Photonics West 2018

EXHIBITION GUIDE

BiOS Expo
27–28 January 2018

Photonics West Exhibition
30 January–1 February 2018

The Moscone Center
San Francisco, USA

Moving technology to market™

www.spie.org/pw
Measurement Station for Virtual Reality Optics
ImageMaster® Lab VR

Efficient Automated Alignment of Doublets with Air Manipulator
OptiCentric® 3D 100 with LensAlign 2D Air and Vacuum Unit

Innovative Technologies:

Universal Power and Wavefront Testing for Free-form Lenses
UniWave: New Technology Unbeatably Fast

High-speed Centration Measurement
OptiCentric® Linear: Rotation-free Inspection of Position-sensitive Lenses
SPIE is the international society for optics and photonics, an educational not-for-profit organization founded in 1955 to advance light-based science and technology. The Society serves nearly 264,000 constituents from approximately 166 countries, offering conferences and their published proceedings, continuing education, books, journals, and the SPIE Digital Library in support of interdisciplinary information exchange, professional networking, and patent precedent. SPIE provided more than $4 million in support of education and outreach programs in 2017.
General Information

**Registration and Badge Pick-Up Hours**

**BiOS EXPO**
Moscone West, Level 1 Lobby
Saturday 27 January 7:00 am to 5:00 pm
Sunday 28 January 7:15 am to 5:00 pm

**Photonics West**
Location: Moscone North Lobby
Monday 29 January 7:15 am to 5:00 pm
Tuesday 30 January 7:30 am to 5:00 pm
Wednesday 31 January 7:30 am to 5:00 pm
Thursday 1 February 7:30 am to 4:00 pm

**Badge Corrections**
Badge corrections can be made at the Badge Corrections station in Moscone West and North Lobbies. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

**Course and Workshop Registration**
Courses and workshops are priced separately. Course-only registration includes your selected course(s), course notes, coffee breaks, and admittance to the exhibition. Course prices include applicable taxes. Onsite, please go to Course Materials after you pick up your badge.
Multiple facilities may be used for courses; allow yourself enough time to register, pick up your materials, and possibly walk to a nearby facility before your course begins.

**Exhibition Hall Policy**
Everyone who attends the exhibition must be registered and have a badge. Badges for children are free and available onsite at the registration desk. Children under 14 years of age must be accompanied by an adult at all times. Guardians are asked to help maintain a professional, disturbance-free exhibition environment. Children under 18 are not allowed in the exhibition area during exhibition move-in and move-out.

**FOOD AND BEVERAGE SERVICES**

**Coffee Breaks**
Complimentary coffee will be served twice daily, at 10:00 am and 3:00 pm.
Saturday am West Level 2 & 3
Saturday pm West Exhibition Hall
Sunday am & pm West Exhibition Hall
Monday am & pm West Levels 2 and 3 South Lower Lobby (Exhibit Level)
Tuesday through Thursday Exhibition Halls A, B, C, D (West Levels 2 and 3)

**Food & Refreshments for Purchase**
Various Locations Saturday through Thursday
A variety of food outlets will serve hot and cold snacks, espresso, beverages, hot entrees, deli sandwiches, salads, and pastries. Cash and credit cards accepted.

**Food Outlets Open in the Exhibition Halls**
West Exhibition Hall
Saturday 11:00 am to 3:00 pm
Sunday 11:00 am to 3:00 pm
Exhibition Halls A, B, C, D
Tuesday through Thursday 10:00 am to 4:00 pm
A Spectrum of Solutions

From Deep UV to Mid-IR

- Silicon Photodetectors
- IR Detectors
- LEDs
- IR Emitters & Controllers
- Optoelectronic Subsystems & Modules

See us at Photonics West, Booth #5228

www.optodiode.com
General Information

ONSITE SERVICES

Wireless
All Moscone Lobbies and Conference Rooms
Complimentary wireless access is available; instructions will be posted onsite.

SPIE Conference App

DOWNLOAD NOW
Search and browse the program, special events, participants, exhibitors, courses, and more. Free Conference Apps also available for iPhone and Android smart phones.

SPIE Bookstore
North Lower Lobby (Exhibit Level)
West Lobby (Level 2)
The SPIE Bookstore is your source for the latest SPIE Press Books, Proceedings, and Education and Professional Development materials. Become an SPIE member, explore the Digital Library, take home a free SPIE poster, or buy a souvenir (tie, t-shirt, educational toys, and more).

SPIE Education Services / Course Materials Desk
West Level 1 Lobby .......... Saturday through Wednesday
North Lobby .......................... Thursday
Browse course offerings and the other education services available: SPIE courses, videos, and CDs as well as customized in-company courses.

SPIE Press Room
Saturday and Sunday ............... West Lobby (Level 1)
Monday through Thursday .......... Upper Mezzanine South Lobby
Open during Registration hours
For Registered Press only. The Press Room provides meeting space, refreshments, access to exhibitor press releases, and Internet connections. Press are urged to register before the meeting by emailing name, contact information, and name of publication to media@spie.org. Preregistration closes approximately 10 days before the start of the event.

SPIE Luggage + Coat Check
West Level 1 Lobby .......... Saturday through Wednesday
Room 104 (South Level 1) .... Monday through Thursday
Complimentary luggage, package, and coat storage are available. Please note posted hours; no late pickup available.

Business Center
Near Exhibition Hall D on the Exhibit Level ........ Tuesday through Thursday
The Moscone Business Center provides full service business needs for your convenience. Their services include photocopying, faxing, computer workstations and printing services.

Restaurant & City Information
West Lobby
Saturday through Sunday ............... 9:00 am to 5:00 pm
North Lobby
Monday through Wednesday ........... 9:00 am to 5:00 pm
The San Francisco Travel Association will have Visitor’s guides and maps available. Staff will be available during the posted hours to discuss city information including tips on local restaurants, the city’s many attractions, sightseeing suggestions and transit information.

Child Care Services
Sitters Unlimited .......................... (408) 452-0225
San Francisco Bay Area
Rachael Osorio .... www.bayareasittersunlimited.com
Email: info@bayareasittersunlimited.com

NOTE: SPIE does not imply an endorsement nor recommendation of these services. They are provided on an “information only” basis for your further analysis and decision. Other services may be available.

Urgent Message Line
An urgent message line is available during registration hours: 415.978.3700

Lost and Found
Cashier - West Level 1 Lobby .... Saturday through Wednesday
Cashier - North Lobby ........... Monday through Thursday
Found items will be kept at Cashier during the meeting and available only during registration hours. At the end of the meeting, all found items will be turned over to Moscone Security Control, 415.974.4021.

Parking During Photonics West
Parking rates at Photonics West Hotels range from $30 (self) to $60 (valet), rates subject to change. Please check with your individual hotel for specific parking rates over PW18.
• Parking Panda provides 100% guaranteed reserved parking spaces throughout San Francisco. Use promo code PW18 for 10% off parking! To reserve a parking space around the Moscone Center, visit Moscone Center Parking.
• Parkopedia - lists all the publicly available parking lots, garages and information about street parking.
• Best Parking
• Union Square Parking
If getting to your optical solutions is taking forever...

...get on a faster track.

PG&O. Fast, friendly, and streamlined.

No matter what size, shape, or functionality you need in precision optical components – PG&O delivers. Fast. We have the expertise and flexibility to design, engineer, and manufacture exactly what you need, when you need it, all in our state-of-the-art facilities. From grinding and polishing to fabrication and precision coatings, we provide high performance, high volume, cost effective solutions. PG&O. Keeping your project on time and on track.

Turnkey Optical Solutions. Fast.

PG&O®
Precision Glass & Optics

Avionic Displays  Imaging
Military/Defense  Digital Cinema
Biomedical  Astronomy
Life Sciences  Laser Manufacturing
Automotive  Photovoltaics

See us at
BiOS #8648
Photonics West #4867

www.pgo.com
3600 West Moore Avenue, Santa Ana, CA 92704 / 714.540.0126 / info@pgo.com
As a leader in the Optoelectronics industry we offer a full range of high performance products and services.

50 Years servicing in the industry of:
- Aerospace/Military
- Industrial
- Telecommunications
- Medical X-ray
- Security Scanning

By leveraging our core expertise in optoelectronics technology and global manufacturing presence, OSI Optoelectronics leads the industry in providing the best, and most advanced economical solutions.

WE PROVIDE:
- Extensive Engineering
- Custom Fabrication
- Testing & Screening
- High & Low Volume Manufacturing

AS9100:2009 Certified

See us at Photonics West
Booth #5569
North Hall

World Class Products
TRUE HD THERMAL
THE VAYU HD CAMERA

The first LWIR camera with true **1920 x 1200 pixel** resolution, no scanning required. This fully-functional system is designed for users who require the maximum number of pixels available in a commercially-supported thermal system.

+ True HD Resolution
+ 1920 x 1200 x 12 μm Uncooled LWIR
+ 30 Hz Frame Rate
+ 24 mm F1.1 Athermalized Optic
+ HD-SDI Video
+ IP67 Environmental Housing

SALES@SIERRAOLYMPIC.COM       WWW.SIERRAOLYMPIC.COM       855.222.1801
SPIE COURSES

Personal Instruction from Leading Experts

70 courses and workshops to stay current with evolving technologies. Don’t miss the opportunity to connect with experts with decades of hands-on, real-world experience.

Program Tracks

- Photonic Therapeutics and Diagnostics
- Neurophotonics, Neurosurgery, and Optogenetics
- Clinical Technologies and Systems
- Tissue Optics, Laser-Tissue Interaction, and Tissue Engineering
- Biomedical Spectroscopy, Microscopy, and Imaging
- Nano/Biophotonics
- Laser Sources
- Nonlinear Optics and Beam Guiding
- Micro/Nano Applications
- Macro Applications
- Optoelectronic Materials and Devices
- Photonic Integration
- Nanotechnologies in Photonics
- MOEMS-MEMS in Photonics
- Semiconductor Lasers and LEDs
- Displays and Holography
- Advanced Quantum and Optoelectronic Applications
- Optical Communications: Devices to Systems
- Optical Materials & Fabrication
- Optical Systems & Lens Design
- Optomechanics
- Metrology and Standards
- Imaging
- Snapshots: 2-Hour Courses for Non-Technical Staff
- Industry Workshops
- Professional Development Workshops

Workshops and Courses for Industry and Non-Technical Staff

INDUSTRY WORKSHOPS
Free to attend.
1-hour to all-day sessions.
- Basics of Laser Material Processing
- How to Speak “High Power Diode Laser”
- Concurrent Opto-Mechanical Engineering: Where do You Start?
- A Session for Engineering Managers
- Concurrent Design for Optical and Mechanical Engineers with Zemax Virtual Prototyping
- Laser Optics & Polarizers, PLDs & APDs, and IR Detectors: One-day Workshop
- Photodetectors, Raman Spectroscopy, and SiPMs versus PMTs: One-day Workshop
- Marketing Tips for Small Companies: How to Bring Customers to You
- Export Control Working Groups: Cameras, Lasers, Lenses and Optics

SNAPSHOT COURSES
Fees vary. Earn CEU credits.
2-hour sessions.
- Basic Optics for Non-Optics Personnel
- The Very Least You Need to Know about Optics
- Fundamentals of Optical Engineering
- Introduction to VR, AR, MR and Smart Eyewear: Market Expectations, Hardware Requirements and Investment Patterns
- Additive Manufacturing of Metals – Powder Bed Fusion and Directed Energy Deposition
- Biomedical Optics: Imaging Biomaker Basics

MONEY-BACK GUARANTEE

We are confident that once you experience an SPIE course for yourself you will look to us for your future education needs. However, if for any reason you are dissatisfied, we will gladly refund your money. We just ask that you tell us what you did not like; suggestions for improvement are always welcome. SPIE reserves the right to cancel a course due to insufficient advance registration.

CONTINUING EDUCATION UNITS

SPIE is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU.

Learn from the Best · Build Your Skills · Get Ahead
She gets it. Shouldn’t you?

Sign up to the free weekly newsletter and we’ll send the news to you.

optics.org/newsletter

Get the latest industry news.

Visit us on booth #1206
### Daily Course Schedule

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<th>Saturday</th>
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<td><strong>Photonic Therapeutics and Diagnostics</strong></td>
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<td><strong>SC1221 Physiological Optics of the Eye for Engineers</strong> <em>(Lakshminarayanan)</em> 8:30 am to 5:30 pm, $675 / $785</td>
<td><strong>SC1175 Optics in the Hospital - Endoscope Specification and Design</strong> <em>(Leiner)</em> 8:30 am to 12:30 pm, $415 / $470</td>
<td><strong>SC702 Optics and Optical Quality of the Human Eye</strong> <em>(Roorda)</em> 1:30 pm to 5:30 pm, $390 / $445</td>
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<td><strong>Neurophotonics, Neurosurgery, and Optogenetics</strong></td>
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<td><strong>SC1126 Neurophotonics</strong> <em>(Levi, Dufour)</em> 1:30 pm to 5:30 pm, $390 / $445</td>
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<td><strong>Clinical Technologies and Systems</strong></td>
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<td><strong>SC312 Principles and Applications of Optical Coherence Tomography</strong> <em>(Fujimoto)</em> 1:30 pm to 5:30 pm, $390 / $445</td>
<td><strong>SC981 Biomedical Applications of Specialty Optical Fibers and Fiber Sensors</strong> <em>(Mendez, Arkwright)</em> 1:30 pm to 5:30 pm, $450 / $505</td>
<td><strong>SC868 Optical Design for Biomedical Imaging</strong> <em>(Liang)</em> 1:30 pm to 5:30 pm, $470 / $525</td>
<td><strong>SC1205 Fundamentals of Applied Pathophysiology in Optical Diagnostics</strong> <em>(Shadgan)</em> 8:30 am to 5:30 pm, $625 / $735</td>
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<td><strong>Tissue Optics, Laser-Tissue Interaction, and Tissue Engineering</strong></td>
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<td><strong>SC029 Tissue Optics</strong> <em>(Jacques)</em> 1:30 pm to 5:30 pm, $390 / $445</td>
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<td><strong>Biomedical Spectroscopy, Microscopy, and Imaging</strong></td>
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<td><strong>SC1203 Analysis of Texture and Oriented Patterns in Biomedical Images</strong> <em>(Rangayyan)</em> 8:30 am to 12:30 pm, $485 / $540</td>
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<td><strong>Nano/Biophotonics</strong></td>
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<td><strong>SC806 Advance Multivariate Statistics for Imaging</strong> <em>(Bajorski)</em> 8:30 am to 5:30 pm, $625 / $735</td>
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<td><strong>SC1206 Nanophotonics: Fluorescence and Plasmon Controlled Fluorescence</strong> <em>(Fixler)</em> 8:30 am to 12:30 pm, $390 / $445</td>
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<td><strong>SC1186 Fluorescence Sensing and Imaging: Towards Portable Healthcare</strong> <em>(Levi)</em> 8:30 am to 12:30 pm, $390 / $445</td>
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See SPIE Cashier to register.
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<td><strong>Laser Sources</strong></td>
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<td>SC1020 Splicing of Specialty Fibers and Glass Processing of Fused Components for Fiber Laser and Medical Probe Applications (Wang)</td>
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<td>SC1181 Ultrafast Lasers and Amplifiers (Paschotta)</td>
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<td><strong>Nonlinear Optics and Beam Guiding</strong></td>
<td>SC047 Introduction to Nonlinear Optics (Fisher)</td>
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<td><strong>Micro/Nano Applications</strong></td>
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<td>SC743 Micromachining with Femtosecond Lasers (Nolte)</td>
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<td>SC547 Introduction to Nonlinear Optics (Fisher)</td>
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<td><strong>Macro Applications</strong></td>
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<td>SC689 Precision Laser Micromanufacturing (Schaeffer)</td>
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<td><strong>Optoelectronic Materials and Devices</strong></td>
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<td>SC747 Semiconductors Photonic Device Fundamentals (Linden)</td>
<td>SC1091 Fundamentals of Reliability Engineering for Optoelectronic Devices (Leisher)</td>
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<td>SC817 Silicon Photonics (Michel, Saini)</td>
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<td><strong>Photonic Integration</strong></td>
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<td>SC1071 Understanding Diffraction Optics (Soskind)</td>
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<td>8:30 am to 5:30 pm, $660 / $770</td>
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<td>SC1204 Volume Bragg Gratings—New Optical Components Providing Unique Means (Glebov)</td>
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Student Members receive significant discounts. Visit the course desk or cashier desk for more information.
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<td><strong>Nanotechnologies in Photonics</strong></td>
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<td>SC608 Photonic Crystals: A Crash Course, from Bandgaps to Fibers (Johnson) 8:30 am to 12:30 pm, $435 / $490</td>
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<td>SC1191 Quantum Sensors (Lanzagorta, Venegas-Andraca) 8:30 am to 12:30 pm, $390 / $445</td>
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<td><strong>MOEMS-MEMS in Photonics</strong></td>
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<td>SC1230 Optical MEMS Engineering (Khalil) 8:30 am to 5:30 pm, $625 / $735</td>
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<td>SC454 Fabrication Technologies for Micro- and Nano-Optics (Suleski) 8:30 am to 12:30 pm, $390 / $445</td>
<td>SC1125 Design, Modeling and Fabrication Techniques for Micro-optics: Applications to Display, Imaging, Sensing and Metrology (Kress) 8:30 am to 5:30 pm, $625 / $735</td>
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<td><strong>Advanced Quantum and Optoelectronic Applications</strong></td>
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<td>SC1210 Quantum Computing (Venegas-Andraca, Lanzagorta) 1:30 pm to 5:30 pm, $390 / $445</td>
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<td><strong>Semiconductor Lasers and LEDs</strong></td>
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<td>SC1146 Laser Diode Beam Basics, Characteristics and Manipulation (Sun) 1:30 pm to 5:30 pm, $390 / $445</td>
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<td><strong>Displays and Holography</strong></td>
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<td>SC1218 Optical Technologies and Architectures for Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) Head Mounted Displays (HMDs) (Kress) 8:30 am to 5:30 pm, $625 / $735</td>
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<td>SC1234 Introduction to VR, AR, MR and Smart Eyewear: Markets Expectations, Hardware Requirements and Investment Patterns (Kress) 1:30 pm to 3:30 pm, $250 / $275</td>
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<td><strong>Optical Materials and Fabrication</strong></td>
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<td>SC321 Thin Film Optical Coatings (Macleod) 8:30 am to 5:30 pm, $625 / $735</td>
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<td>SC1178 Fundamentals of Molded Optics (Symmons, Schaub) 8:30 am to 12:30 pm, $425 / $480</td>
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<td><strong>Optical Systems &amp; Lens Design</strong></td>
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<td>SC156 Basic Optics for Engineers (Boreman) 8:30 am to 5:30 pm, $670 / $780</td>
<td>SC1224 Fundamentals of Optical Engineering (Vogt) 8:30 am to 10:30 am, $250 / $275</td>
<td>SC1199 Stray Light Analysis and Control (Fest) 8:30 am to 5:30 pm, $670 / $780</td>
<td>SC720 Cost-Conscious Tolerancing of Optical Systems (Youngworth) 1:30 pm to 5:30 pm, $390 / $445</td>
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<td>SC690 Optical System Design: Layout Principles and Practice (Greivenkamp) 8:30 am to 5:30 pm, $660 / $770</td>
<td>SC935 Introduction to Lens Design (Bentley) 8:30 am to 5:30 pm, $660 / $770</td>
<td>SC1229 Introduction to Performance Budgeting (Arenberg) 1:30 pm to 5:30 pm, $390 / $445</td>
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<td>SC011 Design of Efficient Illumination Systems (Cassarly) 1:30 pm to 5:30 pm, $390 / $445</td>
<td>SC1170 The Very Least You Need To Know About Optics (Diehl) 10:30 am to 12:30 pm, $250 / $275</td>
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<td>SC014 Introduction to Optomechanical Design (Vukobratovich) 8:30 am to 5:30 pm, $1,125 / $1,380</td>
<td>SC010 Introduction to Optical Alignment Techniques (Castle) 8:30 am to 5:30 pm, $625 / $735</td>
<td>SC015 Fastening Optical Elements with Adhesives (Daly) 8:30 am to 12:30 pm, $390 / $445</td>
<td>SC1085 Optomechanical Systems Engineering (Kasunic) 8:30 am to 5:30 pm, $695 / $805</td>
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<td>SC212 Modern Optical Testing (Wyant) 8:30 am to 12:30 pm, $425 / $480</td>
<td>SC700 Understanding Scratch and Dig Specifications (Aikens) 8:30 am to 12:30 pm, $390 / $445</td>
<td>SC1017 Optics Surface Inspection Workshop (Aikens) 1:30 pm to 5:30 pm, $490 / $545</td>
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Student Members receive significant discounts. Visit the course desk or cashier desk for more information.
## Daily Course Schedule

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<td>SCI222 Deep Learning and Its Applications in Image Processing (Nasrabadi)</td>
<td>SCI967 High Dynamic Range Imaging: Sensors and Architectures (Darmon)</td>
<td>SCI068 Use of CCD and CMOS Sensors in Visible Imaging Applications (Lomheim)</td>
<td>SCI231 Designing and Specifying Digital Cameras (Baldwin)</td>
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<td>8:30 am to 5:30 pm, $625 / $735</td>
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<td><strong>Snapshots: 2-Hour Courses for Non-Technical Staff</strong></td>
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<td>SCI224 Fundamentals of Optical Engineering (Vogt)</td>
<td>SCI234 Introduction to VR, AR, MR and Smart Eyewear: Markets Expectations, Hardware Requirements and Investment Patterns (Kress)</td>
<td>SCI237 Additive Manufacturing of Metals – Powder Bed Fusion and Directed Energy Deposition (Nassar)</td>
<td>SCI238: Biomedical Optics: Imaging Biomarker Basics (Bohndiek)</td>
<td>SCI170 The Very Least You Need To Know About Optics (Diehl)</td>
<td>SCI609 Basic Optics for Non-Optics Personnel (Harding)</td>
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<td>8:30 am to 10:30 am, $250 / $275</td>
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<td>WS9007 Laser Optics &amp; Polarizers, PLDs &amp; APDs, and IR Detectors: One-day Workshop (Volke, Grubisic, Snyder, Merken) 8:30 am to 5:30 pm</td>
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<td>WS9005 Concurrent Design for Optical and Mechanical Engineers with Zemax Virtual Prototyping (Pickering, Peguero) 1:00 pm to 5:00 pm</td>
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<td>WS9006 Photodetectors, Raman Spectroscopy, and SiPMs versus PMTs: One-day Workshop (Piatek) 8:30 am to 5:30 pm</td>
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See SPIE Cashier to register.

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### SPIE OPTICS AND PHOTONICS EDUCATION SCHOLARSHIPS

Students located anywhere in the world, in high school through PhD programs, who are studying or planning to study optics, photonics, or a related field, are eligible to apply for scholarships ranging from $2,500 to $11,000.

**APPLY BY 15 FEBRUARY**

spie.org/scholarships
## Daily Course Schedule

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<td>WS1208 <em>The Seven Habits of Highly Effective Project Managers</em> (Warner) 8:30 am to 12:30 pm, $200 / $250</td>
<td>WS667 <em>The Craft of Scientific Presentations: A Workshop on Technical Presentations</em> (Haas) 8:30 am to 12:30 pm, Free to technical attendees</td>
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<td>WS1240 <em>Essential Skills for a Career in Industry</em> (Giltner) 1:30 to 5:30 pm, Free to technical attendees</td>
<td>WS668 <em>The Craft of Scientific Writing: A Workshop on Technical Writing</em> (Haas) 1:30 to 5:30 pm, Free to technical attendees</td>
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<td>Panel Discussion: Charting a Course in the Photonics Industry, 2:00 to 4:00 pm</td>
<td>WS1059 <em>Resumes to Interviews: Strategies for a Successful Job Search</em> (Welch) 3:30 to 5:30 pm, Free to technical attendees</td>
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We Have Your Wavelength!

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Single Frequency NIR & Visible Fiber Lasers
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and a REPUTATION for INNOVATION

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Come see what we can do for you
Bios - #8615  Photonics West - #4753
6 FINALISTS, 5 MINUTES

$10,000

WEDNESDAY

3:30 TO 6PM
CONVENTION CTR.
ROOM 21

SIX PRE-REVENUE PHOTONICS ENTREPRENEURS HAVE 5 MINUTES TO PITCH THEIR BUSINESS IDEAS AND A CHANCE TO WIN OVER $85,000 IN CASH, PRIZES, PROMOTION, AND MORE.

WWW.SPIE.ORG/STARTUP

Founding Partner

Lead Sponsor

Supporting Sponsors
Attend these sessions to learn about growth opportunities, gain insight and inspiration about big markets, hear new business ideas, and meet industry leaders focused on commercial applications.

**Startup Challenge Pitch Clinic**
Monday 29 January 2018 · 9:00 am to 12:00 pm
Location: Park Central Hotel, Metropolitan 3
Semi-Finalists for the Startup Challenge are invited to a morning of training on entrepreneurship and pitches.

**Startup Challenge Networking Lunch**
Monday 29 January 2018 · 12:00 pm to 1:30 pm
Location: Park Central Hotel, Metropolitan 3
Startup Challenge Pitch Clinic attendees network with judges and mentors. This event is open to Startup Challenge participants only.

**Photonics Cluster Reception**
Monday 29 January 2018 · 5:00 pm to 6:30 pm
Location: InterContinental Hotel, Ballroom A (5th Floor)
RSVP required. See SPIE Cashier.
All leaders from regional optics and photonics clusters are invited to join this SPIE-hosted reception. Connect with your peers while enjoying drinks and appetizers, compare notes, and hear an update from your peers abroad on efforts to raise awareness of photonics and grow local business, as well as a brief report on the SPIE Photonics Market Analysis project. Dress is business attire.

**Women Executives Meet-Up**
Monday 29 January 2018 · 6:00 to 7:00 pm
Location: InterContinental Hotel, Fremont (5th Floor)
RSVP required. See SPIE Cashier.
Please join this inaugural event for women executives (industry or academia) to meet up, talk shop, network, and enjoy a glass of wine. This is an event for women in the optics, photonics, and applications community. This event follows the SPIE Women in Optics presentation and reception.
SPIE INDUSTRY EVENTS

VR, AR, MR
FREE ONE-DAY CONFERENCE

VR, AR, MR One-Day Industry Conference and Headset Demonstrations

Monday 29 January 2018 • 9:00 am to 5:30 pm • Room 21 (North Exhibit Level)
This daylong industry conference consists of 18 invited talks and a panel on the current optical technological challenges and successes for Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). Hear from the biggest names in consumer electronics to up-and-coming companies in AR, VR, and MR.

MORNING SESSION • 9:00 am to Noon
The coming of age for VR headsets: hardware challenges

9:00 am
Opening: Introduction to hardware challenges in VR / AR
Bernard Kress
Partner Optical Architect at Microsoft / HoloLens

9:20 am
Historical introduction to VR
Ronald Azuma
Advanced Development, Research, and Project/Team Leadership in New Media at Intel

9:40 am
VR at HTC
Vinay Narayan
Executive Director, VR @HTC VIVE, Tech Strategist and Advisor

10:00 am
VR at Google
Jerry Carollo
Optical Architect at Google

10:20 am
VR at Oculus
Doug Lanman
Director of Computational Imaging at Oculus Research

10:40 am
VR at Huawei
Tish Shute
Director AR/VR/MR, Corporate Technology Strategy, Huawei USA

11:00 am
Infrared mirrors for eye-tracking application
Timothy L. Wong
Electronics Materials Solutions Division, 3M

11:20 am
Optical sensors for AR and VR
Chang Hee Kim
Sr. Director, Head of Business Development of uSens

11:40 am
How LCOS (Liquid Crystal on Silicon) technology addresses AR glass issues
PoKing Li
VP of Marketing & Sales, LCOS display at Himax Display

Lunch Break

“This is the largest single day event in AR/VR hardware planned for 2018, especially for optical architectures (optics, displays and sensors), one of the main challenges for next generation AR/VR headsets.”

- Bernard Kress, Microsoft HoloLens
AFTERNOON SESSION • 1:00 to 4:30 pm
Visual comfort for immersive, see-through displays (AR and MR)

1:00 pm
Smart glasses and AR headsets
John Haddick
CTO at Osterhout Group (ODG)

2:00 pm
Optimizing Head-mounted light field displays for quality and comfort
Hong Hua
Professor at University of Arizona, College of Optical Sciences

1:20 pm
Mixed reality headsets and gesture sensing
Kari Pulli
CTO at Meta Vision

2:20 pm
3D vision cues challenges for AR and VR
Marty Banks
Professor of Vision Science at UC Berkeley

1:40 pm
Monocular waveguide combiners for AR
Jonathan Waldern
Founder, Chairman & CTO at DigiLens

2:40 pm
Light field displays for head-mounted displays (HMDs)
Gordon Wetzstein
Assistant Professor, Electrical Engineering and Computer Science, Stanford University

3:00 pm
Light field displays for flat panels
David Fattal
Founder & CEO at LEIA

3:20 pm
Light field AR headset
Ed Tang
Founder and Chief Technology Officer at Avegant

3:40 pm
The real destination of “augmented reality” is not the phone, but smartglasses MR
Robert Schultz
Head of Optics Research and Development at Vuzix

4:00 pm
AR hardware for power grid management
Micah Tinklepaugh
Engineer, AR and AI at Electric Power Research Institute (EPRI)

PANEL SESSION • 4:30 to 6:00 pm
Listen and interact with some of the biggest names in VR, AR, and MR. Panelists include pioneers in VR, smart glasses, cryptography and more. Grab a beverage, prepare questions, and be part of this interactive panel discussion.

MODERATORS
Bernard Kress
Microsoft HoloLens

Ronald Azuma
A pioneer and innovator in augmented reality, visualization, and mobile applications at HRL Labs, Nokia Research Center, and Intel Labs.

Marty Banks
Vision specialist for head-mounted displays, studying the effects emerging technology, screens, and virtual reality headsets have on our eyes.

David Chaum
AR hardware developer, recognized as the inventor of digital cash and other fundamental innovations in cryptography, including privacy technology and secure election systems.

Jim Melzer
One of the pioneers for defense and military head mounted displays. Currently the Technical Director at Thales Visionix.

PANELISTS
Jaron Lanier
A pioneer in the field of virtual reality, as well as a computer philosophy writer, computer scientist, visual artist, and composer of classical music.

Thad Starner
Early smart glasses pioneer. Founder and director of the Contextual Computing Group at Georgia Tech’s College of Computing.

Mark Bolas
A VR pioneer who helped jumpstart the technology. Now at Microsoft working on the “vision strategy” for Microsoft’s Mixed Reality platform.

Jared Allen
One of the pioneers for defense and military head mounted displays. Currently the Technical Director at Thales Visionix.

Networking to follow

HANDS-ON HARDWARE DEMOS • 9:00 am to 5:30 pm
Take this opportunity to test-drive the hottest new headsets that are currently—or about to be—on the market. Participating companies include:

IMPORTANT
Separate registration is required to reserve a free headset demonstration session (participants may choose one to five 20-minute sessions). Email innovation@spie.org to reserve your session or visit the SPIE Cashier for details.
How Global Investment is Bringing Quantum Technologies to the Marketplace

Tuesday 30 January 2018 · 8:30 to 9:45 am
Location: Room 21 (North Exhibit Level)

Quantum Technologies promises significant advances in secure communication, sensing and computation. It has gained momentum in the last few years, attracting significant investment, not only from various governments but also from industry. Photonics is not only a key enabler of quantum technology but it will also progressed further because of tighter demands.

This session provides a snapshot of the investments being made in different countries: the amount of money being made available for different areas. There are differences in emphasis and approach. Some of our speakers have been closely involved in their national programs. We will round this up with examples of significant commercial development that some companies are undertaking. The session will close with a panel discussion about the variation in approach in funding of quantum technology globally and the key development needs, with focus on photonics to make this all work.

MODERATOR:
Anke Lohmann
Anchored In Ltd. Consultant in Photonics and Quantum Technologies

PANELISTS INCLUDE:

Andrew Robertson
Gooch & Housego (UK) Senior Vice President

Lars Unnebrink
VDI Technologiezentrum GmbH, Quantentechnologien

Rishiraj Pravahan
AT&T Foundry, Principal Data Scientist

Qiang Zhang
University of Science and Technology of China

Robert Rölver
Bosch (Germany) Scouting Quantum and Nanotechnologies

Recent Developments Affecting IP Protection and Trade Compliance with China: Key Things to Know

Tuesday 30 January 2018 · 8:30 am to 10:00 am
Location: Room 23 (North Exhibit Level)

Infringements of intellectual property rights are a widespread and ever-increasing phenomenon worldwide. International trade in counterfeit products represents up to 2.5% of world trade, or as much as €338 billion (EUPO study, a-tv, 9.21.2017).

This session will look at how U.S. export regulations are effecting trade with China and how it is applicable to the photonics and sensors industry. Topics include:

- IP agreements and challenges: establishing IP safeguards in the PRC business environment
- Trade logistics in China: leveraging enterprise zones, joint ventures and other business entity structures
- Managing export controlled technology in China: protective agreements and Technology Control Plans
- New PRC export regulations: impact of exporting products, technology and software from the PRC
- Recent CFIUS developments affecting trade with China

SPEAKERS:

Kerry Scarlett
BakerHostetler

Don Fischer
Fischer Associates

Open Session of the Sensors and Instrumentation Technical Advisory Committee

Tuesday 30 January 2018 · 9:30 am to 11:00 am
Location: InterContinental Hotel, Ballroom A (5th Floor)

The Sensors and Instrumentation Technical Advisory Committee (SITAC) advises the Office of the Assistant Secretary for Export Administration within the Department of Commerce on technical questions that affect the level of export controls applicable to sensors and instrumentation equipment and technology.

MODERATOR:
Chris Costanzo
Deputy Director of the Sensors and Aviation Division, Bureau of Industry and Security, Department of Commerce

If you are interested in joining for one or more of these meetings, contact SPIE Government Affairs Director Jennifer Douris at jenniferd@spie.org to be added to the distribution list for meetings and activities.

BACKGROUND

Technical Advisory Committees (TACs) advise the Department of Commerce on the technical parameters for export controls applicable to dual-use commodities and technology and on the administration of those controls. The TACs are composed of representatives from industry and Government representing diverse points of view on the concerns of the exporting community. Industry representatives are selected from firms producing a broad range of goods, technologies, and software presently controlled for national security, foreign policy, nonproliferation, and short supply reasons or that are proposed for such controls, balanced to the extent possible among large and small firms.
TAC members are appointed by the Secretary of Commerce and serve terms of not more than four consecutive years. Members of the public who are not members of the TAC are welcome to attend the open session of this committee meeting. A closed session will immediately follow the open session.

**Marketing Tips for Small Companies: How to Bring Customers to You**

Tuesday 30 January 2018 · 10:15 am to 12:00 pm  
Location: Room 23 (North Exhibit Level)

INSTRUCTOR: Michele Nichols  
Launch Team Inc.

Looking to improve the ROI on your marketing and sales? Compare notes with your peers in this open discussion. Speaker Michele Nichols will share successes and lessons learned across many of the optics and photonics companies she works with, and will facilitate this roundtable session.

This session will include a marketing roundtable discussion, “how to bring customers to you” ideas, practical tips for companies from start-up to second stage growth, etc.

**Photonics Fast Pitch Lunch**

Tuesday 30 January 2018 · 11:30 am to 1:30 pm  
Location: Park Central Hotel, Metropolitan 3  
RSVP required: https://goo.gl/j2PgSo

The Photonics Fast Pitch event brings entrepreneurs together with people interested in technology business investment. With 2 minutes to pitch, entrepreneurs will introduce their company, business plan, and current market traction in a rapid fire format. The goal is to build a basis for introductions and network-building in the area of photonics technology entrepreneurship. Join angel investors, VCs, analysts, M&A specialists, and big company scouts at this industry event.

**Free Headshots**

Tuesday 30 January 2018 · 10:00 am to 5:00 pm  
Location: South Exhibit Hall

Get your FREE professional portrait taken during Photonics West

Whether you are looking to update your SPIE profile, social media pics, or a framed picture, take advantage of this FREE service offered by SPIE. Dress professionally and even come back each day to get multiple styles of pictures.

These are free for every attendee, exhibitor, instructor, student, or exhibition visitor.

Sponsored by SPIE.CAREER

**SPIE Job Fair**

Tuesday 30 January 2018 · 10:00 am to 5:00 pm  
Location: South Exhibit Hall

**Top employers are coming together to interview and hire candidates at Photonics West 2018**

Whether you are looking for employees or looking for a job, this is your chance to connect with the best. Meet over 30 recruiters on the exhibit floor including OSRAM Opto Semiconductors, IG Photonics, Quartus Engineering, Intel, SCHOTT North America, Lawrence Livermore National Laboratory, Rockley Photonics, Luminar Technologies, Daylight Solutions, Newport, KLA Tencor, BAE Systems, The Aerospace Corp, Zygo Corporation, Thorlabs, Applied Materials, nmlaser, Oculus, Lockheed Martin Space Systems Co, Lasertel, Coherent, Hardin Optical, Volk Optical, Inc., Magic Leap, and more.

**Next Generation Fiber Technology: Perspective and Roadmap**

Tuesday 30 January 2018 · 1:30 pm to 2:30 pm  
Location: Room 23 (North Exhibit Level)

We will bring world-leading experts together to discuss the challenges in different applications and markets with the goal to derive a roadmap for the next developments required in fiber technology. The results will be published in a white paper summarizing our efforts and containing a derived fiber technology roadmap for the next 10 years.

**SPEAKERS**

Andreas Tünnermann  
Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Director

Jens Limpert  
Friedrich Schiller University Jena, Head of Fiber & Waveguide Lasers

Thomas Schreiber  
Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Head of Department Fiber Technology

Kevin Füchsel  
Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Head of Department Strategy & Marketing
The Solid-State Lighting Revolution: The Next Stage of Market Development
Tuesday 30 January 2018 · 1:30 pm to 3:00 pm
Location: Room 21 (North Exhibit Level)

The lighting market is undergoing a transformation of a magnitude not seen since the invention of the incandescent lamp. LED technology embodied in lamps (bulbs) and luminaires (fixtures) has now captured over 50% of the $80 billion worldwide lighting market and the near-complete penetration of this market with LED sources is in sight. Energy efficiency has been the main driver for this transformation, but other factors, such as light quality and controllability, have now becoming equally, if not more, important in moving the market forward.

This panel of lighting experts will provide examples of the innovative applications that go well beyond the simple replacement of conventional sources with more efficient LEDs. Attendees will gain insights into the technology innovations that are providing new benefits and capabilities that were never achievable with conventional light sources.

MODERATOR:
Robert V. Steele
Consultant in Solid-State Lighting

PANELISTS:
Aaron M. Smith
Finelite, Director of Technology
Clifton Stanley Lemon
IESNA, Founder and CEO
Dima Simonian
Telelumen, Color Scientist
Steve Paolini
Telelumen, President

Q&A and networking to follow.

Startup Challenge Semi-Finals
Tuesday 30 January 2018 · 2:00 pm to 4:00 pm
Startup Challenge semi-finalists pitch their business to a panel of expert judges and compete to move on to the Startup Challenge finals. Get connected to early-stage technology companies in the following areas:

Track 1: Biophotonics and Point of Care
Location: Park Central Hotel, Franciscan I

Track 2: Imaging, Displays, Lasers, and Semiconductors
Location: Park Central Hotel, Franciscan II

Track 3: Sensors, Wearables, IoT
Location: Park Central Hotel, Stanford

Graphene-CMOS Integration for Broadband Imaging and Integrated Photonics
Tuesday 30 January 2018 · 3:00 to 3:45 pm
Location: Room 23 (North Exhibit Level)

Graphene-CMOS integration for broadband imaging and integrated photonics: a graphene flagship perspective on taking graphene from the lab to the market

Integrated circuits based on CMOS (complementary metal-oxide semiconductors) are at the heart of the technological revolution of the past 40 years, as these have enabled compact and low cost micro-electronic circuits and imaging systems. However, the diversification of this platform into applications other than microcircuits and visible light cameras has been impeded by the difficulty to combine other semiconductors than silicon with CMOS.

We show several applications of graphene-CMOS integration. This includes the first monolithic integration of an electronic CMOS integrated circuit with graphene, operating as a broadband photodetector. We demonstrate a high-resolution image sensor and operate it as a digital camera. The graphene was sensitized with colloidal quantum dots that make it sensitive to UV, visible and infrared light (300 – 2000 nm). Moreover, we discuss the progress on integrated photonics and wafer-scale integration within the EU Graphene Flagship program.

SPEAKER:
Frank Koppens
The Institute of Photonic Sciences (ICFO)
Silicon Photonics and Photonic Integrated Circuits: 2018 Industry Perspective
Tuesday 30 January 2018 · 3:30 to 4:45 pm
Location: Room 21 (North Exhibit Level)
Demand for smaller and cheaper optical interconnections inside networks and computers will create a new market of miniaturized, low-cost photonic components that can leverage the scale of CMOS manufacturing. Learn what industry leaders have developed at the frontier of the silicon photonics market.

MODERATOR:

Peter Hallett
SPIE, Director of Marketing and Industry Relations

PANELISTS:

Philippe Absil
IMEC, 3D and Optical Technologies Department Director

Peter De Dobbeleare
Luxtera, VP of Engineering

Douglas Gill
IBM T. J. Watson Research Center, Research Staff

Ashok Krishnamoorthy
Axalume, Founder and CEO

Tuesday 30 January 2018 · 4:00 to 5:00 pm
Location: Room 23 (North Exhibit Level)
Attendees will learn how software is rapidly changing the way optical design teams are organizing themselves, significantly lowering total cost, accelerating time to market, and changing the competitive landscape. Attendees will learn what they can do to assess their current capabilities, as well as how to initiate the changes needed to modernize their work flows.

Intended Audience: Optical and mechanical engineering managers, Directors and VPs.

INSTRUCTOR:

Mark Nicholson
Zemax

SPONSORED BY: Zemax

Export Control Working Group: Cameras
Wednesday 31 January 2018 · 8:30 am to 9:30 am
Location: InterContinental Hotel, Nob Hill (4th Floor)
SPIE, in conjunction with the Department of Commerce Sensors and Instrumentation Technical Advisory Committee (SITAC), has established working groups composed of industry and university representatives to assist in identifying and developing proposals related to improving the export control system in the areas of Detector & Cameras, Lasers, and Lenses and Optics.

Discussion Topic: Detectors and Cameras
• Uncooled
• Cooled
• SWIR
• Cryocoolers
• ROICs
• Image Intensifiers

MODERATOR:

Jennifer Douris O’Bryan
SPIE, Director of Government Affairs

If you are interested in joining for one or more of these meetings, contact SPIE Government Affairs Director Jennifer Douris at jenniferd@spie.org to be added to the distribution list for meetings and activities.

From Startup Creation to Acquisition: How to Be Successful at Each Stage
Wednesday 31 January 2018 · 8:30 am to 9:45 am
Location: Room 23 (North Exhibit Level)
Come hear experts discuss how best to develop your ideas, company, and strategies.

MODERATOR:

Laura Smoliar
Berkeley Catalyst Fund, Founding Partner and Managing Director

SPEAKERS:

From science to startup launch: how to get your idea developed into a company
Patrick Scaglia
Blue Bear Ventures, Managing General Partner

How to find the money and utilize accelerators and incubators
Sujatha Ramanujan
Luminate, Managing Director

Plans for your business, planning growth, planning an exit strategy
Magnus Bengtsson
Coherent, Vice President Strategic Marketing

Onsite News: www.spie.org/PWnews  •  #SPIEPhotonicsWest
Industry Events

3D Printing and Industry 4.0: An Industry Perspective

Wednesday 31 January 2018 · 8:30 am to 10:00 am
Location: Room 21 (North Exhibit Level)

The 3D printing/additive manufacturing landscape has changed drastically since the first 3D printer was created in 1984. Originally used mostly for modelling and prototyping, 3D printing is now making its way into mainstream manufacturing. Widespread adoption however, has been slowed or limited by such factors as material options, slow print speeds, equipment cost, and lack of standardization.

At the same time advances in computing, robotics, automation, and the advent of the internet of things have aligned to further disrupt the manufacturing sector. To remain profitable and stay competitive, companies will have to embrace the digitization of manufacturing – Industry 4.0 – which, in addition to these disruptive technologies, will potentially upend traditional supply chain management and production planning as well as require engineers and designers to change their mindset from subtractive to additive.

Attend this panel discussion and find out how industry leaders are addressing the challenges of this exciting marketplace.

MODERATOR:
Stephen G. Anderson
SPIE, Director, Industry Development,

PANELISTS:
Karsten Heuser
Siemens AG, Digital Factory Division, Additive Manufacturing

Peter Leibinger
TRUMPF GmbH, CTO, Vice Chairman of the Managing Board

Jason Jones
Hybridge Manufacturing Technologies, Co-founder and CEO

Andy Martin
GE Additive, Technology Development Leader

Photodetectors, Raman Spectroscopy, and SiPMs versus PMTs: One-Day Workshop

Wednesday 31 January 2018 · 8:30 am to 5:30 pm
Location: visit the SPIE Course Desk for details

Free to attend. CEU Credits not available.

Hamamatsu is holding a free one-day workshop that covers three topics. Come for a session or come for the entire day.

DAILY SCHEDULE:

PART I: 8:30 to 10:00 am
Photodetectors: Theory, Practice, Applications, and Selection

Photodetectors are essential components in a vast array of modern scientific and commercial instruments and devices; technological progress will make them even more ubiquitous. Understanding their opto-electronic properties, regimes of operation, circuit requirements, and noise characteristics is essential to a practitioner to make a proper photodetector selection for a given application.

The purpose of this presentation is to provide guidance in this process by discussing the above considerations for the four most common point photodetectors: photomultiplier tube, photodiode, avalanche photodiode, and silicon photomultiplier.

PART II: 1:00 to 2:45 pm
Raman Spectroscopy: Theory and Practice

Information about the system under investigation may be contained in the spectrum of light received from it. Spectroscopy is an umbrella term referring to a multitude of measurement techniques that can be employed to access the information.

This presentation mentions several major dispersive and non-dispersive spectroscopic techniques such as, for example, fluorescence, Fourier transform, laser-induced breakdown, time-resolved, and discusses in greater detail three forms of Raman spectroscopy: normal, resonant, and surface enhanced. The discussion of Raman spectroscopy includes the theory behind the technique, the hardware components of a working setup, and the most common applications.

PART III: 3:00 to 5:00 pm
Single-photon detection: SiPMs versus PMTs

Since early 1990’s, a silicon photomultiplier has become a viable alternative to a photomultiplier tube in selecting a photodetector for applications where the light signal may consist of few hundred photons per second.

This presentation reviews the physics of operation of both devices, describes their key opto-electric characteristics, compares their performance, and reports the latest advancements in the design of silicon photomultipliers. It ends with a discussion of several applications for which the choice between using either silicon photomultipliers or photomultiplier tubes may be very subtle.

INSTRUCTOR:
Slawomir Piatek
Hamamatsu

SPONSORED BY: Hamamatsu
Laser Optics and Polarizers, from Pulsed Lasers to White Laser Light, and IR Detectors: One-Day Workshop

Wednesday 31 January 2018 · 8:30 am to 5:00 pm
Location: visit the SPIE Course Desk for details
Free to attend. CEU Credits not available.

The team from Laser Components is holding a free one-day workshop that covers three topics. Come for a session or come for the entire day.

PART I: 8:30 to 10:00 am
How to Specify High-Power Laser Optics and Polarizers

Specifying the correct optical component may determine the success of an application. This session focuses on high-power laser optics and polarizers, their functional principles, essential properties, and corresponding effects depending on the application.

8:30 to 9:00 am
High-Power Laser Optics
- Advantages and disadvantages of different coating technologies
- Tradeoffs of laser optics specifications
- Laser Induced Damage Threshold (LIDT) / Absorption for UV wavelengths
- Surface flatness of laser optics after coating

9:00 to 10:00 am
Theory of polarization, polarizer types, and utilization
- Explain the matter of polarization and list different types of polarizers
- Characterize polarizers by their specifications
- Describe the polarizers mode of operation in various applications
- Define key parameters for a polarizer in an intended application

INSTRUCTORS:
Barbara Herdt
Laser Components
André Volke
CODIXX

PART II: 11:00 am to 1:30 pm
From Distance Measurement in LiDAR to Next-Gen White Light, Each Using Different Technologies: How to Set the Optimal Device Performance

In laser scanning applications like LiDAR, many electro-optical systems using a time-of-flight concept require temporally fast optical pulses to achieve the distance resolution and detectors that can amplify very weak signals coming from the targets. The first workshop will focus on the Pulsed Laser Diodes (PLDs) part and provide an overview of challenges faced when switching high peak current fast switch hybrid laser diode circuits. The workshop on the detector part will zoom in on Silicon Avalanche Photodiodes (APDs) in terms of structure, internal gain mechanism, and noise and speed of operation.

To close this session, we will provide an overview of a next generation white laser light module, which features safe high efficiency fiber delivery of light from a blue laser diode to a remote phosphor module that produces high luminance, incoherent, broad spectrum white light.

INSTRUCTORS:
Dragan Grubisic
Laser Components
Ran Zhu
Laser Components Canada
Julian Carey
SoraaLaser

PART III: 1:30 to 5:00 pm
IR Detectors: What Are the Best New IR Technologies for Your Company

Choosing the right infrared detector can often be quite daunting as there are many to choose from, each with their own modes of operation, ideal performance conditions, variations, and limitations. This session will provide an overview of the different types of IR detectors available on the market today & cover their usage in industrial gas sensing applications, spectroscopy, radiation thermography and non-destructive inspection processes. This will include the following technologies:

- InGaAs, Extended InGaAs, and InAs Photodiodes
- PbS & PbSe (Lead Salt) Photoconductors
- Pyroelectric Detectors

1:00 to 2:00 pm
Selecting an IR detector for Gas Sensing Applications

- An understanding of the main advantages and disadvantages of common IR detector technologies covering operation, ideal conditions, available versions, and limitations of each technology
- How to specify a detector for your project
- Typical gas sensing setups for each technology
- How to get the best out of your detector
- Upcoming sensor technologies and “exotic” materials

Laser Optics and Polarizers, from Pulsed Lasers to White Laser Light, and IR Detectors: One-Day Workshop continued next page ➤
Industry Events

2:00 to 2:30
High speed InGaAs Arrays for SD-OCT and Machine Vision
Understanding the specifications of 512, 1024 and 2048-pixel InGaAs Line-arrays with up to 400 KHz line rates, surpassing the speed requirements of medical (3D SD-OCT) and machine vision applications, consuming limited power while exhibiting stellar noise performance

2:30 to 3:00 pm
Use of Extended InGaAs Linear Arrays
To develop an understanding of the capability of 1.7µm, 2.2µm, and 2.6µm cut-off wavelength linear InGaAs arrays and the factors that influence sensitivity

4:00 to 4:30 pm
Recent improvements in PbS/PbSe detector technology
• How PbS/PbSe detectors are constructed
• The internal structure of PbS/PbSe
• What material mechanisms affect device performance
• Old vs. new: how modern manufacturing techniques affected overall detector performance

4:30 to 5:00 pm
Differential Pyroelectric Detectors
Understanding the operation of pyroelectric detectors in the true differential mode, which provides doubling of signal and an increase in D* by a factor of around \( \sqrt{2} \).

INSTRUCTORS:

Elliott Martyn Chick
Laser Components GmbH

Lowell Snyder
Laser Components Detector Group

Patrick Merken
Xenics

Export Control Working Group: Lasers
Wednesday 31 January 2018 · 10:00 am to 11:00 am
Location: InterContinental Hotel, Nob Hill (4th Floor)
SPIE, in conjunction with the Department of Commerce Sensors and Instrumentation Technical Advisory Committee (SITAC), is forming working groups comprised of industry and research university representatives that will assist in identifying and developing proposals related to improving the export control system in the areas of Detector & Cameras, Lasers and Lenses & Optics.

Discussion Topic: Lasers
* Fiber
* Diode
* High Powered

MODERATOR:
Jennifer Douris O’Bryan
SPIE, Director of Government Affairs
If you are interested in joining for one or more of these meetings, contact SPIE Government Affairs Director Jennifer Douris at jenniferd@spie.org to be added to the distribution list for meetings and activities.

Free Headshots
Wednesday 31 January 2018 · 10:00 am to 5:00 pm
Location: South Exhibit Hall
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Sponsored by

SPIE Job Fair
Wednesday 31 January 2018 · 10:00 am to 5:00 pm
Location: South Exhibit Hall
Top employers are coming together to interview and hire candidates at Photonics West 2018
Whether you are looking for employees or looking for a job, this is your chance to connect with the best. Meet over 30 recruiters on the exhibit floor including OSRAM Opto Semiconductors, IPG Photonics, Quartus Engineering, Intel, SCHOTT North America, Lawrence Livermore National Laboratory, Rockley Photonics, Luminar Technologies, Daylight Solutions, Newport, KLA Tencor, BAE Systems, The Aerospace Corp, Zygo Corporation, Thorlabs, Applied Materials, nmlaser, Oculus, Lockheed Martin Space Systems Co, Lasertel, Coherent, Hardin Optical, Volk Optical, Inc., Magic Leap, and more.
Nikon Optical Materials and Optics: at the Heart of 100 Years of History

Wednesday 31 January 2018 · 11:00 am to 12:00 pm
Location: Room 23 (North Exhibit Level)

Take a historical look back at 100 years of development in optical materials and optics for use in some of the world most demanding consumer and industrial products. From our first microscope introduced in 1925 to the Nikon 1 in 1948, moving forward through to the digital age with semiconductor, FPD lithography systems, digital imaging, microscopes and industrial metrology.

This technical talk will focus on how Nikon's optical materials and optics have evolved to support and advance Nikon's portfolio of high-end products.

SPEAKER: Naoyasu Uehara
Nikon

SPONSORED BY:

Export Control Working Group: Lenses and Optics

Wednesday 31 January 2018 · Noon to 1:00 pm
Location: InterContinental Hotel, Nob Hill (4th Floor)

SPIE, in conjunction with the Department of Commerce Sensors and Instrumentation Technical Advisory Committee (SITAC), has established working groups comprised of industry and research university representatives to assist in identifying and developing proposals related to improving the export control system in the areas of Detector & Cameras, Lasers and Lenses & Optics.

Discussion Topic: Lenses and Optics

MODERATOR: Jennifer Douris O’Bryan
SPIE, Director of Government Affairs

If you are interested in joining for one or more of these meetings, contact SPIE Government Affairs Director Jennifer Douris at jenniferd@spie.org to be added to the distribution list for meetings and activities.

Concurrent Design for Optical and Mechanical Engineers with Zemax Virtual Prototyping

Wednesday 31 January 2018 · 1:00 to 5:00 pm
Location: visit the SPIE Course Desk for details
Free to attend. CEU Credits not available.

Virtual prototyping helps optical and mechanical engineers design, communicate, and collaborate on building their optical product right the first time by flagging potential problems early in the product development process. Virtual prototyping from Zemax links the preferred software design tools used by the optical engineer with the preferred design tools used by the mechanical engineer. By using the same virtual prototype for design and simulations, optical and mechanical engineers can create a complete model of a product and validate the effectiveness of the design.

Learn how virtual prototyping from Zemax is improving the engineering design process for both optical and mechanical engineers with OpticStudio and LensMechanix. This course will provide awareness and understanding of the software tools available from Zemax that streamline engineering design workflow.

In this workshop, we will demonstrate how to:

• optimize, analyze, and tolerance a sequential system in OpticStudio
• optimize a sequential design for conversion to non-sequential mode
• load a sequential design into SOLIDWORKS using LensMechanix
• package, analyze, and validate your complete optomechanical design
• open a completed LensMechanix design in OpticStudio
• optimize a complete optomechanical design

INSTRUCTORS:

Thomas Pickering
Zemax
Isis Peguero
Zemax

SPONSORED BY:

Basics of Laser Material Processing

Wednesday 31 January 2018 · 1:30 to 3:00 pm
Location: Room 23 (North Exhibit Level)

Learn the basics of lasers and laser applications in this interesting and valuable workshop. This session is especially valuable to non-laser engineers and project managers who need to know what to expect from their laser systems.

• Discuss what happens when a laser beam hits a material
• Review process threshold and process window
• Discussions of how you can optimize a process, including examples of marking and ablation / engraving or cutting
• Discussion around some common things that can go wrong
• Additional examples of successful laser applications

INSTRUCTOR:

Jean-Philippe Lavoie
Coherent
Executive Panel: How High-Growth Industries are Embracing the Innovation Ecosystem

Thursday 31 January 2018 · 1:30 to 2:30 pm
Location: Room 21 (North Exhibit Level)

To stay relevant and competitive in this rapidly changing world, corporations must find new ways to foster innovation in key enabling technologies and to enhance their product portfolios. How they maintain a pipeline of talent, technology, and new products will be key to their survival.

Join industry leaders from high-tech industries and learn how they engage the innovation ecosystem in a variety of ways, from company-sponsored incubators and corporate venture investment activities to sponsorship of university-related incubators and accelerators. Hear expert discussion about the changing nature of technology transfer in a world where students want to become entrepreneurs. And find out how aspects of the innovation ecosystem touch optics and photonics. Don’t miss this opportunity to listen to and ask questions of high-tech executives who can help you better understand today’s changing innovation ecosystem.

MODERATOR:
Laura Smoliar
Berkeley Catalyst Fund, Founding Partner and Managing Director

PANELISTS:
Yuriko Kaida
Asahi Glass Chemical (AGC), General Manager, Business Development Americas

Mostafa Ronaghi
Illumina, CTO and SVP

How to Speak “High Power Diode Laser”

Wednesday 31 January 2018 · 3:00 to 4:30 pm
Location: Room 23 (North Exhibit Level)

When working in the laser industry, every sector and technology has their own language and lingo. Whether you’re new to an industry or interacting with vendors and customers in that space, you might feel like you could use a crash course. How to Speak “High Power Diode Laser” is exactly that, a crash course in what you need to know to be effective in your interactions and communication with vendors, customers, and your colleagues in the High Power Diode Laser industry.

In this session, we’ll cover basic operation of diode lasers, but staying light on the physics and heading straight to the application. We’ll go through the different structures of the semiconductor and why they are so important, before reviewing some different types of heat-sinks, the trade-offs, and a few examples of final packaging. Finally, we’ll talk about what to specify and what is critical to share so you get the best solution. Vendors in the industry, their product offerings, and pricing is not discussed.

SPEAKER:
Joseph Braker
Coherent | DILAS

SPIE Startup Challenge

Wednesday 31 January 2018 · 3:30 to 6:00 pm
Location Room 21 (North Exhibit Level)

THE MAIN EVENT—THE SPIE STARTUP CHALLENGE FINALS.

With over $85,000 in cash, prizes, and promotion at stake, this is an event not to be missed.

See and hear pitches for the “best of the best” new photonics businesses. This pitch competition is a lively, interactive event showcasing the power of entrepreneurs to move photonics technology to the global marketplace. The top two entrepreneurs from each semi-final track will have just five minutes each to pitch their businesses to a team of expert judges.

The top pitch presenter will go home with $10,000 in cash from JENOPTIK and $5,000 of equipment from Edmund Optics. Join fellow business development, investment, and product managers to scout new talent and see what the future of entrepreneurship in photonics looks like.

The event will conclude with a networking reception from 5-6:00 pm where you can meet the presenters and fellow attendees involved in photonics entrepreneurship. See the Startup Challenge webpage for more details on presenters, logistics, prizes, and sponsors: http://spie.org/startup

JUDGES:

Jason Eichenholz
Luminar Technologies, Inc.

Marc Himel
JENOPTIK Optical Systems, LLC

Andreas Popp
TRUMPF, GmbH

Sujatha Ramanujan
High Tech Rochester Inc. & Luminate Accelerator

Jenny Rooke
5 Prime Ventures

N. Darius Sankey
Innovation Acceleration Capital

Homan Yuen
NewGen Capital

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Industry Events

PRISM Awards Ceremony and Banquet
Wednesday 31 January 2018 • 6:00 to 10:00 pm
Location: Marriott Marquis Hotel, Yerba Buena Ballroom
The Prism Awards is celebrating 10 years—and this year we recognize new products that influence and improve our lives on a daily basis.
This gala has become the largest gathering of CEOs and VIPs in the photonics industry.
Tickets required: ticket pick-up or questions go to the SPIE Cashier, North Upper Lobby.
PRESENTERS INCLUDE:

Akira Hiruma
Hamamatsu, CEO, President and Representative Director

Eric Mottay
Amplitude Systèmes, CEO

Peter Leibinger
TRUMPF GmbH, CTO, Vice Chairman of the Managing Board

Uwe Higgen
BMW i Ventures, Managing Partner

Debbie Gustafson
Energetiq Technology, CEO

Kathleen Burke
MKS Instruments, VP and General Counsel

Ray O. Johnson
Bessemer Venture Partners, Executive in Residence and former CTO of Lockheed Martin

PRESENTED BY: SPIE.

MEDIA SPONSOR:

Market Update: Size of the Optics and Photonics Market along with Enabled Markets
Thursday 1 February 2018 · 9:15 to 9:45 am
Location: Room 21 (North Exhibit Level)

KEYNOTE SPEAKER:

Stephen G. Anderson
Director, Industry Development, SPIE

In a unique analysis of the global optics and photonics industry, Stephen G. Anderson presents an updated comparative profile of the industry that highlights the importance of photonics to the world economy. The profile is based on a continuing SPIE review of industry trends and also includes a first-look at key end-use market segments. Don’t miss this valuable presentation after the Exhibitor Breakfast. Free and open to all attendees.

Lighting the Path Towards Autonomous Mobility
Thursday 1 February 2018 · 11:00 am to 12:00 pm
Location: Room 21 (North Exhibit Level)

Autonomous mobility is the disruptive technology of our era, and at its core are optical sensing challenges. Getting better data required to operate safely is the key to a driverless future, and this all hinges on a new kind of LiDAR built for self-driving scenarios.

Join SPIE Fellow and Co-Founder of Luminar Jason Eichenholz in a talk on the requirements for self-driving vehicles and a vision for a major breakthrough in LiDAR.

SPEAKER:

Jason Eichenholz
Luminar, Co-Founder

Startup Alley: Commercialization and Prototype Showcase
Thursday 1 February 2018 · 11:00 am to 12:30 pm
Demo Area (Exhibit Hall D)

Meet with the entrepreneurs featured in the Startup Challenge as they deliver their pitches and take questions about their new photonics businesses. See the prototypes and talk with the entrepreneurs to explore potential partnerships, investment, or sales.

Free Headshots
Thursday 1 February 2018 · 10:00 am to 4:00 pm
Location: South Exhibit Hall

Get your FREE professional portrait taken during Photonics West
Whether you are looking to update your SPIE profile, social media pics, or a framed picture, take advantage of this FREE service offered by SPIE. Dress professionally and even come back each day to get multiple styles of pictures.
These are free for every attendee, exhibitor, instructor, student, or exhibition visitor.

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BANQUET & AWARDS CEREMONY

Wednesday 31 January 2018
6PM Cocktail Reception
7PM Dinner & Awards Ceremony

For ticket information, visit the SPIE Cashier
Congratulations to the 2018 finalists.

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**BIOS Expo**

200 Companies

BIOS Expo, the world’s largest biomedical optics and biophotonics exhibition, kicks off the Photonics West week. Find the latest technologies from 200 companies in the thriving biomedical optics and photonics industries.

**SPIE Photonics West Exhibition Directory Listing, See page 83.**

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BIOS Expo
Saturday 27 January ...............10:00 am to 5:00 pm
Sunday 28 January ............... 10:00 am to 4:00 pm

Plan to Attend FREE Exhibitor Product Demonstrations
Refer to page 43 for complete times, schedules, and locations.

SPIE Industry Events
Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees. Refer to pages 21–36.

BIOS Expo Exhibitor Booth Index

8208 Redondo Optics, Inc.
8210 Bliq Photonics
8212 Presco, Inc.
8213 Vortran Laser Technology, Inc.
8214 greateyes GmbH
8214 Laserand, Inc.
8214 UniKLasers Ltd.
8216 Revilbro Optics.
8218 Opticology, Inc.
8307 Fresnel Technologies Inc.
8308 GrinTech GmbH
8309 OZ Optics Ltd.
8310 Toshiba America Information Systems, Inc.
8311 Pyser Optics
8312 BioOptics World
8313 Optics Technology Inc
8315 MegaWatt Lasers, Inc.
8316 Tucson Photonics Co., Ltd.
8317 Southern Photonics
8319 DataRay Inc.
8320 Gooch & Housedge
8321 HOLO/OR Ltd.
8322 US Fiberoptic Technology, Inc.
8323 MOXTEK, Inc.
8324 Photonic Cleaning Technologies
8325 Advanced Microoptic Systems GmbH
8327 PCO-TECH Inc.
8328 Innovative Photonic Solutions
8335 Exalos AG
8336 Prior Scientific Inc.
8338 Hindsight Imaging, Inc.
8340 IMEC
8340 PIX4life
8341 art photonics GmbH
BIOS Expo Booth Index

8342  Wuhan National Laboratory for Optoelectronics (WNLO)

8343  TruTag Technologies

8344  AXSUN Technologies Inc.

8345  Blue Sky Research

8349  Etaluma, Inc.

8350  Brimrose Corporation of America

8352  LEUKOS

8354  The Australian National University

8355  Flexible Optical B.V.

8356  Covesion Ltd.

8357  Starlight Xpress Ltd.

8358  Kimmy Photonics Ab

8359  Benchmark

8360  PHASICS Corp.

8361  Rochester Precision Optics, LLC

8400  NK1 Photonics Inc.

8407  PI (Physik Instrumente) L.P.

8408  Hamamatsu Corp.

8411  Isuzu Glass, Inc.

8413  Optotune Switzerland AG

8414  Superlum

8415  Optimax Systems, Inc.

8416  Nexcel IP, Inc.

8419  AdvR, Inc.

8419  Elfordlight Ltd.

8420  Electro Optical Components, Inc.

8420  IMM Photonics GmbH

8421  MKS Instruments, Inc.

8421  Newport, a division of MKS Instruments

8421  Spectra-Physics, a division of MKS Instruments

8422  Ealing Catalog

8422  Market Tech Inc.

8422  Ommicron Laserage Laserprodukte GmbH

8424  optics.org

8424  SPIE Career Center

8424  SPIE Digital Library

8435  inPhenix, Inc.

8436  Cambridge Technology, A Novanta Company

8436  Laser Quantum Inc

8437  Changchun New Industries Optoelectronics Technology Co., Ltd.

8439  Raptor Photonics Ltd.

8440  ALPha - RLH (Lasers & Microwave French Cluster)

8440  Alphanov

8440  Amplitude Systemes

8440  Femto Easy

8440  Irisione Solutions

8441  Delta Optical Thin Film A/S

8443  Photon Gear, Inc.

8445  PIEZOCONCEPT

8447  Applied Scientific Instrumentation, Inc.

8448  asphericon, Inc.

8449  IRsweep GmbH

8450  ISS

8451  Webb Holdings LLC

8453  Altos Photonics, Inc.

8453  EKSPLA

8453  Light Conversion

8454  Santec U.S.A. Corp.

8500  Becker & Hickl GmbH

8500  Boston Electronics

8507  Coherent, Inc.

8508  TOPTICA Photonics Inc.

8509  Hellma USA, Inc.

8511  BWT Beijing Ltd.

8512  Xenics USA, Inc.

8513  Jenoptik Optics and Life Science

8514  OFS

8519  Sutter Instrument Corp.

8520  Andover Corporation

8521  Litron Lasers Ltd.

8522  General Photonics Corp.

8523  MIKROP AG

8523  Zued Precision Optics Ltd

8524  Optores GmbH

8525  heracle GmbH

8525  microfluidic ChipShop GmbH

8526  MPA Crystal Corp.

8527  Boulder Nonlinear Systems

8528  Avo Photonics, Inc.

8529  IMRA America, Inc.

8535  B&W Tek

8536  NoIR Laser Shield

8537  Applied Physics & Electronics, Inc.

8538  SmarAct GmbH

8539  Optikron GmbH

8541  HOLOEYE Photonics AG

8542  LASOS Lasertechnik GmbH

8542  AdValue Photonics, Inc.

8544  NanoScribe GmbH

8547  ALPAO S.A.S.

8548  Ibsen Photonics A/S

8549  LEONI Fiber Optics, Inc.

8550  Alazar Technologies, Inc.

8551  JenLab GmbH

8553  Meadowlark Optics, Inc.

8554  Timbercon

8556  Berliner Glas KGaA Herbert Kubatz GmbH & Co.

8556  SwissOptic AG

8600  Thorlabs, Inc.

8607  Semrock, a unit of IDEX Health & Science

8608  Ocean Optics, Inc.

8609  Micro Laser Systems, Inc.

8611  M Squared Lasers Ltd.

8612  PicoQuant Photonics North America, Inc.

8615  MPB Communications Inc.

8619  DiCon Fiberoptics, Inc.

8620  Edmund Optics Inc.

8621  Iridian Spectral Technologies Ltd.

8622  Wasatch Photonics, Inc.

8623  Cobolt AB

8623  HUBNER Group GmbH

8625  FISBA

8626  Boston Micromachines Corp.

8627  Insight Photonic Solutions, Inc.

8628  GPD Optoelectronics Corp.

8630  Mad City Labs., Inc.

8635  Fibertech Optica Inc.

8636  Pavilion Integration Corp.

8637  ESPROS Photonics AG

8637  Viavi Solutions

8639  Lasertel, Inc.

8640  HILLTOP Technology Laboratory, Inc.

8641  SAMTEC USA

8642  POG Precision Optics Gera Corp.

8643  Spectrogon US, Inc.

8644  Princeton Instruments

8647  Onix, Inc.

8648  Precision Glass & Optics

8650  Modulight, Inc.

8651  Auxora (Shenzhen), Inc.

8652  Fiberguide Industries, Inc.

8653  Opto GmbH

8654  OSELA Inc.

8655  Cree Inc

8655  Marktech Optoelectronics

8656  Avantes, Inc.

8657  Iris AO, Inc.

8707  UTC Aerospace Systems - Sensors Unlimited

8708  Andor Technology Ltd.

8709  New Scale Technologies

8711  Diode Laser Concepts, Inc.

8712  Zurich Laser Instruments AG

8713  Electro-Optics Technology, Inc.

8714  Syntec Optics

8714  Wordingham Technologies

8715  Imagine Eyes

8715  Imagine Optic SA

8716  Spectral Devices

8718  OptiGrate Corp.

8719  Optics Balzers

8720  FEMTOperaint SA

8722  Argolight

8723  OPTOTEK

8724  YSL Photonics

8725  II-VI

8726  IMT Precision on Glass

8728  Princeton Infrared Technologies, Inc.

8729  Energetiq Technology, Inc.

8730  PreXion Corp.

8732  Oxxius SA

8735  Biophotonics, a Photonics Media Publication

8736  DRS Daylight Solutions

8738  HEIDSTAR CO., LTD.

8739  Spectrolight Inc.

8740  Feinwerkoptik Züld AG

8741  Shanghai Mega-9 Optoelectronic Co., Ltd.

8742  Quantel Laser

8743  LaCroix Precision Optics

8744  Grace Laser

8746  Chroma Technology Corp.

8747  Analog Modules, Inc.

8749  Springer Nature

8750  NanoHybrids Inc.

8751  American Photonics

8752  PhotoSound Technologies, Inc.

8753  Lumedica, Inc.

8754  KMLabs

8755  IRD Glass

8756  EPIGAP Optronic GmbH

8757  AFL

8758  SAIS Co., Ltd.
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BIOS Expo Product Demonstrations
Learn new possibilities at these sessions, which are free to all attendees. Exhibiting companies will be showcasing products in half-hour demonstrations.

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<tr>
<th>TIME</th>
<th>Saturday 27 January</th>
<th>Sunday 28 January</th>
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<tbody>
<tr>
<td>10:30 am</td>
<td><strong>How to Address Four Common End-User Requirements in Spectroscopy</strong> &lt;br&gt;Dr. Thomas Rasmussen &lt;br&gt;<strong>Ibsen Photonics</strong> &lt;br&gt;Dr. Thomas Rasmussen will share guidelines for how to address requirements for various applications during the design of spectroscopic instruments - from speed, size and endurance to usability.</td>
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<tr>
<td>11:30 am</td>
<td><strong>Portable, Affordable, and Clinician-Friendly Solution for Biomedical Photoacoustic Imaging</strong> &lt;br&gt;Dr. Mithun Kunjil Ajith Singh &lt;br&gt;<strong>PreXion Corporation</strong> &lt;br&gt;We will introduce our LED-based photoacoustic imaging system and demonstrate its functional, molecular, and structural imaging capabilities using several clinical/pre-clinical imaging examples.</td>
<td><strong>Discover the Limits of Your Microscope</strong> &lt;br&gt;Gautier Papon &lt;br&gt;<strong>Argolight</strong> &lt;br&gt;Today, controlling the performances of microscopes using different technology is a challenge. Discover new technologies helping microscopists to check and explore the true potential of their systems.</td>
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<tr>
<td>12:30 pm</td>
<td><strong>NIR Sugar Measurements Using a Surface Mount Spectrometer</strong> &lt;br&gt;Dana Hinckley &lt;br&gt;<strong>Hamamatsu Corporation</strong> &lt;br&gt;Hamamatsu has an exciting new surface mount spectrometer that is sensitive from 640nm to 1050nm. We’ll cover the impact of the spectral sensitivity and what can be achieved for sugar measurements.</td>
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<td>1:30 pm</td>
<td><strong>A New Wavelength Tunable Device for Imaging and Microscopy</strong> &lt;br&gt;Marcus Noble, Ph.D. &lt;br&gt;<strong>Spectrolight Inc.</strong> &lt;br&gt;We will demonstrate a new device called the Flexible Wavelength Selector that combines the wavelength tuning of a monochromator with the large circular aperture typical of an optical filter.</td>
<td><strong>Lasers for Raman Spectroscopy and Gas Detection</strong> &lt;br&gt;Bill Bolster &lt;br&gt;<strong>Electro Optical Components</strong> &lt;br&gt;Raman Spectroscopy is used to observe vibrational, rotational &amp; other modes in a system. EOC offers 785, 830 and 1064nm precision lasers required for this. Lasers work for accurate gas detection too.</td>
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<td>2:30 pm</td>
<td><strong>High Spatial Resolution Hyperspectral Camera Based on a Continuously Variable Filter</strong> &lt;br&gt;Oliver Pust &lt;br&gt;<strong>Delta Optical Thin Film A/S</strong> &lt;br&gt;The principle of this new approach to HSI will be presented, along with characterization of the camera, real-world measurements, comparison with reference data, simultaneous 3D, and snapshot version.</td>
<td><strong>Spero-QT®, the Next Breakthrough in Non-destructive Infrared Chemical Imaging</strong> &lt;br&gt;Nick McCollum &lt;br&gt;<strong>DRS Daylight Solutions</strong> &lt;br&gt;Learn how the Spero-QT® wide-field mid-infrared QCL microscope is bringing video rate hyperspectral imaging modalities to a multitude of bio-pharmaceutical, materials and life sciences applications.</td>
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<td>3:30 pm</td>
<td><strong>OBIS CellX - The Ultimate Laser Beam Combiner</strong> &lt;br&gt;John Abbott &lt;br&gt;<strong>Coherent, Inc.</strong> &lt;br&gt;The high-power and easy-to-integrate OBIS CellX combines up to four wavelengths, eliminating cost and effort for customers who need multiple excitation wavelengths in instrumentation applications.</td>
<td><strong>Introducing the ChemDetect™ Liquid Analyzer</strong> &lt;br&gt;Bill De Costa &lt;br&gt;<strong>DRS Daylight Solutions</strong> &lt;br&gt;This compact, smart spectrometer combines fast-scanning, broadly-tunable QCLs with balanced detection to achieve unprecedented sensitivity and speed for trace analyte detection in liquid columns.</td>
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<tr>
<td>Company</td>
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<td>AdValue Photonics, Inc.</td>
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<td><strong>2μm wavelength Q-Switched Fiber Laser for thin film ablation, clear plastic welding and marking.</strong></td>
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<td>AFL</td>
<td>8757</td>
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<td><strong>Come see a demo of AFL’s ARCMASTER® FSM-100 series specialty fusion splicers at Booth #8757.</strong></td>
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<td>Alazar Technologies, Inc.</td>
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<td><strong>ATN-10G waveform digitizer platform with user programmable FPGA, 10GE interface, and x86 controller.</strong></td>
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<td>Alphanov</td>
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<td><strong>PULS is a spectrally tunable ultrashort fiber laser platform dedicated to biophotonics application.</strong></td>
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<td>Alphasense Technologies, Inc.</td>
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<td><strong>asphericon revolutionizes measurement technology with an aspheric transmissions sphere.</strong></td>
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<td>ALPAO S.A.S.</td>
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<td><strong>New DMs featuring large pupil from 100 mm to 200 mm with 37 to 127 actuator - fit it in your laser.</strong></td>
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<td>Applied Scientific Instrumentation, Inc.</td>
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<td><strong>Microjoule industrial grade fs fiber laser FemtoLux, 3W power, 300fs-5ps tunable pulse duration.</strong></td>
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<td>Boston Micromachines Corp.</td>
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<td><strong>Multi-C Deformable Mirror: Greater control with 137 actuators and 1.5 μm stroke and new low price.</strong></td>
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<td>Boston Electronics, Inc.</td>
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<td><strong>Time Correlated Single Photon Counting (TCSFC) Systems and Components.</strong></td>
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<td>Cobalt AB</td>
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<td><strong>Cobalt AB market releases the Cobalto™ Skyra™, a revolutionary multi-line laser.</strong></td>
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<td>Coherent, Inc.</td>
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<td><strong>The OBIS CellX laser beam combiner is perfect for customers needing multiple excitation wavelengths.</strong></td>
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<td>DataRay Inc.</td>
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<td><strong>The new WinCamD-IR-BB MWIR/FIR beam profiler offers affordable broadband 2-16 μm profiling.</strong></td>
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<td>Delta Optical Thin Film A/S.</td>
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<td><strong>Continuously Variable Bandpass Filter with exponential dispersion for Hyperspectral Imaging.</strong></td>
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<td>DRS Deylight Solutions</td>
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<td><strong>The Spero-QT is the next breakthrough in label-free chemical imaging.</strong></td>
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Meeting Highlights

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest

EKSPLA .......... 8453
Mobile High Energy Tunable Laser System PhotoSonus series for Photoacoustic Imaging.

Electro Optical Components, Inc. .... 8420
EOC introduces new Lasers, NDIR and Pump Components for Raman Spectroscopy and Gas Detection.

Electro-Optics Technology, Inc. ............ 8713
EOT Tornos Series Compact 520-810nm Optical Isolators - Compact, wavelength tunable design.

Etaluma, Inc. ........ 8349
Etaluma high-res, no pixel shift, 3 color fluorescence microscope module with motorized focus for OEM.

Feinwerkoptik Zünd AG8740
Our miniaturized camera (Ø1.5mm, 160k pixels) is now available with 15° and 30° viewing angle.

FEMTOprint SA ...... 8720
Contract manufacturing according to ISO13485 for accurate 3D microtools out of glass.

FISBA .......... 8625
Precision Molded Aspheres for Medical Endoscopic Devices.

Grace Laser .......... 8744
Model: ALICE-PS / Info.: Ultrafast picosecond lasers for Medical application.

Hamamatsu Corp. .... 8408
Hamamatsu’s G13913-256FG is a compact, low-cost InGaAs linear image sensor for portable instruments.

Hindsight Imaging, Inc. 8338
ChemVu™ and ChemVuR™: Hindsight’s handheld high speed reflectance and Raman hyperspectral imagers.

HOLO/OR Ltd. ......... 8321
Holoo/Or’s Collimated Homogenizer provides a uniform beam at constant size over long working distance.

HUBNER Group GmbH .8623
The compact & flexible laser combiner, C-FLEX lets you combine up to 6 wavelengths.

Ibsen Photonics A/S .. 8548
FREEDOM C, compact OEM spectrometers for the UV, VIS and NIR ranges with very high resolution.

II-VI .................. 8725
Qomo Lasers: II-VI to introduce lasers ideal for Flow Cytometry & Confocal Fluorescence Microscopy.

InPhenix, Inc. ........ 8435
850nm/1050nm/1300nm Swept Light Source; wavelength repetition rate 100KHz over 100nm.

Irisiome Solutions ... 8440
Irisiome Solutions is proud to introduce a new product range, the MANNY laser family.

KMLabs .............. 8754
Y-Fi OPA – Tunable vertically integrated optical parametric amplifier pumped system.

Laser Quantum Inc . .8436
venteon OPCPA, a leading parametric amplifier, now operates as few-cycle or wavelength tunable.

LASOS Lasertechnik GmbH ........ 8542
The intensity stabilized LGS 7662 offers 0.6 mW output power.

Light Conversion ....... 8453
Carbide 40W - Next Generation Industrial Grade Femtosecond Laser.

M Squared Lasers Ltd. . 8611
Imaging at the edge of biology with the Aurora light sheet microscope.

BIOS EXPO Exhibiting Companies Featuring New Products

SPIE BIOS EXPO: 27–28 JANUARY 2018
Marktech Optoelectronics. 8655
Marktech introduces its new broadband detector, ranging from 365nm-1700nm in a TO-5 package.

Meadowlark Optics, Inc. 8553
BROADBAND Ferroelectric Liquid Crystal Polarization Rotator (high speed over extended λ ranges).

Micro Laser Systems, Inc. 8609
Fiber Focuser - Compact Fiber Focusing with other optical accessories for manipulating light.

MIKROP AG 8523
Micro-Camera for OV6946 CMOS Sensor: smallest dimensions; customizable; brilliant performance.

NanoHybrids Inc. 8750
PAtrace: An in vivo functional mapping agent for photoacoustic/optoacoustic imaging systems.

New Scale Technologies 8709
Battery-powered microstages move 200g loads for portable systems, embedded microscopes, spectroscopy.

Ondax, Inc. 8647
Ondax’s new THz-Raman® accessory enables transmission Raman measurements on pills, tablets and vials.

Optores GmbH 8524
NG-OMES is Optores’ latest OCT solution with long imaging range and MHz speed for live 4D-OCT.

Optotune Switzerland AG 8413
Tunable lens with 3mm clear aperture & up to 70dpt range offers fast, compact & repeatable focusing.

Oxxius SA 8732
The L8Cc is a compact all-in-one wavelength combiner systems with advanced features for Microscopy.

Pavilion Integration Corp. 8636
Whisper Comet™ APD Detector Modules, high QE, covering UV and NIR, individually tunable.

PCO-TECH Inc. 8327
pco.panda joins the ranks as newest member of PCO’s state-of-the-art sCMOS sensor camera systems.

PI (Physik Instrumente) L.P. 8407
See PI's miniaturized nanopositioning and alignment systems: ideal for microscopy & micro-assembly.

PIEZOCONCEPT 8445
Compact 3-axis nanopositioner offering 100μm travel range and subnanometric resolution.

Precision Glass & Optics. 8648
PG&O’s New Optical Monitoring System Enables Greater Accuracy in Optical Thin-Film Coatings.

PreXion Corp. 8730
Real-time photoacoustic imaging at an affordable cost is not a dream anymore with Acoustic X plus.

Princeton Infrared Technologies, Inc. 8728
LineCam12 High Resolution SWIR InGaAs Linescan Camera: Image Vis-to-SWIR with One High Speed Camera.

Prior Scientific Inc. 8336
Prior Scientific to demonstrate the new OpenStand - an innovative modular automated microscope stand.
**Quantel Laser** ........ 8742

Millijoule class diode laser source with pulse width < 10 ns.

**Raptor Photonics Ltd.** .8439

A vacuum cooled 1280 x 1024 InGaAs camera, <35e- r/o noise and dark current of <1.500e/p/s @ –20°C.

**SAIS Co., Ltd.** ........ 8758

optical filters manufactured by HB Optical with high transmission T>95%, sharp edge, deep blocking.

**Santec U.S.A. Corp. .... 8454**

World’s first UV-hardened LCOS Spatial Light Modulator. 10mW/cm² sustainable at 365nm.

**Semrock, a unit of IDEX Health & Science ........ 8607**

Spectrally complex optical filters on thin-glass substrates for miniaturized optical systems.

**Spectral Devices Inc. .. 8716**

Spectral Devices Inc offers a RGB-NIR USB3 Vision camera for multispectral imaging applications.

**Spectrolight Inc. ...... 8739**

Flexible Wavelength Selector (Auto) obsoletes monochromators and filter wheels in bioinstrumentation.

**Superlum.............. 8414**

30 mW output, single mode 670 nm Superluminescent Diodes for speckle-free illumination and sensing.

**Sutter Instrument Corp. ........ 8519**

Lambda OBC - an exciting patented concept for combining light sources into a single output beam.

**The Australian National University .......... 8354**

MIROPA-fs-M supports both two- and three-photon imaging in a single package.

**Thorlabs, Inc. 8600**

Quantalux™ Monochrome and Color sCMOS Cameras offer low read noise (<1 e-) and high sensitivity.

**Timbercon ............ 8554**

Now offering advanced fiber processing and beam characterization with a LZM-100 laser & expanded lab.

**Tuscan Photonics Co., Ltd. .......... 8316**

NIR spectrometer series: 10x more sensitive, thermally stable, highly linear absorbance, 900-2200nm.

**Xenics USA, Inc ....... 8512**

Xlin-FC InGaAs linear arrays: advances in low-noise and high-speed performance.

**Zurich Instruments AG . 8712**

HD4WG Arbitrary Waveform Generator: 2.4 GSa/s, 16 bit, up to 8 channels, shortest trigger latency.
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contact@advaluephotonics.com; www.advaluephotonics.com

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Amplitude Systems
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1 Fortune Dr, Billerica, MA, 01821-3923 USA
+1 978 262 0049; fax +1 978 262 0035
info@axsun.com; www.axsun.com

Berliner Glas KGaA Herbert Kubatz GmbH & Co. #8556
Waldkraiburger Str 5, Berlin, 12347 Germany
+49 30 60905 0; fax +49 30 60905 100
medical@berlinerglas.de; www.berlinerglas.com
Featured Product: OEM Medical Solutions - From Concept to Volume Production
Berliner Glas is one of the world’s leading providers of optical key components, assemblies and systems. Berliner Glas develops, produces and integrates optics, mechanics and electronics into innovative system solutions for its customers. As a classic OEM partner, Berliner Glas supplies innovative companies from the medical technology and life science market who are a cut above the competition thanks to the quality and functionality of their products. Contact: Kevin Liddane, Dir of Business Development - North America, kilddane@berlinerglasus.com; Martin Kuchenbecker, Key Account Manager, martin.kuchenbecker@berlinerglas.de

B&W Tek #8535
19 Sheaw Way, Newark, DE, 19713-3452 USA
+1 302 368 7824; fax +1 302 368 7830
marketing@bwtek.com; www.bwtek.com
Featured Product: i-Raman Pro ST
B&W Tek is the global leader in innovative mobile spectroscopy solutions. We utilize our own key building blocks consisting of spectrometers, light sources, sampling accessories and software capabilities to produce portable and handheld spectroscopy and laser instrumentation. B&W Tek provides Raman, LIBS, UV-Vis and NIR solutions for the pharmaceutical, biomedical, physical, chemical, safety, security, research and education communities. Contact: Daniel Rau, Marketing Manager, d.rau@bwtek.com; Michaela Gomez, Marketing Assistant, michaelag@bwtek.com

Avantes, Inc. #8656
500 S Arthur Ave Ste 500, Louisville, CO, 80027-3038 USA
+1 303 410 8668; fax +1 303 410 8669
infos@avantes.com; www.avantes.com
Featured Product: Avantes Debuts the AvaSpec-Mini4096 Compact and AvaSpec-NIR512 Spectrometers
Avantes, leader in fiber optic spectroscopy for biomedical applications, offers a range of spectrometers, light sources, & fiber optics for the range 190-2500 nm. Avantes is excited to debut the first ever 4096 pixel compact CMOS spectrometer, built with automated manufacturing system provides unbeatable unit-to-unit repeatability and thermal stability. Avantes also features the high-resolution AvaSpec-NIR512-1.7 as the newest addition to our NIRLine of Spectrometers for measurements to 1700nm. Contact: Janel Kane, Marketing Manager, j.kane@avantes.com; Damon Lenski, General Manager, d.lenski@avantes.com

Avo Photonics, Inc. #8528
120 Welsh Road, Horsham, PA, 19044 USA
+1 215 441 0107
sales@avophotonics.com; www.avophotonics.com
Featured Product: Contract Manufacturing and Custom Design of Opto-Electronic Components and Systems
Enables your success by providing custom design, development, prototyping and volume production services for clients utilizing opto-electronic products in the medical, industrial, communications, military, and aerospace markets. Delivers client-owned component and system level solutions through rapid-innovation and high-quality, ISO9001 & 13485 certified, manufacturing within the USA. Light. Precisely. Contact: Joe Delfino, Director of Global Business Development, j.delfino@avophotonics.com; Joe Dallas, President, jdallas@avophotonics.com

Auxora (Shenzhen), Inc. #8651
Bldg 5 Flr 1&3 Zhong Yun Tas Industrial Park, 1 Tangtou Rd Shiyian Community Baoan District, Shenzhen, 518057 China
+86 755 29833292; fax +86 75586016750
sales@auxora.cn; www.auxora.com

Becker & Hickl GmbH #8500
Nundorfer Ring 7-9, Berlin, 12277 Germany
+49 30 212 80 02 0; fax +49 30 212 80 02 13
info@becker-hickl.com; www.becker-hickl.com
Featured Product: TCSPC systems, picosecond correlators, picosecond lasers, single photon counting (hybrid) detectors
Becker & Hickl GmbH is technology leader in time-correlated single photon counting (TCSPC). The product range includes TCSPC modules, lasers, detectors for a wide range of applications like e.g. fluorescence lifetime imaging (FLIM) in biology, medicine, pharmacy, biochemistry, chemistry, and physics. Becker & Hickl currently supplies more than 1600 TCSPC systems worldwide, organizes yearly 5 workshops around the world and distributes more than 1600 pages of TCSPC literature. www.becker-hickl.com Contact: Wolfgang Becker, CEO, becker@becker-hickl.com; Hauke Studier, Manager, studier@becker-hickl.com

Benchmark #8359
Medical Technologies, 4141 N Scottsdale Rd 301, Scottsdale, AZ, 85251-4064 USA
+1 623 300 7000
info@bench.com; www.bench.com
Benchmark provides In-house FDA/QSR compliant design, V&V, prototyping & global manufacturing of imaging, non-imaging & laser-based optical products, with a focus on cameras, laser interferometers, fiber & waveguide products, high-density optical, die-level packaging, and miniaturization. Our precision design/build of test systems, fixtures, tools, and processes ensure the closest tolerances. Learn more at www.bench.com Contact: Susan Johnson, Business Development Executive, susan.johnson@bench.com; Jim Apfel, VP of Business Development, jim.apfel@bench.com

BioOptics World #8312
61 Spilt Brook Rd Ste 401, Nashua, NH, 03060 USA
+1 603 891 0123; fax +1 603 891 0574
info@laserfocus.com; www.bioopticsworld.com
BioOptics World, presented by Laser Focus World, tracks technologies, applications, and business trends related to the use of optical technologies and instrumentation in the life sciences. Comprising a magazine, e-newsletter, and web site, BioOptics World covers cutting-edge research related to the design, development, and utilization of optical technologies for the study, diagnosis, and treatment of disease and disease processes. Contact: Alan Bergstein, Publisher, alanb@pennwell.com; Barbara Gefvert, Editor in Chief, barbarag@pennwell.com

Berlin Glas KGaA Herbert Kubatz GmbH & Co. #8556
Waldkraiburger Str 5, Berlin, 12347 Germany
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medical@berlinerglas.de; www.berlinerglas.com
Featured Product: OEM Medical Solutions - From Concept to Volume Production
Berliner Glas is one of the world’s leading providers of optical key components, assemblies and systems. Berliner Glas develops, produces and integrates optics, mechanics and electronics into innovative system solutions for its customers. As a classic OEM partner, Berliner Glas supplies innovative companies from the medical technology and life science market who are a cut above the competition thanks to the quality and functionality of their products. Contact: Kevin Liddane, Dir of Business Development - North America, kilddane@berlinerglasus.com; Martin Kuchenbecker, Key Account Manager, martin.kuchenbecker@berlinerglas.de

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Nundorfer Ring 7-9, Berlin, 12277 Germany
+49 30 212 80 02 0; fax +49 30 212 80 02 13
info@becker-hickl.com; www.becker-hickl.com
Featured Product: TCSPC systems, picosecond correlators, picosecond lasers, single photon counting (hybrid) detectors
Becker & Hickl GmbH is technology leader in time-correlated single photon counting (TCSPC). The product range includes TCSPC modules, lasers, detectors for a wide range of applications like e.g. fluorescence lifetime imaging (FLIM) in biology, medicine, pharmacy, biochemistry, chemistry, and physics. Becker & Hickl currently supplies more than 1600 TCSPC systems worldwide, organizes yearly 5 workshops around the world and distributes more than 1600 pages of TCSPC literature. www.becker-hickl.com Contact: Wolfgang Becker, CEO, becker@becker-hickl.com; Hauke Studier, Manager, studier@becker-hickl.com

Benchmark #8359
Medical Technologies, 4141 N Scottsdale Rd 301, Scottsdale, AZ, 85251-4064 USA
+1 623 300 7000
info@bench.com; www.bench.com
Benchmark provides In-house FDA/QSR compliant design, V&V, prototyping & global manufacturing of imaging, non-imaging & laser-based optical products, with a focus on cameras, laser interferometers, fiber & waveguide products, high-density optical, die-level packaging, and miniaturization. Our precision design/build of test systems, fixtures, tools, and processes ensure the closest tolerances. Learn more at www.bench.com Contact: Susan Johnson, Business Development Executive, susan.johnson@bench.com; Jim Apfel, VP of Business Development, jim.apfel@bench.com

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info@laserfocus.com; www.bioopticsworld.com
BioOptics World, presented by Laser Focus World, tracks technologies, applications, and business trends related to the use of optical technologies and instrumentation in the life sciences. Comprising a magazine, e-newsletter, and web site, BioOptics World covers cutting-edge research related to the design, development, and utilization of optical technologies for the study, diagnosis, and treatment of disease and disease processes. Contact: Alan Bergstein, Publisher, alanb@pennwell.com; Barbara Gefvert, Editor in Chief, barbarag@pennwell.com

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**Bliq Photonics**

*8210*

2750 Einstein St Bureau 130, Quebec, QC, G1P 4R1 Canada

+1 416 814 2000; fax +1 416 814 2022
info@bliqphotonics.com; www.bliqphotonics.com

**Featured Product:** SPARK: Optical Sectioning System AXICON: Volumetric Imaging Module

At Bliq Photonics, we design and manufacture microscopy systems for life science researchers. We aim to contribute to the improvement of medicine by putting forward the latest microscopy technologies packaged in a custom, reliable and user-friendly solution. Each of Bliq’s solutions is designed with the client’s specific needs in mind. Our technologies improve resolution, enable volumetric imaging and can be installed on any new or existing wide-field, confocal and multiphoton microscope. Contact: Mariève Picard, International Business Development Manager, mariève@bliqphotonics.com; Eric LeBel, President, eric@bliqphotonics.com

**Blue Sky Research**

*8345*

510 Alder Dr, Milpitas, CA, 95035-7443 USA

+1 408 941 6068; fax +1 408 941 0406
sales@blueskyresearch.com; www.blueskyresearch.com

**Featured Product:** The SpectraTec X, Polarized Multi-Laser Source

Blue Sky Research is a vertically integrated volume manufacturer of fiber-coupled and free space, red, blue, violet, and IR laser systems, semiconductor laser devices, and OEM laser components. The company crafts state of the art laser products using its in-house expertise in micro-optics, laser diode manufacturing and optical/ electrical engineering disciplines. Blue Sky Research provides solutions to your high reliability, custom requirement(s) and application-specific products/system needs. Contact: Phil Armatis, Business Development, philiparmatis@hotmail.com; Cara Prunty, Account Executive, sales@blueskyresearch.com

**Sponsor**

Boston Electronics

*8500*

91 Boylston St, Brookline, MA, 02445-7602 USA

+1 617 566 3821
boselec@boselec.com; www.boselec.com

**Featured Product:** Time Correlated Single Photon Counting (TCSPC) systems, software and components

PICOSECOND TCSPC spoken here. We are specialists in photodetection and photon generation. We are agents for leading European and Asian manufacturers who make or apply Single Photon Counting or analog/ linear UV or IR detectors or related light sources - including tunable IR lasers. These manufacturers include Becker & Hickl, Scontei, Licel, sglux, Vigo System, Heimann Sensor, Alpes Lasers, and Nikkiso. www.boselec.com; boselec@boselec.com; Contact: Rick Mannello, CEO, rmannello@boselec.com; Fred Perry, CTO, fpsl@boselec.com

**Sponsor**

BWT Beijing Ltd.

*8511*

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+86 10 83681053; fax +86 10 83682949
info@bwt-bj.com; www.bwt-bj.com

**Featured Product:** 1470nm/12W Fiber Coupled Diode Laser

BWT Beijing Ltd. specializes in developing and manufacturing of high performance diode laser components and subsystems. As a leading supplier of fiber coupled diode lasers, BWT Beijing provides the lasers in a wide range of wavelengths and output powers. With professional knowledge and experiences, BWT is committed to provide comprehensive and reliable diode lasers and its total solutions. Long-term corporation and common development with customers are BWT’s always goal.

Contact: Helen Wang, Sales Director, helen@bwt-bj.com; Haiwei Wang, VP, wanghaiwei@bwt-bj.com
Cambridge Technology, A Novanta Company #8436

125 Middlesex Tpke, Bedford, MA, 01730-1409 USA
+1 781 266 5700; fax +1 781 266 5123
scanners@cambridgetechnology.com;
www.cambridgetechnology.com

Featured Product: Galvanometer- & polygon-based optical scanning components, scan heads, control hardware & software

For half a century, the Cambridge Technology business, part of Novanta, has developed innovative beam steering solutions, including polygon- and galvanometer-based optical scanning components, 2-axis and 3-axis scan heads, scanning subsystems, high power scanning heads, and controlling hardware and software. We collaborate with key OEMs to engineer products for medical applications such as laser treatment and optical coherence tomography. Contact: Megan MacNeil, Market Development Manager, megan.macneil@cambridgetechnology.com; Lisa Alfano, Director, Sales & Customer Service NA, lisa.alfano@cambridgetechnology.com

Cobolt AB #8623

Vretenvägen 13, Solna, 171 54 Sweden
+46 8 5459 1230; fax +46 8 5459 1231
info@cobolt.se; www.cobolt.se

Cobalt supplies high performance CW and Q-switched lasers, for stand-alone use or OEM integration in equipment for fluorescence analysis, Raman spectroscopy, interferometric metrology, micromachining and environmental monitoring. The Cobalt lasers are manufactured in a compact and robust hermetically sealed package using proprietary HTCuRe™ Technology, which provides outstandingly high tolerance to demanding environmental conditions and ensured lifetime. Contact: Elizabeth Illy, Director of Marketing

Coherent, Inc. #8507

5100 Patrick Henry Dr, Santa Clara, CA, 95054-1112 USA
+1 408 764 4000; fax +1 408 764 4646
tech.sales@coherent.com; www.coherent.com

Featured Product: The OBIS Cellix laser beam combiner is perfect for customers needing multiple excitation wavelengths.

Founded in 1966, Coherent, Inc. is one of the world’s leading providers of lasers and laser-based technology for scientific, commercial and industrial customers. With headquarters in the heart of Silicon Valley, California, and offices spanning the globe, Coherent offers a unique and distinct product portfolio and services for scientific research, life sciences, microelectronics, and materials processing. Contact: Stephen McDonald, Director, Commercial OEM Sales, Stephen.McDonald@coherent.com

Covesion Ltd. #8356

Unit A7 The Premier Ctr, Premier Way, Romsey, SO51 9DG United Kingdom
+44 1794 521638; fax +44 8709 289714
sales@covesion.com; www.covesion.com

Featured Product: PPMgO:LN crystals, custom or ex stock, for wavelength conversion in visible and mid-IR applications

A UK manufacturer of PPMgO:LN, supporting a wide range of applications from stock: Spectroscopy, Sensing, Bio-Medical, Terahertz Imaging, fs/ps-laser SHG and many more. Our unique production process ensures the highest conversion efficiencies (uniform domains in x, y & z), enhancing both performance and ease-of-use. We can offer these key components in high volumes and at market-enabling prices. Large range of stock PPLN ships within 1 week for a cost effective and fast development cycle. Contact: Rongrong Xu, Senior Sales Engineer, sales@covesion.com

Cree Inc #8655

4600 Silicon Dr, Durham, NC, 27703-8475 USA
+1 919 313 5300; fax +1 919 313 5558
info@marktechopto.com; www.cree.com/chips

DataRay Inc. #8319

10 Imtec Ln, Bellows Falls, VT, 05101 USA
+1 802 428 2500; fax +1 802 428 2525
sales@chroma.com; www.chroma.com

Chroma Technology Corp. #8746

10 Imtec Ln, Bellows Falls, VT, 05101 USA
+1 802 428 2500; fax +1 802 428 2525
sales@chroma.com; www.chroma.com

Featured Product: WinCamD-IR-BB - ISO 11146 compliant 2 to 16 µm MWIR/FIR beam profiler

DataRay Inc. was founded in 1988 to bring affordable, high-performance beam profiling to the photonics community. DataRay manufacture precision, UV to 16 micron beam profiling instruments for laser, laser assembly and fiber optic telecom beam profiling and imaging to ISO 11146 standards. Contact: Kevin Garvey, COO, kgarvey@dataray.com; Rocco Dragone, VP Engineering, rdragonedataray.com

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**Delta Optical Thin Film A/S**  
Venligsvedsvej 4, Hørsholm, 2970 Denmark  
+49 70 70 71 46  
info@deltathinfilm.com; www.deltathinfilm.com  
**Featured Product:** High-performance optical filters for discerning OEM customers  
Delta Optical Thin Film is the leading supplier of the most advanced dielectric filters. For 50 years Delta enables customers to offer the highest performing analytical and diagnostic instruments by applying latest design and process control technologies. Delta offers a wide range of high efficiency durable hard coated filters that have set standards in the market place. With its unique design tools Delta is able to tailor filters to any application with competitive pricing at high volume. Contact: Oliver Svensgaard, CEO, osv@deltathinfilm.com

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**DiCon Fiberoptics, Inc.**  
1689 Regatta Blvd, Richmond, CA, 94804-7438 USA  
+1 510 620 5000; fax +1 510 620 4100  
sales@diconfiber.com; www.diconfiberoptics.com  
**Featured Product:** World-class Laser Solutions: OEM applications for medical, machine vision, measurement and alignment  
DiCon Fiberoptics is the leading expert in fiber optic switches, and offers high quality solutions for Aerospace, Biomedical, Defense, Fiber Sensing, Network Monitoring, Network Security, and Optical Communications applications. DiCon’s proven MEMS technology offer unsurpassed lifetime and reliability, with solutions optimized to the application. In addition, DiCon’s ScopeLED division offers high intensity, tunable LED lighting solutions for BF and Fluorescence Microscopy.  
Contact: sales@diconfiberoptics.com

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**Diode Laser Concepts, Inc.**  
2027 Commerce Dr, Medford, OR, 97504-9744 USA  
+1 541 773 5321; fax +1 541 773 1705  
sales@diodelaserconcepts.com; www.diodelaserconcepts.com  
**Featured Product:** World-class Laser Solutions: OEM applications for medical, machine vision, measurement and alignment  
Diode Laser Concepts - Custom. Integrated. Solutions. We leverage your engineering capabilities with our proven laser and optical design expertise. We solve manufacturing challenges by providing turnkey, high-quality optoelectronic and mechanical solutions. We deliver your production capacity needs from prototypes to full-scale OEM volume, with DLC-owned domestic and offshore manufacturing options. Our relationship-based business has been developing successful long-term partnerships since 1991. Contact: Mike Robinson, President, sales@diodelaserconcepts.com

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**DRS Daylight Solutions**  
15378 Ave of Science Ste 200, San Diego, CA, 92128-3451 USA  
+1 858 432 5737; fax +1 858 432 7500  
sales@daylightsolutions.com; www.daylightsolutions.com  
**Featured Product:** Spero-QT, ChemDetect Analyzer  
DRS Daylight Solutions develops molecular detection, imaging and illumination systems for use in scientific research, life sciences, industrial process control, and defense applications. The company is the world leader in mid-infrared laser based solutions, with a line of broadly tunable and fixed wavelength laser sources and sensors that utilize mid-infrared spectroscopy.  
Contact: Jeremy Rowlette, Senior Director of Scientific Instruments, jeremy.rowlette@drs.com

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**Ealing Catalog**  
340 El Pueblo Rd Ste E, Scotts Valley, CA, 95066 USA  
+1 831 461 1992; fax +1 831 461 1136  
sales@ealingcatalog.com; www.ealingcatalog.com  
**Featured Product:** Linear Actuators with Encoder are available with ranges of travel of 10 mm, 15 mm, and 50 mm  
Founded as The Ealing Corporation in 1961, the company provides optical, opto-mechanical and motion control products for Research, OEM and Industrial applications. Contact: Olav Tabatabai, Product Manager, olav@hylandopticaltechnologies.com

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**Edmund Optics Inc.**  
101 E Gloucester Pike, Barrington, NJ, 08007-1380 USA  
+1 800 363 1992  
sales@edmundoptics.com; www.edmundoptics.com  
**Featured Product:** Come learn more about our new UV series of OD4/10nm BP filters  
Edmund Optics is a leading global supplier of optics and optical components, designing and manufacturing a wide array of multi-element optical lenses, coatings, imaging systems, and optomechanical equipment. Led by skilled optical engineers and scientists, EO is application-focused and pursues new ways to implement optical technology, enabling advancements in industrial metrology, semiconductor manufacturing, life sciences, and more.

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**EKPLA**  
Savanoriu Av. 237, Vilnius, LT-02300 Lithuania  
+370 5 264 9629; fax +370 5 264 1809  
sales@ekpla.com; www.ekpla.com  
**Featured Product:** Mobile High Energy Tunable Laser System  
EKPLA is an innovative manufacturer of solid state and fiber lasers, systems and components from unique custom system for basic research to small OEM series. In-house R&D team and more than 25 years experience enable to tailor products for specific applications and/or according to specific requirements. Main products are: femtosecond, picosecond and nanosecond lasers, tunable wavelength systems, ultrafast fiber lasers, spectroscopy systems and laser electronics.  
Contact: Lucian Hand, President, Altos Photonics, sales@altosphotonics.com; Laurie Dewar, Customer Support, Altos Photonics, laurie@altosphotonics.com

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**Electro Optical Components, Inc.**  
5464 Skyline Blvd Ste D, Santa Rosa, CA, 95403 USA  
+1 707 568 1642; fax +1 707 568 1652  
info@eoc-inc.com; www.eoc-inc.com  
**Featured Product:** Medical & Raman Laser Modules; NDIR Gas Detector Systems; Detectors; Signal Recovery Amplifiers  
Electro Optical Components (EOC) provides advanced systems and components for laser and optoelectronic systems from the UV to the far IR including signal recovery amplifiers & photoreceivers; thermopile and pyroelectric detectors; MID IR LEDs & photodiodes; UV detectors; IR and visible laser diode modules; broadband IR sources; NDIR gas detection systems & components; NDIR laser diodes; Electrochemical sensors; Hydrogen sensors; Optics & coatings; IR Filters; Spectral imaging systems. Contact: Wally Tang, Sales, wallytang@eoc-inc.com; Andriko Zavadelli, Sales Manager, andrikoz@eoc-inc.com
SPONSOR

Electro-Optics Technology, Inc. #8713
3340 Parkland Ct, Traverse City, MI, 49686 USA
+1 231 935 4044; fax +1 231 935 4046
sales@eotech.com; www.eotech.com

Featured Product: EOT Tornos Series Compact 520-810nm Optical Isolators
EOT supplies enabling components and diagnostic equipment to manufacturers and users of high power laser systems. Products include Faraday rotators and optical isolators for use with laser diodes, fiber lasers, and solid-state lasers. EOT stocks a complete line of photodetectors to monitor the output of pulsed, mode-locked, and externally-modulated CW lasers. Contact: Mike Torrance, VP Sales & Marketing, sales@eotech.com

Elforlight Ltd. #8419
Nene House, Drayton Way, Daventry Northants, NN11 8RB United Kingdom
+44 1327 300069; fax +44 1327 300076
info@elforlight.com; www.elforlight.com

Featured Product: Nanosecond OPOs and Raman lasers, rapidly tuneable visible laser systems for photoacoustic imaging.
Elforlight is a worldwide supplier of advanced Diode Pumped Solid State (DPSS) lasers. Based in the UK, our products include CW and q-switched, IR, visible and UV, featuring options for rapid tuneability. We work closely with both researchers and OEMs to supply single quantity and higher volume production. Applications include photo-acoustic microscopy, MALDI imaging, Raman spectroscopy, FLIM, LIDAR, holography, flow visualization, rapid prototyping, and printing plate imaging. Contact: Keith Oakes, Director, info@elforlight.com

Energetiq Technology, Inc. #8729
7 Constitution Way, Woburn, MA, 01801-1024 USA
+1 781 939 0763; fax +1 781 939 0769
info@energetiq.com; www.energetiq.com

Featured Product: Revolutionary Laser-Driven Light Sources
Energetiq Technology is the world’s leading developer and manufacturer of ultra-bright broadband light sources for a wide variety of advanced applications in life and materials sciences, semiconductor manufacturing, and R&D. Energetiq’s Laser-Driven Light Sources (LDLS) are based on a revolutionary technology that generates high brightness across the spectrum, with high reliability and long life. Contact: Karen Scammell, Vice President of Sales, kscammell@energetiq.com; Samuel Gunnell, Technical Sales Engineer, sgunnell@energetiq.com

EPIGAP Optronic GmbH #8756
Köpenicker Str 325, Berlin, 12555 Germany
+49 30 6576 3760; fax +49 30 6576 3770
sales@epigap-optronic.de; www.epigap-optronic.de

Featured Product: LED Chips, LEDs and photodiodes in the range of UV VIS and NIR, Multiwavelength customized arrays
EPIGAP Optronic GmbH is an industrial leader in LED technology for state-of-the-art optoelectronics for industrial sensors, security and safety technology, diagnostics and biotechnology. EPIGAP offers high-end LED chips, LEDs and photodiodes beginning in the deep UV range at 265 nm up to the infrared region at 1750 nm which have a very good degradation stability and high efficiency. We realize customized housings or specially designed CoB modules from design and development to production. Contact: Antje Thamm, Sales Director, thamm@epigap-optronic.de

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ESPROS Photonics AG #8637
St Gallerrstrasse 135, Sargans, SG, 7320 Switzerland
+41 58 411 0330; fax +41 58 410 0310
info@espros.com; www.espros.com

Featured Product: SPM64 - Developer Kit for the ESPROS and Viavi Solutions Multispectral Sensor
ESPROS Photonics develops and produces photosensitive semiconductors for challenging industrial and scientific applications. For this purpose, ESPROS has developed and industrialized a dedicated process technology. ESPROS Photonics CMOS™ process, is a unique offering in today’s semiconductor markets. ESPROS employs over 250 employees and provides a portfolio that reaches from classic foundry services to the complete development and supply chain for demanding imager solutions. Contact: Hans Ebinger, VP Sales, hans.ebinger@espros.com; Beat De Coi, CEO, beat.decoi@espros.com

Etaluma, Inc. #8349
3129 Tiger Run Ct, Ste 112, Carlsbad, CA, 92010 USA
+1 760 298 2355
info@etaluma.com; etaluma.com/

Featured Product: Etaluma high-res, no pixel shift, 3color fluorescence microscope module with motorized focus for OEM
Etaluma’s LS Microscopes (Lumascopes) constitute a dramatic new concept in solid-state optics with outstanding resolution and sensitivity and zero pixel shift. The compact, inverted designs allow imaging in most labware and live cell imaging inside incubators and hoods using single images, time-lapse or live video. The LS720 adds walk-away automation to the manual 3-color LS620. OEM opportunities range from optical components and modules to automated microscopy in standard or custom versions. Contact: Mary Harper, VP of Business Development, mharper@etaluma.com; Eric Weiner, Director of Manufacturing, eweiner@etaluma.com

Exalos AG #8335
Wagistr 21, Schlieren, Zürich, 8952 Switzerland
+41 43 444 6090; fax +41 43 444 6099
sales@exalos.com; www.exalos.com

Featured Product: Superluminescent Light Emitting Diodes, Swept Sources, Broadband Light Sources, Balanced Receivers
Founded in 2003, EXALOS is a Swiss privately held, technology driven company, which focuses on the design, development, manufacturing and sales of advanced light source solutions based on Superluminescent Light Emitting Diodes (Visible and Near-IR) and External Cavity Lasers (Swept Sources). In addition, the EXALOS product portfolio includes Driver Electronics and Balanced Receivers which are complementary to our light source offerings. EXALOS has shipped more than 300,000 SLEDs. Contact: Gene Covell, VP of Sales, covell@exalos.com; Bernd Nestmeier, European Sales Manager, nestmeier@exalos.com

Femto Easy #8440
Bat Sonora Parc Scientifique et Technologique Lasers 1, Avenue du Medoc, Barp, 33114 France
+3 5 4000 3852
info@femtoeasy.eu; femtoeasy.eu

Featured Product: Femto Easy is a company specialized in ultrafast instrumentation.
Femto Easy is a company specialized in ultrafast instrumentation. Strong of its expertise in the production and characterization of high energy ultrashort pulses, the company provides robust and reliable measurement devices for ultrafast lasers. Contact: Antoine Dubrouil, Founder and CEO, dubrouil@femtoeasy.eu; Stéphane Lecorne, Founder and CEO, lecorne@femtoeasy.eu

FEMTOprint SA #8720
Via Industria 3, Muzzano Ticino, 6932 Switzerland
+41 9160 10 70; fax +41 9160 00 48
info@femtoprint.ch; www.femtoprint.ch

Featured Product: FEMTOPRINT® - innovative 3D printing technology for glass microdevices.
FEMTOprint is a Swiss high-tech company manufacturing 3D printed microdevices out of glass and other transparent materials. It equally develops and assembles its own 3D printing platforms for rapid prototyping and serial production. Through the innovative FEMTOPRINT® technology and the highly-qualified expertise in micromachining, FEMTOprint is changing the way industrial, complex micro-systems are conceived. Contact: Nicoletta Casanova, CEO, nicoletta.casanova@femtoprint.ch; Andrea Lovera, CSO, andreas.lovera@femtoprint.ch

Fibertech Optica Inc. #8652
FiberGuide Industries, Inc. #8652
Fibertech Optica Inc. #8652
1 Bay St, Stirling, NJ, 07980-1529 USA
+1 908 647 6601; fax +1 908 647 8464
info@fiberguide.com; www.fiberguide.com

Featured Product: Fiber Optics, Fiber Assemblies, RARE Motheyle, Optical Switching, Fiber Bragg Gratings
For more than three decades Fiberguide Industries has been a reliable, long-term, strategic partner with OEM manufacturers in providing efficient, cost-effective, practical fiber optic solutions engineered to meet their specific needs. We specialize in manufacturing large core specialty optical fiber, high temperature metalized optical fibers, and we package these fibers in a variety of assemblies / bundles used for optical power delivery and optical sensing applications. Contact: Kevin Rauscher, Marketing Associate, krauscher@fiberguide.com; Catherine Sutton, Customer Service Representative, csutton@fiberguide.com

Fibertech Optica Inc. #8635
330 Gage Ave Ste 1, Kitchener, ON, N2M 5C6 Canada
+1 519 745 2763; fax +1 519 342 0128
info@fto.ca; www.fto.ca

Featured Product: Integrated specialty fiber optic assemblies
A leader in the design and manufacture of integrated specialty fiber optic solutions, FTO offers precision micro optical assemblies, bundles, v-groove arrays, Raman & reflectance probes, high power laser cables and vacuum feed through for use from Deep UV to MIR wavelengths. From prototype through production quantities, FTO supports applications in academia, aerospace, military, astronomy, analytical instrumentation, biomedical imaging, spectroscopy, laser power delivery and research. Contact: Jeff Dupuis, VP Sales & Marketing, jeffdupuis@fto.ca; Cheryl Provost, Sales Engineer, cprovost@fto.ca

Femto Easy #8440
Bat Sonora Parc Scientifique et Technologique Lasers 1, Avenue du Medoc, Barp, 33114 France
+3 5 4000 3852
info@femtoeasy.eu; femtoeasy.eu

Featured Product: Femto Easy is a company specialized in ultrafast instrumentation.
Femto Easy is a company specialized in ultrafast instrumentation. Strong of its expertise in the production and characterization of high energy ultrashort pulses, the company provides robust and reliable measurement devices for ultrafast lasers. Contact: Antoine Dubrouil, Founder and CEO, dubrouil@femtoeasy.eu; Stéphane Lecorne, Founder and CEO, lecorne@femtoeasy.eu

FEMTOprint SA #8720
Via Industria 3, Muzzano Ticino, 6932 Switzerland
+41 9160 10 70; fax +41 9160 00 48
info@femtoprint.ch; www.femtoprint.ch

Featured Product: FEMTOPRINT® - innovative 3D printing technology for glass microdevices.
FEMTOprint is a Swiss high-tech company manufacturing 3D printed microdevices out of glass and other transparent materials. It equally develops and assembles its own 3D printing platforms for rapid prototyping and serial production. Through the innovative FEMTOPRINT® technology and the highly-qualified expertise in micromachining, FEMTOprint is changing the way industrial, complex micro-systems are conceived. Contact: Nicoletta Casanova, CEO, nicoletta.casanova@femtoprint.ch; Andrea Lovera, CSO, andreas.lovera@femtoprint.ch

Fibertech Optica Inc. #8652
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info@fiberguide.com; www.fiberguide.com

Featured Product: Fiber Optics, Fiber Assemblies, RARE Motheyle, Optical Switching, Fiber Bragg Gratings
For more than three decades Fiberguide Industries has been a reliable, long-term, strategic partner with OEM manufacturers in providing efficient, cost-effective, practical fiber optic solutions engineered to meet their specific needs. We specialize in manufacturing large core specialty optical fiber, high temperature metalized optical fibers, and we package these fibers in a variety of assemblies / bundles used for optical power delivery and optical sensing applications. Contact: Kevin Rauscher, Marketing Associate, krauscher@fiberguide.com; Catherine Sutton, Customer Service Representative, csutton@fiberguide.com

Fibertech Optica Inc. #8635
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+1 519 745 2763; fax +1 519 342 0128
info@fto.ca; www.fto.ca

Featured Product: Integrated specialty fiber optic assemblies
A leader in the design and manufacture of integrated specialty fiber optic solutions, FTO offers precision micro optical assemblies, bundles, v-groove arrays, Raman & reflectance probes, high power laser cables and vacuum feed through for use from Deep UV to MIR wavelengths. From prototype through production quantities, FTO supports applications in academia, aerospace, military, astronomy, analytical instrumentation, biomedical imaging, spectroscopy, laser power delivery and research. Contact: Jeff Dupuis, VP Sales & Marketing, jeffdupuis@fto.ca; Cheryl Provost, Sales Engineer, cprovost@fto.ca
FISBA is a worldwide leading supplier of customized optical components, systems and microsystems offering full service from initial feasibility studies and design, to serial production and assembly. We manufacture micro optics for many life science and medical applications, such as microscopy, medical diagnostics and flow cytometry. Contact: Wallace Latimer, Sales Director, Customized Optical Systems, wallace.latimer@fisba-us.com; Jim Dooley, Sales Director, Advanced Optical Components, jim.dooley@fisba-us.com

Flexible Optical B.V. is a world leading supplier of optical components, systems and microsystems offering full service from initial feasibility studies and design, to serial production and assembly. We manufacture micro optics for many life science and medical applications, such as microscopy, medical diagnostics and flow cytometry. Contact: Linda Claytor, vice president, Iclaytor@fresneltech.com; Nelson Claytor, president, nclaytor@fresneltech.com

Fresnel Technologies, Inc. makes molded plastics Fresnel lenses, general optics, infrared-transmitting materials and optics made from them. Specialties are lens arrays for the passive infrared, diffusers and microlens arrays for illumination, optics for 3.4 micrometers, and silicone optics for the UV. Design assistance, tooling and production are available. We also offer diamond machining for prototyping, tooling and production, including five-axis diamond machining of freeform optical surfaces. Contact: Linda Claytor, vice president, Iclaytor@fresneltech.com; Nelson Claytor, president, nclaytor@fresneltech.com

General Photonics Corp. is a leading supplier of optical components, systems and microsystems offering full service from initial feasibility studies and design, to serial production and assembly. We manufacture micro optics for many life science and medical applications, such as microscopy, medical diagnostics and flow cytometry. Contact: Wajih Daab, Product Line Manager, wdaab@generalphotonics.com

Gooch & Housego is a leading supplier of optical components, systems and microsystems offering full service from initial feasibility studies and design, to serial production and assembly. We manufacture micro optics for many life science and medical applications, such as microscopy, medical diagnostics and flow cytometry. Contact: Adrian Chance, Marcomms Manager, info@goochandhousego.com; Mark Stevens, Director of Business Development, Life Sciences, mstevens@goochandhousego.com

GPD Optoelectronics Corp. is a global supplier of Ge & InGaAs photodetectors operating in the 0.8 to 2.6 micron short wave infrared (SWIR) spectrum. The Ge photodiodes, InGaAs photodiodes and InGaAs APDs are available in die on carrier, TO package, TEC module, single/multi-mode fiber (with high reliability packaging), SMA/FC/ST active mount, & custom designs. GPD has Si over Ge, Si over InGaAs, InGaAs over InGaAs “two-color sandwich” sensors for ratio pyrometry & InGaAs quadrant sensors. Contact: Rufus Ward, President, rward@gpd-ir.com; George Gasparian, Sales/Applications Engineer, ggasparian@gpd-ir.com

Grace Laser manufactures High-performance Ultrafast solid-state lasers for use in a wide range of industries. For the past 3 years, Grace Laser concentrated on developing ultrafast (picosecond) solid-state lasers which apply to Medical and Industrial applications, such as tattoo removal, skin rejuvenation and improvement of acne scarring in Medical applications with die on ceramic, TO46, or fiber formats. Grace Laser manufactures High-performance Ultrafast solid-state lasers for use in a wide range of industries. For the past 3 years, Grace Laser concentrated on developing ultrafast (picosecond) solid-state lasers which apply to Medical and Industrial applications, such as tattoo removal, skin rejuvenation and improvement of acne scarring in Medical and Glass, sapphire, LCD and OLED cutting, micro-machining, airplane engine blade drilling, laser marking and trimming in Industrial. Visit us at #8744. Contact: Lei Jin, Sales Manager, saleskr@gracelaser.com; Tao Wang, CEO, wangt@gracelaser.com

greateyes GmbH is an aspiring German-based manufacturer of scientific high-performance cameras for imaging and spectroscopic applications. The company is passionate about innovative, cutting-edge technology and strives for continuous product improvement. Based on their unique platform concept, customers can choose from a large portfolio of cameras (more than 50) featuring high dynamic range combined with excellent sensitivities, ranging from the X-ray through EUV to the VIS and NIR region. Contact: Torsten Wende, torsten.wende@greateyes.de

Gooch & Housego

Flexible Optical B.V.

GPD Optoelectronics Corp.

Grace Laser

greateyes GmbH

SPIE Industry Events

Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees. Refer to pages 21-36.
**Grintech GmbH**

**Featured Product:** Gradient index (GRIN) lenses and lens systems

GRINTECH manufactures gradient index (GRIN) lenses and lens systems for applications in sensor technology, fiber optics, biophotonics, medical imaging, telecommunication and laser diode beam shaping tailored to your specific requirements. Rod and cylindrical lenses are fabricated by unique non-toxic silver-ion-exchange technique in glass. Contact: Herbert Steurmer, Product Manager, info@grintech.de

**Hilltop Technology Laboratory, Inc.**

**Featured Product:** ChemVu™ and ChemVuR™ are compact, handheld reflectance and Raman hyperspectral imagers.

Hindsight Imaging, Inc. manufactures next-generation spectral and OCT-based volumetric imaging instruments. Using the patented High-Throughput Virtual Slit technology, Hindsight’s portable hyperspectral imagers combine the highest spectral resolution on the market with full light-gathering power and a small, compact footprint. These complete solutions equip nontechnical personnel to detect and characterize explosives, narcotics and similar materials via their unique spectral signatures. Contact: Arsen Hajian, Founder & CEO, ars.en.hajian@hindsight-imaging.com; Ed Gooding, Director of Sales & Marketing, ed.gooding@hindsight-imaging.com

**HOL卵巢 Ltd.**

**Featured Product:** Diffractive Optics, Top-Hat, Beam-splitter, Homogenizer, multi-focal, beam sampler, vortex & custom.

HOLO/OR Ltd., est. 1989, are experts in developing, designing and manufacturing of diffractive and micro-optical elements for the laser industry. HOLO/OR produces both standard & custom products and holds the largest stock of DOEs and designs. Our DOEs are suitable for high power lasers, from UV to IR. Among our products: beam splitters, beam splitters (top-hat), beam samplers, homogenizers, vortex lenses, multi-focal and more. We welcome you to visit the HOLO/OR website at http://www.holoor.com Contact: Michal Sheckter, Purchasing and Admin Manager, Michal@holoor.co.il; Benjamin Huss, Application Engineer, benjamin@holoor.co.il

**HOLOEYE Photonics AG**

**Featured Product:** Spatial Light Modulators, Diffractive Optical Elements, LCOS Microdisplays

HOLOEYE Photonics AG and its US-subsidiary, HOLOEYE Corp, are providing customized design, fabrication and replication services of Diffractive Optical Elements (DOE) as well as a broad range of standard DOEs. Besides that HOLOEYE offers Spatial Light Modulators (SLM) for phase or amplitude modulation, which are based on high-resolution translucent or reflective microdisplays and a variety of high resolution LCOS microdisplays types and products for monochrome or color field sequential operation.
Iridian Spectral Technologies Ltd. #8621
IRD Glass #8755
InPhenix, Inc. #8435
Insight Photonic Solutions, Inc. #8627
IMT Precision on Glass #8726
IRsweep AG #8449
Laubsrüetistrasse 44, Staefa, 8712 Switzerland
+41 44 586 79 79
info@irsweep.com; www.irsweep.com

Featured Product: IRspectrometer
Pushing mid-IR sensing to field applications in order to enable our customers in research and industry to be faster and more precise. Our first product is a revolutionary laser-based spectrometer. Contact: Andreas Hugi, Managing Director, andreas.hugi@irsweep.com; Markus Mangold, Managing Director, markus.mangold@irsweep.com

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+1 310 517 1866; fax +1 310 517 1869
sales@isuzuglas.com; www.isuzuglass.com

JenLab Gmbh #8551
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+49 3641 470 501
info@jenlab.de; www.jenlab.de

JENOPTIK Optics and Life Science #8513
Ste 240, 39300 Civic Center Drive, Fremont, CA, 94538 USA
+1 561 881-7400; fax +1 561 881-1947
sales@jenoptik-inc.com; www.jenoptik.com

Featured Product: Lasers, optics & optoelectronic systems to enable next-generation biomedical and diagnostic devices
Jenoptik is an OEM photonics supplier in the Healthcare & Life Science industries, including medical imaging, analytics, diagnostics, and laser therapy. We deliver complete solutions, subsystems and key optical assemblies such as optics, microoptics and optoelectronics. Our light sources range from high-power diode lasers, DPSS lasers and ultra-short pulse lasers, to LEDs as well as digital cameras. They are used in the areas of dermatology, ophthalmology, dentistry or surgery and for sequencing. Contact: Thomas Goundry, Microoptics, sales@jenoptik-inc.com; Sujeet Mangaldas, Managing Director, sujeet.mangaldas@jenoptik.com

Kimmy Photonics Ab Oy #8358
Maapallonkuja 1 B, Espoo, 02210 Finland
+358 456 158 705
info@kimmy.fi; www.kimmy.fi

Featured Product: 3D-imaging calibration standards, 2D3D MAGIC and Super Resolution Nanoscope
With over 30 years of providing high-technology, laser-and light-based measurement solutions and components to researchers, engineers and end-users, we believe our knowledge and experience will benefit our clients in their own developments and designs. Our commitment is to provide the most precise and reliable optical instruments, sensors and components available on the market. We combine the best technology and engineering talent, enabling us to offer a perfect solution for your applications. Contact: Kim Grundström, Managing Director, kim.grundstrom@kimmy.fi; Anton Nolvi, Development Director, anton.nolvi@helsinki.fi

KMLabs #8754
4775 Walnut St Ste 102, Boulder, CO, 80301-2579 USA
+1 303 544 9068; fax +1 391 821 2284
sales@kmlabs.com; www.kmlabs.com

KMLabs is a manufacturer of high-performance, ultrafast femtosecond laser systems. Fiber lasers feature sub-150 femtosecond pulse widths and 0.5 microjoules or >3 microjoules pulse energy. Regenerative and multi-pass Ti:Sapphire amplifiers: a single-stage series, systems capable of tunable repetition rates from 1 kHz to 1 MHz, & multistage systems up to 50 W or 30 mJ. We also produce the world’s only production-grade test instrument for measuring Group Delay Dispersion. Contact: MaryEl Smith, Executive Assistant, maryel@kmlabs.com

LaCroix Precision Optics #8743
50 Lacroix Dr, Batesville, AR, 72501 USA
+1 870 698 1881; fax +1 870 698 1880
www.lacroixoptics.com

Featured Product: Custom Manufactured Precision Optics
Since 1947, LaCroix Precision Optics has positioned itself as a premier domestic volume and prototype manufacturer of custom precision optics. Capabilities include Spherical, Aspherical, Plano, and custom coated optics. At our facility in Batesville, Arkansas, we use both traditional methods and advanced CNC processing to achieve the highest level of precision and quality demanded by our customers, ISO 2001:2008, ITAR certified and compliant. Contact: Tom Cox, Engineering Manager, tom@lacroixoptics.com

Laser Quantum Inc #8436
47673 Lakeview Boulevard, Fremont, CA, 94538 USA
+1 408 510 0079
info@laserquantum.com; www.laserquantum.com

Featured Product: Venteon ultra, designed and optimised to offer the shortest available laser pulses of sub 5.5.
Laser Quantum is a world-class manufacturer of high quality solid-state and ultrafast laser sources. Our products are known for their reliability, compactness, performance-excellence and long operational lifetimes. You will find our products, with their patented technology, in laboratories and integrated in systems and machines worldwide, for numerous applications. Meeting the needs of each application is essential in the research and design to achieve exceptional lasers. Contact: Dave Stockwell, Ultrafast Sales Manager, dstockwell@laserquantum.com; Barney Mitchell, Vice President, bmitchell@laserquantum.com

Laserand, Inc. #8214
177 De Mount Vernon Ave, Montreal, QC, H8R 1K2 Canada
+1 514 452 4693
sales@laserand.com; laserand.com

Featured Product: X-ray to VIS CCD imaging cameras, Single frequency DPSS lasers, low intensity fiber spectrometers
Laserand supplies imaging equipment, lasers and photonics components to customers in North America. Our team of engineers and technical support specialists with more than 15 years of experience in supplying optics, single frequency DPSS lasers, UV-VIS-NIR to x-ray CCD imaging cameras, low intensity fiber spectrometers and diffuse reflectance spectral microscopes, sub THz imaging cameras, IMPATT diodes and THz detectors is ready to assist you in choosing the right product for your application. Contact: Vitalijus Kosenko, Director, vitalijus@laserand.com

Onsite News: www.spie.org/PWnews – #SPIEPhotonicsWest
Lasertel, Inc.

7775 N Casa Grande Hwy, Tucson, AZ, 85743-9317 USA
+1 877 844 1444; fax +1 520 744 5766
sales@lasertel.com; www.lasertel.com

Featured Product: The T6AIR array reduces the weight and size with lightweight materials and smaller optical elements.

Lasertel is a vertically-integrated manufacturer of high-power semiconductor laser components and developer of custom laser solutions. Servicing the defense, medical, industrial and scientific industries, a wide range of chips, bars, array packages and fiber-coupled devices are available with peak wavelengths from 770nm to 1700nm, and output powers from 0.5W to 1MW. Contact: Craig Henry, Account Manager, chenry@lasertel.com; Robert Walker, Director of Sales & Marketing, rwalker@lasertel.com

Light Conversion

Keramiku st. 2B, Vilnius, LT-10223 Lithuania
+370 5249 1830; fax +370 5210 2785
sales@lightcon.com; www.lightcon.com

Featured Product: Light Conversion CARBIDE - compact, all-in-one femtosecond industrial laser system.

Light Conversion is the world-leader for tunable ultrafast OPA systems with the worldwide recognized TOPAS series products. Light Conversion is also an established manufacturer of Ytterbium laser PHAROS and CARBIDE, harmonics generators, parametric amplifier ORPHEUS, and nonlinear spectrometers. Together the portfolio forms a best-in-class set of devices for femtosecond applications in industry, medicine, and fundamental research. Contact: Lucian Hand, President, Altos Photonics, sales@altosphotonics.com; Laurie Dewar, Customer Support, Altos Photonics, laurie@altosphotonics.com

LASOS Lasertechnik GmbH

Franz-Loewen-Str 2, Jena, 07745 Germany
+49 3641 294440; fax +49 3641 2944 300
info@lasos.com; www.lasos.com

Featured Product: LASOS DPSS-XT laser series

LASOS supplies industry and research with the best tools for manufacturing, measuring, analysis or inspection. Highly qualified staff and a closed chain of development, design and manufacturing enables LASOS to adapt customer's requirements and deliver customized solutions including laser modules, optomechanical systems and fiber technology up to system solutions. So LASOS has become the world’s leading supplier of laser technology for confonfocal microscopy. Contact: Claudia Rabis, Key Account Manager, claudia.rabis@lasos.com; Steffen Steinberg, Head of Sales & Marketing, steffen.steinberg@lasos.com

LEONI Fiber Optics, Inc.

209 Bulifants Blvd, Williamsburg, VA, 23188-5729 USA
+1 757 258 4805; fax +1 757 258 4694
cusme-s.contact@leonie.com; www.leoni-northamerica.com

Featured Product: Fiber Optics

LEONI develops & manufactures specialty fiber optic high quality products for individual applications prototypes through production. We specialize in design & development, preform & fiber production, fiber assys, for Spectroscopy, HP Laser, Process Control, Pharmaceutical & Class II Medical Probe. We also offer standard & custom FO switches(SM & MM), Planar Light Channels (PLC) and Fiber Bragg Sensors. LEONI is an integrated global manufacturer with mfg. sites in the USA, Germany & China. Contact: Shawn Moran, shawn.moran@leonie.com

LEUKOS

Z1 Nord, 37 rue Henri Giffard, Limoges, 87280 France
+33 5 87 20 00 23
contactus@leukos-systems.com; www.leukos-systems.com

Featured Product: Supercontinuum lasers UV Visible NIR Mid-IR, White light lasers, Microchip Nd:YAG lasers

LEUKOS is a leading developer and manufacturer of supercontinuum lasers. Our broad portfolio includes solutions covering UV 270nm, Visible, NIR, SWIR, Mid-IR > 4µm, delivering high power or high energy. With more than 10 years of experience we offer a great variety of standard and custom made supercontinuum lasers, enabling various techniques in Spectroscopy and Imaging. Our expert team will take your project from prototype to production with the highest level of support. Contact: Karine Weck, Technical Sales, contactus@leukos-systems.com

Litron Lasers Ltd.

8 Consul Rd, Rugby Warwickshire, CV21 1PB United Kingdom
+44 1788 574444; fax +44 1788 574888
sales@litron.co.uk; www.litronlasers.com

Lumedica, Inc.

701 W Main St Ste 200, Durham, NC, 27701-2047 USA
+1 919 886 1863
info@lumedica.co; www.lumedica.co

M Squared Lasers Ltd.

1 Kelvin Campus WSSP/Venture Bldg, Maryhill Rd, Glasgow, G20 0SP
+44 141 945 0500; fax +44 141 945 0505
mail@msquaredlasers.com; www.m2lasers.com

Featured Product: Imaging at the edge of biology with the Aurora light sheet microscope.

M Squared is a leading developer of photonic and quantum technologies, harnessing the power of light to drive society changing innovation. The tools it designs and manufactures are used in collaboration with Nobel Prize-winning scientists, the world’s top universities and innovative manufacturers. For more information visit m2lasers.com, LinkedIn or follow the company on Twitter @m2lasers. Contact: Julie Phinn, Marketing & Events Executive, mail@msquaredlasers.com

Mad City Labs, Inc.

2524 Todd Dr, Madison, WI, 53713-2317 USA
+1 608 298 0855; fax +1 608 298 9525
sales@madcitylabs.com; www.madcitylabs.com

Mad City Labs designs & manufactures a complete product line of high precision piezo nanopositioners, micropositioners, and microscopes suitable for inspection, metrology, microscopy, and astronomy applications. Our nanopositioners include proprietary PicoQ® position sensors yielding picometer scale precision and low noise performance. Mad City Labs reputation in providing innovative solutions from the micro-to-pico scale with outstanding technical support is unparalleled in the industry. Contact: Technical Sales, sales@madcitylabs.com; European Sales, sales@madcitylabs.eu
**Nanoscribe GmbH**  
Hermann-von-Helmholtz-Platz 1, Eggenstein-Leopoldshafen, 76344 Germany  
+49 721 9819800; fax +49 721 981980130  
info@nanoscribe.com; www.nanoscribe.com  
**Featured Product:** Photonic Professional GT: 3D Printer for Nano- and Microfabrication  
Nanoscribe GmbH, located near Karlsruhe in Germany, develops and provides 3D printers (Photonic Professional GT) for the nano-, micro- and mesoscale, photoresists and process solutions. Since the foundation in 2007, the spin-off of the Karlsruhe Institute of Technology (KIT) has established itself as global market- and technology leader in its field. Industrial as well as scientific customers use these state-of-the-art systems for a multitude of applications in more than 30 countries worldwide. Contact: Alexander Legant, Sales Manager, legant@nanoscribe.com; Benjamin Richter, Sales Manager, richter@nanoscribe.com  

**New Scale Technologies**  
121 Victor Heights Pkwy, Victor, NY, 14564-8938 USA  
+1 585 924 4450; fax +1 585 924 4468  
NSTsales@newscaletech.com; www.newscaletech.com  
**Featured Product:** M3-LS Linear Smart Stage: Piezo microstage has embedded controller for small size, fast integration  
We help medical device makers transform large, complicated-to-use systems into small, easy-to-use instruments and devices. We also create complete manipulator systems for research automation. Our tiny beam steering systems and motion modules adjust micro optics or mechanical parts with micrometer precision. They work on battery power, perform at any orientation, and resist shock, vibe and extreme temps. With all controls built in, they are your smallest, easiest-to-integrate motion solution. Contact: Heidi Quinlivan, Sales Manager, NTSales@newscaletech.com; Stefan Friedrich, Products and Systems Salesperson, NTSales@newscaletech.com  

**Newport, a division of MKS Instruments**  
1791 Deere Ave, Irvine, CA, 92606-4814 USA  
+1 949 863 3144; fax +1 949 253 1680  
sales@newport.com; www.newport.com  
Newport, now part of MKS Instruments, is the world’s largest photonics company providing innovative solutions and industry leading product brands to multiple markets. Our combined product portfolio includes Corion®, ILX Lightwave™, New Focus™, Ophir, Oriel® Instruments, Richardson Gratings™, and Spectra-Physics® Lasers. We provide complete photonics solutions to make, manage and measure light. Contact: Tom Miller, tom.miller@newport.com
OFS is a world-leading designer, manufacturer and provider of optical fiber, optic cable, connectivity, fiber-to-the-subscriber (FTTX) and fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide. Contact: Jonathan Loft, Medical Engineer Sales, jloft@ofsoptics.com; Jaehan Kim, Medical Marketing Manager, jkim@ofsoptics.com

NKT Photonics Inc. #8400
3514 N Vancouver Ave Ste 310, Portland, OR, 97227-2026 USA
+1 503 444 8404; fax +1 503 914 1664
laser_sales@nktp Photonics.com; www.nkt photonics.com

Featured Product: Customizable medical grade fiber tips
OFS is a world-leading designer, manufacturer and provider of optical fiber, optic cable, connectivity, fiber-to-the-subscriber (FTTX) and specialty photonics products. We provide reliable, cost-effective solutions for a broad range of applications including telecommunications, medicine, industrial automation, sensing, government, aerospace and defense. These products help our customers meet the needs of consumers and businesses, both today and into the future. Visit us at www.ofsoptics.com Contact: Jonathan Loft, Medical Engineer Sales, jloft@ofsoptics.com; Jaehan Kim, Medical Marketing Manager, jkim@ofsoptics.com

Featured Product: Supercontinuum white light lasers, Ultrafast Lasers, Low noise fiber lasers, Photonic Crystal Fibers
NKT Photonics is the leading supplier of high performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide. Contact: Landry Molimb, Director of Sales, sales-us@nktp Photonics.com

NoIR Laser Shield #8536
Laser Shield, 6155 Pontiac Trl, South Lyon, MI, 48178-9647 USA
+1 734 769 5565; fax +1 734 769 1708
noirsales@noirlaser.com; lasershields.com

Featured Product: Introducing the #43 universal frame for all polycarb Laser Shields. Widest field of view, best fit. NoIR Laser Shields® provide industry-defining protection and visibility for the world of laser applications. Made in the USA and CE-Certified, LaserShields® deliver performance and protection with an eye on comfort. With more than 125 filters—over 75 CE-certified— and a frame to fit any face, LaserShields® are the point where Form and Function converge. Contact: David Bothner, david.bothner@noirlaser.com

Ocean Optics, Inc. #8608
8060 bryan Dairy Rd., Largo, FL, 33777 USA
+1 727 733 2447; fax +1 727 733 3962
info@oceanoptics.com; www.oceanoptics.com

Featured Product: Ocean-FX
Ocean Optics is the leader in spectroscopy applications knowledge. We provide modular optical sensing solutions for applications such as medical and biological research, environmental regulation, science education, and process control. Our comprehensive range of complementary technologies includes light sources, chemical sensors, Raman instrumentation, Multi Spectral Imaging and other accessories. Our spectrometers and sensors are ideal for integration into OEM and custom instruments. Contact: Application Engineer, info@oceanoptics.com

Ondax, Inc. #8647
850 E Duarte Rd, Monrovia, CA, 91016-4275 USA
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sales@ondax.com; www.ondax.com

Featured Product: Ondax’s new THz-Raman® accessory enables transmission Raman measurements on pills, tablets and vials
Ondax, Inc. is the market leader and largest commercial manufacturer of high-performance Volume Holographic Gratings (VHG/VBG), Wavelength-stabilized Laser Sources, and high-performance, THz-Raman® Low-frequency (Low-wavenumber) Raman Spectroscopy Systems for a wide range of industrial, medical, defense, and scientific applications. VHGs improve laser diode performance by increasing spectral brightness, locking the emission wavelength, and increasing environmental and spectral stability. Contact: Ryan Park, Sales & Key Account Administrator, sales@ondax.com; Karen Lam, Office Manager, kiam@ondax.com

Omicron Laserage Laserprodukte GmbH #8422
Raiffeisenstr 5e, Rodgau-Dudenhofen, 63110 Germany
+49 6106 8224 0; fax +49 6106 8224 10
mail@omicron-laser.de; www.omicron-laser.de

Featured Product: LEDHub LED based Light engine with up to 6 different LEDs.
Omicron has been developing, designing and producing innovative laser systems since 1989. Since then its highly-qualified team has specialized in the development of solutions for medicine, research, biotechnology, digital imaging and optical data storage, as well as quality assurance and metrology. Products include high power laser diode and LED systems with high speed modulation capability. Contact: Philip Crowley, phil@markettechinc.net

NoIR Laser Shield #8536
Laser Shield, 6155 Pontiac Trl, South Lyon, MI, 48178-9647 USA
+1 734 769 5565; fax +1 734 769 1708
noirsales@noirlaser.com; lasershields.com

Featured Product: Introducing the #43 universal frame for all polycarb Laser Shields. Widest field of view, best fit. NoIR Laser Shields® provide industry-defining protection and visibility for the world of laser applications. Made in the USA and CE-Certified, LaserShields® deliver performance and protection with an eye on comfort. With more than 125 filters—over 75 CE-certified— and a frame to fit any face, LaserShields® are the point where Form and Function converge. Contact: David Bothner, david.bothner@noirlaser.com

Ocean Optics, Inc. #8608
8060 bryan Dairy Rd., Largo, FL, 33777 USA
+1 727 733 2447; fax +1 727 733 3962
info@oceanoptics.com; www.oceanoptics.com

Featured Product: Ocean-FX
Ocean Optics is the leader in spectroscopy applications knowledge. We provide modular optical sensing solutions for applications such as medical and biological research, environmental regulation, science education, and process control. Our comprehensive range of complementary technologies includes light sources, chemical sensors, Raman instrumentation, Multi Spectral Imaging and other accessories. Our spectrometers and sensors are ideal for integration into OEM and custom instruments. Contact: Application Engineer, info@oceanoptics.com

Ondax, Inc. #8647
850 E Duarte Rd, Monrovia, CA, 91016-4275 USA
+1 626 357 9600; fax +1 626 357 9321
sales@ondax.com; www.ondax.com

Featured Product: Ondax’s new THz-Raman® accessory enables transmission Raman measurements on pills, tablets and vials
Ondax, Inc. is the market leader and largest commercial manufacturer of high-performance Volume Holographic Gratings (VHG/VBG), Wavelength-stabilized Laser Sources, and high-performance, THz-Raman® Low-frequency (Low-wavenumber) Raman Spectroscopy Systems for a wide range of industrial, medical, defense, and scientific applications. VHGs improve laser diode performance by increasing spectral brightness, locking the emission wavelength, and increasing environmental and spectral stability. Contact: Ryan Park, Sales & Key Account Administrator, sales@ondax.com; Karen Lam, Office Manager, kiam@ondax.com

Omicron Laserage Laserprodukte GmbH #8422
Raiffeisenstr 5e, Rodgau-Dudenhofen, 63110 Germany
+49 6106 8224 0; fax +49 6106 8224 10
mail@omicron-laser.de; www.omicron-laser.de

Featured Product: LEDHub LED based Light engine with up to 6 different LEDs.
Omicron has been developing, designing and producing innovative laser systems since 1989. Since then its highly-qualified team has specialized in the development of solutions for medicine, research, biotechnology, digital imaging and optical data storage, as well as quality assurance and metrology. Products include high power laser diode and LED systems with high speed modulation capability. Contact: Philip Crowley, phil@markettechinc.net

Featured Product: Supercontinuum white light lasers, Ultrafast Lasers, Low noise fiber lasers, Photonic Crystal Fibers
NKT Photonics is the leading supplier of high performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide. Contact: Landry Molimb, Director of Sales, sales-us@nktp Photonics.com

OFS is a world-leading designer, manufacturer and provider of optical fiber, optic cable, connectivity, fiber-to-the-subscriber (FTTX) and specialty photonics products. We provide reliable, cost-effective solutions for a broad range of applications including telecommunications, medicine, industrial automation, sensing, government, aerospace and defense. These products help our customers meet the needs of consumers and businesses, both today and into the future. Visit us at www.ofsoptics.com Contact: Jonathan Loft, Medical Engineer Sales, jloft@ofsoptics.com; Jaehan Kim, Medical Marketing Manager, jkim@ofsoptics.com

Featured Product: Customizable medical grade fiber tips
OFS is a world-leading designer, manufacturer and provider of optical fiber, optic cable, connectivity, fiber-to-the-subscriber (FTTX) and specialty photonics products. We provide reliable, cost-effective solutions for a broad range of applications including telecommunications, medicine, industrial automation, sensing, government, aerospace and defense. These products help our customers meet the needs of consumers and businesses, both today and into the future. Visit us at www.ofsoptics.com Contact: Jonathan Loft, Medical Engineer Sales, jloft@ofsoptics.com; Jaehan Kim, Medical Marketing Manager, jkim@ofsoptics.com

Fight Bias, Embrace Diversity
SPIE seeks to cultivate a culture of openness and inclusivity. Help us eradicate bias and make the world of optics and photonics a shining example of all minds coming together to innovate regardless of gender, race, nationality, culture, educational background, politics, sexuality, body-type and age, for the betterment of life. Educate yourself on the issues faced by a diverse workforce, challenge your own assumptions, and tap into the rich pool of talent, perspectives, and ideas offered by people different from you.

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest f twitter tyre insta youtube vimeo linkedin
Opticstechnology.com
Manager, ben@opticstechnology.com; John Warda, President, jwarda@opticstechnology.com
Assembly of entire optical systems. Contact: Ben Piatt, Production and mechanical components to complete design, manufacture, and sealing, and further processing capabilities necessary for producing optical thin film coated components and optical sub-assemblies. Contact: Ben Piatt, Production Manager, ben@opticstechnology.com; John Warda, President, jwarda@opticstechnology.com

Optical Technology Inc.

Optics Balzers
#8719
11941 W 48th Ave Ste 100, Wheat Ridge, CO, 80033 USA
+1 303 502 5401; fax +1 720 974 5901
info@opticsbalzers.com; www.opticsbalzers.com
Optics Balzers is a globally recognized leader in customized optical thin-film coatings and components for the photonics industry. The company possesses a broad and in-depth know-how in optical thin-film coating processes, complemented by sophisticated patterning, glass bonding/sealing, and further processing capabilities necessary for producing optical thin film coated components and optical sub-assemblies. Contact: Steffen Capello, Sales Manager, steffen.capello@opticsbalzers.com; Brian Sjogren, Sales Engineer, briuan.sjogren@opticsbalzers.com

Optics Technology Inc
#8313
3800 Monroe Ave Ste 3, Pittsford, NY, 14534 USA
+1 585 586 0950; fax +1 585 248 2371
info@opticstechnology.com; www.opticstechnology.com
Featured Product: Micro Optics, Micro Mechanics, Assembly, Complete Imaging Systems
Optics Technology, Inc., designs, manufacturers and assembles micro-optical imaging systems and components. Optical and mechanical components range in size from .75mm-30mm in diameter. We offer a range of services from manufacturing single micro optical and mechanical components to complete design, manufacture, and assembly of entire optical systems. Contact: Ben Piatt, Production Manager, ben@opticstechnology.com; John Warda, President, jwarda@opticstechnology.com

Optics.org
#8424
Ffordd Pengam, 2 Alexandra Gate, Cardiff, CF24 2SA United Kingdom
+44 29 2089 4747; fax +44 29 2089 4750
sales@optics.org; www.optics.org
optics.org is the leading online resource for professionals working and using photonics in application. optics.org delivers the latest photonics business news, market trends and product applications. You can also find the latest photonics jobs, events and a comprehensive buyers guide. With thousands of users visiting the site every month it is an effective place to find news and get your products to market.

OptiGrate Corp., an IPG Photonics Company
#8718
562 S Econ Cir, Oviedo, FL, 32765-4311 USA
+1 407 542 7704; fax +1 407 542 7804
info@optigrate.com; www.optigrate.com
Featured Product: BragGrate™ products are unmatched in the industry for linewidth, optical density, transmission, etc.
OptiGrate is a pioneer of commercial Volume Bragg Gratings and supplies VBGs to more than 500 customers on 6 continents for laser line narrowing, spectroscopy, laser pulse stretching and compression, etc. Nowadays, OptiGrate is a leading manufacturer of VBG-based filters and components. Since May, 2017 OptiGrate is a part of the IPG Photonics Family. Contact: Alexei Glebov, President and GM, aglebov@optigrate.com; Vadim Smirnov, CTO, vsmirnov@optigrate.com

Optikron GmbH
#8539
Loebstedter Str. 70, Jena, 07749 Germany
+49 3641 384970; fax +49 3641 384978
info@optikron.de; www.optikron.de
Featured Product: Micro-camera-modules and miniaturized vision systems
OPTIKRON is a partner for the development and production of micro-optical systems, thin-film optics, complex optical assemblies and micro-optical systems for both medical and technical applications such as endoscopes, laser sensors, sensor systems, measuring instruments and innovative applications for aerospace industry. OPTIKRON also develops and manufactures miniaturized vision systems and high integrated micro-camera modules with sensor, optics and LED illumination in smallest dimensions. Contact: Gerrit Seyffert, Managing Director, seyffert@optikron.de; Thoralf Wassmann, Technical Sales / Project Manager, wassmann@optikron.de

Optimax Systems, Inc.
#8415
6367 Dean Pkwy, Ontario, NY, 14519-8939 USA
+1 585 265 1020; fax +1 585 265 1033
sales@optimax.com; www.optimax.com
Featured Product: Optics for High Power; precision optics with superior coatings for Directed Energy, DUV and HEL
Optimax is set-up to manufacture, test and deliver high precision optics, including aspheres, cylinders, prisms, spheres, and freeforms with the speed and quality your project demands. Over the past 25 years, we have grown to nearly 300 employees and expanded our capabilities to include innovative research and production volumes. As one of the largest optical manufacturing companies, we remain committed to small volume, high quality, and quick delivery. Contact: Joe Spilman, Sales Manager, jspilman@optimax.com
Opto GmbH

Lohchamer Schlag 14, Grafelfing, 82166 Germany
+49 89 898 055 0; fax +49 89 898 055 18
info@opto.de; www.opto.de

Featured Product: Imaging Module Profile, Imaging Module Module PANO, Stereo and Assessment Microscope

Opto develops and manufactures customized, optoelectronic modules, optical components and systems for the industrial and biomedical markets. With its own facilities in Germany, France, Swiss, UK and Asia, Opto is a globally recognised solution provider. For more than 30 years, Opto has established itself as a leading International supplier of machine vision solutions. Opto provides special optomechanical solutions that are reduced to the essentials of the application and perfectly cost optimised.

Contact: Alexander Schlager, Marketing, marketing@opto.de

Optores GmbH

Gollierstr 70, Munich, Bayern, 80339 Germany
+49 89 927 78775
info@optores.com; www.optores.com

Featured Product: NG-OMES: MHz-OCT System

Optores is the world’s only provider of MHz-OCT solutions, optical coherence tomography (OCT) with more than 4 million axial scans per second. This ultra-high speed is based on proprietary Fourier-domain mode-locked (FDML) laser technology, advanced synchronization and GPU OCT processing with data rates exceeding 5 GB/s for live real-time 3D imaging. Contact: Thomas Klein, Managing Director, info@optores.com

Optotune Switzerland AG

Bernstr 388, Dietikon, 8953 Switzerland
+41 58 856 3000; fax +41 58 856 3001
info@optotune.com; www.optotune.com

Featured Product: Focus tunable lenses, laser speckle reducers & beam steering devices

Founded in 2008, we started out with our core technology of focus tunable lenses, which was inspired by the working principle of the human eye. Laser speckle reducers, 2D mirrors and tunable prisms are further additions to our product lines. Thanks to our deep understanding of optics and mechanics and a passion for technology, Optotune is your ideal partner when it comes to solving challenges where conventional optics fail. Contact: Mark Ventura, VP Sales & Marketing, mark.ventura@optotune.com; David Leuenberger, Business Development Manager, david.leuenberger@optotune.com

OSELA Inc.

1869 32nd Ave, Lachine, QC, H8T 3J1 Canada
+1514 631 2227; fax +1 514 631 2462
info@osella.com; www.osela.com

Featured Product: Lasers

Osela is a specialized manufacturer of laser illumination systems and structured lighting for industrial applications in machine vision, life sciences and research. With an experienced and skilled staff knowledgeable in the area of beam shaping optics and lasers allows us to continually innovate our product portfolio offering to our customers. Based on our standard platform and our expertise, we offer very competitive customized solution specific to the needs of our customers. Contact: Tony Marzilli, Sales Manager, tmarzilli@osela.com

Oxxius SA

4 rue Louis de Brogile, Lannion, 22300 France
+33 2 96 48 70 28; fax +33 2 96 48 21 90
sales@oxxius.com; www.oxxius.com

Featured Product: LBX, LCX, L4Cc, L6Cc, LUV

Oxxius manufactures innovative solid-state lasers for life science, spectroscopy and industrial applications. Its LaserBoxx compact laser modules, featuring wavelengths in the UV, visible and NIR, have outstanding performance with market-leading power levels. The LCX DPSS and LBX laser diode share the same platform offering mechanical, optical and connection compatibility for easy integration-The LUV series is Deep UV laser at 266nm & 280 nm-The L6Cc & L4Cc are laser launchers for Microscopy. Contact: sales@oxxius.com

Pavilion Integration Corp.

2380 Qume Dr Ste F, San Jose, CA, 95131 USA
+1 408 453 8801; fax +1 408 453 8802
sales@pavilionintegration.com; www.pavilionintegration.com

Featured Product: Whisper Comet™ APD Detector Modules, high QE, covering UV and NIR, individually tunable

Pavilion Integration Corporation (PIC), is a Silicon Valley-based designer and manufacturer of free space and/or fiber-coupled laser modules and laser optical engine subsystems covering the UV, Visible and IR wavelength ranges for demanding biomedical and industrial applications. Contact: info@pavilionintegration.com

PCO-TECH Inc.

6930 Metroplex Dr, Romulus, MI, 48174 USA
+1 866 678 4566; fax +1 248 276 8825
info@pco-tech.com; www.pco-tech.com

Featured Product: compact pco.panda: best solution for applications in state-of-the-art sCMOS imaging technology!

PCO is a leading specialist and Pioneer in Cameras and Optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company’s cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world. Contact: Nimesh Juthani, Regional Manager, nimesh.juthani@pco-tech.com; Altatf Ramji, Regional Manager, altatf.ramji@pco-tech.com
**PHASICS Corp.**

**SPIE Corporate Member**

11th Fl, 600 California St, San Francisco, CA, 94109 USA
+1 415 610 9741
contact@phasics.com; www.phasicscorp.com

**Featured Product: Plug & play camera for quantitative phase imaging: label-free single cell morphology and dry mass.**

Phasics offers imaging solution for fast and label-free cell imaging based on our innovative quantitative phase microscopy technique. The instrument simply plugs in to any microscope as a camera and from the images we can obtain automatically multiple parameters on various cell types and tissues (dry mass, growth rate). It enables easy multimodality (phase-fluorescence merging) or OEM integration. It applies to many assays: cancer and stem cell, drug screening, blood test, tissue biopsy. Contact: Yoann Priol, Sales manager US, priol@phasics.com; Flor Medina, Sales engineer BIO, medina@phasics.com

**Photon Gear, Inc.**

**#8443**

245 David Pkwy, Ontario, NY, 14519-8955 USA
+1 585 265 3360; fax +1 585 265 3364
sales@photongear.com; www.photongear.com

Photon Gear specializes in the design, assembly and characterization of high-precision optical systems. Custom lens assemblies are verified with the interferometric test capabilities from 266 nm to 1600 nm. Supported application areas include semiconductor inspection and processing, military, metrology, biomedical, laser scanning and polymer optics. We also provide contract optical engineering and optical design as well as systems engineering support for custom software and optical hardware. Contact: Gary Blough, President, sales@photongear.com; John Bowen, Senior Optical Engineer, bowen@photongear.com

**Photonic Cleaning Technologies**

**#8324**

1895 Short Ln, Platteville, WI, 53818-9977 USA
+1 608 467 5396; fax +1 608 467 5397
sales@photoniccleaning.com; www.photoniccleaning.com

**Featured Product: First Contact Polymers™. Only no-residue strip coat available to clean & protect sensitive surfaces**

Manufacturer of First Contact™ Polymers. The Cleaning and Protection System. Apply liquid polymer and peel the dried film leaving the surface nearly atomically clean. Independent XPS/ESCA and Laser Damage Threshold testing shows no residue to the molecular level! Safe with high power laser optics. Remove Dust & Fingerprints. Reduce waste: non-toxic inert polymers. Clean Nanostructures, Gratings & Phase Systems. Apply liquid polymer and peel the dried film leaving the surface nearly atomically clean. Independent XPS/ESCA and Laser Damage Threshold testing shows no residue to the molecular level! Safe with high power laser optics. Remove Dust & Fingerprints. Reduce waste: non-toxic inert polymers. Clean Nanostructures, Gratings & Phase Masks! Protect and clean microscope objectives & CCD Sensors. Safe, Low Adhesion, No residue. Contact: David Giesen, Operations and Manufacturing Manager, davidg@photoniccleaning.com; James Hamilton, CTO, hamiltonj@photoniccleaning.com

**PhotoSound Technologies, Inc.**

**#8752**

5658 Sylmar Rd, Houston, TX, 77081 USA
+1 832 930 2778
info@pst-inc.com; www.pst-inc.com

**PI (Physik Instrumente) L.P.**

**#8407**

Piezo Nano Positioning, 16 Albert St, Auburn, MA, 01501-1304 USA
+1 508 832 3456; fax +1 508 832 0506
info@pi-usa.us; www.pi-usa.us

ISO-9001-Certified, Global Leader in Precision Motion Solutions. Piezo Mechanisms, Air Bearigs, Hexapods, Photonics Alignment, Nanopositioning, Micropositioning, Piezo Positioning Systems, Linear Motors & Rotary Stages for OEM & Research. Products: Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Tip/Tilt Mirrors; Piezo Transducers, Piezo Actuators; Piezo Motors, Piezo Drivers & Digital Motion Controllers; Voice Coil Actuators, MicroMotion Robots. Contact: Sales Dept, info@pi-usa.us

**SPONSOR**

**PicoQuant Photonics North America, Inc.#8612**

**SPIE Corporate Member**

9 Trinity Dr, West Springfield, MA, 01089 USA
+1 413 562 6161; fax +1 413 562 5117
info@picoquant-usa.com; www.picoquant-usa.com

Product lines include Pulsed Diode Lasers, Time-Correlated Single Photon Counting (TCSPC) electronics and detectors, fluorescence lifetime spectrometers, time-resolved fluorescence microscopes and upgrade kits for Laser Scanning Microscopes. Applications include Single Molecule Spectroscopy, Fluorescence Lifetime Imaging (FLIM), Fluorescence Resonance Energy Transfer (FRET), Fluorescence Correlation Spectroscopy (FCS), super-resolution microscopy. Contact: Alain Boudon, Vice President, boudon@picoquant-usa.com

**PIEZOCONCEPT**

**#8445**

15 rue du Bocage, Lyon, 69008 France
+33 4 78 74 24 56; fax +33 4 78 09 55 17
info@piezoconcept.com; www.piezoconcept.com

**Featured Product: Picometric noise floor nanopositioner**

PIEZOCONCEPT is the leading provider of nanopositioners dedicated to applications such as Super Resolution and Atomic Force Microscopy. We developed a range of ultra-stable nanopositioner able to meet a wide range of microscopy applications with significant advantages over the currently available nanopositioners. As one of our biggest advantages, the sensor we use outperforms high-end capacitive sensor because of their exceptionally high signal, leading to picometric noise floor. Contact: Samuel CHOBLÉT, Managing Director, info@piezoconcept.com

**PIX4life**

**#8340**

Kapeldreef 75, Leuven, 3001 Belgium
+32 16 28 12 11
info@pix4life.eu; www.pix4life.eu

**Featured Product: SiN photonics for life sciences**

PIX4life offers easy access to SiN photonics for life sciences applications. PIX4life is a European pilot line supported by 14 partners, providing both a technology platform and supporting services such as consultancy, design support and services, chip manufacturing (Multi project wafer approach), chip testing, characterization and assembly. Innovative life sciences companies can build SiN photonics integrated circuits using PIX4life’s library of photonics building blocks and interfaces. Contact: Hilde Jans, Researcher, hilde.jans@imec.be
Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Raptor Photonics Ltd. #8439
Willowbank Business Park, Larne N Ireland, BT40 2SF United Kingdom +44 2828 270141; fax +44 2828 275685 sales@raptorphotonics.com; www.raptorphotonics.com
**Featured Product: OWL 1280 – Ultimate InGaAs resolution for VIS-SWIR applications**
Raptor is delighted to announce the OWL 1280. This is another member of the successful OWL family offering unsurpassed image quality from 400nm to 1700nm. The OWL 1280 offers 1280 x 1024 resolution with 10um pixels. The image area is 12.8mm x 10.24mm. The camera is cooled with a TEC and in high gain model it offers <40e- read noise and very low dark current. The camera will offer 2x2 binning to offer 640x512, 20um pitch for better sensitivity and higher speeds up to 450Hz.
Contact: Derek Craig, sales@raptorphotonics.com

Redondo Optics, Inc. #8208
811 N Catalina Ave Ste 1114, Redondo Beach, CA, 90277 USA +1 310 406 1295; fax +1 310 406 1297 www.redondooptics.com
Redondo Optics Inc. (ROI) specializes in the development and production of miniature, light weight, and power efficient fiber optic sensors for physical, chemical, and biological measurements with applications in aerospace, oil and gas, renewable energy, civil and environmental engineering, medical and biomedical, and defense and security. Contact: Edgar Mendoza, CEO, emendoza@redondooptics.com

Revibro Optics #8216
1716 W Main St Ste 8B, Bozeman, MT, 59715 USA +1 406 624 9068 info@revibrooptics.com; www.revibrooptics.com/home.html

Roche Precision Optics, LLC #8361
850 John St, West Henrietta, NY, 14586-9748 USA +1 585 292 5450; fax +1 585 292 5459 bd@rpoptics.com; www.rpoptics.com
**Featured Product: See what’s new and happening at RPO!**
We are experts at developing creative engineering solutions for our customers and specialize in developing lightweight electro-optical products. Our engineering department provides up front systems engineering and integration services and builds the prototypes for our customers. Upon completion of test and evaluation activities, RPO’s vertically integrated manufacturing facility provides large volume manufacturing capabilities. Contact: Adam Dunn, Director of Business Development, adunn@rpoptics.com; Lisa Belodoff, VP of Business Development, lbelodoff@rpoptics.com

SAI Co., Ltd. #8758
HB Optical, No 242 Beihai St Dadong District, Shenyang, 110043 China +86 24 88710538; fax +86 24 88722312 info@hb-optical.com; www.hb-optical.com
**Featured Product: Interference filters, bandpass filters, optical filters, fluorescence filters, ND filters**
HB OPTICAL, SAI Co., Ltd. is an experienced interference filters manufacturer in China. We have more than 40 years of history in R&D optical coatings. We have developed interference filters, bandpass filters, sharp edge filters and neutral density filters etc. and widely applied in fluorescence detectors and fluorescence imaging systems. The typical application such as fluorescence microscopy, PCR detectors, Flow cell cytometers etc. Special customer products can be manufactured. Contact: Jing Ma, Products Manager, majing@hb-optical.com; LINLIN GAO, Marketings, info@hb-optical.com

SAMTEC USA #8641
520 Park East Blvd, New Albany, IN, 47150 USA +1 812 944 6733; fax +1 812 948 5047 info@samtec.com; www.samtec.com
Samtec, Inc. is recognized as the connector industry service leader. Besides featuring our Microelectronic Packaging Services for Biomedical applications and Glass Core Technologies, incorporating TGV’s and RDL’s into Glass Substrates, Samtec offers a wide range of Active Optical Cables including the new FireFly™ Micro Flyover System, High Speed Mezzanine Strips, 28, 40 and 56Gb Backplane Solutions, High Speed Coax and Twin-ax Cable Assemblies as well as Rugged, Power, RF, Board-to-Board. Contact: Glenn Dixon, glenn.dixon@samtec.com

Santec U.S.A. Corp. #8454
433 Hackensack Ave, Hackensack, NJ, 07601 USA +1 201 488 5505; fax +1 201 488 7702 info@santec.com; www.santec.com
**Featured Product: World’s first UV-hardened LCOS Spatial Light Modulator, SLM-150**
Established in 1979, Santec is a global photonics engineering company and a leading manufacturer of Tunable Lasers, Optical Test and Measurement Products, and Advanced Optical Components. Santec’s tunable lasers and test systems are known for high resolution, high accuracy, and high wavelength stability for high performance in photonic device characterization. Contact: Jonathan Evans, VP, Global Sales Group, jonathan@santec.com; Max Chang, Manager, Global Sales Group, max@santec.com

Semrock, a unit of IDEX Health & Science #8607
600 Park Ct, Rohnert Park, CA, 94928-7906 USA +1 707 588 2000; fax +1 707 588 2020 www.idex-hs.com
**Featured Product: Optical Filters**
IDEX Health & Science is the global optofluidic authority for the life sciences market. Respected worldwide for solving complex problems, we deliver complete life science instrumentation development innovation for analytical, diagnostic and biotechnology applications. Product offerings include: connections, valves, pumps, degassers, column hardware, manifolds, microfluidics, consumables, optical filters, lenses, laser sources, light engines and integrated optofluidic assemblies.

Shanghai Mega-9 Optoelectronic Co., Ltd. #8741
5, Lane 111, Shihui Road, Songjiang District, Shanghai, 201613 China +86 21-57784688; fax +86 21-57784689 zstang@mega-9.com; www.mega-9.com/en/
**Featured Product: Various optical filters, used in PCR, POCT, Fluorescence Microscope.**
Founded in 2006, Mega-9 focused on optical band pass filters and beam splitter cubes, with over 20 years coating research and developing experience. The main application of Mega-9’s optical filters includes biochemical analysis such as PCR, POCT, Flow Cytometry, Microplate Reader etc. With ISO9001:2008 approval, and honored as “State high and new enterprise” by state scientific and technological commission since 2012, Mega-9 has more than 20 patents in fabricating the high end optical filter. Contact: Zhaosheng Tang, CTO, zstang@mega-9.com; Xinhua Luo, luoxhn@mega-9.com, CEO.
Syntec Optics #8714

Syntec Optics is North America’s largest private manufacturer of custom plastic optics serving the medical, defense and biometric industries by producing “precision plastic optics for tomorrow’s technologies” from our location in Rochester, NY. We specialize in design for manufacturability, precision plastic optics, diamond turning, coating, electro-optical assembly, opto-mechanical assembly, and metrology. Contact: Steven Polvinen, President, spolvinen@syntecoptics.com

The Australian National University #8354

The Australian National University is a research-intensive university, with world-class academics at the forefront of their fields and specialist research infrastructure. Our researchers are continually developing new innovations to address the challenges facing the world today, many of which are available for collaboration and licensing by industry to achieve further impact. Please visit http://www.anu.edu.au/research/innovation for more information.

Contact: Lindsay Hogan, Business Development Manager, lindsay.hogan@anu.edu.au

Timbercon #8554

Timbercon designs and manufactures fiber optic cable assemblies and modules for the military, aerospace, data communications, medical and industrial markets. We are proud of our reputation for high quality products, engineering excellence, custom design solutions and customer service. AS9100 certified, ISO9001 certified, ITAR registered. Contact: Kip Nix, VP Sales and Marketing, info@timbercon.com

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OPTICS & PHOTONICS International Exhibition

OPTIE '18

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Total Projected Participation  - Exhibitors 500  - Attendees 20,000

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TOPTICA Photonics Inc. #8508

TOPTICA Photonics Inc.
1286 Blossom Dr, Victor, NY, 14564-1402 USA
+1 585 657 6663; fax +1 877 277 9897
office@toptica-usa.com; www.toptica.com

TOPTICA is a privately held technology driven company, which develops, produces and sells diode and ultrafast fiber lasers for scientific and industrial applications. The company sets its own challenge to regularly present exciting product innovations and world firsts. Contact: Alexis Sipfle, Marketing, alexis.sipfle@toptica-usa.com

Toshiba America Information Systems, Inc. #8310

Toshiba America Information Systems, Inc.
Imaging Systems Division, 5241 California Ave. Suite 100, Irvine, CA, 92617 USA
+1 810 357 5022; fax +1 949 470 9390
info@camerastoshiba.com; www.toshabacameras.com

Supplier of 3-chip ultra HD 4K and 1080p, high-definition (HD) video camera technology, Innovative, ultra-compact and robust remote-head 3CMOS, 3CCD, ultra-small, chip-on-tip, and single-piece cameras provide color accuracy, high resolution, wide dynamic range, and sensitivity in low-light and near-infrared (NIR) applications. Contact: Gary Pitre, National Sales Manager, gary.pitre@toshiba.com

TruTag Technologies #8343

TruTag Technologies
Hyerspectral Imaging, 2200 Powell St Ste 1035, Emeryville, CA, 94608-1879 USA
+1808 TRU TAGS; fax +1 808 380 2223
contactus@trutags.com; www.trutags.com

Featured Product: 4100H Handheld Hyperspectral Camera

TruTag Technologies Inc. is a leading technology company in the hyperspectral imaging space. TruTag developed the world’s first high-resolution, handheld autonomous hyperspectral camera which was awarded the SPIE Best Camera and Imager Prism Award in 2017. TruTag’s hyperspectral cameras provide spectrally-tunable multi-megapixel hyperspectral data from 400 nm – 1000 nm with embedded object identification for the medical imaging, machine vision and quality inspection industries. Contact: Kevin Lynch, Sales Director, Hyperspectral Products, klynch@trutags.com; Sally Lee, Marketing Manager, sallylee@trutags.com

Tucson Photonics Co., Ltd. #8316

Tucson Photonics Co., Ltd.
6/F No 1 Bldg Caimao Zone, 756 Qian Rd, Fuzhou, 350008 China
+86 591 8819 4580; fax +86 591 8383 1590
support@tucson.com; www.tucson.com

Featured Product: Scientific camera

As a result of extensive investment in technology, quality and manufacturing, Tucson Photonics is now the premier manufacturer of scientific cameras in China. Focusing only on the development and manufacturing of scientific cameras has allowed Tucson to lead in advanced hardware & software solutions. Contact: Jessica Wu, Sales Director, support@tucson.com; Mike Blake, OEM/ODM support, mikeblake@tucson.com

UnikLasers Ltd. #8214

UnikLasers Ltd.
Unit 5/Bavelaw Business Ctr, 46A Bavelaw Rd, Edinburgh, Midlothian, EH14 7AE United Kingdom
44 131 2812778; fax 44 74037 22 220
sales@uniklasers.com

Featured Product: CW Single Frequency DPSS Lasers

UnikLasers manufacture CW Single Frequency DPSS lasers at any wavelength from NIR to UV using a single engineering platform based on patented BRaMMS technology. UnikLasers products, all ultra-compact & air cooled: Quartetto-266, Duetto-532, 515, 442, 360, 355, 349, 320 & Solo-1064, 720, 698, 640, 607, 523 offer exceptional performance, high conversion efficiency, 100m+ coherence length, low noise, various power levels, lowest power consumption & smallest footprint for given output up to 3W. Contact: Roger Brueggemann, Sales Manager, roger.brueggemann@uniklasers.com; Andy Wells, New Business Development Manager, andy.wells@uniklasers.com

US Fiberopotec Technology, Inc. #8322

US Fiberopotec Technology, Inc.
175 Bernal Rd Ste 15, San Jose, CA, 95119 USA
+1 408 834 7410; fax +1 408 834 7430
info@usfiberopotec.com; www.usfiberopotec.com

Featured Product: Non-circular Optical Fibers & Assemblies

100% vertically integrated world leader in silica and glass optical fibers, assemblies, bundles and hybrid photonics solutions. Producing silica (Quartz), silica/silica and hard polymer clad/silica (HPCS), glass and MIR (Mid Infrared) optical fibers and value added assemblies for a wide variety of industries and applications. We offer fibers from 40 microns to 2,000 microns in core sizes with N.A. range of 0.12 to 0.53 and wavelengths range from 193nm to 16 microns. sales@usfiberopotec.com Contact: Kevin Bakhshpour, VP of Sales & Marketing, sales@usfiberopotec.com; Ilya Rotenstein, Sales & Marketing, ilya@usfiberopotec.com

UTC Aerospace Systems - Sensors Unlimited #8707

UTC Aerospace Systems - Sensors Unlimited
330 Carter Rd Ste 100, Princeton, NJ, 08540-7438 USA
+1 609 333 8000
sui_info@utas.utc.com; www.sensorsinc.com

Featured Product: Non-ITAR, Low-Cost Sensors Unlimited 640CSX and 320CSX MicroSWIR™ Cameras

Sensors Unlimited, Inc., a UTC Aerospace Systems company, develops innovative shortwave infrared (SWIR) sensing/imaging solutions based on indium gallium arsenide imaging technology. Products include InGaAs-SWIR cameras & systems, 1- and 2-D focal plane arrays & extended wavelength response InGaAs image sensors. Imaging applications include security/surveillance, near-infrared spectroscopy, line-scan inspection, process control, laser beam profiling, microscopy, OCT, art inspection & astronomy. Contact: Doug Malchow, Sales Manager, doug.malchow@utas.utc.com; Paul Messina, Sales Manager, paul.messina@utas.utc.com

Viavi Solutions #8637

Viavi Solutions
1402 Mariner Way, Santa Rosa, CA, 95407 USA
+1 707 525 9200; fax +1 707 525 7028
ospcustomerservice@viavisolutions.com; viavisolutions.com/osp

Featured Product: Multispectral sensor, custom optical coatings

Viavi Optical Security and Performance Products group (formerly JDSU/OCLI) develops and delivers high value optical thin film filter components and coating services that enhance the performance, safety, and security of our customers’ products. Our solutions support the consumer electronics, government, healthcare, industrial, automotive and anti-counterfeiting markets. Learn more at osp.viavisolutions.com. Contact: Steve Saxe, Product Line Manager, steve.saxeviavisolutions.com; Connie Heinse, Marketing Manager, connie.heinse@viavisolutions.com
Xenics USA, Inc #8512
SPIE Corporate Member
600 Cummings Center, Suite 166-Y, Beverly, MA, 01915 USA
+1 978 969 1706; fax +1 978 998 4314
sales@xenics.com; www.xenics.com
Xenics is a pioneer of path-breaking infrared technology with a proven track record of fifteen years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation, machine vision, process control and high-end security applications. The company offers a complete portfolio of line-scan and 2-D area-scan products for the VisNIR, SWIR, MWIR and LWIR ranges. Contact: Hervé Copin, CEO Xenics USA, Inc, sales@xenics-usa.com

YSL Photonics #8724
SPIE Corporate Member
80# Fifth Hi-tech Ave East Lake Hi-Tech Development Zone, Wuhan Hubei Province, 430073 China
+86 27 87 204039; fax +86 27 87 179217
sales@yslphonotics.com; www.yslphonotics.com/en/
Featured Product: Supercontinuum source; picosecond pulsed and femtosecond fiber laser
Advances in photonics technology enable progress in health, mobility and sustainability. YSL Photonics explores, develops and manufactures next-generation of supercontinuum source (supercontinuum laser, white light source, white light laser), picosecond pulsed and femtosecond fiber laser that bring new capabilities, higher reliability and lower ownership to a diverse range of industrial and R & D applications.

Zuend Precision Optics Ltd #8523
SPIE Corporate Member
Prismastr 5, Diepoldsau, 9444 Switzerland
+41 71 73 74 00; fax +41 71 73 74 10
info@zuendoptics.com; www.zuendoptics.com
Featured Product: Micro planar optical single components and planar optical kitting systems
Production and distribution of uncoated or coated planar optical single components and planar optical assemblies in dimensions of 0.2mm up to 50.0mm. Our supporting role begins with the design, development of prototypes and extends to the execution of production from 50 to 20,000 units and more. Contact: Oscar Turienzo, Head of sales & marketing, o.turienzo@zuendoptics.com; Dario Fusinato, Managing Director / CEO, d.fusinato@zuendoptics.com

Zurich Instruments AG #8712
SPIE Corporate Member
Technoparkstrasse 1, Zurich, 8005 Switzerland
+41 44 515 0410; fax +41 44 515 0419
info@zhinst.com; www.zhinst.com
Featured Product: Lock-in amplifier, impedance analyzer, arbitrary waveform generator, PLL, digitizer
Zurich Instruments is a test and measurement company based in Zurich, Switzerland, developing and selling measurement instruments and delivering customer support in key markets around the world, either directly or with carefully selected partners. We are a growing, independent and founder-led company. Zurich Instruments makes cutting-edge instrumentation for scientists and technologists in advanced labs who are passionate about phenomena that are often notoriously difficult to measure.
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### Photonics West Exhibition New Product Launches

<table>
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<th>Company</th>
<th>Booth Number</th>
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<tbody>
<tr>
<td>3DOptix</td>
<td>1450</td>
</tr>
<tr>
<td>The BreadBox™ platform provides an accurate way for 3D mounting &amp; aligning optical elements.</td>
<td></td>
</tr>
<tr>
<td>Abrisa Technologies</td>
<td>1842</td>
</tr>
<tr>
<td>The BreadBox™ platform provides an accurate way for 3D mounting &amp; aligning optical elements.</td>
<td></td>
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<tr>
<td>Acktar Ltd.</td>
<td>2334</td>
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<td>2334</td>
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<tr>
<td>AdiOptica Optical Systems GmbH</td>
<td>3002</td>
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<tr>
<td>foXXus - multi-focus objectives with up to 0.8 NA for laser cutting of brittle materials.</td>
<td></td>
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<tr>
<td>AdTech Optics, Inc.</td>
<td>4204</td>
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<tr>
<td>Copper Thick Film Metalization on HTCC alumina and AlN substrates with numerous plating options.</td>
<td></td>
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<tr>
<td>AdValue Photonics, Inc.</td>
<td>337</td>
</tr>
<tr>
<td>Adamant Co., Ltd.</td>
<td>4333</td>
</tr>
<tr>
<td>MEMS Tunable Optical Filter. Tunable Filter with Attenuation function.</td>
<td></td>
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<tr>
<td>ADIT Electron Tubes</td>
<td>1739</td>
</tr>
<tr>
<td>The L25D32 is a new 25mm fast photomultiplier with bialkali photocathode &amp; sub-nanosecond timing.</td>
<td></td>
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<tr>
<td>AET Technologies</td>
<td>4210</td>
</tr>
<tr>
<td>Wet thermal oxidation system for VCSEL and other photonics devices manufacturing (4 up to 6” wafers).</td>
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<tr>
<td>AFL</td>
<td>2125</td>
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<tr>
<td>AFL's new LZM-110A LAZERMaster™ is an optical fiber processor/splicer that features fiber ablation.</td>
<td></td>
</tr>
<tr>
<td>ALIO Industries Corp.</td>
<td>1907</td>
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<tr>
<td>ALIO's NEW Mini Hybrid Hexapod®: Precision, Travel Range and Speed with Prices Starting at $29,900.</td>
<td></td>
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<tr>
<td>Aistana Inc.</td>
<td>4426</td>
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<tr>
<td>10W High Power Non-PM &amp; PM Circulator.</td>
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<tr>
<td>Ajile Light Industries Inc.</td>
<td>4446</td>
</tr>
<tr>
<td>High-speed Digital Micromirror Device (DMD) Controller and RGB Structured Light Projector.</td>
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<tr>
<td>Alluxa</td>
<td>4569</td>
</tr>
<tr>
<td>Alluxa Ultra Series Filters provide the highest performance optical thin film solutions available.</td>
<td></td>
</tr>
<tr>
<td>Alazar Technologies, Inc.</td>
<td>135</td>
</tr>
<tr>
<td>ATN-10G waveform digitizer platform with user programmable FPGA, 10GE interface, and x86 controller.</td>
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</tbody>
</table>

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Photonics West Exhibition New Product Launches

New DMs featuring large pupil from 100 mm to 200 mm with 37 to 127 actuator – fit it in your laser.

Amron GmbH

Ultra compact laser diode driver with 18kW output power and Performance Level e (PL e) certification.

Analog Modules, Inc.

Model 8212A Pockels Cell Driver 2kV output with <7ns rise time, High PRF and variable pulse width.

Andon Electronics Corp.

Patented Heat Sink Sockets™ from Andon Electronics combine the benefits of a socket and heat sink.

Apex Technologies

Discover the highest resolution (5 MHz/0.04 pm) Optical Spectrum Analyzer actually in the market!

Ascentta, Inc.

Ultra Broadband 1x2 or 2x2 Coupler (650nm to 950nm or Specify wavelength) For OCT Applications.

Asia Optical Co., Inc.

Fiber Optics Division of Asia Optical Co., Inc. supported CWDM/Lan WDM Prism with Thin Film Filters.

A-Star Photonics, Inc.

A-Star can provide professional and reliable optical Lenses design and Lens Assembly Copy.

ASME's AD280 is a high accuracy die bonder for precision bonding of VCSEL and EEL lasers @±3µm.

Aspen Systems, Inc.


Asphera, Inc.

Conical lenses: Conic Diameter: (+0/-0.20), Thickness: +/-0.10, Surface 20-10, Flatness: λ/4 @ 6

asphericon, Inc.

asphericon presents a compact and modular beam shaping system based on an aspheric solution.
Super EPOXY for touch panel display film. Ultra AR structure with excellent hardness & antifouling.

AvaSpec-Mini4096CL, the first 4096 px CMOS mini spec. 200-1100 nm, 0.99 reproducibility Wi/Auto-Mfg.

Axetris thermal infrared sources can be electronically modulated and work within 2µm-14µm.

Axetris new Small Form Factor Swept Source OCT Engine (3.5 x 4.5 x 1 inch).

Optical transducer with high output voltage (~5V) for insulation products (isolated MOSFET Driver).

AZURE IR lenses are working with IR camera (900-1700nm) up to 1” sensor. Focal in 25, 35 and 50mm.
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<tr>
<td>BWT Beijing Ltd.</td>
<td>2219</td>
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<tr>
<td>976nm/1000W wavelength-stabilized high brightness diode laser.</td>
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<tr>
<td>CAILabs得意光源技术有限公司</td>
<td>5644</td>
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<tr>
<td>CAILabs introduces Canunda-MP, a high-beam quality, low-losses and high-energy handling laser beam shaper.</td>
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<tr>
<td>Calmar Laser</td>
<td>1619</td>
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<tr>
<td>Carmel: &gt; 0.6W@920nm, &gt; 1W@780nm, &gt; 3W@1550nm; compact femtosecond fiber laser for biomedical imaging.</td>
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<tr>
<td>Cambridge Technology, A Novanta Company</td>
<td>731</td>
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<tr>
<td>The new DC3000 Plus Servo Driver offers higher marking speed and accurately drives larger mirrors.</td>
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<tr>
<td>Canare Electric Co., Ltd.</td>
<td>6011</td>
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<tr>
<td>New compact Beam-Profiler for NIR high-power lasers, no attenuation, real-time and speckle-free.</td>
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<tr>
<td>CCR Technology GmbH</td>
<td>2518</td>
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<tr>
<td>COPRA LS &amp; IS-Sources for PVD-Assist in E-Gun or Sputter Box-or Batch Coaters.</td>
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<tr>
<td>CE Optics Ltd.</td>
<td>4070</td>
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<tr>
<td>High precision GDD measurement device with scanning over large dimension optics (D=12” or larger).</td>
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<tr>
<td>CEDRAT TECHNOLOGIES</td>
<td>4329</td>
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<tr>
<td>MSPS3XS a compact piezo motor based linear stage - Vacuum, Cryo, Non-magnetic optional.</td>
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<tr>
<td>Changchun New Industries Optoelectronics Technology Co., Ltd.</td>
<td>2018</td>
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<tr>
<td>DPSS lasers &amp; Diode lasers &amp; Lamp-pumped lasers &amp; Fiber lasers, from 257nm-4800nm.</td>
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<tr>
<td>Chengdu Dongjun Laser Co., Ltd.</td>
<td>4653</td>
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<tr>
<td>Nd-YAG as one of laser crystals, is widely used in industrial, medical, military and research etc.</td>
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<td>Chiopt Optotech Co., Ltd.</td>
<td>4046</td>
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<tr>
<td>Full range high level lenses, including Zoom lens, M12 lens and FA lens, zoom lens.</td>
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<td>Chiral Photonics, Inc.</td>
<td>4156</td>
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<tr>
<td>Chiral Photonics’ Multicore Fiber Fanout provides standard SM fiber access to multicore fiber cores.</td>
<td></td>
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<tr>
<td>Circle and Square Co., Ltd.</td>
<td>2606</td>
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<tr>
<td>Shape accuracy 1µm of CNC machining plastic micro lens array. Pitch min 100µm, size max 400x600nm.</td>
<td></td>
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<tr>
<td>CMOS Sensor Inc.</td>
<td>2517</td>
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<tr>
<td>Thin profile optical Fingerprint/heart-rate Biometric module, best for under glass &amp; OLED displays.</td>
<td></td>
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<tr>
<td>Cobalt AB</td>
<td>2119</td>
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<tr>
<td>Cobolt AB market releases the Cobolt Skyra™, a revolutionary multi-line laser.</td>
<td></td>
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<td>CODIXX</td>
<td>1931</td>
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<tr>
<td>New IR polarizers: colorPol® N-series, made for laser wavelengths of 1310 nm, 1490 nm and 1550 nm.</td>
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<tr>
<td>Coherent, Inc.</td>
<td>4829</td>
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<tr>
<td>HighLight 10 kW high power fiber laser is ideal for heavy industrial applications.</td>
<td></td>
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<tr>
<td>CIS Forschungsinstitut für Mikrosensorik</td>
<td>4529</td>
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<tr>
<td>Miniaturized UV-LED lighting with multiple wavelengths for applications in biotechnology &amp; medicine.</td>
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<td>Company Name</td>
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<td>Connected Fibers, LLC</td>
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<td>Cristal Laser S.A.</td>
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<td>CRYSTECH Inc.</td>
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<td>Delta Optical Thin Film A/S.</td>
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<td>Connet Laser Technology Co., Ltd.</td>
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<td>Critical Link, LLC</td>
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<td>Cybel LLC</td>
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<td>Continuum</td>
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<td>CryLight Photonics, Inc.</td>
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<td>Crylsaer Inc.</td>
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<td>DataRay Inc.</td>
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<td>Daylight Solutions Inc.</td>
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<td>Deposition Sciences, Inc.</td>
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<td>Diamond USA Inc.</td>
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<td>Cylindrical lenses, Trioptics</td>
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<td>CRYSTECH Inc.</td>
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<td>Daylight Solutions Inc.</td>
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<tr>
<td>Dino-Lite Digital Microscope</td>
<td>4673</td>
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</tbody>
</table>

**Connected Fibers, LLC 4609**

The latest addition to the TCure epoxy curing ovens, the TCure-VO-Q adds 4 block 120 port capacity.

**Connet Laser Technology Co., Ltd 1507-L**

The CoLiD series 1550nm short pulse fiber laser for LiDAR.

**Continuum 713**

When processing quality matters: New Tangor 50W Femtosecond laser available in IR, green and UV.

**Contrast, Inc. 4508**

The 4K HDR Camera, amp Fathom, offers over 13 stops of dynamic range with real-time HD video output.

**Corning Incorporated 1342**

Corning unveils new Titania-clad optical fiber: Durable, single mode fiber enabling 2.5mm bends.

**CRYSTECH Inc. 4866**

RTP is excellent crystal for E-Optical applications at high repetition rate, aperture up to 12x12.

**Cybel LLC 5434**

HELIOS-2100-5W, 37dBm-PM, Holmium Fiber Amplifier at 2100nm.

**Dandong Elaser Electronic Technology Co., Ltd. 4653**

532nm integrated package laser diode. Normal operation in ~20° ultra-wide temperature.

**DataRay Inc. 300**

The new WinCamD-IR-BB MWIR/FIR beam profiler offers provides affordable broadband 2-16 µm profiling.

**Daylight Solutions Inc. 2330**

The Spero-QT is the next breakthrough in label-free chemical imaging.

**Dino-Lite Digital Microscope 4673**

Dino-Lite USB digital microscopes used for inspection and quality control.
**Photonics West Exhibition New Product Launches**

**Dioptic GmbH**... 4529
Surface inspection system for lenses and optical flats. Complete test reports acc. ISO 10110-7

**Discovery Semiconductors, Inc.**... 4238
Configurable Lab Buddy: World’s most versatile O/E converter in the marketplace!

**Dongguan Harmony Technology Co., Ltd.**... 4653
Injection molding plastic lens, including Aspheric lens, Freeform lens, Lens array, Fresnel lens.

**Dover Motion**... 4030
The Dover Objective Focuser (DOF) high-resolution, high bandwidth linear motor focusing stage.

**DOWA Electronics Materials Co., Ltd.**... 5040
DOWA released new model Deep UV-LED, DF8ZV series. The wavelength is 280nm and the power is 75mW.

**Dynavac**... 5437
Dynavac’s Confocal Sputtering Systems enable deposition of multiple layer thin films in a single run.

**DZD Photonics Co., Ltd.**... 4660
Eagle serial 400 yellow lasers, 589nm. High power up to 25W, with own-designed patented pump.

**Eagleyard Photonics GmbH**... 1925
New - versatile building block for customization integrated in a 14 Pin windowed butterfly package.

**Edmund Optics**... 823
Feature durable hard coatings to minimize filter degradation while increasing transmission in the UV.

**EDT | Engineering Design Team, Inc.**... 4670
VisionLink CLS, a PCIe-based Camera Link simulator for playback, testing and development.

**DZD Photonics Co., Ltd.**... 4660
Eagle serial 400 yellow lasers, 589nm. High power up to 25W, with own-designed patented pump.

**Dowag**... 5437
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**East Tender Optoelectronics Corp.**... 5566
The cloud data center requires filters and prisms. EOC provides both of them & also assembled block.

**EDT | Engineering Design Team, Inc.**... 4670
VisionLink CLS, a PCIe-based Camera Link simulator for playback, testing and development.

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**DZD Photonics Co., Ltd.**... 4660
Eagle serial 400 yellow lasers, 589nm. High power up to 25W, with own-designed patented pump.
EPIGAP Optronic GmbH 221; 4529
Multi-Wavelength-Emitter with LED chips from 350nm up to 1720nm mounted on CoB with glass cover.

EPIX, Inc. 3051
PIXCI E4TX2 Four Camera Frame Grabber with TX2 Processor for Fast Image Acquisition & Processing.

ESPROS Photonics AG 4423
TOF-cam 635 is a new cost optimized 3D camera, based on ESPROS revolutionary TOF technology.

Excell Technologies 5231
Cutting Edge Speedfam 9B-5 Lap & Polishers w/ New Controls, 16B-5 & 20B-5 and other brands available.

Finisar Corporation 4053
Finisar WaveShaper offers arbitrary attenuation & phase spectra for femtosecond laser pulse shaping.

Focuslight Technologies, Inc. 1415
Focuslight launches FocusFiber SQ series 200W fiber coupled diode laser modules.

Forth Dimension Displays Ltd 317
Extended temperature range SXGA (1280 x 1024) microdisplay enabling outdoor and defence applications.

Frankfurt Laser Company 2107
High Power Line Laser Module ML2040. Up to 2W output power in a small IP65 proved housing.

Fraunhofer Heinrich-Hertz-Institut (HHI) 4529
Non-destructive, contact free measurements with Terahertz.

Fraunhofer Institute for Applied Optics and Precision Engineering IOF 4529
Additive manufacturing of optical high-power components for VIS-NIR-IR applications
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<tr>
<td>Fraunhofer-Institut für Lasertechnik ILT</td>
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<tr>
<td>Diamond lenses offer superior optical and thermal properties for high power laser applications.</td>
<td></td>
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<tr>
<td>Fujian Hitronics Technologies Inc.</td>
<td>4143</td>
</tr>
<tr>
<td>Optics solution for Diode Laser-SAC, Mirror, Filter, Waveplate, PBC, and Cylinders for Line-beam UV application.</td>
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<tr>
<td>Fuzhou Hundreds Optics Inc.</td>
<td>4163</td>
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<tr>
<td>Professional manufacturer of LBO BBO crystals and high-precision optical components.</td>
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<tr>
<td>Fuzhou Intpho Technology Co., Ltd.</td>
<td>2604</td>
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<tr>
<td>Spherical lenses Dia 0.8mm–Dia 300mm.</td>
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<tr>
<td>Fuzhou Toptec Optics, Inc.</td>
<td>4772</td>
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<tr>
<td>Using a newly improved flux method, Toptec now produces high quality Beta-Barium Borate crystal boule.</td>
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<td>Gel-Pak</td>
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<tr>
<td>Gel-Pak Vacuum Release Trays for Safely Handling 100G Components including Photonic ICs and Lasers.</td>
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<tr>
<td>Gitterwerk GmbH</td>
<td>4529</td>
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<tr>
<td>Optimized gratings for ultra short pulse and high power laser at 800, 980, 1030, 1064, 1550, 1950 nm.</td>
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<tr>
<td>GMT Global Inc.</td>
<td>4243</td>
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<tr>
<td>Gooch &amp; Housego PLC</td>
<td>1215</td>
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<tr>
<td>Features: 4.0 Digit LCD display, Detachable Sensor probe, Handheld UV intensity meter.</td>
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<tr>
<td>Gentec Electro Optics</td>
<td>542</td>
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<tr>
<td>Introducing BLU, our first wireless laser power meters. Easily connect your iOS, Android or PC.</td>
<td></td>
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<tr>
<td>GiGa Concept</td>
<td>4437</td>
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<tr>
<td>All fibers are possible in our AnyWave Fiberbench for SM, MM achromatic control and scrambling &gt;1 ms</td>
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<tr>
<td>GS Plastic Optics</td>
<td>1113</td>
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<tr>
<td>GS Plastic Optics is a leading manufacturer of custom designed injection molded polymer optics.</td>
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<tr>
<td>Guangzhou CKLaser Co., Ltd.</td>
<td>4205</td>
</tr>
<tr>
<td>TASTE LASER—smaller, and stronger.</td>
<td></td>
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<tr>
<td>Guild Optical Associates, Inc.</td>
<td>108</td>
</tr>
<tr>
<td>Large Format - Precision Flat Sapphire Windows. Custom shapes and rectangles also available.</td>
<td></td>
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<tr>
<td>Gurley Precision Instruments, Inc.</td>
<td>231</td>
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<tr>
<td>A37H Absolute Hollowshaft Encoder offers resolutions up to 23-bit SSI and accuracy to ±30 arcsec.</td>
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<td>Haas Laser Technologies, Inc.</td>
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<td>HelioWorks, Inc.</td>
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<td>HOLO/OR Ltd.</td>
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<td>Id Quantique SA</td>
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<tr>
<td>Hangzhou Techwin Precision Instrument Co., Ltd.</td>
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<tr>
<td>Techwin 1550nm pulsed fiber laser is a laser source delivering high peak power for LIDAR.</td>
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<tr>
<td>Han’s TianCheng Semiconductor Co., Ltd.</td>
<td>4664</td>
</tr>
<tr>
<td>The World 1st 808nm 400W Fiber Coupled Diode Laser for Hair Removal, 50 Million Shots Lifetime.</td>
<td></td>
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<tr>
<td>HC Photonics Corp.</td>
<td>1921</td>
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<tr>
<td>A compact, robust and fiber coupled frequency tripling module that delivers UV from a 1064nm laser.</td>
<td></td>
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<td>Heimann Sensor GmbH</td>
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<td>Infranovations: Heimann Sensor offers Ultra Small and Low Cost Thermopile Arrays for IR-Imaging.</td>
<td></td>
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<tr>
<td>Hindsight Imaging, Inc.</td>
<td>5568</td>
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<tr>
<td>Pulsable IR Source Model EF-8532R. Includes CaF2 window and Au plated reflector. Input Max 4.0 watt.</td>
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<tr>
<td>Hi-Tech Optoelectronics Co., Ltd.</td>
<td>4552</td>
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<tr>
<td>ChemVu™ and ChemVuR™: Hindsight’s handheld high speed reflectance and Raman hyperspectral imagers.</td>
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<td>HIWIN Corp.</td>
<td>5553</td>
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<tr>
<td>The HIWIN DIAMOND is a Nano-accuracy positioning stage with positioning and repeatability to ±50nm.</td>
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<tr>
<td>HYSpex</td>
<td>5466</td>
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<tr>
<td>HySpex Mjolnir S-620, the first SWIR scientific grade hyperspectral camera for UAVs 620px/300 bands.</td>
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<tr>
<td>Imaging Solutions Group</td>
<td>2616</td>
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<tr>
<td>An industry first USB3 Vision endoscope for easy control and optimization of image quality.</td>
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<td>IMOS Gubela GmbH</td>
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<td>IMOS has developed the first full cube curved microcubic reflex surface.</td>
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<td>InfraTec Infrared LLC</td>
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<td>KrellTech</td>
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<td>LRM-244</td>
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<td>850nm/1060nm/1300nm Swept Light Source</td>
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<td>ISP System</td>
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<td>JoinCast Ltd</td>
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<td>Instrument Technology Research Ctr.</td>
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<tr>
<td>ISS, Inc.</td>
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<td>instrumentTechnology</td>
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<td>KMLabs</td>
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<td>Kurt J. Lesker Company</td>
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<td>iXBlue</td>
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<td>Integrated Optics, UAB4459</td>
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<td>JENOPTIK</td>
<td>JENOPTIK Optical Systems, LLC</td>
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<td>JENOPTIK</td>
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<td>KETEK GmbH</td>
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<td>Kimmy Photonics</td>
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<td>Luftikement</td>
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<td>Intevac Thin Film</td>
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<td>Jiangxi Lianchuang Electronic Co., Ltd.</td>
<td>4366</td>
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<td>4365</td>
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**Product Descriptions:**

- **InfraTec Infrared LLC**: LRM-244: Four channel pyroelectric IR detector with a wide FOV and high signal for flame detection.
- **InPhenix, Inc.**: 850nm/1060nm/1300nm Swept Light Source; wavelength repetition rate 100KHz over 100nm.
- **Instrument Technology Research Ctr.**: ITRC provides customized services in optical design, coating, fabrication and integration.
- **Integrated Optics, UAB4459**: High-end 785 nm and 633 nm SLM lasers with integrated isolators. World’s most compact.
- **Intevac Thin Film**: Pleiades Cluster System is a customizable, multi-chamber array for complex processes under vacuum.
- **ISP System**: GP is ISP System.
- **iXBlue**: iXblue releases a double clad PM Neodymium fiber with negligible parasitic 1060 nm emission.
- **JENOPTIK | JENOPTIK Optical Systems, LLC**: Efficiency enhanced transmission gratings in quartz glass with nearly 100% diffraction efficiency.
- **KMLabs**: Hera is KMLabs’ newest sub-35 fs, integrated single-box amplifier. Stop by booth #1816 for details!
- **Keopsys Group**: New Pulsed Erbium Fiber Laser up to 15kW peak power with ultra compact design for 3D scanning.
- **KETEK GmbH**: KETEK introduces the WB Series product line with next generation chip and package design.
- **Kimmy Photonics**: NARORULER is a new nm 3D-imaging calibration standard, step height of 4 nm with molecular accuracy.

**Contact Information:**

- SPIE Photonics West 2018 • www.spie.org/PW • Tel: +1 360 676 3290
Laser Components GmbH .......... 1931

Next gen FLEXPOINT MV laser modules with new focus mechanism, cos4 correction and additional options.

Laser Components Pyro Group, Inc. .......... 1931

Pyroelectric Detectors with a Differential Amplifier Increases Signal-to-Noise Ratio Significantly.

Laser Components USA, Inc. .......... 1931

Triple bending laser mirrors designed for customized combinations of wavelengths.

Laser Quantum Inc ....... 731

venteon OPCPA, a leading parametric amplifier, now operates as few-cycle or wavelength tuneable.

Laserline Inc. .......... 1747

High Power Compact Diode Laser - 6 kW.

Lasertec, Inc. ......... 5529

Fiber laser protective windows made from UVFS (Corning 7980) available in Dia30x5, Dia35x5, and more.

laservision USA ....... 3067


LASOS Lasertechnik GmbH ............ 1315

The intensity stabilized LGS 7662 offers 0.6 mW output power.

LETI, CEA Grenoble ....... 431

Leti demonstrates a disruptive technology to curve image sensors or displays on Si readout circuits.

LEW Techniques Ltd .... 5137

Precision submounts and carriers for laser diodes, laser bars, laser stacks and photodiodes.

LIGENTEC SA ......... 4061

Low loss thick film silicon nitride photonic chip with integrated fast modulation heater module.

Light Conversion ....... 639

Carbide 40W - Next Generation Industrial Grade Femtosecond Laser.

LightComm Technology Co., Ltd. ....... 5347

High power laser deliver terminal with SKW power-handling capability.

LightMachinery Inc ........ 2245

Hornet Spectrometer - Ultra compact, low cost, very high resolution spectrometer. No moving parts.

LightTrans International UG (haftungsbesch.) ....... 4529

VirtualLab Fusion 2nd gen technology ‘Near-eye Display Package’ for modelling of NEDs and HUDs.

Lumencor, Inc. ....... 121

NEXT GEN SPECTRA III Light Engine.Brightest UV-nIR solidstate light with advanced electronic control.

Lumetrics, Inc. ....... 244

The CLAS-FX is a Shack-Hartmann wavefront sensor utilizing the CLAS-NX software suite.

Lumics GmbH ....... 1931; 4529

Small diode laser module featuring up to 110 W high power for NIR-based processing applications.

Lumina Power, Inc. ....... 4612

LDDHP Pulsed laser diode driver. Outputs to 8KW, 300amps, 150V. Pulse widths: 50µs to CW, 3Ø input.

Luminar ....... 1716

Luminar’s raw LiDAR data captured on Market Street in San Francisco.
**Photonics West Exhibition New Product Launches**

**Luvantix SSCP** 4604

Low refractive index coating for high power fiber laser & high temperature fiber sensor application.

**LuxFlux GmbH** 4529

LuxFlux.software takes Hyperspectral Imaging from the lab to industrial and embedded applications.

**M Squared Lasers Ltd.** 2019

SolsTiS DFM - CW, narrow linewidth, gapless tunable light across the IR region from 1.1µm to 4.5µm.

**Mahr Inc. – ESDI** 1407

High precision, low cost interferometer for measuring spherical and plano optics on the shop floor.

**Marina Photonics, Inc.** 3001

Two Channel Gigahertz Time Correlated Photon Counters with digital input for two photon imaging.

**Marktech Optoelectronics** 221

Marktech introduces its new broadband detector, ranging from 365nm-1700nm in a TO-5 package.

**Marubeni America Corp.** 4618

SWIR is HI power in various package w/tight binning control w/highest efficiency epi manufacturing.

**Marysol Technologies, Inc.** 2421

1610DC Series diffuse pump cavity for CTH:YAG improving efficiency and reducing thermal load.

**MaxEmil Photonics Corporation** 2431

Bluetooth wireless controlled automatic lens tester.

**Meadowlark Optics, Inc.** 1916

BROADBAND Ferroelectric Liquid Crystal Polarization Rotator (high speed over extended λ ranges).

**mechOnics ag** 4529

Ultra precise micropositioner DSP50 with position accuracy of 1 nm over a long travel range of 10 mm.

**MeshTel** 6003

High Efficient Laser Diode Source (400 - 1600nm, up to 200mW) with Versatile Fiber Coupling Assembly.

**MH GoPower Company Limited** 5268

PoF Platform: Built in two way communication between transmitter (laser source) and receiver module.

**Micro Laser Systems, Inc.** 316

FC100, A 100mm Fiber Collimator for Lidar, Free Space Communications, Chemical Sensing.

**MIKROP AG** 2342

Micro-Camera for OV6946 CMOS Sensor: smallest dimensions; customizable; brilliant performance.

**mirSense** 431

multiSense is the smallest QCL laser-based gas analyzer in the world with very high selectivity.

**ML Optic Corp.** 2047

MLOptic provide high-end customized objectives to help your system achieve a higher level of perform.

**MPA Crystal Corp.** 1835

Optics of Sapphire, Fused silica, optical glass; window, lens, rod, waveguide, Micro-Optics and more.
<table>
<thead>
<tr>
<th><strong>MRC Systems GmbH</strong></th>
<th>2443</th>
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<tbody>
<tr>
<td>MRC’s new laser beam stabilization system with multiple read-out and control functions via USB.</td>
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<thead>
<tr>
<th><strong>MRSI Systems</strong></th>
<th>4568</th>
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<tr>
<td>MRSI Systems - MRSI-HVM3 High Speed, Flexible, 3-Micron Die Bonder for High Volume Manufacturing.</td>
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<thead>
<tr>
<th><strong>MY Polymers Ltd.</strong></th>
<th>4206</th>
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<tbody>
<tr>
<td>LM Series Low Modulus Re-Coatings enable lower stress and Higher Reliability under thermal cycling.</td>
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<table>
<thead>
<tr>
<th><strong>Nalux Co., Ltd.</strong></th>
<th>2633</th>
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<tbody>
<tr>
<td>Miniature plastic lens module for endoscope (Dia.1.3mm x L 1.7mm, WD 3mm. FOV 120 deg)</td>
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<table>
<thead>
<tr>
<th><strong>Nanjing Chunhui Science &amp; Technology Industrial Co., Ltd.</strong></th>
<th>4653</th>
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<tbody>
<tr>
<td>Ring Light Guide. Mainly used as the auxiliary light in the microscope, CCD etc.</td>
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<thead>
<tr>
<th><strong>New Infrared Technologies</strong></th>
<th>4218</th>
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<tbody>
<tr>
<td>TACHYON 16k CAMERA: Uncooled MWIR 128x128 pixels camera, high-speed (2000 fps). GigE VISION, PoE.</td>
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<tr>
<th><strong>New Scale Technologies</strong></th>
<th>225</th>
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<tr>
<td>Battery-powered microstages move 200g loads for embedded motion in hand-held &amp; portable instruments.</td>
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<tr>
<th><strong>Navitar Inc.</strong></th>
<th>125</th>
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<tbody>
<tr>
<td>Navitar’s HDR wide angle lenses - Designed for complex environments with 12-16 MP 1” format cameras.</td>
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<tr>
<th><strong>New Source Technology, LLC</strong></th>
<th>4606</th>
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<tbody>
<tr>
<td>A single “plug and play” 200µm diameter fiber-coupled Holmium resonator lasing up to 0.5J at 30Hz.</td>
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<thead>
<tr>
<th><strong>NewPion Photonics Inc.</strong></th>
<th>4661</th>
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<tbody>
<tr>
<td>Laser Power Transmission Fiber. PTIS&amp;PTUS Silica Core/F Doped Silica Clad/ Silica Outerlayer Clad.</td>
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<tr>
<th><strong>NIL Technology ApS</strong></th>
<th>5651</th>
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<tr>
<td>Masters/molds/stamps for replication of slanted gratings.</td>
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<tr>
<th><strong>nLIGHT Corp.</strong></th>
<th>1241</th>
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<tbody>
<tr>
<td>The brightest fiber coupled diode lasers for pumping and material processing applications.</td>
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<tr>
<th><strong>NorPix Inc.</strong></th>
<th>4442</th>
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<tbody>
<tr>
<td>CUDA JPEG compression library using CUDA based GPU from real time jpeg compression.</td>
<td></td>
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<tr>
<th><strong>NOVAE</strong></th>
<th>5435</th>
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<tbody>
<tr>
<td>BrevityHP (<a href="http://www.novae-laser.com">www.novae-laser.com</a>) is a 2µm high energy ultrafast laser for scientific applications.</td>
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<tr>
<th><strong>nPoint, Inc.</strong></th>
<th>4960</th>
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<tr>
<td>nPCube - A 100µm 3-axis flexure-based piezo stage allows the fastest XYZ motion and 3nm resolution.</td>
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<tr>
<th><strong>NURBURO, Inc.</strong></th>
<th>4139</th>
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<tr>
<td>Blue dramatically improves or enables impossible process windows with IR laser enabling spatter-free.</td>
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<tr>
<th><strong>Nutfield Technology</strong></th>
<th>1447</th>
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<tr>
<td>BLINK! 50Gs, 100% duty-cycle removable lens focuser. Blazingly fast performance @ under 2.5 amps!</td>
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Onsite News: [www.spie.org/PWnews](http://www.spie.org/PWnews) • #SPIEPhotonicsWest
Photonics West Exhibition New Product Launches

Nüvü Camēras Inc. ... 4448
AO, Nüvü’s new EMCCD camera option for unique robustness, maintains the highest SNR at high speeds.

Nyfors Teknologi AB ... 4545
SMARTEPLICER™: A versatile, CO₂ laser based fiber processing station.

Ocean Optics, Inc. ... 723
The compact Ocean HDX spectrometer offers great resolution, high throughput and low stray light.

OEwaves, Inc. ... 3047
High Performance Laser RIN Measurement System Customizable to Common Wavelength Bands & up to 40GHz.

Ondax, Inc. ... 1348
Ondax’s new THz-Raman® accessory enables transmission Raman measurements on pills, tablets and vials.

Ophir, a division of MKS Instruments ... 507
Measure focus spot shift and M2 for high power lasers with our BeamWatch® beam monitoring system.

Optec S.p.A. ... 2131
New family of high resolution SWIR lenses FN 4.0 for industrial inspection.

Optilab LLC ... 5562
Introducing the PEBBLE: a comprehensive sensor with industry leading sensitivity (30pm/g) and range.

OptiPro Systems ... 233
PRO 160P+ CNC high speed spherical polisher with in-process tool truing spindle.

Optizone Technology (Shenzhen) Limited ... 5539
Collimators, Isolators, Circulators, WDM, Couplers, Combiners and so on around 1.5μm (O/S/C/L band).

Opto Diode Corp. ... 5228

Opto GmbH ... 4529
Our Imaging Module PROFILE innovatively combines telecentric optics in a compact design.

Optogama ... 2233
Motorised laser beam expanders, beam reducers, beam delivery systems and laser power attenuators.

Optometrics Corp. ... 5053
Diffraction Gratings large and small. As thin as 0.50mm. Leader in part-to-part consistency.

Optotune Switzerland AG ... 6027
Tunable lens with 3mm clear-aperture & up to 70dpt range offers fast, compact & repeatable focusing.

Optronics, Inc. ... 5045
Laser for your “Pocket” (Fiber Coupling LD module for your “Pocket”) Reasonable “Pocket” for R&D, OEM.

ORSA Corporation ... 5049
Single Mode Fiber type of Non-Coherent Orange (605-615nm) Fiber Laser.

OSI Optoelectronics ... 5569
Annular Silicon (Si) Quadrant Backscatter Detectors-Used for Backscatter Reflectivity Measurements.

Pangolin Laser Systems, Inc. ... 2446
Our TSOP6/4G-20V LASORB Semiconductor Device is ideal for integration into OEM products.
Parker Hannifin Corp.
Electromechanical & Drives Div. 4364
Monolithic XY, planar cable mgmt for customer pass through; For Laser Scribing/Scanning Applications.

Particle Measuring Systems, Inc. 1911
LiQuilaz II particle counter for H2O, cleaning baths and chemicals, offering improved comm options.

Pavilion Integration Corporation (PIC) 110
Lapis™ Optical Engine, OEM designed solutions, covering excitation sources, optics, and detectors.

PCO-TECH Inc. 1425
pco.panda joins the ranks as newest member of PCO’s state-of-the-art sCMOS sensor camera systems.

Perkins Precision Developments, LLC 1807
Beam Splitter Cubes Prism Assemblies with IBS Coatings using epoxy or adhesive free bonding.

PHASICS Corp. 4667
Phasics is innovating in optical metrology - Kaleo MultiWave optical bench at multiple wavelengths.

Photometrics 2531
Iris 15™, a New 15 Megapixel Scientific CMOS Camera for Large Field of View Imaging.

Photon etc. 4438
GRAND-EOS: a hyperspectral wide-field and microscopy imaging platform ranging from 400 nm to 1700 nm.

Photonfocus AG 5364
The new 3D05 camera is the fastest 3D Photonfocus camera for laser profile applications.

PHLUXi, Inc. 6009
Rethink the impossible and meet the game changer Philips ColorSpark HLD LED!

PHLUXi, Inc. 6009
New Photonis Cricket optically couples cameras to image intensifiers with focus and alignment.

PHONITONIS USA 5247
Rethink the impossible and meet the game changer Philips ColorSpark HLD LED!

Pi (Physik Instrumente) L.P. 4745
See PI’s nano-manufacturing / laser micromachining solutions: engineered precision motion systems.

PicoLAS 1931, 4529
Mini VCSEL driver for LiDAR applications featuring 4 ns pulse width with up to 130 A pulse currents.

PIEZOCONCEPT 5071
Compact 3-axis nanopositioner offering 100μm travel range and subnanometric resolution.

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<tr>
<th>Company Name</th>
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<td>Pixelink</td>
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<tr>
<td>Precision Optics Corp.</td>
<td>2213</td>
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<tr>
<td>Prizmatix Ltd.</td>
<td>2348</td>
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<tr>
<td>Quantum Composers</td>
<td>4607</td>
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<td>Plasma Process Group, Inc.</td>
<td>4341</td>
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<tr>
<td>Pure Photonics</td>
<td>4331</td>
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<tr>
<td>Quantum Light Instruments</td>
<td>1731</td>
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<tr>
<td>Polaris Motion</td>
<td>4237</td>
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<tr>
<td>Quantum Composers</td>
<td>4607</td>
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<tr>
<td>Polaris Glass &amp; Optics</td>
<td>4867</td>
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<td>Quantum Light Instruments</td>
<td>1731</td>
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<tr>
<td>Power Photonic Ltd.</td>
<td>5137</td>
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<tr>
<td>Raptor Photonics Ltd.</td>
<td>2308</td>
</tr>
<tr>
<td>Precision Glass &amp; Optics</td>
<td>4867</td>
</tr>
<tr>
<td>Prizmatix Ultra-High Brightness Modular LED Light Source. Collimated, Fiber Coupled, or LLG.</td>
<td>2348</td>
</tr>
<tr>
<td>Princeton Infrared Technologies, Inc.</td>
<td>2624</td>
</tr>
<tr>
<td>QD Laser, Inc.</td>
<td>4946</td>
</tr>
<tr>
<td>Prizmatix Ultra-High Brightness Modular LED Light Source. Collimated, Fiber Coupled, or LLG.</td>
<td>2348</td>
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<tr>
<td>Princeton Instruments</td>
<td>425</td>
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<tr>
<td>Q2 laser.</td>
<td>543</td>
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<tr>
<td>Prior Scientific Inc.</td>
<td>118</td>
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<tr>
<td>QPC Lasers/Laser Operations LLC</td>
<td>5467</td>
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<tr>
<td>Prior Scientific Inc.</td>
<td>118</td>
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<tr>
<td>Quantel Laser</td>
<td>417</td>
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<tr>
<td>Quarto USA, Inc.</td>
<td>543</td>
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<tr>
<td>Quantel Laser</td>
<td>47</td>
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<tr>
<td>Raptor Photonics Ltd.</td>
<td>2308</td>
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<tr>
<td>Q2 Laser.</td>
<td>543</td>
</tr>
<tr>
<td>Research Electro-Optics, Inc.</td>
<td>1406</td>
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</tbody>
</table>

**Pixelink**

Pixelink’s USB 3 CMOS high quality cameras provide versatility and outstanding real-time capability.

**Plasma Process Group, Inc.**

6cm x 30cm Linear RF Ion Source for Ion Beam Sputter Deposition, Ion Assist, and Ion Etch Processes.

**Polaris Motion**

Polaris SL2-100: Increase productivity and quality by coordinating your stage with ANY Galvoscanner.

**Power Photonic Ltd.**

FLASH Wavefront Sensor: Precision, high-power handling laser wavefront measuring instrument.

**Precision Glass & Optics.**

PG&O’s New Optical Monitoring System Enables Greater Accuracy in Optical Thin-Film Coatings.

**Prior Scientific Inc.**

Prior Scientific to demonstrate the new OpenStand - an innovative modular automated microscope stand.

**Research Electro-Optics, Inc.**

VarFi linear variable filters on sensor wafers for volume scalable spectrometry.
Resolved Instruments .2447
Stream low-noise optical signals to a PC with the DPD80 digital photodetector’s 14-bit, 80 MS/s ADC.

Reynard Corp . . . . . . . . 2341
Diamond Point Turning of Infrared and Exotic Materials.

Rocky Mountain Instrument Co . . . . . . . . 1007
Rocky Mountain Instrument Co now offers ZnSe raw material and finished optical components for all of your CO₂ and IR needs.

Sacher Lasertechnik GmbH . . . . . . . . 4622
Sacher Lasertechnik GmbH offers ZnSe raw material and finished optical components for all of your CO₂ and IR needs.

SAIS Co., Ltd . . . . . . . . 1521
SAIS Co., Ltd offers ZnSe raw material and finished optical components for all of your CO₂ and IR needs.

Santec U.S.A. Corporation . . . . . . . . 2617
World’s first UV-hardened LCOS Spatial Light Modulator. 10mW/cm² sustainable at 365nm.

Satisloh North America Inc . . . . . . . . 106
Satisloh’s SPM/SPS-200 have spherical, aspheric, and free form capabilities.

SCANLAB America, Inc . . . . . . . . 2025
New 2D scan systems intelliSCANse 20/30 with digital encoder technology for large processing volumes.

Schneider Optical Machines Inc . . . . . . . . 1253
Aspherical Lens Polisher ALP 120 and Advanced Polishing System 3D.

Schneider Optics, Inc . . . . . . . . 318
Topaz C-Mount 1.1” Format (17.6mm image circle) Lenses. Designed for use at long working distance.

SCHOTT North America, Inc . . . . . . . . 1207
Ceramic converter components for superior lumiance in laser phosphor wheels for digital projectors.

Scientech, Inc . . . . . . . . 2419
Patented laser power measurement – Radiation Pressure Power Meter measure power levels >1 kW.

Seiwa Optical America Inc . . . . . . . . 4425
Seiwa MS-200-TCD-33 with M Plan APO HR objectiveWide FOV video tube lens f=200mm 33mm image circle.

SemeaTech Co . . . . . . . . 4858
Long-life NH₃ sensor capacity reaches 50K PPM Hr, 10 times over the ones available in today’s market.

Semiconductor Laser Development Ltd . . . . . . . . 5661
SLD extends the NEXT fiber laser family with 2000, 3000 and 6000 Watts units for serious cutting!

SemiNex Corp . . . . . . . . 5270
High-power, single mode, fiber coupled TO9: 1300-1700nm, small form factor heatsink, 9/125um SMF.
Photonics West Exhibition New Product Launches

Senop Oy ............... 4365
Senop’s new frame hyperspectral camera with true image pixels and embedded Linux, for labs and UAVs.

Sensofar Metrology  .  4034
Sensofar presents two innovative measurement technologies, Continuous Confocal & Confocal Fusion.

Shanghai Bo Shi Photoelectric Technology Co., Ltd. .......... 2423
Fisheye lens, Automotive lens, Monitoring lens, Zoom Lens, Customized lens, Capsule caps, Endoscope lens.

Shanghai Institute of Optics and Fine Mechanics CAS .......... 4767
Co:Spinel for passive Q-switch laser emit from 1.2 to 1.6µm, for eye-safe 1.54µm Er:glass laser.

Shanghai Jiahuang - O Store Optics Co., Ltd .......... 4661
It is a 2 seconds Schmidt prism. Surface quality 40/20. Figure tolerance: N0.5; Irregularity: N 0.2.

Shanghai Jiujon Optics Co., Ltd. ..................... 4056
OEM SERVICE, Advance in flat optical glass parts, good at spherical lens.

Shenzhen Jiaguan - O Store Optics Co., Ltd .......... 4768
SGOptics can supply different high-precision prisms, including Right Angle Prisms, Roof Prisms.

Shenzhen JPT Opto-Electronics Co., Ltd. .... 1521
MOPA Fiber Laser.

Shenzhen Qiangfeng Optical & Electronic Technology Co., Ltd .......... 4337
OANDE 360 Panoramic VR Camera. Put the world in a nutshell!

Shenzhen Solar Valley SciTech Development Co., Ltd .......... 4507
PV of Surface shape accuracy up to 0.1–0.3µm. Surface Roughness up to 0.01µm.

Shimadzu Corporation 4945
100W Fiber-coupled Blue Direct Diode Laser for material processing and 3D printing application.

Sierra-Olympic Technologies, Inc. .... 5258

Sill Optics GmbH & Co. KG ............... 1146
Telecentric F-Theta lenses with large scan area at f = 125 mm.

Silios Technologies .......... 431
VIS-NIR Multispectral Filters & Cameras, Micro & Diffractive optics.

Si-Ware Systems .......... 4461
The NeoSpectra Micro Development Kit (Visit www.neospectra.com/shop-products to learn more).

SmarAct ............... 5138
SLS Series: Combine multiple positioners to build your high-resolution positioning system.

smartGAS Mikrosensorik GmbH ............... 4858
New analyzing NDIR sensors for process control, food industry, environment and SF6 detection.

SN&N Electronics, Inc. .... 2546
The eMRO is a single frequency, externally pumped, ultrastable solid-state laser at 1064 and 1319 nm.

Solid State Cooling Systems .......... 1953
Introducing TCube Edge - our newest family of thermoelectric chillers with capacities of 230–460W.
SoraaLaser ............. 1931
LaserLight Fiber: Highest Luminance and Intensity Concentration of any White Light Source.

Spark Lasers ............. 437
SPARK LASERS reinforces its DIADEM and ALTAIR industrial femtosecond lasers.

Special Optics ............. 125
Special Optics’ custom microscope objectives provide a solution for your most complex application.

Spectral Devices Inc .... 5063
Spectral Devices Inc offers a RGB-NIR USB3 Vision camera for multispectral imaging applications.

Spectrum Scientific, Inc ............. 1352
Our Hollow Retroreflectors are capable of <2 arcsec RBA and <0.7 Surface Accuracy.

SPI Lasers UK Ltd ... 3023
The new redENERGY G4 EP-M Fiber Laser extends the power range of our market leading Pulsed products.

SRICO Inc ............. 4957
High Speed TFLN™ on Quartz Electro-Optic Modulator.

Stable Laser Systems, Inc ............. 1914
Integrated 3 Hz Stabilized Laser System: <3 Hz linewidth in a compact, robust, and portable package.

StingRay Optics ............. 4563
GhostSight VisSWIR 0.45-1.7µm achromatically corrected 100mm F/1.6 HD InGaAs compatible lens.

Sumita Optical Glass, Inc ............. 4465
UV-300 is a sensor which can always monitor ultra violet rays with little deterioration.

Superlum ............. 5353
30 mW output, single mode 670 nm Superluminescent Diodes for speckle-free illumination and sensing.

Sutter Instrument Corp ............. 1311
Lambda OBC - an exciting patented concept for combining light sources into a single output beam.

Suzhou Xin Heng Hi-Tech Optoelectronics Technology Co., Ltd ............. 4064
Material: K9, surface quality: 60-40, Flatness: 1/4λ@633nm, Light deviation: 3’, wavelength: 400-700nm.

Taiyo Optics Ltd ............. 6017
Manufacturing prism and cylindrical lens since 1993 (Size range 0.3 - 500mm).

Tae Young Optics ............. 4035
Index Matched ITO Coating provides low reflectance used for EMI and Heater.

TDK-Lambda Americas Inc ............. 2420
NEW - from TDK-Lambda - PHV Family. Precise High Voltage to 300kV and 15kW. USB/LAN/IEEE interfaces.

Technica Optical Components, LLC ............. 4028
The T98 is a Single-Mode Fiber based Fiber Bragg Grating Sensor (FBG) for environments up to 1,000°C.

Teledyne e2v ............. 1836
Teledyne e2v has launched the OctoPlus range of line scan cameras for OCT applications.

Teledyne Judson Technologies ............. 2006
Room Temp MWIR InAsSb SLS (Strained Layer Superlattice) Detectors with excellent quantum efficiency.
Photonics West Exhibition New Product Launches

Tempo Clean Room Foam .......................... 6001
New small corner protectors allow you to make your own packages.

Termotek AG. ............ 4033
The P10080 is a 48VDC powered chiller providing 800W of cooling in only a 5 HU, 19" rack enclosure.

Thales Optronique S.A.S......... 1741; 4223
Thorlabs .............. 707; 807
Quantalux™ Monochrome and Color sCMOS Cameras offer low read noise (<1 e-) and high sensitivity.

THATSHIGH Photoelectric Technology Co., Ltd. .... 549
DKDP Q-Switch/Pockels Cell with Easier Adjustment and Longer Service Life.

The Australian National University ......... 4052
MIROPA-fs-M supports both three- and two-photon imaging in a single package.

Thermogym Ltd. ............ 5645
Stainless steel heat exchanger.

ThermoTek, Inc. .......... 5352
NEW T257P thermoelectric chiller with 210 watts cooling & 21.5 psi variable drive pump - 20% lighter.

Tower Optical Corp. ....... 1706
Large 4", zero order waveplates, air spaced, with a clear aperture of 96 mm mounted in a 4.5" ring.

Toyotec Co., Ltd. ........ 5655
HYBRID LENS-Leading High Precision Aspherical Lens in the Optical Industry.

Tuscan Photonics Co., Ltd. ........ 5535
Dhyana 400BSI, 94%QE sCMOS camera, 6.5µmx6.5µm pixel size and 1.2-inch chip, 2048x2048 resolution.

ultralumina GmbH ......... 4529
Optical converter containing a gas-filled Hollow-Core Photonic Crystal Fibre for our DUV SC source.

Uniklasers Ltd ......... 317
SOLO698 - Single-Frequency DPSS laser emitting at fundamental wavelength 698nm with power upto 300mW.

UniTemp GmbH .......... 4529
RSS-160-S. Mini Reflow Solder System.

Universal Photonics Inc. .... 1723
Somos TPM. Internally-cooled, temperature-controlled, double-sided polishing and lapping.

US Fiberoptec Technology, Inc. ........ 308
USFiberOptec® ensures the highest quality and best transmission for fiber optic bundles.

Vacuum Engineering & Materials, Inc. ........ 2210
VEM’s Shield Cleaning Services provide one-stop solutions providing fast turnaround and lower costs.
Valley Design Corp........ 1949

Ultra thin polished substrates: fused silica & silicon 10µm, glass 15µm, AlN 15-20µm, Alumina 20µm.

VIALUX GmbH ........... 642

New VIALUX V-9501 DLP® module with extra slim DMD board design enabling gapless DMD arrays.

Vieworks Co., Ltd....... 2513

2k x 80stages Color TDI line scan camera with up to 160kHz via CoaXPress, producing true color image.

Vincent Associates ...... 218

The Uniblitz A125 is a motorized iris diaphragm (auto iris) with an operational range of 1.5 – 25.0 mm.

Vision Research - A Unit of AMETEK.......... 1321

Phantom VEO4K® high-speed cameras are compact, rugged and packed full of features.

VLC Photonics .......... 5266

Photonic Foudries and Packagers Industry Reports.

VM-TIM GmbH.......... 4240

LINZA 150—The first spectrophotometer to measure transmittance and reflectance on lenses.

Voltage Multipliers, Inc.4515

15kV diode in the smallest footprint possible. SMF150 is great for automatic insertion.

Wasatch Photonics, Inc. ............ 3003

NIR spectrometer series: 10x more sensitive, thermally stable, highly linear absorbance, 900-2200 nm.

Wavelength Opto-Electronic (S) Pte. Ltd... 111

Hole inspection lens used for checking defects, foreign particles, features, etc. in various parts.

Westboro Photonics .. 4444

WP6 Series with EF control is the world’s most accurate high resolution Imaging Colorimeter.

World Star Tech....... 5429

RGB Laser Diode Assemblies with FC/ PC/ SMA connector and a variety of options.

Xact Wire EDM Corp. 4037

Xact Wire EDM Corp. provides wire EDM services to the Optics & Photonics industries. ISO 9001:2008.

Xenics ..................... 1931

Xlin-FC InGaAs line arrays: advances in low-noise and high-speed performance up to 400 kHz.

Xenics NV ................. 2235

Xlin-FC InGaAs linear arrays: advances in low-noise and high-speed performance.

XIMEA Corp............. 4570

New 50 Mpixel PCI express camera now shipping!

Xinxiang Baihe O.E Co., Ltd...... 4661

UV-LED Collimated Light Source. Exposure size: 8” Central wavelength: 365nm, 385nm, 395nm, 405nm.

XUV Lasers .............. 2622

Bringing the Power of bright coherent extreme ultraviolet to your lab.
Y&M Technologies, Inc. 2605

Our new RTP Pockel cell repetition frequency 500kHz, low half wave voltage, no piezoelectric effect.

Yangtze Optical Fibre and Cable Joint Stock Limited Company . . . . . . . . . . . . . . 3083

YOFC offers various specialty fibre and cable products and related solutions for various industries.

Yunnan North OLiGHTEK Opto-Electronic Technology Co., Ltd. . . . . . . . 1507-G

0.41° 800 x 480 WVGA AMOLED microdisplay in Full color, Monochrome White & Monochrome green.

Z & Z Optoelectronics Tech. Co., Ltd. . . . . . . . . 2110

AR, HR, DLC & splitter coating in 2-14μm and High precision Reticle are new available.

Zhongshan Meisu Technology Co., Ltd. . . . . . . . . 6015

Custom Fiber Array: 1D FA from 1 to 192, 2D mxn FA (2<m,n<32), types: PM/SM/MM/Customer provided.

Zolix Instruments Co., Ltd. . . . . . . . . . . . . . . 6031

Tunable Light Source with Uniform Light Output.

Zurich Instruments AG . 1930

HDAWG Arbitrary Waveform Generator: 2.4 GSa/s, 16 bit, up to 8 channels, shortest trigger latency.
SPIE BOOKSTORE
Make your visit complete

- Books
- T-shirts
- Ties and Scarves
- Posters
- Souvenirs
- Educational Toys
# Photonics West Exhibition Product Demonstrations

Learn new possibilities at these sessions, which are free to all attendees. Exhibiting companies will be showcasing products in half-hour demonstrations.

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<th>TIME</th>
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| 11:00 am | How to Address Four Common End-User Requirements in Spectroscopy  
Dr. Thomas Rasmussen  
Ibsen Photonics  
Dr. Thomas Rasmussen will share guidelines for how to address requirements for various applications during the design of spectroscopic instruments - from speed, size and endurance to usability. | Crystalline Optics (UV – FIR): Made to Measure  
Mark Middleton  
Crystran Ltd.  
As a leading manufacturer of precision crystalline optics across the complete spectrum, Crystran highlights its production methods and know-how used to make and measure custom components on demand. | Start Up Challenge Pitches  
SPIE  
Hear new business ideas from early-stage companies. |
| 12:00 pm | MY Polymers LM products: Low Modulus Re-Coatings improve reliability under Thermal Cycling  
Ron Zohar  
MY Polymers Ltd.  
Combining high flexibility and very high bond strength, the High Reliability LM products, were designed for Re-Coating Pump Combiners, Cladding Light Strippers, FBGs, splice points, etc. | All-Dielectric Filter Solutions for Multi- and Hyperspectral Imaging  
Stefan Gliech  
Optics Balzers  
| 1:00 pm | AFL's new LZM-110A+ LAZERMaster™ Laser Splicer Featuring Ablation.  
Brad Hendrix  
AFL  
AFL’s new LZM-110A+ LAZERMaster™ is an optical fiber processor/splicer that features fiber ablation. This machine can splice on endcaps and create ablated cladding mode stripping in one process. | Optotune’s New 2D Mirror Benefits Vision, Medical and Automotive Applications  
David Leuenberger  
Optotune Switzerland AG  
Optotune’s dual axis mirror MR-15-30 suits applications that require large deflections in combination with a compact form factor. The non-resonant mirror includes an accurate position feedback system. | The EDK - An Educational Digital-Electro-Optics Kit for Training Photonics Engineers  
Mike Stover  
Jasper Display Corporation  
JDC will demonstrate how the EDK will enable training and exploration of Photonic Technologies using an FPLA (Field Programmable Lens Array) and Open Source Software, enabling users’ experiments. |
| 2:00 pm | RARe Motheye Fiber  
Devinder Saini  
Fiberguide Industries, Inc.  
The presentation would include an overview of the new RARe Motheye Fiber. It would go over the technical specifications, features, and benefits this would add to numerous industries. | High Spatial Resolution Hyperspectral Camera Based on a Continuously Variable Filter  
Oliver Pust  
Delta Optical Thin Film A/S  
The principle of this new approach to HSI will be presented, along with characterization of the camera, real-world measurements, comparison with reference data, simultaneous 3D, and snapshot version. | |
| 3:00 pm | Photonic designer access to narrow line-width laser modules  
Dr. Douwe Geuzebroek  
LioniX International  
We show and demonstrate, how through Process Design Kit (PDK) access, hybrid Photonic Integrated Circuits (PICs) can be accessed creating a tunable ultra narrow line width laser module. | i-Raman EX  
Daniel Rau  
B&W Tek  
The improved i-Raman EX 1064 Raman has higher resolution and throughput than the previous generation. | |
| 4:00 pm | Are All Newest CMOS Sensors Equal?  
What is the Technology Behind Sony IMX Sensors?  
Sean Pologruto  
Basler Inc.  
What are the differences and commonalities between the latest large CMOS image sensors from Sony and which one is the right one for your application? | | |
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<td></td>
<td>This demonstration would be an overview of the Fiber Bragg Gratings product line and how they work to measure temperature, strain, stress, and other factors within numerous applications.</td>
<td>SCHOTT proudly presents a new product family of structured glasses in thickness range 70 μm-4mm. It features an outstanding structure precision on SCHOTT thin glass materials.</td>
<td>An overview of beam shaping diffractive optical elements designed and produced by HOLO/OR for a variety of industries and applications.</td>
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<td>11:30 am</td>
<td>Fiber Bragg Gratings Devinder Saini or Ron Mehl Fiberguide Industries, Inc.</td>
<td>How to Make Great Products Smaller— Embedded Motion with Micro Smart Modules David Henderson New Scale Technologies, Inc.</td>
<td>SCHOTT Optical Glass and IR Materials for SWIR Applications Dr. Ralf Jedamzik SCHOTT North America, Inc.</td>
</tr>
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<td></td>
<td>This demonstration would be an overview of the Fiber Bragg Gratings product line and how they work to measure temperature, strain, stress, and other factors within numerous applications.</td>
<td>Learn how to easily embed precision micro motion into your handheld and portable instruments. We demo smart stages with built-in controllers, show integration via I2C or SPI, and present case studies.</td>
<td>SWIR applications require materials that are transmittant in the visible and the SWIR range, sometimes even up to 4 μm. SCHOTT will provide an overview of its optical materials for SWIR applications.</td>
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<tr>
<td>12:30 pm</td>
<td>Seeing Is Believing – An Illumination and Optical Story David Hargis IDEX Health &amp; Science LLC</td>
<td>Flatness Control, Plano Surface “Cold Blocking” Technique Troy Alley Universal Photonics Inc.</td>
<td>The os7500 Accelerometer Todd Haber Micron Optics, Inc.</td>
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<td>This session will provide an overview of integration of advanced illumination and imaging technologies in critical applications in Diagnostics, Biotechnology, and Laboratory markets.</td>
<td>Cold Blocking maintains parallel, critical surface tolerances; group similar substrates &amp; block on same plane, scratch free, using semi-hard, hi-tack, C.T.E. adhesive &amp; monofilament blocking fabric.</td>
<td>The os7500 is a fiber optic accelerometer based on patent pending Fabry-Perot (FP) technology, offering a wide dynamic range, high sensitivity and unmatched multiplexing capabilities plus EMI immunity.</td>
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<tr>
<td>1:30 pm</td>
<td>Advanced Thermal Management Solutions for High Power Laser Applications Peter Ritt Advanced Cooling Technologies, Inc.</td>
<td>Pulsed Green Laser for Glass Drilling Shibin Jiang AdValue Photonics, Inc.</td>
<td>The os7500 is a fiber optic accelerometer based on patent pending Fabry-Perot (FP) technology, offering a wide dynamic range, high sensitivity and unmatched multiplexing capabilities plus EMI immunity.</td>
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<td>Thermal management technologies help deliver high performance solutions in high powered devices. Join us to learn about active pumped, passive heat pipe and thermal storage solutions from ACT.</td>
<td>The industrial green laser has a pulse energy &gt;100 μJ, pulse width &lt;5ns, and beam quality M2&lt;1.2. It is a capable tool for high precision materials processing including glasses, crystals &amp; ceramics.</td>
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<td>2:30 pm</td>
<td>SCHOTT Optical Glass and Beyond... Dr. Uwe Petzold SCHOTT North America, Inc.</td>
<td>Optical Filters on Thin-Glass Substrate Enable Miniaturized Optical Systems in Life Sciences Chris Fridd IDEX Health &amp; Science LLC</td>
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<td>With the release of the new pocket catalog 2018, SCHOTT gives an overview on the existing status of its optical glass and material portfolio including an outlook on recent and upcoming developments.</td>
<td>Optical filters are critical in the development of miniaturized optical systems. Semrock’s spectrally complex coating on thin-glass substrates enables instrument manufacturers to push the boundaries.</td>
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<td>3:30 pm</td>
<td>Low Cost High Power Picosecond Fiber Laser Shibin Jiang AdValue Photonics, Inc.</td>
<td>Seeing Is Believing – An Illumination and Optical Story David Hargis IDEX Health &amp; Science LLC</td>
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<td>The OEM industrial 1µm ps fiber laser provides up to 100W average power. It is a capable production tool for various high precision and high throughput material micro processing applications 24/7.</td>
<td>This session will provide an overview on integration of advanced illumination and imaging technologies in critical applications in Diagnostics, Biotechnology, and Laboratory markets.</td>
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<td>4:30 pm</td>
<td>Mini-Diff V2 – 3D Hemispheric Scatterometer Yan Cornil Light Tec</td>
<td>Next Generation Solid State Illumination for Biophotonics Iain Johnson Lumencor, Inc.</td>
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<td>Mini-Diff is a compact and portable optical system device for scattering characterization (BSDF) of materials and objects. It characterizes surfaces as roughness, defects, types of coatings and more</td>
<td>Our brightest new products SPECTRA III &amp; CELESTA light engines are presented. Each combines arrays of independently addressable sources - 500 or 1000 mW per color, to drive 21st century bioanalysis.</td>
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Plan to Attend FREE Exhibitor product demonstrations
Refer to page 108–109 for complete times, schedules, and locations

SPIE Industry Events
Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees.
Refer to pages 21–36.
**JOB FAIR**

**LAND THE PERFECT JOB.**

**VISIT THE JOB FAIR IN THE EXHIBITION HALL**

**FREE ADMISSION**

Tuesday & Wednesday 10 am to 5 pm

Talk with representatives from companies currently looking to hire. Refer to page 36 for more information.

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
THE MOSCON CENTER
NORTH HALL  BOOTHs 4000-6000+
See Booth Index pp. 114–125

EXHIBITION DAYS AND HOURS
Tuesday 30 January .......... 10:00 am to 5:00 pm
Wednesday 31 January .......... 10:00 am to 5:00 pm
Thursday 1 February .......... 10:00 am to 4:00 pm
LiDAR Demonstration

Monday to Thursday 29 January – 1 February
Location: North Exhibit Level, outside Hall D

LiDAR is the core component of optical sensing technology powering autonomous vehicles, and high-performance data is required for safe self-driving. Stop by to see Luminar’s breakthrough LiDAR perception capabilities enabling the autonomous future.

Industry Keynote Talk: Room 21 • 11:00 am Thursday
### SOUTH HALL

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- Electro Optics Magazine
- International OptoIndex
- Laser Focus World
- Novus Light Technologies Today
- optics.org
- Photonics & Imaging Technology
- Photonics Online
- Photonics Spectra, a Photonics Media Publication
- Physics Today
- Spectroscopy Magazine
- The Optronics Co., Ltd.
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**2b-special GmbH**
Sophienhöhe 1 B, Jena, 07749 Germany
+49 36424738140; fax +49 36424738149
post@2b-special.de; www.2b-special.de

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**3DOptix**
Har Gilboa 3, Kiryat Ono, 5502403 Israel
+972 522 554945
info@3doptix.com; www.3doptix.com

*Featured Product: 3DOptix BreadBox platform provides a new & accurate way for 3D mounting & aligning optical elements*
3DOptix™ is happy to introduce a revolutionary optical mounting platform - The BreadBox™. The new platform provides an accurate way for 3D mounting and aligning optical elements, dramatically reduces alignment setup time as well as saves real-estate across the optical table. With discrete locations, its compatibility to all conventional optical elements, and its precise synchronization to the optical table, The 3DOptix™ BreadBox™ platform allows to focus on experiments, and not on alignments. Contact: Gil Noy, CEO, gilnoy@3doptix.com

**3SAE Technologies, Inc.**
318 Seaboard Ln Ste 212, Franklin, TN, 37067-8289 USA
+1 615 778 8812; fax +1 615 778 8816
info@3sae.com; www.3sae.com

*Featured Product: Combiner Manufacturing System – for production level repeatability of fused optical components*
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Access Laser Co. #1938

917 134th St SW Unit A-1, Everett, WA, 98204-9377 USA
+1 425 582 8674
sales@accesslaser.com; www.accesslaser.com

Featured Product: RF excited CO₂ & CO lasers with wavelengths from 9–12µm and 5–6µm and power 400mW to 50W CW

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AA SA #437

18 rue Nicolas Appert, Orsay Cedex, 91898 France
+33 1 7691 5012; fax +33 1 7691 5031
sales@aa-sa.fr; www.aaoptechnique.com

Featured Product: Acousto-Optic Components and Associated Radio Frequency Drivers

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Aavid Thermacore #1952

780 Eden Rd, Lancaster, PA, 17601-4275 USA
+1 717 569-6651
info.thermacore@aavid.com; www.thermacore.com

Featured Product: Thermal Ground Planes for Direct Die Attach to Heat Spreaders

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AccuCoat Inc. #234

111 Humboldt St Ste B, Rochester, NY, 14609 USA
+1 585 288 2330; fax +1 585 288 2331
coatings@accucoatinc.com; www.accucoatinc.com

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Contact: Alan Parsons, Sales Engineer, alan@accucoatinc.com

Accumold #2241

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micromolding@accumold.com; www.accu-mold.com

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Abris Technologies #1842

200 S. Hallock Dr, Santa Paula, CA, 93060-9646 USA
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info@abrisatechnologies.com; abrisatechnologies.com

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Photonics West Exhibitor Listing

Actkar Ltd. #2334
Topaz 19, PO Box 8643, Kiryat Gat, 8213513 Israel +972 8 681 4213; fax +972 8 681 0198 info@acktar.com; www.acktar.com

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Acqiris SA #5167
12 chemin des Aulx, Plan-les-Ouates, Geneva, 1228 Switzerland +41 22 884 32 90 hello@acqiris.com; www.acqiris.com

**Active Fiber Systems GmbH** #4529
Technologie- und Innovationspark Jena, Wildenbruchstr 15, Jena, 07745 Germany +49 3641 6338902; fax +49 3641 6338904 contact@afs-jena.de; www.activefibersystems.com/

**Active Optical Systems, LLC** #2441
2021 Girard Blvd SE Ste 150, Albuquerque, NM, 87106 USA +1 505 207 4202 info@aos-llc.com; www.aos-llc.com

**Active Optics Night N Ltd.** #5653
Bldg 5, Sudostroitelnaya Str 18, Moscow, Adygea Resp., 115407 Russian Federation +7 499 4180042; fax +7 903 6642282 adopt@nightn.ru; www.activeoptics.ru

**Acton Optics & Coatings** #425
15 Discovery Way, Acton, MA, 01720-4482 USA +1 978 263 5884; fax +1 978 263 5086 info@actonoptics.com; www.actonoptics.com

**Featured Product:** Metachrome UV-conversion coatings for sensors

Acton Optics & Coatings of provides superior optical components and optical sub-assemblies for a diverse array of industries, including the medical, semiconductor, materials processing, analytical instrumentation, aerospace, and defense markets. Products include excimer and UV laser optics, VUV-UV optical filters, AlMg₂ coatings, Metachrome UV-conversion coatings for sensors as well as custom coatings and finished optics. Contact: Jim Diamond, Optics Unit Manager, jdiamond@actonoptics.com; Joanne Choi, Sales Engineer, jchoi@actonoptics.com

**Adapтив Lighting Ltd.** #4042
Unit 4 Blk B Charleville Business Park Bakers Road, Charleville, P56 YW90 Ireland +353 8775 14801 info@adaptivelighting.ie; www.adaptivelighting.ie

**ADIT Electron Tubes** #1739
300 Crane St, Sweetwater, TX, 79556-0870 USA +1 325 235 1418 sales@electrontubes.com; www.electrontubes.com

**Featured Product:** New compact photodetector module with over light protection function will be on display

ADIT Electron Tubes designs and manufactures photomultiplier tubes, housings, voltage dividers, signal processing modules and photodetector modules. Photomultipliers are available in diameters from 1/2” to 11”, some with our new high QE photocathodes. Tubes are available for use at cryogenic temperatures, high temperatures, with low background glass and qualified for space flight. Two manufacturing facilities, in west Texas and west London, help to ensure fast delivery and competitive pricing. Contact: Paul Davison, Sales Manager, paul@electrontubes.com; Thushari Gomes, Electronics Business Development Manager, thushari.gomes@et-enterprises.com

**AdiOptica Optical Systems GmbH** #3002
Rudower Chaussee 29, Berlin, 12489 Germany +49 305 6590 8880; fax +49 305 6590 8881 info@adioptica.com; www.adioptica.com

**Featured Product:** foXXus - multi-focus optics for multi-kW lasers

AdiOptica works in field of Laser Beam Shaping Optics transforming Gaussian to flattop beams and finding numerous industrial and scientific applications. Multi-year developments are realized in family of PiShaper systems. > 50 models: almost 100% efficiency, spectrum from UV to IR, power from mW to kW, CW or pulse lasers, achromatic design, variety of flattop spot sizes, low sensitivity to misalignment. AdiOptica is located in Adlershof, Berlin, Germany’s leading science and technology park. Contact: Alexander Laskin, Project Manager, alex@adioptica.com; Vadim Laskin, General Manager, vadamus@adioptica.com

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
AdValue Photonics, Inc.
3440 E Britania Dr Ste190, Tucson, AZ, 85706 USA
+1 520 790 5400; fax +1 520 790 5438
sales@advaluephotonics.com; www.advaluephotonics.com

**Featured Product:** Green Pulsed Laser for drilling / cutting glass and ceramics, 515 nm, 30 W, 5ns, 100 µJ at 300 kHz

AdValue Photonics is a leading manufacturer of innovative fiber lasers and amplifiers. The company’s product offerings range from 0.5 µm, 1.0 µm, 1.5 µm and 2.0 µm in wavelength, femtoseconds, picoseconds, and nanoseconds in pulse width, and single frequency to supercontinuum in spectral domain. With a reputation for delivering groundbreaking products, the company utilizes its unique capabilities in specialty glasses and fibers to optimize the performance and reliability of its fiber lasers.

Contact: Contact@advaluephotonics.com; Sales@advaluephotonics.com

AdTech Ceramics Co.
511 Manufacturers Rd, Chattanooga, TN, 37405-3203 USA
+1 423 755 5400; fax +1 423 755 5438
sales.department@adtechceramics.com; www.adtechceramics.com

**Featured Product:** High Temperature Co-fire Ceramic Electronic Packages from alumina and aluminum nitride (HTCC)

AdTech Ceramics offers a full line of multilayer co-fired ceramic packages for electronic applications. With a fully integrated manufacturing facility located in Chattanooga, TN and over 45 years’ experience producing high temperature co-fire ceramics (HTCC) for alumina and aluminum nitride, we are ideally positioned to take on the most challenging packaging designs. Additionally, our injection molding operation allows for the economical production of complex ceramic components. Contact: Douglas Brown, Director of Sales and Marketing, sales@adtechceramics.com; Kyle Adams, Sales Engineer, sales@adtechceramics.com

AdTech Optics, Inc.
18007 Cortney Ct, City of Industry, CA, 91748-1203 USA
+1 626 956 1000; fax +1 626 810 0259
sales@atoptics.com; www.atoptics.com

**Featured Product:** Quantum Cascade Laser

AdTech Optics designs, engineers, and manufactures mid-IR semiconductor lasers based on Quantum Cascade technology. Contact: Charles Luu, charles.luu@atoptics.com

Advance Reproductions Corp.
100 Flagship Dr, North Andover, MA, 01845-6117 USA
+1 978 685 2911; fax +1 978 685 1771
sales@advancerepro.com; www.advancerepro.com

**Featured Product:** Photomasks

Advance Reproductions Corporation is a leading supplier of superior, large-area and optical Photomasks and Phototools. Innovative by nature we strive tirelessly to collaborate with our customers on their complex requirements. Our seasoned staff of experts and our creative approach to each and every request is what sets us apart. Working with unique requirements and complex patterning requests as well as offering prototypes and high volume patterning we welcome the challenge. www.advancerepro.com Contact: Don Robinson, Director of Sales, d.robinson@advancerepro.com

Advanced Abrasives Corp.
7980 National Hwy, Pennsauken, NJ, 08110 USA
+1 856 665 9300; fax +1 856 488 1815
www.advancedabrasives.com

**Featured Product:** Abrasive and Superabrasive Product

Advanced Abrasives Corp. is an independently owned and operated micronizer of abrasive and superabrasive products. We manufacture and distribute worldwide a complete line of synthetic monocristalline diamond, polycrystalline diamond, natural diamond and cubic boron nitride products. These products consist of powders, slurries, suspensions, and compounds, complimented by lubricants, thinners and extenders. Contact: Andy Seligman, Vice President/Sales, aseligman@advancedabrasives.com

Advanced Cooling Technologies, Inc.
1046 New Holland Ave, Lancaster, PA, 17601-5688 USA
+1 717 295 6061; fax +1 717 295 6064
info@1-act.com; www.1-act.com

**Featured Product:** Photomasks

Advanced Reproductions Corp. is an independently owned and operated micronizer of abrasive and superabrasive products. We manufacture and distribute worldwide a complete line of synthetic monocristalline diamond, polycrystalline diamond, natural diamond and cubic boron nitride products. These products consist of powders, slurries, suspensions, and compounds, complimented by lubricants, thinners and extenders. Contact: Andy Seligman, Vice President/Sales, aseligman@advancedabrasives.com

Advanced Fiber Resources (Zhuhai) Ltd.
2/F, B-5 Southern Software Park Tangjia, Zhuhai, Guangdong, 519080 China
+86 756 3802175; fax +86 756 389 8088
sales@fiber-resources.com; www.fiber-resources.com

**Featured Product:** SteadiBeam™ Isolator

AFR is a leading manufacturer of passive optical components, designed mainly for telecommunication, fiber laser, fiber sensing and biomedical applications. With strong customized capability, AFR specialized in high power handing fiber optic components and polarization maintaining components, such as isolator up to 500 W, pump combiner up to 6000 W, mode field adaptor, circulator, pump protector, PM coupler/WDM, fused WDM, photodiode, etc., which covers a wavelength range of 400 nm-2000 nm. Contact: Grace Pan, VP of Business, gracepan@fiber-resources.com; Juliet Liu, Marketing Manager, lyeliiu@fiber-resources.com
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Advanced Microoptic Systems GmbH  #4334
SPIE Corporate Member
Lebacher Str 6a, Saarbrücken, 66113 Germany
+49 681 40000 30; fax +49 681 40000 32
office@amus.de; www.amus.de

Featured Product: Refractive microoptic components: lenslet arrays, microlenses and MLA based optical systems
Design, development and fabrication of the highly precise refractive microoptic components like microlens arrays, microlenses and microlens array based optical systems. Hexagonal, rectagonal, orthogonal, cylindrical microlenses, convex and concave, spherical and aspherical surfaces with pitches within 10µm-4000µm. 1D- and 2D-microlens arrays, single and double-side. Lithographical accuracy. Fused silica, BK7, high refractive glass and polymer materials.
Contact: Vladimir Leleko, Sales Manager, leleko@amus.de

Advanced Power Group Corp.  #5536
SPIE Corporate Member
2005 Orange St Ste D, Alhambra, CA, 91803-1553 USA
+1 626 458 0927; fax +1 626 289 1048
apincendo@gmail.com; www.apgcondoscopy.com

Advanced UV for Life  #4529
Gustav-Kirchhoff-Str 4, Berlin, 12489 Germany
+49 30 6392 3397; fax +49 30 6392 3392
info@advanced-uv.de; www.advanced-uv.de

Advanced UV for Life is a consortium of academic institutions and industrial companies working together in the development and application of UV LEDs within the framework of the Twenty20 initiative funded by the German Federal Ministry of Education and Research. Its activities cover the whole value chain: from material to UV LEDs, UV photodetectors and modules to final applications in the fields of medicine, environment & life sciences, disinfection and production.

AdvR, Inc.  #3007
SPIE Corporate Member
2310 University Way Bldg 1-1, Bozeman, MT, 59715-6504 USA
+1 406 522 0388; fax +1 406 522 0387
info@advr-inc.com; www.advr-inc.com

Featured Product: High power fiber coupled phase modulators. Frequency conversion KTP, MgLN, and LN waveguide modules
AdvR specializes in engineered nonlinear optical devices periodically poled waveguide and bulk materials. AdvR offers PPKTP, PPMgLN, and PPLN for custom interactions (SHG, SFG, DFG, and Type I/II SPDC) in fiber coupled and free space modules. AdvR offers lines of broadband fiber coupled phase modulators for high power visible to NIR operation and low loss in the IR. Developments include short period poled, entangled photon sources, and stabilized sources. Custom developments available. Contact: Bob Tamosaitis, Owner, bob@4adinc.com; David Walsh, Marketing Manager, dwalsh@advr-inc.com

Aehr Test Systems  #30
400 Kato Ter, Fremont, CA, 94539 USA
+1 510 623 9400; fax +1 510 623 9450
info@aehr.com; www.aehr.com

Headquartered in Fremont, California, Aehr Test Systems is a worldwide provider of test systems with an installed base of more than 2,500 systems for burn-in and test of integrated circuits and optoelectronics devices. It’s an industry leader in wafer level product aging, stabilization and test of VCSELs, Laser Diodes, LEDs, and Proximity Sensors which are becoming increasingly important in the Automotive, Mobility, Infotainment, and Communications markets movement to MEMS and WSI packaging.

AEMtec GmbH  #4529
SPIE Corporate Member
James-Franck-Str 10, Berlin, 12489 Germany
+49 30 6392 7300; fax +49 30 6392 7302
info@aemtec.com; www.aemtec.com/

Featured Product: Next level of advanced optoelectronics for comprehensive development and production services
AEMtec develops, qualifies and manufactures advanced technology optoelectronic assemblies in compliance with high quality, security and sustainability standards. Our customer-specific products are complex electronic assemblies with precise component placement requirements. AEMtec offers a unique spectrum of technologies: Wafer Back-End Services (UBM, SBA, Dicing), high speed / high accuracy Die- and Flip Chip Bonding, Au and Al Wire Bonding, SMT and assembly of Optical Components. Contact: Matthias Lorenz, Head of Business Development US & Nordics, matthias.lorenz@aemtec.com; Jim Ohneck, Representative North America, Jim. Ohneck@exceutusa.com

Aerotech, Inc.  #946
SPIE Corporate Member
101 Zeta Dr, Pittsburgh, PA, 15238-2811 USA
+1 412 963 7470; fax +1 412 963 7459
sales@aerotech.com; www.aerotech.com

Aerotech manufactures automated alignment, positioning, and motion control systems and components for 24/7 manufacturing. Products include optical mounts and gimbals, single- and multi-axis piezo and direct-drive nanopositioners, hexapods, linear-motor gantries, goniometers, galvanometers, air-bearing and mechanical-bearing linear and rotary and lift stages, a full line of single- and multi-axis motion controllers, PWM and linear drives, linear and rotary brushless motors, and custom systems.

AET Technologies  #4210
Inovallée, 8 chemin de malacher, Meylan, 38240 France
+33 4 76 90 41 18; fax +33 4 76 90 74 27
aet@aet-technologies.fr; www.aet-technologies.fr

Feated Product: Innovative wet thermal oxidation system for VCSEL and other photonics devices manufacturing
AET Technologies is a French company manufacturing high temperature industrial furnaces. Today AET is presenting its ALOX system, a totally innovative thermal equipment designed to generate and accurately monitor in real time the wet thermal oxidation of III-V semiconductors resulting of the combination of a high temperature (between 350°C and 600°C) and a wet gas flow on wafers from 100 mm up to 150 mm (4 to 6”). This tool can be designed to work in production or R&D environment. Contact: Jean-Yves Poriel, CEO, commercial@aet-technologies.fr

AFL  #2125
SPIE Corporate Member
170 Ridgeview Center Dr, Duncan, SC, 29334-9635 USA
+1 864 433 0333; fax +1 864 433 5363
sales@aflglobal.com; www.aflglobal.com

Featured Product: AFL's new LZN-110A+ LAZERMaster™ is an optical fiber processor/splicer that features fiber ablation
AFL is an international manufacturer of fiber optic technology, developing and delivering product and services solutions for active and passive optical applications. AFL understands the intricacies of specialty fibers, optical cables and lasers as well as fusion splicers and test equipment. We provide solutions for the technologically advanced OEM, biomedical, defense, oil & gas and research markets. At AFL, we connect. Stop by our booth to see demos our newest laser splicer, the LZN-110A+. Contact: Michael Hetrick, National Sales Manager, Michael.Hetrick@aflglobal.com; Doug Duke, Senior Applications Engineer, Doug.Duke@aflglobal.com
AKELA Laser Corp. #2408
SPIE Corporate Member
1095 Cranbury South River Rd Ste 14, Jamesburg, NJ, 08831 USA
+1 732 305 7105; fax +1 732 305 7057
info@akelalaser.com; akelalaser.com

Featured Product: High power laser diodes and multi-wavelengths laser modules
AKELA Laser Corporation designs and manufactures high-power laser diodes for the most demanding medical, industrial and scientific applications. We make a broad range of free-space and fiber-coupled packages, laser drivers and temperature controllers, as well as turn-key systems. We offer the widest in the industry spectrum of wavelength from 375nm to 12 microns in single-mode and multi-mode configuration. Contact: Igor Trofimov, CTO, igor.trofimov@akelalaser.com; Mikhail Maiorov, CEO, mike.maiorov@akelalaser.com

Akribis System Incorporated #5037
780 Montague Expwy Ste 508, San Jose, CA, 95131-1319 USA
+1 408 913 1300
cust-service@akribis-sys.com; www.akribis-sys.com

Featured Product: High precision motion control systems
Akribis Systems Inc. is a leading manufacturer of direct-drive precision positioning systems for laser processing, optics alignment, and small part pick and place. Akribis supplies direct drive linear motors, rotary motors, xyz stages, voice coil motors, and turnkey systems to support a wide range of industries including semiconductor, laser, flat panel, data storage, photonics, biomedical and electronics manufacturing. Some applications include laser marking, trimming, ablation, and welding. Contact: Thomas Barrett, Western Regional Sales, thomas.barrett@akribis-sys.com; Chin Foong Lai, Sales Manager, laicf@akribis-sys.com

Alazar Technologies, Inc. #135
SPIE Corporate Member
6600 Trans-Canada Hwy Ste 310, Pointe-Claire, QC, H9R 4S2 Canada
+1 514 426 4899; fax +1 514 426 2723
sales@alazar.com; www.alazar.com

Featured Product: ATS-GMA: 6.8 GB/s true DMA from AlazarTech PCIe waveform digitizers to AMD GPUs
AlazarTech manufactures high-performance PCIe waveform digitizer (DAQ) cards with data streaming rates up to 6.8 GB/s & on-FPGA signal processing. Applications include biomedical, fiber sensing, defense & general research. Our unique clocking technology that allows the use of k-clocks directly for A/D conversion has made us the de facto standard for data acquisition & signal processing in the OCT community. Come see our latest advancements in OCT signal acquisition & processing at Photonics West. Contact: Muneeb Khalid, President, sales@alazar.com; Sandy Luk, Marketing Associate, marketing@alazar.com

Alluxa #4569
SPIE Corporate Member
3660 N Laughlin Rd, Santa Rosa, CA, 95403 USA
+1 855 425 5892
info@alluxa.com; www.alluxa.com

Featured Product: ULTRA Series Thin Film Filters
Alluxa is an ISO 9001:2008 certified, ITAR registered, high performance optical filter and optical coating manufacturer located in Santa Rosa, CA. Alluxa produces its filters with a new class of custom optical thin-film coating equipment designed and built by our team. Our state-of-the-art automation, proprietary control algorithms, and our SIRRUS plasma deposition process allows the world’s most difficult filters to be created in a fraction of the time required by other hard-coating methods. Contact: Haley Mellinger, Marketing, haley.mellinger@alluxa.com

AllMotion, Inc. #4864
SPIE Corporate Member
30097 Ahern Ave, Union City, CA, 94587 USA
+1 510 471 4000; fax +1 510 400 8001
support@allmotion.com; www.allmotion.com

Featured Product: EZ4AXIS17XR
AllMotion manufactures Stepper Drives, Stepper Controllers, Servo Drives and Servo Controllers. These are the most compact Intelligent Stepper Motor Drives and Stepper Motor Controllers on the market today. Our Servo Motor Controllers and Brushless DC Motor Controllers feature quadrature encoder feedback and are also programmable to allow stand-alone operation. We can also provide custom solutions based on our EZStepper and EZServo motor driver technology. Contact: David Goodin, david@allmotion.com; Jessica Suto, Operations Manager, jessica@allmotion.com

ALIO Industries Corp. #1907
SPIE Corporate Member
5335 Xenon St, Arvada, CO, 80002-1348 USA
+1 303 339 7500
sales@alioindustries.com; www.alioindustries.com

Featured Product: ALIO’s NEW Mini Hybrid Hexapod®: Precision, Travel Range and Speed with Prices Starting at $29,900
ALIO manufactures True Nano® Precision Motion Systems for applications such as Fiber Alignment, 6D Laser Processing and Micro Assembly. Since 2001, ALIO has been the gold standard for precision in most of the world’s metrology tools. Please visit our booth or our world headquarters to learn more about our Hybrid Hexapods, Laser Gimbal, XY stages, Linear Gantry Systems, and unique 6D Point Precision® Metrology Capabilities. Contact: Walter Silvesky, VP Sales, walter.silvesky@alioindustries.com

ALPAO S.A.S. #5442
SPIE Corporate Member
345 rue Lavoisier, Montbonnot St Martin, 38330 France
+33 476 890 965
contact@alpao.com; www.alpao.com

Featured Product: Large stroke and high speed deformable mirror set in a full AO loop
ALPAO manufactures Adaptive Optics Components and Systems. It includes very rapidly deformable mirrors with large strokes, wavefront sensors, and complete adaptive optics loops. These products are specially designed for various applications such as vision science (ophthalmology), astronomy, microscopy, microelectronics, defense and laser applications. Our product’s unrivalled performance allows users to recover very high-resolution images. Contact: Bertrand Charlet, Sales Engineer, bertrand.charlet@alpao.fr; Vincent Hardy, Sales Manager, vincent.hardy@alpao.fr

Allied Vision Technologies Inc. #142; 5528
SPIE Corporate Member
38 Washington St, Newburyport, MA, 01950 USA
+1 978 225 2030; fax +1 978 225 2029
info@alliedvision.com; www.alliedvision.com

Featured Product: Allied Vision 1 Product Line; Bonito PRO
For over 25 years, Allied Vision has been helping people to see the bigger picture. Allied Vision supplies camera technology and image capture solutions for industrial inspection, science, medicine, traffic monitoring and many more application areas in digital imaging. With a deep understanding of customers’ needs, Allied Vision finds individual solutions for every application, a practice which has made Allied Vision one of the leading camera manufacturers worldwide in the machine vision market.
Photonics West Exhibitor Listing

**Amphos, Inc.** #4853
Kaiserstr 100, Herzogenrath, 52134 Germany
+49 143 562 4040; fax +1 413 562 6167
info@amphos-usa.com; www.amphos-usa.com

AMPHOS is the leading manufacturer of extreme high-average power ultrafast laser systems for scientific and industrial applications. AMPHOS systems deliver pulses from 500fs to the ns regime with an average output power up to 1000W and peak power of several 100MW. Continuously setting of pulse width and variation of repetition rate as well as diffraction limited beam quality are outstanding characteristics of AMPHOS laser systems. Contact: Alain Bourdon, US Sales, arbi@alliedlasersolutions.com

**Ampliconyx Oy** #4365
Lautakatonkatu 18, Tampere, Finland
+358 41 4774781
info@ampliconyx.com; ampliconyx.com

**Amplitude Systemes**
part of Amplitude Laser Group #713
Cité de la Photonique - Batiment Meropa, 11 ave de Cantaneranne, Pessac, 33600 France
+33 5 5646 4060; fax +33 5 5646 0694
info@amplitude-systemes.com; www.amplitude-systemes.com

**Featured Product: Ultrafast lasers for scientific, research and industrial applications**
Amplitude Laser Group is one of the world’s leading providers of ultrafast and high energy lasers. From petawatt peak powers to kilojoule pulse energies and high average power industrial lasers, Amplitude offers a wide range of systems for scientific and industrial applications. By combining high quality manufacturing and aggressive R&D, the industrial division of Amplitude provides innovative and reliable solutions for the most demanding industrial applications. Contact: Vincent Rouffignac, VP, Sales, vincent.rouffignac@amplitude-laser.com

**Amplitude Technologies**
part of Amplitude Laser Group #713
2-4 rue du Bois Chaland, Lisses, 91090 France
+33 169 11 27 90
info@amplitude-technologies.com; www.amplitude-technologies.com

**AMS AG** #5563
Schloss Premstatten, Tobelbaderstr 30, Unterpremstatten, 8141 Austria
+43 3136 5000; fax +43 3136 52501
info@ams.com; www.ams.com

**Featured Product: CMOS Image Sensors & Spectral Sensing Solutions**
ams sensor solutions take sensing to the next level by providing a seamless interface between humans and technology. We enable our customers to create highly differentiated products that are smarter, safer, easier to use and more eco-friendly. We develop high-performance solutions for the most challenging applications in sensors, sensor interfaces, power management and wireless. Contact: Dina Aguier, Marketing Manager, dina.aguier@ams.com; Dana Apostol, Marketing Engineer, dana.apostol@ams.com

**AMT Technologies, AG** #3007
Fraunhoferstr 22, Martinsried, 82152 Germany
+49 89 895 77199
info@amstechnologies.com; www.amstechnologies.com

**Andon Electronics Corporation** #5632
4 Court Dr, Lincoln, RI, 02865-4203 USA
+1 401 333 0388; fax +1 401 333 0287
info@andonelect.com; www.andonelect.com

**Featured Product: Andon’s patented Heat Sink Sockets™ combine the benefits of a socket with heat and noise reduction**
Andon Electronics makes precision sockets used in the production of cameras, lasers, and other photonics products. Leading users of image sensors and optoelectronic sensors solder Andon sockets – not the sensor – to the PCB, to avoid 1) sensor damage from exposure to high temp solder, ESD, and cleaning solutions, 2) cracked solder joints, 3) the labor and PCB damage associated with de-soldering a faulty sensor, 4) holding up production until the sensors arrive, and overheating of the sensor. Contact: Scott Tate, Vice President, state@andonelect.com; Julie Andrews, Customer Service Manager, jandreus@andonelect.com

**Amtron GmbH** #4529
Neustr 26, Würselen, 52146 Germany
+49 2405 47989 0; fax +49 2405 47989 20
info@amtron.net; www.amtron.net

**Featured Product: Ultra compact laser diode driver with 18kW output power and Performance Level e (PL e) certification**
Amtron GmbH develops and markets high-quality laser-diode power supplies, laser-diode turnkey systems and pyrometry solutions. Clients include laser manufacturers, system integrators and R&D specialists using Amtron systems in machining or medical technology around the globe. Apart from high-end products with integrated process control, simple applications are also provided by Amtron models which never-the-less feature all of the necessary functions for deployment in industry. Contact: Hans-Dieter Gehlen, Business Manager, sales@amtron.net

**Analog Modules, Inc.** #1707
126 Baywood Ave, Longwood, FL, 32750-3426 USA
+1 407 739 4355; fax +1 407 834 3806
ami@analogmodules.com; www.analogmodules.com

**Featured Product: Model 8221 <7ns Pulse Width Pockels Cell Driver**
Founded in 1979, Analog Modules, Inc. designs & manufactures a wide range of analog electronic products primarily for laser & electro-optics industries. AMI’s products serve in military, medical, scientific & industrial applications. Laser electronic products include laser diode drivers, pulsed flashlamp drivers, cap charging power supplies, simmer supplies, Pockels cell & CW arc lamp drivers. AMI also offers a line of sensors & amplifiers, including rangefinder receivers & laser spot trackers. Contact: Bruce Soileau, Marketing Manager, bsoileau@analogmodules.com; Tim Cable, Product Manager, tcable@analogmodules.com

**Andor Technology Ltd.** #741
300 Baker Ave Ste 150, Concord, MA, 01742-2124 USA
+1 860 290 9211; fax +1 860 290 9566
www.andor.com

Andor Technology is a global leader in the pioneering and manufacturing of high performance scientific imaging cameras, spectroscopy solutions and microscopy systems for research and OEM markets. Andor continues to innovate ground-breaking products that improve the world in which we live. Andor Technology is part of Oxford Instruments plc, a leading provider of high technology tools and systems for industry and research. Contact: Susan Cummings, Global Events Coordinator, s.cummings@andor.com
Japan Knows Photonics

Visit the Japan Pavilion in North Hall

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Andover Corporation #1641
4 Commercial Dr, Salem, NH, 03079-2800 USA
+1 603 893 6888; fax +1 603 893 6508
info@andcorp.com; www.andovercorp.com

Featured Product: First-surface UV filters
Andover Corporation manufactures a broad array of standard and custom optical components including bandpass, ND, edge filters, multi-band dichroic filters, and more. Wavelengths from 193nm to 14μm. Applications include airborne surveillance and targeting, spaceborne and ground-based astronomy, machine vision, biomedical analysis, photolithography, agricultural imaging, hyperspectral imaging, water and gas analysis, calibration, etc. AS9100B, and AS9104A certified, and ITAR registered. Contact: Michael Tiner, VP Business Development, mtiner@andovercorp.com; Rob Pursel, Sr. Optical Engineer, rpurssel@andovercorp.com

Andritz Powerlase Ltd. #317
Units 3 & 4 Meadowbrook Industrial Est, Maxwell Way, Crawley, West Sussex, RH10 9SA United Kingdom
+44 1293 456 222; fax +44 1293 456 235
enquiries@powerlase-photonics.com; www.powerlase-photonics.com/

Anson Optical Products Co., Ltd. #3057
Rm 708 7th Fl, 12 Kut Shing St, Chaivan, Hong Kong, China
+852 2757 0168; fax +852 2796 2568
info@ansonoptical.com.hk; www.ansonoptical.com.hk

Featured Product: Polymer aspheric optics, LED Optics, Mirrors and reflectors
Anson Optical Products Co Ltd., as one of the trusted name of optics and are specialized in plastic optical components from optics design, prototype making, tooling fabrication, and precision molding. Our experienced work team features states-of-art molding technology ad have capability for supplying custom-designed molded aspherical, cylindrical, fresnel surfaces components, modules and mirrors. Contact: Raymond Law, Marketing Manager, raymond@ansonoptical.com.hk

Aperture Optical Sciences Inc. #5441
170 Pond View Drive, Meriden, CT, 06450-7142 USA
+1 860 316 2588; fax +1 860 301 2589
info@apertureos.com; www.apertureos.com

Aperture Optical Sciences designs and manufactures: Athermal, Low Mass Satellite Telescopes with Clear Apertures from 85 mm to 500 mm; Aspheric Mirrors with Diameters to 800 mm; High Precision Off Axis Parabolas to 800 mm; Mirrors in Glass, SiC, Ceramics; Steering and Focusing Optics for High Energy Lasers; SiC Beam Steering Mirrors for Laser Machining. Contact: Alberto Bodden, Applications Engineer, abodden@apertureos.com

Apollo Optical Systems, Inc. #245
925 John St, West Henrietta, NY, 14586-9780 USA
+1 585 272 6170; fax +1 585 272 6177
info@apollooptical.com; www.apollooptical.com

Manufacturer of custom precision optical components specializing in Single Point Diamond Turning and injection molded polymer optics in prototype and production volumes. In-house capabilities include SPDT, extensive metrology, injection molding, coating, optical/ mechanical design and engineering. AOS specializes in design and manufacturing of diffractive and refractive optics. Contact: Daniel McGarry, President, McGarry@ApolloOptical.com; Claude Tribastone, President, MFG, Tribastone@ApolloOptical.com

Applied Image, Inc. #206
1653 E Main Street, Rochester, NY, 14609-7090 USA
+1 585 482 0300; fax +1 585 288 5989
info@appliedimage.com; www.appliedimage.com

Featured Product: Custom & "off-the-shelf" Calibration Standards, Test Targets, and Imaging Components
A recognized world leader dedicated to the manufacturing of innovative standard and custom designed imaged components. With over 40 years of experience Applied provides for a broad range of optical and photonics applications to a global array of industries requiring benchmark standards to test, calibrate, align, control, measure or monitor system's performance. Applied also offers Custom Spherical Lenses Mask Making and Sub-Assembly Services. Contact: Darren Dixon, Sales Manager, Ddixon@appliedimage.com; Brandon Morabito, Sales Associate, Bmorabito@appliedimage.com

Applied Laser Engineering Ltd #5145
Unit 7 Ember Ctr, Lyon Rd, Walton-On-Thames Surrey, KT12 3PU United Kingdom
+44 208 941 1101; fax +44 208 793 1348
hello@appliedlaser.co.uk; www.appliedlaser.co.uk

Featured Product: ALE introduces its new Harmony 500-watt laser combining both Nano-second and CW-operations
Applied Laser Engineering manufactures high resolution, direct laser engraving machinery utilizing multiple fibre laser (cw or pulsed) and/or CO2 laser beams. Machines range from 0.8m-7m roller length capability and up to 1m diameter. ALE’s expertise lies in large format, high resolution, in the round engraving, marking, texturing or surface treatment machinery. Typical applications include printing, embossing, micro machining, coating and security applications. Contact: Brendan Pollard, Managing Director, hello@appliedlaser.co.uk; Philip Limberger, Sales Director, ratty@appliedlaser.co.uk

Applied NanoTools Inc. #2544
NINT Bldg, 11421 Saskatchewan Dr NW, Edmonton, AB, T6G 2M9 Canada
+1 780 628 5830
info@appliednt.com; www.appliednt.com

Featured Product: NanoSOI Fabrication Service for Photonic Integrated Circuits
Applied Nanotools (ANT) specializes in offering photonics products/services for x-ray and infrared wavelengths. ANT’s fabrication service, NanoSOI, provides an avenue for the rapid prototyping of photonic integrated circuits on silicon-on-insulator chips. The process uses 100 keV electron-beam lithography technology to pattern silicon structures down to 60 nm with excellent repeatability and accuracy. We offer various process options, multi-project wafer runs, and custom fabrication by request. Contact: Cameron Horvath, Product Manager, info@appliednt.com; Mirwais Aktary, President/CEO, info@appliednt.com
Applied Optics Ctr., a Div. of Optex Systems, Inc. #4065
9827 Chartwell Dr, Dallas, TX, 75243 USA
+1 972 629 1701; fax +1 972 629 1702
info.aoc@optexsys.com; www.optexsys.com/aoc
Applied Optics Center, a division of Optex Systems, Inc., is a world-class provider of optical thin films and multi-element optical sub-assemblies with over 50 years of experience. Our coating facility, including multiple 2-meter coating chambers, allows us to produce high volume and large format custom optics at a competitive advantage. Our precision assembly capability allows us to provide turnkey solutions meeting any conceivable optical challenge, from the deep UV to the far IR wavelength. Contact: Bill Bates, General Manager, AOC, bbates@optexsys.com; Greg Rapp, Optical Coating Engineer, AOC, grapp@optexsys.com

Applied Physics & Electronics, Inc. #4336
45401 Research Ave Ste141, Fremont, CA, 94539-6120 USA
+1 888 690 3250
mail@ape-america.com; www.ape-america.com
APE is a manufacturer of ultrafast laser diagnostics and systems. Our portfolio includes, but is not limited to, ultrafast test/measurement instruments and wavelength tunable laser systems. APE products are used worldwide in research and industrial applications in markets such as medical imaging, semiconductor and bio-photonics. Contact: Lutz Keller, Sales Manager, sales@ape-america.com

Applied Surface Technologies #6007
15 Hawthorne Dr, New Providence, NJ, 07974 USA
+1 908 464 6675; fax +1 908 464 7475
co2clean@co2clean.com; www.co2clean.com
Featured Product: CO2 Snow Jet
We demonstrate precision cleaning using a CO2 Snow Jet, a quick and safe process. CO2 snow cleaning is a simple, process removing particles of all sizes, (visible to below 5 nanometers), organic residues, solvent stains, and water spots. CO2 Snow cleans substrates, optics, diamond turned optics, fiber-optics, wafers, mirrors, large telescopes mirrors, analytical samples (AFM & XPS), and many other items. We demonstrate manual, portable, and semi-automated units for R&D or manufacturing. Contact: Robert Sherman, roberts@co2clean.com

Applied Thin-Film Products #4146
3439 Edison Way, Fremont, CA, 94538-6179 USA
+1 510 661 4287; fax +1 510 661 4250
atp@thinfilm.com; www.thinfilm.com
ATP is a leading ISO 9001:2008 and AS9100 certified build-to-print thin film manufacturer with a wide range of Thermal Materials and Metalization schemes. Substrates are fabricated from Alumina, BN, BeO, Fused Silica, and other materials. Metalizations range from plated or sputtered Au-Cu-Ni-Pd-Pt. Features can include laser diode submounts, interconnect solutions, edge defined wraps, conductors, integrated resistors, hollow plated vias, solid filled vias(Au-Cu), and double-sided patterning. Contact: Franco Pietroforte, Vice President, franco@thinfilm.com; Kelly Copeland, Customer Service Manager, kcopeland@thinfilm.com

Äpre Instruments, LLC #5433
2440 Ruthrauff Rd Ste 100, Tucson, AZ, 85705 USA
+1 520 639 8195; fax +1 888 395 5536
sales@apre-inst.com; www.apre-inst.com
Featured Product: Plates/prisms measured without frustrating back reflection interference, yet easy to align: S100 SCI
APRE’s goal is to make optical manufacturing easier and less expensive. Supplying interferometers for surface and wavefront measurement, we give you more confident control over ever tightening specifications from components to system test. Upgrades, peak performance interferometers and unique innovations give you many choices from which to solve your unique requirements. Contact: Donald Pearson, VP Sales, dpearson@apre-inst.com; Robert Smythe, President, rsmythe@apre-inst.com

April Electro-Optics Co., Ltd. #4419
Rm 420 14th Bldg, No 43 Yunjin Rd, Nanjing, Jiangsu, 210017 China
+86 25 83602718; fax +86 25 83602518
market@njapril.com; www.njapril.com

Aquitaine Science Transfert #431
Centre Condorcet, 162 ave du Docteur Albert Schweitzer, Pessac, 33600 France
+33 5 5642 9485
contact@ast-innovations.com; www.ast-innovations.com/
Aquitaine Science Transfert is a French Technology Transfer Office dedicated to the IP and economic valuation of public research technologies. We are highly specialized and investing in projects in photonics, laser and optics. We license disruptive technologies or help create technological startups. Contact: Matthieu Ayfre, Business Developer, m.ayfre@ast-innovations.com; Christophe Dupuy, Marketing, c.dupuy@ast-innovations.com

Archer OpTx, Inc. #3009
1208 Sigma Ct, Rockwall, TX, 75087 USA
+1 972 722 1064
sales@archeroptx.com; www.archeroptx.com
Featured Product: Design services, ultra-high precision molded glass aspheres, rapid prototyping, metrology services
Maximize your potential with ultra-high optical precision that will produce optimal outcome. Archer OpTx offers the optics industry what could be its most exceptional resource yet: comprehensive solutions to meet your needs by providing engineering design services, ultra-high precision molded glass aspheres, traditional optical components, SIVA series of lens assemblies, subassemblies, and more. Archer OpTx is a strategic resource for your competitiveness. Contact: Janeil Lorin, International Sales Manager, janeil.lorin@archeroptx.com; Colby Freeman, US Sales Manager, colbyfreeman@archeroptx.com
 Photonics West Exhibitor Listing

Arden Photonics Ltd. #5371
SPIE Corporate Member
Royston House, 267 Cranmore Blvd, Shirley Solihull, B90 4QT United Kingdom
+44 121 773 3721; fax +44 121 773 3779
sales@ardenphotonics.com; www.ardenphotonics.com

Featured Product: FGC Fiber Geometry system
Arden designs and manufactures high quality components and instrumentation for the measurement of a wide range of properties of optical fibers and lasers. Products include Fiber geometry system for measuring the dimensions of standard and specialty fiber, MPX Modal Explorer for real-time measurement of Encircled Flux, VFI interferometer for optical fiber end-face inspection. Contact: Lesley Allison, Sales Office Manager, sales@ardenphotonics.com

ARGES GmbH #1852
Werk 4, Wackersdorf, 92442 Germany
+49 9431 7984 0; fax +49 9431 7984 300
info@arges.de; www.arges.de

ARGES develops and manufactures innovative laser scan systems for positioning and deflecting laser beams in industrial materials processing and medical applications. We are also actively involved in a variety of research projects relating to the development of novel laser processes and techniques. Our range of services includes a versatile product range of scan heads and scan modules, tailored customer- and application-specific solutions and the implementation of complete laser subsystems. Contact: Renate Arenknecht, Chief Sales Officer

Arroyo Instruments, LLC #4247
1201 Prospect St, San Luis Obispo, CA, 93401 USA
+1 805 543 1302; fax +1 805 543 1303
sales@arroyoinstruments.com; www.arroyoinstruments.com

Featured Product: 7000 Series MultiSource Multi-Channel Controllers
Arroyo Instruments is a supplier of leading edge diode drivers, temperature controllers, and device fixtures. We offer both bench top and OEM power supplies in a wide range of power levels, and a wide range of heat sinks for lasers and LEDs. Our newest product is the 7000 Series MultiSource Multi-Channel Controllers, providing easy-to-use, low-cost building blocks for high density systems. Available in powers reaching 420W per channel, the 7000 Series supports any laser or thermal application. Contact: Paul Corr, President, sales@arroyoinstruments.com

Artray #4941
1-17-5 Kouenjikita Suginami-ku, Tokyo, 166-0002 Japan
+81 3 3389 5488; fax +81 3 3389 5486
info@artphotronics.com; www.artphotronics.com

art photonics GmbH, founded in 1998, develops and manufactures special fiber optic products for the broad spectral range from 180nm to 16 m. Our innovative design of FlexiRay® High Power laser cables, metal coated silica fibers, FlexiSpec® spectroscopy probes incl. our latest miniaturized Raman Probe, multi-spectral bundles and FlexiSens® fiber spectral sensors provide broad spectra fiber solutions. Contact: Renate Arenknecht, Chief Sales Officer

Arrow Thin Films, Inc. #6037
9 Ackerman Ave, Emerson, NJ, 07630 USA
+1 201 977 1070; fax +1 201 839 9007
info@arrow-otf.com; www.arrow-otf.com

Featured Product: High performance, high damage threshold thin film coatings, optics and laser materials
Arrow Thin Films is a leading manufacturer of optical coatings on glass and laser materials. Arrow Thin Films partners with our customers, from design feasibility and development through high volume production. We deposit high performance thin films from the deep UV through the far IR on a virtually all inclusive list of optical and crystalline substrate materials in diameters to 15? Arrow Thin Films routinely processes customer supplied substrates or provides high quality finished components. Contact: Jon Herringer, President, pw2018@arrow-otf.com; Paul Szczepanski, VP Sales, pw2018@arrow-otf.com

Arrow Thin Films, Inc. #5672
5F Ueno Bldg, 1-17-5 Kouenjikita Suginami-ku, Tokyo, 166-0002 Japan
+81 3 3389 5488; fax +81 3 3389 5486
info@arrow-otf.com; www.arrow-otf.com

Featured Product: InGaAs Camera, InGaAs/GaAsSb Camera, SWIR Camera, UV Camera, CMOS Camera, CCD Camera
Arrow was founded in 1995 Tokyo Japan. Since its establishment, Arrow has been specializing in manufacturing image processing devices on different interfaces and wavelength. We provide a variety of products including InGaAs Camera 900nm-1700nm, InGaAs/GaAsSb Camera 900nm-2500nm, InGaAs Line Scan Camera 950nm-1700nm, SWIR Camera 400nm-1700nm, UV Camera 200nm-900nm, CMOS Camera, CCD Camera, Device driver and Customized hardware/software application. Contact: Ellen Su, International Sales Manager, su@artray.co.jp

Artray #4941
1-17-5 Kouenjikita Suginami-ku, Tokyo, 166-0002 Japan
+81 3 3389 5488; fax +81 3 3389 5486
info@artphotronics.com; www.artphotronics.com

art photonics GmbH, founded in 1998, develops and manufactures special fiber optic products for the broad spectral range from 180nm to 16 m. Our innovative design of FlexiRay® High Power laser cables, metal coated silica fibers, FlexiSpec® spectroscopy probes incl. our latest miniaturized Raman Probe, multi-spectral bundles and FlexiSens® fiber spectral sensors provide broad spectra fiber solutions. Contact: Renate Arenknecht, Chief Sales Officer
Ascentta, Inc. #5256
370 Campus Dr Ste 105, Somerset, NJ, 08873-1128 USA
+1 732 868 1766; fax +1 732 868 1769
sales@ascentta.com; www.ascentta.com
Featured Product: Short Wavelength Compact Circulator - 532, 650, 780, 850, 980, 1060nm or Specified wavelength
Since its establishment in 2003, Ascentta has actively provided optimal services to advance the fiber optics industry. Our team of experts specializes in the designing, manufacturing and testing of the finest passive fiber-optic components in the field. We also extend our expertise to serve the telecommunication, defense, test equipment, sensor, and biomedical industries. Ascentta prioritizes personal service and communication. Choosing Ascentta ensures top-quality products developed with the most Contact: Jennifer Ke, VP Marketing, jennifer@ascentta.com; Shao Liang, CTO, shao@ascentta.com

Asia Optical Co., Inc. #4253
No 22-3 S 2nd Rd Tanzi District, Taichung City, 427 Taiwan
+886 4 25342550; fax +886 4 2533 5696
services@aoci.com.tw; www.asia-optical.com/
Featured Product: Fiber Optics Communication
Asia Optical is a manufacturer has complete product lines from small component to larger optical product. i.e. Data Center-MM(SR4/SR); lens array, CFP2/CFP4; DWDM/CWDM Prism+Thin Film Filters, SM(LR4); Collimating / Focus Lens and total solution for TOSA/ROSA ARK. Contact: Wayne Chou, Sales Representative, wayne.chou@aoci.com.tw

ASM Pacific Technology #4036
7850 S Hardy Dr Ste 110, Tempe, AZ, 85284-1122 USA
+1 602 437 4688; fax +1 602 437 4630
www.asmpacific.com
Featured Product: AD280Plus
ASM Pacific is the world’s largest company in the assembly and packaging arena. With over 1700 RnD engineers we are continuously developing modules and systems for our equipment development for the continuing growth and applications of the industry. In addition to our direct RnD staff, ASM has many 1000s of engineers in the product / process development teams directly related to the many systems that we design and manufacture. Our priority is to provide customers with the tools that they need. Contact: Don Ream, Sr Sales Manager, don.ream@asmp.com

Aspen Systems, Inc. #4137
24 Saint Martin Dr, Marlborough, MA, 01752 USA
+1 508 281 5322
sales@aspensystems.com; www.aspensystems.com
Featured Product: Laser Chillers and Direct Refrigerant Cooling Systems
Aspen Systems specializes in the design and manufacture of miniature refrigeration systems. We developed the world’s smallest rotary compressor and have designed numerous commercial and military systems based on this technology. We work with our customers to create custom thermal solutions that integrate directly into products to minimize weight, footprint, and costs. We offer standard products which are used across a variety of industries including industrial, military, laser and medical. Contact: James Burnett, Business Development Manager, jburnett@aspensystems.com

Aspha erica, Inc. #5630
629 Center St, Santa Cruz, CA, 95060 USA
+1 831 431 6801
info@asphaera.net; www.asphaera.co
Featured Product: Aspherical lenses and UV-IR optical components
Aspha erica Inc. is a precision optics company located in Santa Cruz, California. Our mission is to satisfy our customer’s financial needs through the use of cutting-edge technology, superior customer service and competitively priced optics. Aspha erica specializes in aspherical lenses, as we continue to grow we are expanding our capabilities offering components of optical glasses, fused silica, UV-IR crystals, micro-optics, ultra thin quartz windows, reticles, prisms and a wide array of coatings. Contact: Brian Morrissey, President, brian@asphaera.net; Douglas Wilmerton, Production & Business Development Manager, dwilmerton@asphaera.net

Asia Optical Co., Inc. #5453
5500 Bee Ridge Rd Ste 104, Sarasota, FL, 34233 USA
+1 941 564 0890
sales@asphaera.com; www.asphaera.com
Featured Product: Aspheres, spheres, acylinders, axicons, coatings, optical design, systems, transmission spheres
As an independent and recognized specialist, Asia Optical is among the technological leaders in the field of aspher manufacture. The basis for manufacture is a specially developed and patented technology to control CNC grinding and polishing machines. Asia Optical assists its customers from the initial optic design, via manufacturing and coating, full-surface interferometric measuring and documentation, through to the assembly of optical modules and their optical characterization. Contact: Steffen Schneider, President, s.schneider@asphaera.com

A-Star Photonics, Inc. #5164
Bldg 31 Jinshan Juyuanzhuang Industrial Park, Cangshan District, Fuzhou, Fujian, 350002 China
+86 591 88194625; fax +86 591 88194635
sales@astarphotonics.com; www.astarphotonics.com
Featured Product: Spherical Optical Lenses, Optical Windows, Lens Assembly, BBO Crystals
A-Star Photonics Inc., specializes in Projection Display Optical Elements, Crystals Material, Precision Optics & Optical Communication Components, is a high-tech enterprise integrated R&D, manufacturing and selling. Approved by ISO9001 & OHSAS18001. 4 production Lines: Spherical Workshop; Flat Workshop; Crystal Workshop; Coating Workshop. Inspection Power: Zygo Interferometer; AK-40 Interferometer; 100% inspect the surface PV & IRR.

Astra Products, Inc. #4264
6 Bethpage Rd., Copiague, NY, 11726 USA
+1 631 464 4747; fax +1 631 464 4442
info@astraproducts.com; www.astraproducts.com
Featured Product: CLAREX Custom Optical Grade Cell-Cast Acrylic (PMMA) Filters
Astra Products is the North American sales agent for the CLAREX line of optical grade cell-cast acrylic (PMMA) products. CLAREX acrylic is available from 0.1 through 5.0mm thickness, with a variety of surface textures, colors, and coatings. The materials are in stock or made to order in low volumes up to mass production quantities and could be supplied as sheets or finished products. Contact: Jeff Bogin, President, j bogin@astraproducts.com; Mark Bogin, Vice President, mbogin@astraproducts.com
Photonics West Exhibitor Listing

AT-Fachverlag GmbH
Wilhelm-Pfitter-Str 28, D-70736 Germany
+49 71 95 29 51 0; fax +49 71 95 29 51 99
at@at-fachverlag.de; www.photonik.de

Featured Product: Special interest magazines laser+photronics, photonik and biophotonik
laser+photronics is the best-collection of technical articles from the magazine photonik reprinted in English and thus offers a broad range of worldwide up-to-date knowledge in the area of optical technologies. Reports on latest technology trends around the world and relevant industry news complete the editorial spectrum of this issue. Contact: Christiane Wenke, Head of Product Management Journals, christiane.wenke@at-fachverlag.de

ATL Lasertechnik US
2794 Gateway Rd, Carlsbad, CA, 92009 USA
+49 2196 887 9793
info@atl-laser.com; www.atl-laser.com

Featured Product: ATLEX-FBG, high efficient excimer laser for Fiber Bragg Grating (FBG) writing applications
ATL Lasertechnik is the #1 in compact excimer lasers and the perfect solution for a wide variety of high duty cycle industrial applications such as FBG, Micromachining, Medicine and Spectroscopy. The ATLEX-1000-1 laser is the ONLY ONE AIR-COOLED 1 KHz excimer laser with a fraction of the size of competing excimer lasers, with an average energy/power up to 3.5 mJ / 10 Watt at 248 nm. Our ATLEX lasers feature lowest CO2 on the market as well as high service intervals up to several billion shots. Contact: Dawid Przybylski, Product Manager, dp@atl-laser.de

attocube systems Inc.
2020 Stuart St, Berkeley, CA, 94703 USA
+1 510 649 9245
info@attocube.com; www.attocube.com

attocube is technology leader for high precision piezo positioning solutions, optical displacement sensors with picometer resolution and cryogenic measurement systems, all optimized for the use in extreme environmental conditions such as cryogenic temperatures, high magnetic fields and vacuum. The attoDRY800 cryo-optical table is the perfect platform for optical measurements at low temperatures and seamlessly integrates an ultra low vibration cold breadboard system into the optical table.

ATV Technologie GmbH
Johann-Sebastian-Bach-Str 38, Vaterstetten, 85591 Germany
+49 8106 3050 0; fax +49 8106 3050 99
mail@atv-tec.de; www.atv-tech.com

Avo Photonics, Inc.
120 Welsh Road, Horsham, PA, 19044 USA
+1 215 441 0107
sales@avophotonics.com; www.avophotonics.com

Featured Product: Contract Manufacturing and Custom Design of Opto-Electronic Components and Systems
Enables your success by providing custom design, development, prototyping and volume production services for clients utilizing opto-electronic products in the medical, industrial, communications, military, and aerospace markets. Delivers client-owned component and system level solutions through rapid-innovation and high-quality, ISO9001 & 13485 certified, manufacturing within the USA. Light. Precisely. Contact: Joe Delfino, Director of Global Business Development, jdefino@avophotonics.com; Joe Dallas, President, jdadallas@avophotonics.com
Featured Product: Refractive optical elements
Axetris AG is your partner for compact, high-speed sensitive mass flow controllers; efficient modulated-blackbody mid-IR sources; and stable, specific laser gas detection modules. High-quality optical micro-lens arrays. Along with our experienced engineering team, advanced MEMS foundry capabilities and total quality management approach, Axetris works to ensure our customers remain ahead of their field, now and in the future. Contact: Bob Mandarino, Manager Axetris USA, bob.mandarino@axetris.com; Peter Rajec, Head of Sales & Marketing, Micro-Optics, peter.rajec@axetris.com

Featured Product: Swept Laser Optical Coherence Tomography OCT Engines and Integrated OCT Imaging Subsystems
AXSUN Technologies, the leading provider of Swept Source OCT Imaging Subsystems, offers the industry’s most advanced OCT imaging products. Axsun’s Swept Laser Engines and integrated SS-OCT Engines with high-speed Data Acquisition enable ultrafast, high-resolution imaging with outstanding depth range across a variety of biomedical and industrial applications. Axsun will showcase the Small Form Factor OCT Engine at BIOS (Booth 8344) and Photonics West (Booth 4405). Contact: Bill Ahern, Sr. Director Marketing, bahern@axsun.com; Nate Kemp, Market Development Manager, nkemp@axsun.com

Featured Product: Lineman-AYASE Line Module, Blue Line Module, Compact Module, APC Laser Diode, Driver Solutions
Ayase America Inc. was established in the Silicon Valley in 2004. Ayase America, Inc., along with Ayase Europe GmbH, is a subsidiary of Ayase Co., Ltd. headquartered in Yokohama, Japan. Members of Ayase are composed of purchasing, sales & marketing personnel, engineers, scientists and managers who have years of experiences in laser diodes and their applications. We have close partnerships with selected world-class manufacturers of laser diodes, laser modules, optics, motors, etc. Contact: James Fang, Manager of Sales & Marketing, jfang@ayaseamerica.com; Takako Ochoa, Director of Operations, tochoa@ayaseamerica.com

Featured Product: Konoshima Ceramic YAG, Japanese made polishing slurry for AlN, Sapphire, Au, SUS, SiC, LN, LT & etc.
Baikowski Ceramic YAG manufactures high power cw, single frequency lasers ranging from 500mW to 50W at 351, 488, 532, 976, 1060nm, 1090nm for applications like atom cooling and trapping, Argon laser replacement, holography, and LDV. Exclusively distributed in the US by Allied Laser Solutions, LLC - www.alliedlasersolutions.com Contact: Alain Bourdon, US Sales, arbi@alliedlasersolutions.com

AZUR SPACE Solar Power GmbH is a leader in high efficiency III-V based solar cells for space and terrestrial concentrator applications. Based on more than 50 years of industrial success in Si, GaAs and InP-based technology, AZUR SPACE extended its product portfolio with custom optoelectronic devices for light emission and detection and power transmission focused on IR applications. The company’s capabilities cover the complete value chain with design, III-V epi growth, processing and testing. Contact: Daniel Fuhrmann, Manager III-V Devices, daniel.fuhrmann@azurspace.com; Victor Khorenko, Manager R&D Projects, victor.khorenko@azurspace.com

AZURE Photonics Co., Ltd. established in 2000, is an ISO 9001 certified leading designer and manufacturer of machine vision lenses. We are headquartered in Fuzhou, China. Contact: Hersem Yang, Managing Director, hersem@azure photonics.com; Simon Wu, Sales Manager, simon.wu@azure photonics.com

B&W Tek is the global leader in innovative mobile spectroscopy solutions. We utilize our own key building blocks consisting of spectrometers, light sources, sampling accessories and software capabilities to produce portable and handheld spectroscopy and laser instrumentation. B&W Tek provides Raman, LIBS, UV-Vis and NIR solutions for the pharmaceutical, biomedical, physical, chemical, safety, security, research and education communities. Contact: Daniel Rau, Marketing Manager, danielr@bwtek.com; Michaela Gomez, Marketing Assistant, michaelag@bwtek.com

Baikowski International Corp.
6601 Northpark Blvd Ste H, Charlotte, NC, 28216-2385 USA
+1 704 584 7100; +1 704 587 7106
www.baikowski.com

Featured Product: Konoshima Ceramic YAG, Japanese made polishing slurry for AlN, Sapphire, Au, SUS, SiC, LN, LT & etc.
For over a hundred years, BAIKOWSKI has been a leading industrial manufacturer of specialty inorganics. Baikowski brings innovative turnkey solutions & close collaboration to demanding industrial customers. Konoshima Chemical perfected ceramic YAG over the past 25 years using in-house developed high purity raw materials and a unique sintering process. Konoshima ceramic YAG material has been merged with Baikowski fabrication techniques and is ready for distribution through world wide network. Contact: Q. Yuminami, Sales Manager, q.yuminami@baikowski.com
**Photonics West Exhibitor Listing**

**Basler**
855 Springdale Dr Ste 203, Exton, PA, 19341 USA
+1 610 280 0171; fax +1 610 280 7608
sales.usa@baslerweb.com; www.baslerweb.com

**Featured Product:** ace L with Sony Pregius Sensors and ace U with Sony STARVIS Sensors

Basler is a leading manufacturer of high-quality digital cameras for industry, medicine, traffic, and other markets. Our portfolio contains area scan and line scan cameras in compact housings, board-level camera modules for embedded solutions, and 3D cameras. We also offer the pylon SDK and accessories. Basler has 30 years of experience in computer vision. The company is headquartered in Ahrensburg, Germany, and has subsidiaries and sales offices in Europe, Asia, and North America. Contact: Philipp Schweiger, Key Account Manager, philipp.schweiger@baslerweb.com; Alexander Poppe, Inside Sales Representative, alexander.poppe@baslerweb.com

**BASO Precision Optics Ltd.**
14 Chien-Kuo Rd, Tantzu Taichung, 427 Taiwan
+886 4 25320168; fax +886 4 25332501
mkt@baso.com.tw; www.baso.com.tw/Default.aspx

**Featured Product:** Glass lens manufacturing, optical coating, Lens assembly, metal machining, optical lens design

BASO Precision Optics Co., LTD. is the first optical lens and elements manufacturing company in Taiwan. We have experienced technicians and skilled workers in the company, focusing the high-end and high quality lenses. We are certified with ISO 9001, ISO 14001, OHSAS 18001, MRPII class A, and Green Partner. We are capable of designing all kinds of lens, particularly for Projectors, DSC lens module, scanners, telescopes, copiers and Mobile phone lens module. Contact: James Chen, Product Manager, james.chen@baso.com.tw

**BaySpec, Inc.**
1101 McKay Dr, San Jose, CA, 95131-1706 USA
+1 408 512 5928; fax +1 408 512 5929
sales@bayspec.com; www.bayspec.com

**Featured Product:** BaySpec’s OCI-D2000 – A SnapShot imager covering 475-975nm for video rate hyperspectral imaging

BaySpec Inc., founded in 1999 with 100% manufacturing in USA, is a vertically integrated spectral sensing company. BaySpec designs, manufactures, and markets a new class of OCI hyperspectral imagers, covering 400-1700nm from 8 to 220 spectral bands. Featuring extreme compactness with uncompromised performance, these novel hyperspectral imagers allow effortless adoption in many applications from precision agriculture, food inspection, and geospatial imaging to in vivo biomedical imaging. Contact: Lynn Chandler, Sales Manager, sales@bayspec.com; Mike Zemlan, Sales Manager, sales@bayspec.com;

**BEAM Engineering For Advanced Measurements Co.**
1300 Lee Rd, Orlando, FL, 32810 USA
+1 407 629 1282; fax +1 407 629 0460
sales@beamco.com; www.beamco.com

**Featured Product:** Ultra thin, electro-switchable lenses, prisms, shutters, beam shapers and patterned phase plates

BEAM Co. is fully vertically integrated company that manufactures diffractive waveplates. The diffractive waveplates developed by BEAM Co. are micron thin optical coatings capable of performing the same functions as lenses, prisms, spiral phase plates, shutters, beam shapers and non-mechanical beam steering. Unlike normal diffractive optical components, diffractive waveplates can be produced with near 100% diffraction efficiency, broad spectrum UV to IR and either passive or electro switchable. Contact: Zhi Liao, Optical Engineer, Ziliaob@beamco.com; Anna TabrarianT, CFO, Anna@beamco.com

**Beamtech Optronics Co., Ltd.**
15566 Buena Vista Ave, White Rock, BC, V4B 1Z2 Canada
+1 604 960 1429
beamtech@shaw.ca; www.beamtech-laser.com

**Featured Product:** Picosecond and nanosecond combined laser product, Alexandrite Q-Switch cosmetic laser

Beamtech Optronics Co., Ltd is a high-tech laser company specialized in solid-state laser’s design, manufacture, sales and service. Since its foundation in 1997, Beamtech has been following the world most advanced technologies on laser designing, engineering and holds dozens of patents in laser optical design, novel resonator, laser mechanics, electrical design, etc. The main application field includes laser aesthetics, analysis instrument, scientific research and aerospace industry. Contact: Zhennan Shi, International Sales Manager, shizhenman@beamtech-laser.com; Zijiao Yu, Marketing manager, yuzijiao@beamtech-laser.com

**Becker & Hickl GmbH**
Nunsdorfer Ring 7-9, Berlin, 12277 Germany
+49 30 212 80 02 0; fax +49 30 212 80 02 13
info@becker-hickl.com; www.becker-hickl.com

**Featured Product:** TCSPC systems, picosecond correlators, picosecond lasers, single photon counting (hybrid) detectors

Becker & Hickl GmbH is technology leader in time-correlated single photon counting (TCSPC). The product range includes TCSPC modules, lasers, detectors for a wide range of applications like e.g. fluorescence lifetime imaging (FLIM) in biology, medicine, pharmacy, biochemistry, chemistry, and physics. Becker & Hickl currently supplies more than 1600 TCSPC systems worldwide, organizes yearly 5 workshops around the world and distributes more than 1600 pages of TCSPC literature. www.becker-hickl.com Contact: Wolfgang Becker, CEO, becker@becker-hickl.com; Hauke Studier, Manager, studier@becker-hickl.com

**Beijing Bodian Optical Technology Co., Ltd.**
No 2 Xingye Road Yizhuang Daxing District, Beijing, 100176 China
+86 10 67816596; fax +86 10 67816587
bdoptics@126.com; www.bd-optic.cn

**Featured Product:** Optical filters, lens, prism, coating

Beijing Bodian Optical Tech. Co., Ltd. was founded in the beginning of 2001. Our company subjects to Optical Coating Center of Beijing Institute of Film Machine. The company has a strong technical group and rich experience over 40 years. There are advanced automatically operated coaters (Optorun O T F C 1300 and Leybold Syrus 1350), high performance spectrophotometer (Cary 5000 and Cary 7000). We do optical filters, lens, prism. Contact: Fiona Wang, Sales, wzhou0602@bd-optic.cn

**BEIJING FUXINGKAI PHOTO-ELECTRIC TECHNOLOGY CO., LTD**
14#, Tianhe North Rd, Huangcun, Daxing District, Beijing, 102600 China
+86 10 60281330; fax +86 10 60281037
bjfxkyx@163.com; www.fuxingkai.com

**Featured Product:** Optical coating material; anode material for lithium battery


**BEIJING TECHNOLOGY CO., LTD**
No 2 Xingye Road Yizhuang Daxing District, Beijing, 100176 China
+86 10 67816596; fax +86 10 67816587
bdoptics@126.com; www.bd-optic.cn

**Featured Product:** Optical filters, lens, prism, coating

Beijing Bodian Optical Tech. Co., Ltd. was founded in the beginning of 2001. Our company subjects to Optical Coating Center of Beijing Institute of Film Machine. The company has a strong technical group and rich experience over 40 years. There are advanced automatically operated coaters (Optorun O T F C 1300 and Leybold Syrus 1350), high performance spectrophotometer (Cary 5000 and Cary 7000). We do optical filters, lens, prism. Contact: Fiona Wang, Sales, wzhou0602@bd-optic.cn

**BJFXKYX PHOTO-ELECTRIC TECHNOLOGY CO., LTD**
14#, Tianhe North Rd, Huangcun, Daxing District, Beijing, 102600 China
+86 10 60281330; fax +86 10 60281037
bjfxkyx@163.com; www.fuxingkai.com

**Featured Product:** Optical coating material; anode material for lithium battery

Dealing with the diversity of sample sizes and materials is your biggest challenge. And having tough, flexible systems like the LAMBDA 1050 is critical for meeting it. Our snap-in modules give you the flexibility to take on whatever comes your way. PerkinElmer’s Universal Reflectance Accessory enables you to do more in less time by automating absolute reflectance measurements. Our general-purpose optical bench lets you craft a solution to measure irregular samples in minutes rather than weeks. Plus, PMT, InGaAs, and PbS detector configurations deliver extra sensitivity – and optimal performance – across the UV/Vis/NIR range. You don’t shy away from big challenges. Neither do we.
## Photonics West Exhibitor Listing

### Beijing Golden Way Scientific Co., Ltd. #4542-A

ES/F M7 Bldg, No 1 Jixianqiao E Rd, Chaoyang District Beijing, 100016 China  
+86 10 8456 0667; fax +86 10 8456 9901  
optics@goldway.com.cn; www.goldway.com.cn/

**Featured Product:** Optical lenses, optical prisms, optical filters, optical mirrors, achromatic, PBS, coatings, HR, AR

Beijing Golden Way Scientific Co., Ltd. established in 1998, focusing on high precision optical components manufacturing and lens assembling. After more than 10 years of sustained efforts, now it has a whole set of optical processing facilities and top-level metrological instruments, which can guarantee our products’ high precision and excellent quality. We believe that, through our continuous effort, Golden Way Scientific will become your reliable supplier and one of the best cooperators. Contact: Rebecca Sun, Marketing Manager, sunrui@goldway.com.cn; Chuanfeng Liu, VP, liuchuanfeng@goldway.com.cn

### Beijing Opto-Electronics Technology Co., Ltd. #4653

No.4 Jixianqiao Road Chaoyang District, Beijing, 100015 China  
+86 10 8456 1199; fax +86 10 8456 2777  
sales@oet.com.cn; www.oet.com.cn/

**Featured Product:** Nd:YAG,Cr4+:YAG, Yb:YAG, Nd:Ce:YAG and Ho:Cr:Tm:YAG and Er:YAG crystals, coating, etc.

Beijing Opto-Electronics Technology Co. Ltd. (BOET), a subsidiary of North-China Research Institute of Electronics-Optics (NCRIEO) who is one of the earliest institutes in studying laser technology in China, was founded in 2001. With former equipment, technologies and technical staff of NCRIEO, BOET is now devoted to the production and development of laser crystals. BOET is the leader in the large-scale production of Nd:YAG crystal grown by Czochralski method in China. Contact: Heyi Lai, Marketing Dept.Manager, laiheyi@oet.com.cn; Hongzhu Chen, Marketing Dept. Sales Manager, chenhongzhu@oet.com.cn

### Beijing Hanyuan Technology Co., Ltd. #5657

No 86 Bldg in LianDo U Valley Middle District Maju Qiao Town Tongzhou District, Beijing, 101012 China  
+86 10 5977 1957; fax +86 10 5977 1957  
Shengketai08@163.com; www.zg-scanning.com

**Featured Product:** Galvo Scanner Head and Technical Support

Beijing Hanyuan Technology Co., Ltd. was founded in 2007 which is occupied in the research and development, manufacturing and service of high-speed Galvo-Scanning system. The company locates in Zhongguancun Innovation Park, in Beijing Tongzhou District. In order to solve the clients’ problem and help employee realize dream, we do everything in the spirit of “clients’ problem we solve, clients' needs we meet, staff’s dream we realize.” Contact: Amy, Sales Staff, Shengketai08@163.com

### Beijing Pavilion #4653; 4661

Rm 719 Ruichen Int'l Ctr Int'l Co-Op Dept, 13 Nongzhanguan Nanli, Beijing, 100125 China  
+86 10 51295359; fax +86 10 512 95379  
expo8611@worldfairs.cn; www.lewayfairs.com

Beijing Leway International Fairs Co., Ltd. Was established in 2005. Guided by the aim of “promoting global trade through exhibition”, the leader is engaged in the work of foreign economic and trade cooperation. Today, it has three working centers in Beijing, zhengzhou and the United States. It has four registered subsidiaries and a Chinese office in Beijing, which together form an efficient global working system. Contact: Lilian Zhang, Director, expo8210@worldfairs.cn; Maria Chen, Exhibition Coordinator, expo8611@worldfairs.cn

### Beijing Jiepu Trend Technology Co., Ltd. #547

M3 building, No1 East Road of Jixianqiao, Chaoyang district, Beijing, 100016 China  
+86 10 64426995; fax +86 10 64426995  
sophy@bjjcz.com; www.bjjcz.com.cn

**Featured Product:** DSP Laser Control Board

JCCM commits to the development of motion control system used in laser machining device, mechanism machining device and etc. Presently, it has many products including laser cutter, laser marker control system, stepping motor driver and etc. All products are self-designed and developed with full copy rights. Contact: Sophy, Oversea Department Manager, sophy@bjjcz.com; Shawn, Sales Engineer, technic@bjjcz.com

### Beijing RealLight Technology Co., Ltd. #2434

3rd Fl/#5 Bldg, Liangshuihe No 1 St, Beijing, 101076 China  
+86 10 67895356 851; fax +86 10 6789536 881  
sales@real-light.com; www.en.real-light.com

**Featured Product:** Narrow linewidth laser series

RealLight is a high technology enterprise specializing in research, development and manufacturing of fiber pigtailed semiconductor laser, sub-systems as well as related laser accessories. RealLight’s staff consists of a team of laser industry veterans with many years of experience in the assembly and fiber-coupling of semiconductor laser, and a team of optical-electro-mechanical engineers who keep focusing on diode laser applications to serve mainly medical and spectral industry. Contact: Linlin Dong, Marketing Engineer, lynne.dong@real-light.com

### Beijing Scitlion Technology Corp., Ltd. #5269

Opto-Mechatronics Industrial Park, No 5 Xingguang 4 Ave, Tongshou District Beijing, 101111 China  
+86 10 81508346; fax +86 10 81508382  
jin@scitlion.com; www.scitlion.com

**Featured Product:** CaF 2,MgF2,BaF2, LiF, CeF3 crystals; 100-1000µm core Fused Silica Optical Fiber; Fiber Bundles

Beijing Scitlion Technology has more than 50 years’ history based on Beijing Glass Research Institute. Besides certificated by ISO 9001, Scitlion was also the National High-Tech Enterprise, Beijing Pilot Enterprise on Patent Operation and Beijing Safety Standardization Level II Enterprise. Our products have been widely used in Aeronautic, Space, Shipbuilding, Weapon, Nuclear detection, Bio-medical, Electronics, Energy, Environment Protection, Construction, and Anti-terrorism field. Contact: Lelie Jin, Sales Director, jin@scitlion.com; Laura Zhao, Sales, xuan.zhao@scitlion.com
Bioraytron
5F, No 173-8 Yung Fond Tr Tu-Cheng Dist, New Taipei City, 236 Taiwan
+886 2 8262 8886; fax +886 2 8262 8885
jasonlin@bioraytron.com.tw; www.bioraytron.com.tw
Bioraytron is a 50% / 50% joint venture invested by Epileds and HPL. The epi wafers and chips are manufactured by Epileds, packages and modules being exclusively sold by Bioraytron are completed by HPL. Bioraytron products including single LED and COB with copper or aluminum nitride as the substrates, with high-purified quartz optical lens, and the most effectiveness of stabilization wavelength in the range of 265-285nm, emit irradiance greater than 25 mW / cm2 at 10mm working distance and 1.2W.

BkTel Photonics
5 rue Louis de Broglie, Lannion, 22300 France
+33 96727121; fax +33 29627121
photronics@bktel.com; www.bktel.com
Featured Product: New Compact Pulsed Fiber Laser series for LIDAR applications
BkTel photonics is the leading manufacturer of fiber amplifiers and fiber lasers for LIDAR, telecommunication, cable TV, FTTH, military, medical, aerospace and laboratory applications. With over 20 years of activity, BkTel products include a wide range of platforms in the 1µm, 1.5µm and 2µm bands. Contact: Markus Ojutkangas, General Manager, ojutkangas@bktel.com

Blackstone-NEY Ultrasonics, Inc.
9 N Main St, Jamestown, NY, 14702 USA
+1 716 665 2340; fax +1 716 665 2480
info@ctgclean.com; www.ctgclean.com
Featured Product: Ultrasonic Cleaning Equipment
Blackstone-NEY Ultrasonics is located in Jamestown, New York and continues to be a recognized leader in ultrasonic technology. Starting with the introduction of sweeping frequency in 1988, there has been a continuous stream of development and patents covering new ultrasonic generator and transducer technology. A broad spectrum of ultrasonic technology is available to meet the specific needs of a growing list of applications. Contact: Doug Cole, Sales Manager, dcole@ctgclean.com; Dave Melton, Marketing Manager, dmelton@ctgclean.com

Blue Ridge Optics, LLC
1617 Longwood Ave, Bedford, VA, 24523-1705 USA
+1 540 586 8526; fax +1 540 301 5038
www.blueridgeoptics.com

Blue Sky Research
510 Alder Dr, Milpitas, CA, 95035-7443 USA
+1 408 941 6068; fax +1 408 941 0406
sales@blueskyresearch.com; www.blueskyresearch.com
Featured Product: The SpectraTec X, Multi-Laser Source
Blue Sky Research is a vertically integrated volume manufacturer of fiber-coupled and free space, red, blue, violet, and IR laser systems, semiconductor laser devices, and OEM laser components. The company crafts state of the art laser products using its in-house expertise in micro-optics, laser diode manufacturing and optical/electrical engineering disciplines. Blue Sky Research provides solutions to your high reliability, custom requirement(s) and application-specific products/system needs. Contact: Philip Armatis, Business Development, philiparmatis@hotmail.com; Cara Prunty, Account Executive, sales@blueskyresearch.com

BluGlass, Ltd.
74 Asquith St, Silverwater, NSW, 2128 Australia
+61 2 9334 2300
admin@bluglass.com.au; www.bluglass.com.au
Featured Product: GaN Epitaxy Services, Remote Plasma Chemical Vapour Deposition (RPCVD) & MOCVD services
BluGlass offers specialised GaN epitaxial & characterisation services to meet individual customer requirements operated by experienced technical staff in Australia. BluGlass has both MOCVD and low temperature Remote Plasma Chemical Vapour Deposition (RPCVD) capabilities suitable for a range of electronics manufacture including: LEDs, LDs, & HEMTs. If you are looking to develop, fabricate or custom manufacture epitaxial nitride wafers, BluGlass has the expertise to meet your specific needs. Contact: Stefanie Winwood, Sales & Marketing Manager, sales@bluglass.com.au; Brad Siskavich, Business Development Manager, info@xvtech.com

Bodkin Design & Engineering, LLC
77 Oak St Ste 201, Newton, MA, 02464-1460 USA
+1 617 795 1968; fax +1 617 795 1969
info@bodkindesign.com; www.bodkindesign.com
Featured Product: Cubert FirefLEYE S185 Hyperspectral Imager
Founded in 1992, BD&E is an innovative electro-optics engineering firm comprising a team of highly experienced engineers and scientists who design creative, cost-effective solutions to address industry specific vision applications. With a focus on commercial sales, Bodkin is a proud distributor of Cubert snapshot spectral imagers in the VNIR wavelength range in North America and a manufacturer the patented HyperPixel Array™ snapshot imagers for the NIR, SWIR, MIR, and LWIR wavelength ranges. Contact: Andrew Bodkin, Owner, wab@bodkindesign.com; Janette Wilson, bwilson@bodkindesign.com

Boston Applied Technologies, Inc.
6 Gill St Ste F, Woburn, MA, 01801-1721 USA
+1 781 935 2800; fax +1 781 935 2860
sales@bostonati.com; www.bostonati.com
Boston Electronics #322; 325
SPIE Corporate Member
91 Boylston St, Brookline, MA, 02445-7602 USA
+1 617 566 3821; fax +1 617 731 0935
boselec@boselec.com; www.boselec.com

Featured Product: High performance, high speed IR detectors (MCT & InAs) and Quantum Cascade Lasers (QCL)
We are specialists in PHOTODETECTION and PHOTON GENERATION. We are agents for leading European and American manufacturers of: UV photodiodes and UVLED; IR thermopiles and pyroelectric, including low cost focal plane arrays; Fast, sensitive MCT IR photodiodes and photoconductors; IR Light sources - including tunable IR lasers (QCL) and thermal infrared sources and LEDs; Calibrated grade blackbodies; Quantum optics; Visible-NIR single photon counting APDs and PMTs. Contact: Rick Mannello, CEO, rmannello@boselec.com; Fred Perry, CTO, fsp@boselec.com

Boston Micromachines Corp. #2014
SPIE Corporate Member
30 Spinelli Pl, Cambridge, MA, 02138-1046 USA
+1 617 866 4178; fax +1 617 868 7996
moreinfo@bostonmicromachines.com; www.bostonmicromachines.com

Featured Product: Multi-C Deformable Mirror: Greater control with 137 actuators and 1.5 um stroke and new low price
Provider of MEMS deformable mirrors and modulator products as well as advanced imaging systems. By altering the wavefront, BMC devices can be used in a variety of applications which include microscopy, astronomy, vision science, beam shaping and laser comm. BMC offers standard components, instruments and custom research products. Contact: Philip Zeng, Marketing and Sales Engineer, pzeng@bostonmicromachines.com; Michael Feinberg, Vice President of Marketing and Sales, mrf@bostonmicromachines.com

SPONSOR
BoXin Photoelectric Co., Ltd. #5341
SPIE Corporate Member
27-250 Shields Ct, Markham, ON, L3R 9W7 Canada
+1 416 305 7033
sales@bxoptic.com; www.bxoptic.com

Featured Product: Plano, Cylindrical, toroidal, mirror, lens and coating. Especially, large and high precision optics
BoXin provides you precision optical components, including but not limited to plano, cylindrical (measured by CGH), toroidal lens, prisms, mirrors, windows, GC/VC lens, cemented lenses and filter. The max length of optics can be 1000mm. Our products are made of optical glass and crystal materials, such as BK7, borofloat, fused silica, CaF2, BaF2, Ge, ZnSe, Si, ZnS etc. We also produce IR camera lens, industrial camera lens. All products correspond to ISO9001,2000 management system. Contact: Henry Zhao, Marketing Executive, henry@bxoptic.com; Jack Hu, Manager, jack@bxoptic.com

Bridger Photonics, Inc. #4421
2310 University Way Bldg d-4, Bozeman, MT, 59715 USA
+1 406 585 2774; fax +1 406 587 0808
www.bridgerphotonics.com

Featured Product: The Absolute Interferometer measures absolute distances with interferometric precision
Bridger Photonics is a recognized world leader in high-resolution, coherent distance measurement and lidar technologies. We create innovative and sound solutions together with our customers and partners to meet their Metrology and Imaging objectives. We are driven by a desire to create innovative products that advance society and significantly enhance our customers’ measurement capabilities. Contact: Pete Roos, President, CEO, info@bridgerphotonics.com; Jay Brasseur, COO, sales@bridgerphotonics.com

Boston Micromachines Corp. #2014
SPIE Corporate Member
30 Spinelli Pl, Cambridge, MA, 02138-1046 USA
+1 617 866 4178; fax +1 617 868 7996
moreinfo@bostonmicromachines.com; www.bostonmicromachines.com

Featured Product: Multi-C Deformable Mirror: Greater control with 137 actuators and 1.5 um stroke and new low price
Provider of MEMS deformable mirrors and modulator products as well as advanced imaging systems. By altering the wavefront, BMC devices can be used in a variety of applications which include microscopy, astronomy, vision science, beam shaping and laser comm. BMC offers standard components, instruments and custom research products. Contact: Philip Zeng, Marketing and Sales Engineer, pzeng@bostonmicromachines.com; Michael Feinberg, Vice President of Marketing and Sales, mrf@bostonmicromachines.com

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30 Spinelli Pl, Cambridge, MA, 02138-1046 USA
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BoXin Photoelectric Co., Ltd. #5341
SPIE Corporate Member
27-250 Shields Ct, Markham, ON, L3R 9W7 Canada
+1 416 305 7033
sales@bxoptic.com; www.bxoptic.com

Featured Product: Plano, Cylindrical, toroidal, mirror, lens and coating. Especially, large and high precision optics
BoXin provides you precision optical components, including but not limited to plano, cylindrical (measured by CGH), toroidal lens, prisms, mirrors, windows, GC/VC lens, cemented lenses and filter. The max length of optics can be 1000mm. Our products are made of optical glass and crystal materials, such as BK7, borofloat, fused silica, CaF2, BaF2, Ge, ZnSe, Si, ZnS etc. We also produce IR camera lens, industrial camera lens. All products correspond to ISO9001,2000 management system. Contact: Henry Zhao, Marketing Executive, henry@bxoptic.com; Jack Hu, Manager, jack@bxoptic.com

Bridger Photonics, Inc. #4421
2310 University Way Bldg d-4, Bozeman, MT, 59715 USA
+1 406 585 2774; fax +1 406 587 0808
www.bridgerphotonics.com

Featured Product: The Absolute Interferometer measures absolute distances with interferometric precision
Bridger Photonics is a recognized world leader in high-resolution, coherent distance measurement and lidar technologies. We create innovative and sound solutions together with our customers and partners to meet their Metrology and Imaging objectives. We are driven by a desire to create innovative products that advance society and significantly enhance our customers’ measurement capabilities. Contact: Pete Roos, President, CEO, info@bridgerphotonics.com; Jay Brasseur, COO, sales@bridgerphotonics.com
## Photonics West Exhibitor Listing

### Bristol Instruments, Inc. #215

**SPIE Corporate Member**

770 Canning Parkway, Victor, NY, 14564 USA  
+1 585 924 2620; fax +1 585 924 2623  
info@bristol-inst.com; www.bristol-inst.com

Bristol Instruments designs, manufactures and markets precision instruments using its expertise in optical interferometry. Bristol’s flagship products include wavelength meters and spectrum analyzers and accurately characterize the wavelength and spectral properties of lasers used by scientists and engineers. Interferometer-based products are also provided to reliably measure critical physical dimensions of materials such as specialty plastic films, medical tubing, and ophthalmic products.

### Brockton Electro-Optics Corp. #5649

**SPIE Corporate Member**

50 Central Sq Ste 3, Bridgewater, MA, 02324 USA  
+1 508 559 9958; fax +1 508 659 9190  
sales@brocktoneo.com; www.brocktoneo.com

### Brolis Semiconductors UAB #5359

**SPIE Corporate Member**

Moletu pl 73, Vilnius, Vilniaus, 14259 Lithuania  
+370 52199592  
info@brolis-semicon.com; www.brolis-semicon.com

**Featured Product:** 2M2DCM - 2100 nm integrated diode laser modules for DIRCM applications

Brolis Semiconductors develops semiconductors lasers and laser systems in the wavelength range 800 - 3000 nm. Company develops a broad portfolio of products for defence, spectroscopy and consumer market applications. Technology portfolio covers: High-power laser diodes in the 1900 - 2500 nm; Broadband gain-chips and SOAs in the 1900-2500 nm range; Integrated sensors based on GaAs/InGaAs technology; IR electro-optic systems for defence and security; SWIR/thermal and NIR sights. Contact: Augustinas Vizbaras, COO, augustinas.vizbaras@brolis-semicon.com

### Brookman Technology, Inc. #5029

125 Daiku-Machi Naka Hamamatsu, Shizuoka, 430-0936 Japan  
+81 53 482 7741; fax +81 53 482 7742  
bt_info@brookmantech.com; brookmantech.com/top.html

**Featured Product:** Time of Flight Range finding CMOS image sensor

Brookman Technology, Inc. was started in Hamamatsu, Japan in 2006. Since then, we have developed unique CMOS Image Sensors, such as High-Speed sensor with global shutter pixel, Ultra High-Sensitivity sensor achieved by analog noise reduction technique, and 8K High-Resolution sensor with high-speed/low-power A/D Converter. Moreover, we have been working on many Custom Image Sensors including CMOS ToF sensor for various applications. Contact: Tetsuya Takano, Sales Manager, bt_info@brookmantech.com; Akira Nakakura, Sales, bt_info@brookmantech.com

### Buhler Inc. #2106

**SPIE Corporate Member**

Business Area Leybold Optics, 559 James Jackson Ave, Cary, NC, 27513-8101 USA  
+1 919 657 7100; fax +1 919 657 7101  
leyboldoptics.cary@buhlergroup.com; www.buhlergroup.com

Buhler Leybold Optics is a world leading supplier of innovative thin film coating systems and processes, utilizing plasma ion assisted evaporation, sputtering, and plasma enhanced CVD. Our product portfolio includes equipment designed for the optics, Automotive, Display, Glass, Packaging, Electronic and Electro-optics, and Aerospace industries. Contact: Phil Hatchett, Sales Manager, phil.hatchett@buhlergroup.com

### Bullen Ultrasonics #2414

1301 Miller Williams Rd, Eaton, OH, 45320 USA  
+1 937 456 7133; fax +1 937 456 2779  
sales@bullentech.com; www.bullentech.com

**Featured Product:** Precision Ultrasonic Machining

Bullen Ultrasonics is the world leader in the ultrasonic machining of advanced ceramics, glass, and other difficult to machine hard and brittle materials. The process is capable of drilling thousands of holes or features simultaneously in glass, silicon, silicon carbide, and other advanced ceramics. Visit us at #2414 to find out why Bullen Ultrasonics is a critical supplier to many high technology and industrial companies. Contact: Greg Fitch, Director, Business Development, gfitch@bullentech.com

### BUSCH Microsystems Consult GmbH #5338

An der Altnah 34, Langenlonsheim, 55450 Germany  
+49 671 201331 0; fax +49 671 201331 99  
sales@busch-microsystems-consult.de;  
www.busch-microsystems-consult.de

**Featured Product:** Highly Precise Positioning Systems

BUSCH Microsystems is your system supplier for precision and ultra-precision machines. Our core competence is the design and manufacture of high-precision machine components and positioning systems. BUSCH Microsystems provides complete, customized systems from one source. Highly precise gantry-systems, XY-, linear and lifting stages; mechanical systems or with air bearings; with or without controller – BUSCH Microsystems will find the optimal solution for you! Get to know us! Contact: Winfried Busch, Managing Director, info@busch-microsystems-consult.de; Nora Heinrich, Internal Sales, sales@busch-microsystems-consult.de

### BWT Beijing Ltd. #2219

2nd Fl, NO 4A Hangfeng Rd, Fengtai District Beijing, 100070 China  
+86 10 83681053; fax +86 10 83682949  
sales@bwt-bj.com; www.bwt-bj.com

**Featured Product:** Precision Ultrasonic Machining

Bullen Ultrasonics is the world leader in the ultrasonic machining of advanced ceramics, glass, and other difficult to machine hard and brittle materials. The process is capable of drilling thousands of holes or features simultaneously in glass, silicon, silicon carbide, and other advanced ceramics. Visit us at #2414 to find out why Bullen Ultrasonics is a critical supplier to many high technology and industrial companies. Contact: Greg Fitch, Director, Business Development, gfitch@bullentech.com

### Buhler Leybold Optics #539

Business Area Leybold Optics, 559 James Jackson Ave, Cary, NC, 27513-8101 USA  
+1 919 657 7100; fax +1 919 657 7101  
leyboldoptics.cary@buhlergroup.com; www.buhlergroup.com

Buhler Leybold Optics is a world leading supplier of innovative thin film coating systems and processes, utilizing plasma ion assisted evaporation, sputtering, and plasma enhanced CVD. Our product portfolio includes equipment designed for the optics, Automotive, Display, Glass, Packaging, Electronic and Electro-optics, and Aerospace industries. Contact: Phil Hatchett, Sales Manager, phil.hatchett@buhlergroup.com

### BUCH Microsystems Consult GmbH #538

An der Altnah 34, Langenlonsheim, 55450 Germany  
+49 671 201331 0; fax +49 671 201331 99  
sales@busch-microsystems-consult.de;  
www.busch-microsystems-consult.de

**Featured Product:** Highly Precise Positioning Systems

BUSCH Microsystems is your system supplier for precision and ultra-precision machines. Our core competence is the design and manufacture of high-precision machine components and positioning systems. BUSCH Microsystems provides complete, customized systems from one source. Highly precise gantry-systems, XY-, linear and lifting stages; mechanical systems or with air bearings; with or without controller – BUSCH Microsystems will find the optimal solution for you! Get to know us! Contact: Winfried Busch, Managing Director, info@busch-microsystems-consult.de; Nora Heinrich, Internal Sales, sales@busch-microsystems-consult.de

### Buhlmann Instruments AG #2045

Hornwegstrasse 12, 82089 Planegg-Manching, Germany, 82089 Germany  
+49 89 8946 6500; fax +49 89 8946 6510  
sales@buhlmann-instruments.com; www.buhlmann-instruments.com

**Featured Product:** Time of Flight Range finding CMOS image sensor

Buhlmann Instruments AG offers you a wide portfolio of optical products and systems for research, development and production, including World Class batch systems as well as customized systems according to your needs. Contact: Tilmann Schaefer, Business Development Manager, SchaeferT@buhlmann-instruments.com

### Buehler Inc. #2106

**SPIE Corporate Member**

Business Area Leybold Optics, 559 James Jackson Ave, Cary, NC, 27513-8101 USA  
+1 919 657 7100; fax +1 919 657 7101  
leyboldoptics.cary@buhlergroup.com; www.buhlergroup.com

Buhler Leybold Optics is a world leading supplier of innovative thin film coating systems and processes, utilizing plasma ion assisted evaporation, sputtering, and plasma enhanced CVD. Our product portfolio includes equipment designed for the optics, Automotive, Display, Glass, Packaging, Electronic and Electro-optics, and Aerospace industries. Contact: Phil Hatchett, Sales Manager, phil.hatchett@buhlergroup.com
Caeleste CVBA #4222

Hendrik Consciencestraat 1B, Mechelen, 2800 Belgium
+32 15 71 05 03; fax +32 16 60 87 25
info@caeleste.be; www.caeleste.be

Featured Product: Beyond State-of-the-Art custom designed CMOS Image Sensors

Caeleste, situated in Mechelen - Belgium, is a designer and supplier of “Beyond State-of-the-Art” custom designed CMOS image sensors. With our experienced design and test team, we are capable to complete advanced projects in the field of NIR, Visible, UV and X-ray sensing as well as particle detection. Caeleste has experience in designing ultra-low noise solutions and also with rad hard designs for space applications and high radiation backgrounds. Contact: Jan Vermeiren, Business Develop Manager, sales@caeleste.be; Frieda Lardinois, Marketing and Sales Assistant, info@caeleste.be

CAILabs #5644

38 boulevard Albert 1er, Rennes, 35 200 France
+33 2 23 44 08 26
contact@cailabs.com; www.cailabs.com

Featured Product: CANUNDA-HP, a high-beam quality, low-losses and high-energy handling laser beam shaper

CAILabs is a French, deep tech start-up based in Rennes, providing photonic solutions to harness the full potential of optical fibers. CAILabs develops and produces a large range of light shaping components through our patented, efficient and flexible Multi-Plane Light Conversion technology (MPLC). CANUNDA by CAILabs is a laser beam shaping and combining system designed to improve the productivity of industrial laser machining systems. Contact: Lionel Garcia, Product Manager, lionel.garcia@cailabs.com
Cambridge Technology, A Novanta Company
#731
125 Middlesex Tpke, Bedford, MA, 01730-1409 USA
+1 781 266 5700
scanners@cambridgetechnology.com; www.cambridgetechnology.com

**Featured Product: NEW 3-Axis Lightning™ II FX and ProSeries 2 FX for fiber laser applications**

For half a century, the Cambridge Technology business, part of Novanta, has developed innovative beam steering solutions, including polygon- and galvanometer-based optical scanning components, 2-axis and 3-axis scan heads, scanning subsystems, high power scanning heads, and controlling hardware/software. We collaborate with key OEMs to engineer products for advanced industrial processes: additive manufacturing, laser converting, laser marking, and medical applications: laser treatment and OCT. Contact: Gail Hernandez, Marketing Programs Manager, gail.hernandez@cambridgetechnology.com; Megan MacNeil, Market Development Manager, megan.macneil@cambridgetechnology.com

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**CASTECH Inc.**
#1847
Bldg 9 Zone F, 89 Ruanjian Ave, Fuzhou, Fujian, 350003 China
+86 591 83511029; fax +86 591 83711593

**Featured Product: Crystal Products, Glass Optics, Fiber Optics Subs, Coatings, Glass Components and so on.**

CASTECH is a leading manufacturer of NLO & Laser Crystals, Precision Optics and Laser Components. After 30 years untrtting efforts, we’ve built a strong team with unique expertise and rich teaching experience. Over 450,000 ft² facility integrated with cutting edge technologies of crystal growth, optical process and coating enables us the fast reaction of both prototype and mass production. ISO:9001 system and advanced metrology instruments guarantee every part out of our site under rigorous quality control. Contact: Andy Tang, Sales Manager, andy.tang@castech.com; Andy Huang, Marketing Manager, andy.huang@castech.com

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**CASIX, Inc.**
#2113
20 Fuxing St Fuxing Investment District, Fuzhou, 350014 China
+86 591 83610148; fax +86 591 83621248
marketing@casix.com; www.casix.com

**Featured Product: Crystal Products, Glass Optics, Fiber Optics Subs, Coatings, Glass Components and so on.**

Casix, founded in 1992 and located in Fuzhou China, is one of the foremost crystal manufacturers in the world providing world class crystal growth, polishing, and advanced coatings services. We also design, manufacture and supply high quality glass optics products, lenses, coatings and precision glass solutions for optical communications, instrumentation, surveying and medical applications. Contact: Mary Fang, Sales Manager, mary.fang@casix.com; April Liu, Sales Senior Engineer, april.liu@casix.com
CASTON Inc. #2340
SPICE & Member
71 Fuguang Rd, Fuzhou, Fujian, 350014 China
+86 591 8399 566
sales@fz-caston.com; www.fz-caston.com

Featured Product: NLO Crystals - LBO, BBO, BBO EOM (E-O Modulator); Laser Crystals - Nd:YVO4, Nd:YAG, Diffusion-bonded

CASTON is a world leading manufacturer of crystals. Under a stable QA system and with over 20 years’ professional techniques in growth and fabrication of Non-linear optical (NLO) crystals and Laser crystals, CASTON is capable of supplying large quantities of LBO, BBO, Nd:YVO4, Nd:YAG crystals with top quality, high damage threshold and competitive prices for both OEM and R&D customers. Products: NLO Crystals - LBO, BBO, BBO EOM (E-O Modulator); Laser Crystals - Nd:YVO4, Nd:YAG, Diffusion-bonded.

Contact: Jiang Hui, Sales Manager, info@cn-optics.com
sales@fz-caston.com; www.fz-caston.com

CeNing Optics Co., Ltd. #1507-M
4F W Taijiang Park 20th Bldg, JinShan Ave 618, Fuzhou Fujian, 350002 China
+86 591 8733 8232; fax +86 591 8733 4595
sales@cn-optics.com; www.cn-optics.com/

Featured Product: Lenses, Prisms, Mirrors, Windows, Beamsplitters, Polarizers, Filters, Waveplates

Since 2004, CeNing Optics is a professional manufacturer of optical elements, like lenses, prisms, mirrors, waveplates. CeNing employ about 25-30 staffs in two factories. CeNing has two manufacturing factories. CeNing has all necessary manufacturing facilities and precision inspection instruments to guarantee high quality. Contact: Jiang Hui, Sales Manager, info@cn-optics.com

CeramTec GmbH #4054
Luitpoldstr 15, Lauf, 91207 Germany
+1 864 308 1976
info@ceramtec.de; www.ceramtec.com

Featured Product: Technical Ceramics, Actuators, Ultrasonic Sensing

CeramTec is considered to be “The Ceramics Experts” through a wide offering of technical ceramic products that are utilized in many markets. For the photonics market, CeramTec is a leading producer of piezo ceramics (PZT) that are utilized in ultrasonic sensing applications as well as actuation utilizing multilayer actuators and bimorph structures. CeramTec also produces Alumina and AlN ceramics for electrical insulation and thermal management within sensing and electronic products. Contact: Brad Kinard, Business Development Manager, bkinard@ceramtec.com

Changchun New Industries Optoelectronics Technology Co., Ltd. #2018
No 888 Jinhu Rd, High tech Zone, Changchun, Jilin, 130103 China
+86 431 87033597; fax +86 431 87033597
amer@cnilaser.com; www.cnilaser.com

Featured Product: DPSS lasers, Diode lasers, Fiber lasers, Single frequency lasers, Q-switched lasers, OEM lasers

Changchun New Industries Optoelectronics Tech. Co., Ltd. (CNI), founded in 1996, is a high-tech company based on Changchun Institute of Optics, Fine Mechanics and Physics of Chinese Academy of Science. CNI is dedicated to offer best quality lasers, laser systems, optical spectrum analyzer, teaching and laboratory equipment, optical measuring equipment, laser processing equipment, machine vision and the photoelectric detection, etc. Contact: Anna Wang, International Sales, amer@cnilaser.com; Feifei Liu, Sales Manager, market@cnilaser.com

CeNing Optics Co., Ltd. #1507-M
4F W Taijiang Park 20th Bldg, JinShan Ave 618, Fuzhou Fujian, 350002 China
+86 591 8733 8232; fax +86 591 8733 4595
sales@cn-optics.com; www.cn-optics.com/

Featured Product: Lenses, Prisms, Mirrors, Windows, Beamsplitters, Polarizers, Filters, Waveplates

Since 2004, CeNing Optics is a professional manufacturer of optical elements, like lenses, prisms, mirrors, waveplates. CeNing employ about 25-30 staffs in two factories. CeNing has two manufacturing factories. CeNing has all necessary manufacturing facilities and precision inspection instruments to guarantee high quality. Contact: Jiang Hui, Sales Manager, info@cn-optics.com

CeramTec GmbH #4054
Luitpoldstr 15, Lauf, 91207 Germany
+1 864 308 1976
info@ceramtec.de; www.ceramtec.com

Featured Product: Technical Ceramics, Actuators, Ultrasonic Sensing

CeramTec is considered to be “The Ceramics Experts” through a wide offering of technical ceramic products that are utilized in many markets. For the photonics market, CeramTec is a leading producer of piezo ceramics (PZT) that are utilized in ultrasonic sensing applications as well as actuation utilizing multilayer actuators and bimorph structures. CeramTec also produces Alumina and AlN ceramics for electrical insulation and thermal management within sensing and electronic products. Contact: Brad Kinard, Business Development Manager, bkinard@ceramtec.com

Changchun New Industries Optoelectronics Technology Co., Ltd. #2018
No 888 Jinhu Rd, High tech Zone, Changchun, Jilin, 130103 China
+86 431 87033597; fax +86 431 87033597
amer@cnilaser.com; www.cnilaser.com

Featured Product: DPSS lasers, Diode lasers, Fiber lasers, Single frequency lasers, Q-switched lasers, OEM lasers

Changchun New Industries Optoelectronics Tech. Co., Ltd. (CNI), founded in 1996, is a high-tech company based on Changchun Institute of Optics, Fine Mechanics and Physics of Chinese Academy of Science. CNI is dedicated to offer best quality lasers, laser systems, optical spectrum analyzer, teaching and laboratory equipment, optical measuring equipment, laser processing equipment, machine vision and the photoelectric detection, etc. Contact: Anna Wang, International Sales, amer@cnilaser.com; Feifei Liu, Sales Manager, market@cnilaser.com
Photonics West Exhibitor Listing

Changzhou Optical Technical Co., Ltd.  #2512
No.10 Wangcai Road Airport Industry Zone Xinbei District Changzhou City, Jiangsu Province, Changzhou, 213133 China
+86 519 83400000; fax +86 519 83400888
caozm@czoptc.com; www.czoptc.com

Featured Product: Optical lens and Optical components used in laser marking, thermal imaging and night vision
Changzhou Optical Technical Co, Ltd covers production 10000 square meters, including 1000 square meters clean room. It is a high-tech enterprise in Jiangsu province. It boast an experienced first-class talent team, among them more than 30 engineers and 200 technicians and passed the ISO14001:2015,ISO9000:2015 system. The spirit of loyalty, hard work, responsibility and collaboration,we satisfy our staffs and customers most based on the principles of sincere, win-win and long-term cooperation. Contact: Alice, Sales, caozm@czoptc.com

Changzhou Run Chang Optoelectronics Technology Co., Ltd. #4044
Floor 3, SB, Jintong International Industrial Park, No.8, West Lake Road, Wujin High And New Tech Development Zone, Jiangsu, Changzhou, 213164 China
+86 159 8656 9283; fax +86 159 8656 9283
czcrkj@163.com; www.rcgdkj.com

Featured Product: High Precision Ball lens, Half ball lens
Our company was established in November 2014, is located in Changzhou Wujin Hi-tech Development Zone Jintong International Industrial Park, formerly known as Changzhou City Jia Ming Optoelectronics Co., Ltd. Specializing in the production of various specifications ball lens in Optical fiber coupling, micro-ball lenses, infrared and ultraviolet ball lenses silicon germanium arsenic sulfur-based crystal ball lens type, photovoltaic solar energy and aspherical pre-pressure ball lens. Contact: Cheng Wang, Marketing Director, czcrkj@163.com

Chengdu Dongjun Laser Co., Ltd. #4653
Ecological industrial park, Pujiang, Chengdu, 611630 China
+86 28 8885 5855; fax +86 28 8885 4398
chengsq@dj-laser.com; www.dj-laser.com

Featured Product: Laser crystals, sapphire crystal, scintillation crystals, ceramic crystals
Chengdu Dongjun Laser Co., Ltd is the largest manufacturer of laser crystals in Asia, has been concentrating on growing, processing, developing and selling YAG crystals for more than 16 years. As a professional enterprise in laser components, DJ Laser helps thousands of clients in industrial laser welding system, laser cutting system, laser marking system etc., medical lasers system, and research etc. at home and abroad. Contact: William Cheng, International Business Manager, chengsq@dj-laser.com;; Jack Shi, Sales Manager, shijy@dj-laser.com

Chengdu Yagcrystal Technology Co., Ltd #1521-G
No. 1455 Xihanggang Avenue, Shuangliu, Chengdu, 610200 China
+86 28 65058995; fax +86 28 65058993
zjy@yagcrystal.com; www.yagcrystal.com

Featured Product: Laser Crystals, Q-Switched Crystals, NLO Crystals, IR Crystals, Optics, Prisms
We fabricate kinds of IR crystal, laser rods, and optical components. YAGCRYSTAL INC. has become a leading manufacturer and exporter of a variety of crystal products, including: Nd:YAG, Nd:Ce:YAG, Yb:YAG, Er:YAG, Cr4+:YAG, Er:glass, Nd:glass, KTP, KD*P, Sapphire, ZGP, AgGaSe2, AgGaS2, KGW and a set of Q-Switch crystals to match the system. We can provide multifarious optical components, such as spherical lenses, aspheric lenses, optical windows, cylindrical lenses, prisms, filters, mirrors, etc. Contact: Wenxian Wang, Sales Engineer, sales1@yagcrystal.com

China International Optoelectronic Exposition (CIOE) #76
Rm 607 E Block Coastal Building, Haide 3rd Rd Nanshan District, Shenzhen, Guangdong, 518000 China
+86 755 8629 0901; fax +86 755 8824 2599
cioe@cioe.cn; www.cioe.cn/en

Featured Product: China International Optoelectronic Exposition (CIOE)
China International Optoelectronic Exposition (CIOE) is the world’s largest exhibition in optoelectronic industry. The event is an annual gathering for the global optoelectronic professionals to network with business partners and discover the future trends. It is also a meeting place where you could meet your customer, partners and suppliers under one roof. Contact: Derek Deng, International Marketing Executive, derek.deng@cioe.cn; Erin Deng, International Business Executive, erin.deng@cioe.cn

China Pavilion #1507; 1521
1st Floor, Office Building, CIEC, No 6 E Beisianhuan Rd, Chaoyang District, Beijing, 100028 China
+86 10 8460 0334; fax +86 10 8460 0325
www.ciec-oversesas.com

Chinese Laser Press #4552-D
390 Qinghe Rd, Jiading Shanghai, 201800 China
+86 21 69918426; fax +86 21 69918705
clp@siom.ac.cn; english.siom.cas.cn/sp/

Featured Product: Publishing journals, organizing a series of academic conferences and training courses
Chinese Laser Press, established by Shanghai Institute of Optics and Fine Mechanics and Chinese Optical Society in 2009, nowadays publishes seven journals and manage two online platforms. Journal publishing activities include both traditional and digital models, and the first journal can be traced back to 1984. CLP also runs the business of organizing a series of academic conferences and training courses about optics and photonics. Contact: Frank Gao, Sales Manager, ghfai@siom.ac.cn

Chiop Optotech Co., Ltd. #4046
Bldg 1 Jinshan Industrial Zone, Jinshan Rd Nancun Town Panyu, Guangzhou, 511442 China
+86 20 34698878; fax +86 20 34698633
qiguanghui@chiop.com; www.chiop.com

Featured Product: High level lenses, including Zoom lens, M12 lens and FA lens
Guangzhou CHIOPT Optotech Co., Ltd is a high-tech enterprise focusing on R&D, production and sales of high level optical lenses. With strong independent R&D, our company is capable of providing customized product design (ODM) and integrated solution. We have two manufacturing bases (Guangzhou &Changsha), with complete production line of optical lenses. To undertake PCB SMT and OEM business for various optical modules and industrial cameras. Contact: Guanghui Qi, Sales Manager, qiguanghui@chiop.com; Li Dai, Marketing Director, daili@chiopt.com
Chiral Photonics, Inc. #4156

26 Chapin Rd Ste 1104, Pine Brook, NJ, 07058-8802 USA
+1 973 732 0030; fax +1 973 732 0031
mail@chiral photonics.com; www.chiral photonics.com

Featured Product: Multicore Fiber Fanouts, Optoelectronic Packaging

Chiral Photonics offers fiber-based optical components and related services, including: multicore fiber fanouts and assemblies, high density optical couplers, optoelectronic packaging of photonic integrated circuits, high power pump-signal combiners, polarizers: linear and circular, fiber optic temperature sensors up to 1000°C, custom assemblies, e.g.: microfluidic assemblies, power combiners, medical probes. Contact: Jeff Neugroschl, Business Development Manager, jeffn@chiral photonics.com; Dan Neugroschl, President, dann@chiral photonics.com

Chongqing Zhaohong Technology Co., Ltd. #2521

No 79 Tiansheng Rd Beibei District, Chongqing, 400700 China
+86 23 68282023; fax +86 23 68282027
infozh@zhshapphire.com; www.zhsapphire.com

Chroma ATE, Inc. #2537

7 Chrysler, Irvine, CA, 92618 USA
+1 949 421 0355; fax +1 949 421 0353
info@chromaus.com; www.chroma us.com

Chroma is a world leading manufacturer of complete Electronic Test, Measurement and Manufacturing Solutions for commercial, automotive, military and government industries specializing in answers from bench top to fully automated turn-key electronic test and production requirements in semiconductor and optoelectronic including Laser Diode, Photo Detector, LED, CIS and solar cell. For more information, visit Chroma’s website at http://www.chroma us.com Contact: John Tessitore, VP, Sales & Marketing, johnt@chromaus.com; Aryn Douroudian, Sales Engineer, Arynd@chromaus.com

Chroma Technology Corp. #302


SPIE Corporate Member

10 Imtec Ln, Bellows Falls, VT, 05101 USA
+1 802 428 2500; fax +1 802 428 2525
sales@chroma.com; www.chroma.com

Chromacity #4853


SPIE Corporate Member

Quantum Ct, Research Ave S, Riccarton Edinburgh, EH14 4AP United Kingdom
+1 413 562 4040; fax +1 413 562 6167
sales@chromacitylasers.com; www.chromacitylasers.com

Chromacity, located in Riccarton, Scotland designs and manufactures tunable pico or femto second laser sources in the 1,350-4,200 nm range for applications like microscopy, spectroscopy, sensing and much more. Chromacity is exclusively distributed in the US by Allied Laser Solutions based in West Springfield, MA www.alliedlasersolutions.com. Contact: Alain Bourdon, US Sales, arb@alliedlasersolutions.com

Chromasens GmbH #56

Max-Stromeyer-Str 116, Konstanz, 78467 Germany
+49 7531 876 0
info@chromasens.de; www.chromasens.de/en

Founded in 2004, Chromasens GmbH designs, develops and produces innovative image capturing and processing systems to satisfy the most stringent of demands. Chromasens’ expertise lies in the development of both components and systems. The optical, electronic and mechanical elements of high-performance cameras and illumination systems are perfectly adapted to suit the specific tasks faced by each individual customer. The company is based in Constance, Germany, and is ISO 9001 certified.

cibite AG #4529

Posthof 4, Donauwörth, 86609 Germany
+49 90699998230; fax +49 90699998239
dialog@cibite.ag; https://www.cibite.ag/contact/

Featured Product: Pattern Light - Precise Single LED Control

The company behind a large family of world class glass inspection products. cibite AG is the technological leading supplier of inspection systems for quality assurance in the glass industry worldwide. Numerous patents and unique know-how are the company’s base for defining new standards in quality assurance. cibite AG unique products are used by well-known customers all over the world. Contact: Dieter Olschewski, CEO, ceo@cibite.ag

Cimcoop #1715

40 Buxton Blvd, Sofia, 1618 Bulgaria
+359 2 955 9741; fax +359 2 955 9941
info@cimcoop.com; www.cimcoop.com

Featured Product: Aspheric lenses and mirrors

Cimcoop grow optical grade silicon with purity > 99.999% and high-resistivity. Monocrystalline boules are routinely fabricated into blanks and optical components for imaging applications. Aspheric, diamond-turned optical production in Ge, Si, GaP2, plastic, aluminum & Ni-P coatings. Cimcoop produce optical components including lenses, prisms, witness samples using the newest CNC processing technology and metrology. Contact: Buzz Nesti, buzz@nakedoptics.com; Petar Gerovski, Sales Manager, gerovski@cimcoop.com

Circle and Square Co., Ltd. #2606

Yasuda 2-2-45, Osaka, 538-0032 Japan
+81 669115115; fax +81 66917235
model@csq.co.jp; www.csq.co.jp/ourbusinesssinkuuzyoucyaku.html

Featured Product: High-precision direct cutting plastic lens of optical quality below P-V 1µm,Ra 20nm

We have been providing high quality custom CNC machined acrylic lens to prototype manufacturing, research and development. Our machining lenses have been used in a wide range of markets and sectors which include: automotive, medical, aircraft, astronomy. Circle and square is in the top companies in the field of prototype plastic lens manufacturing in Japan to produce custom acrylic and plastic optical parts which will perform well in several applications. Contact: Sales, directcut@osc-japan.com

Cibite AG unique products are used by well-known customers all over the world. Contact: Dieter Olschewski, CEO, ceo@cibite.ag

Cimcoop #1715

40 Buxton Blvd, Sofia, 1618 Bulgaria
+359 2 955 9741; fax +359 2 955 9941
info@cimcoop.com; www.cimcoop.com

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Circle and Square Co., Ltd. #2606

Yasuda 2-2-45, Osaka, 538-0032 Japan
+81 669115115; fax +81 66917235
model@csq.co.jp; www.csq.co.jp/ourbusinesssinkuuzyoucyaku.html

Featured Product: High-precision direct cutting plastic lens of optical quality below P-V 1µm,Ra 20nm

We have been providing high quality custom CNC machined acrylic lens to prototype manufacturing, research and development. Our machining lenses have been used in a wide range of markets and sectors which include: automotive, medical, aircraft, astronomy. Circle and square is in the top companies in the field of prototype plastic lens manufacturing in Japan to produce custom acrylic and plastic optical parts which will perform well in several applications. Contact: Sales, directcut@osc-japan.com

SPIE Industry Events

Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees. Refer to pages 21–36.
CIS Forschungsinstitut für Mikrosensorik #4529
Konrad-Zuse-Str 14, Erfurt, 99099 Germany
+49 361 66 31 410; fax +49 361 66 31 413
info@cismst.de; www.cismst.de

Featured Product: Miniaturized UV-LED lighting with multiple wavelengths. Applications in biology and medicine
Development of customised technologies for optoelectronic, piezo-resistive and impedance micro-sensors and components and small volume production. Examples in the field of optical sensors and micro-sensors are: 1. Optical sensors for detecting vital parameters. 2. Micro laser doppler sensors for blood flow measurements. 3. Sensors for the determination of optical properties (absorption, light scattering, refractive index, polarization) and 4. Assembly technologies for UV LEDs. Contact: Olaf Brodersen, Business Unit Manager MOEMS, obrodersen@cismst.de

Clark-MXR Inc. #2519
7300 W Huron River Dr, Dexter, MI, 48130-1186 USA
+1 734 426 2803
sales@cmxr.com; www.cmxr.com

Featured Product: Femtosecond lasers, Complete System Solutions, Micromachining workstations and Contract machining
Clark-MXR, Inc. is an American ultrafast laser manufacturer (Est.1992) serving scientific and industrial markets. We design, manufactures, sells and supports femtosecond lasers and femtosecond laser based spectroscopy instrumentation for scientific, industrial and medical markets. We also manufacture micromachining workstations for industrial micromachining. We provide femtosecond laser based micromachining services, including microsystems, milling, hole drilling, and patterning. Contact: Tissa Gunaratne, Director, Sales and Marketing, sales@cmxr.com

Class 5 Photonics GmbH #4529
Deutsches Elektronensynchrotron, Notkestr. 85, Hamburg, Hamburg, 22607 Germany
+49 89 983039
www.class5photonics.com/

Clear Align #2321
2550 Blvd of the Generals Ste 280, Eagleville, PA, 19403-3679 USA
+1 484 956 0510; fax +1 484 956 0511
sales@clearalign.com; www.clearalign.com

Clear Align is a global leader in the design and manufacture of precision optical assemblies from components to payload, providing in-house optical, mechanical and electronics expertise that sets us apart from other contractors. Our expertise spans the UV, Visible, NIR, SWIR, MWIR, and LWIR portions of the spectrum. We provide optical solutions for defense, medical and commercial applications from terrestrial to space grade hardware. Clear Align maintains SDB, WOSB and SB status. Contact: Hollie Marinecz, VP of Optical Components, hollie.marinecz@clearalign.com; Susan Benz, BD & Contracts Manager, susan.benz@clearalign.com

CMC Microsystems #4445
945 Princess St, Ste 103, Kingston, ON, K7L 0E9 Canada
+1 613 530 4666; fax +1 613 548 8104
info@cmc.ca; www.cmc.ca

Working with leading suppliers in both commercial and academic environments, CMC Microsystems provides support for the entire design, make, and test cycle - from design, layout and verification to prototype fabrication and characterization. Arrangements for photonics manufacturing includes SOI-based silicon photonic technologies, and III-V epitaxy and processing on GaAs and InP substrates. We also offer packaging and assembly services to integrate multiple technologies. www.cmc.ca/photonics Contact: Jessica Zhang, Optoelectronics Design Engineer, zhangle@cmc.ca; Dan Deptuck, Staff Scientist, Optoelectronics Engineering, deptuck@cmc.ca

CMOS Sensor Inc. #2517
20045 Stevens Creek Blvd Ste 1A, Cupertino, CA, 95014-2355 USA
+1 408 366 2898; fax +1 408 366 2841
_cmos@csensor.com; www.csensor.com

Featured Product: Optical sensors for Biometrics, Fingerprint, Image Scanner/Inspection, Space, LiDAR, Machine Vision
CMOS Sensor Inc. designs & manufactures high quality electro-optical image acquisition solutions for applications in commercial, consumer, industrial, biometrics, bio-medical, space, military, surveillance & security markets. We supply area & line/linear sensors; standard & custom modules/subsystems. Headquarter is in Silicon Valley, California, USA, with subsidiaries in India & Taiwan, manufacturing partner in China, to supply optical products complying to ISO9001, ROHS etc. Contact: Harbor See, Sales and Marketing Manager, harbor@csensor.com; Winnie Hung, winnie@csensor.com

Coastal Connections #2042
2085 Sperry Ave, Ste B, Ventura, CA, 93003-5771 USA
+1 805 644 5051; fax +1 805 644 5355
sales@coastalcon.com; www.coastalcon.com

Featured Product: Fiber End-Caps are added to high power and 405nm fibers to dramatically increase their life.
Coastal Connections has been a leading provider of engineered fiber optic cables and terminations for 15 years. Specializing in high power, short wavelength, PM, SM, and large core MM cables along with vacuum feedthroughs. Our medical cables are sold around the world for laser surgery and for blood and cancer diagnosis. Our military cables are on land and in space for communications and sensing. And our industrial cables are used in strain, pressure and positional sensing. Contact: Max Parker, Sales Engineer, sales@coastalcon.com; Andy Devine, President, sales@coastalcon.com

Cobolt #2119
Vretenvägen 13, Solna, 171 54 Sweden
+46 8 5459 1230; fax +46 8 5459 1231
info@cobolt.se; www.cobolt.se

Cobolt supplies high performance CW and Q-switched lasers, for stand-alone use or OEM integration in equipment for fluorescence analysis, Raman spectroscopy, interferometric metrology, micromachining and environmental monitoring. The Cobolt lasers are manufactured in a company based and robust hermetically sealed package using proprietary HTCure™ Technology, which provides outstandingly high tolerance to demanding environmental conditions and ensured lifetime. Contact: Elizabeth Illy, Director of Marketing

CODIXX #1931
116 S River Rd, Bldg C, Bedford, NH, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
hvu@laser-components.com; www.laser-components.com

Featured Product: New IR polarizers: colorPol® N-series, made for laser wavelengths of 1310 nm, 1490 nm and 1550 nm
CODIXX produces dichroic glass polarizers for the UV, Vis, and IR range (340 nm up to 5,000 nm), well known under the brand name colorPol(R). The products have outstanding characteristics like high acceptance angle of 0 degrees, ±20 degrees, transmittance up to 98%, high contrast ratios of 70dB and a wide operating temperature range from ~<50 deg C to ~+400 deg C; also available with low wavefront distortion. Sales/Support in USA by Laser Components USA, Inc. Contact: Mike Tuohy, Sales Account Manager Laser Optics, Polarizers, tuohy@laser-components.com; Myriam Gillisjans, Marketing, mgillisjans@laser-components.com
Collimated Holes, Inc. #1244

460 Division St, Campbell, CA, 95008-6923 USA
+1 408 374 5080; fax +1 408 374 0670
contact@collimatedholes.com; www.collimatedholes.com

Collimated Holes, Inc. produces custom structures of glass for biotechnology, telecom, scientific, industrial, and medical applications: fused fiber imaging structures, single and multi-channel capillaries, drawn or etched holes, drawn micro-lenses, matrix arrays for coupling and isolation, fiber optic geometry converters, and fused fiber optic scintillating screens for x-ray detection. Contact: Matt Fate, Director of Sales and Manufacturing, contact@collimatedholes.com; Richard Mead, President, contact@collimatedholes.com

Colorado Photonics Industry Association #1813

PO Box 700, Boulder, CO, 80306 USA
+1 303 834 1022; fax +1 303 834 1022
cpia@coloradophotonics.org; www.coloradophotonics.org

Featured Product: Industry Association for Colorado Photonics Companies

CPIA is a not-for-profit association, formed in 1997, of industrial, educational, and governmental entities involved in research, development, and/or the sale of products or services that involve photonics technologies. Contact: Ken Anderson, CPIA Board President, ken@coloradophotonics.org

Colorado Thin Films, Inc. #2427

4895 Joliet St, Unit E, Denver, CO, 80239-2529 USA
+1 303 576 6336; fax +1 303 375 9609
sales@coloradofilms.com; www.coloradofilms.com

Conex Systems Technology, Inc. #4958

2880 Zanker Rd Ste 201, San Jose, CA, 95134-2122 USA
+1 408 954 7329; fax +1 408 954 7330
crystals@castech-us.com; www.castech-us.com

Featured Product: LBO, BBO, KTP, KDP, YVO₄, Nd:YVO₄, Nd:YAG, LiTaO₃ and other crystals

Conex supplies nonlinear (NLO) crystals and other optical materials. It is the most reliable source for LBO, BBO crystal and low cost, high quality wedges, KTP, KDP, YVO₄, Nd:YVO₄, Nd:YAG, LiNbO₃, LiTaO₃ and other optic crystals. Conex offers technical services and satisfaction guarantee for crystal products. Contact: Ken Zhang, VP Sales & Marketing, crystals@castech-us.com; Julia Kanik, Adm. Manager, crystals@castech-us.com

Connected Fibers, LLC #4609

1325 Northmead Pkwy Ste 130, Roswell, GA, 30076 USA
+1 678 389 4854; fax +1 678 623 0652
sales@connectedfibers.com; www.connectedfibers.com

Featured Product: 1Cure-VO four block programmable epoxy curing oven, ramp-soak capable with precision PID controller

An ISO9001:2008 manufacturer and technical reseller of fiber optic manufacturing equipment and processes. We offer epoxy curing ovens, ferrule concentricity measurement, PM alignment, IL test gear and polishing machines. The 1Cure epoxy oven is programmable and allows multiple temperature processes to improve cross linking and ensure long-term reliability of bonded products. The Konzentrik performs ferrule concentricity measurements on both ferrules and patch cords in addition to PM alignment. Contact: Adam Geraci, Chief Sales Officer, ageraci@connectedfibers.com; Tony Nicholson, CTO, tnicheleon@connectedfibers.com

Connet Laser Technology Co., Ltd #1507-L

3/F, Building 322, No. 953 Jiangchuan Road, Minhang, Shanghai, 200240 China
+86 021 61270268; fax +86 021 61270289
sales@connet-laser.com; en.connet-laser.com/

Featured Product: Pulse fiber laser for LiDAR, single frequency PM fiber laser, optical fiber amplifier, laser sources

Connet Laser Technology Co., Ltd founded in 2007, which specializes in the development and production of laser sources, pulse or CW fiber laser, optical fiber amplifier and the related products. Since its establishment, Connet Laser is dedicated to providing products and services on behalf of the frontier technology and the development tendency in scientific research and production applied in the fields of industrial laser, LiDAR, optical fiber sensor and optical fiber communication. Contact: Yanming Wang, Manager, ymwang@connet-laser.com

Continuum #713

140 Baytech Dr, San Jose, CA, 95134 USA
+1 408 727 3240; fax +1 408 727 3550
info@continuumlasers.com; www.continuumlasers.com

Since its founding in 1975, Continuum has developed a full line of standard and custom high energy solid state lasers that are used in scientific, industrial and commercial applications ranging from spectroscopy, materials analysis, combustion and PIV to x-ray generation and high energy plasma physics. With the recent expanded capability, Continuum now offers high peak power femtosecond lasers such as high contrast systems and high power CEP-stabilized femtosecond lasers. Contact: info@continuumlasers.com

Contour Metrological & Manufacturing, Inc. #2344

488 Oliver Dr, Troy, MI, 48084-5426 USA
+1 248 273 1111; fax +1 248 362 2152
info@cmmpptic.com; www.cmmpptic.com

Featured Product: Single Point Diamond Turned Optics-Polymer & Metal Lenses, Mirrors, Micro Arrays, Diffractives, etc.

Contour Metrological & Manufacturing (CMM) is a world class manufacturer of diamond turned precision plastic & metal optics and optic assemblies specializing in Military, Aerospace, Automotive, Industrial and Medical applications. CMM manufactures custom optic mold inserts, precision fixtures and gauges. CMM has an extensive selection of Optical & Mechanical inspection equipment. We certify our manufactured parts and provide inspection services for our customer’s needs. Contact: Tim Metko, General Manager, tmetko@cmmpptic.com; Kevin McMahon, President, kmcmahon@cmmpptic.com
**Contrast, Inc.**
6100 Uptown Blvd NE Ste 560, Albuquerque, NM, 87110-4173 USA
+1 505 872 2123
info@contrastoptical.com; www.contrastoptical.com

**Featured Product:** The VIA Smart Camera, with HDR capability, eliminates the need for external processing systems

Contrast, Inc. is focused on creating leading-edge, system-level solutions. Contrast developed its HDR video technology that allows for a more realistic and data-rich video experience. We specialize in real-time image processing, optical design & imaging system analysis, algorithm development, & electronics prototyping for manufacturability. Our custom HDR, Smart Camera line provides new & far-reaching capabilities to all digital imaging markets, including machine vision, industrial, & military.

Contact: Nora Tocci, President, nora@contrastoptical.com; Breeze Sansom, Executive Assistant, breeze@contrastoptical.com

**Convergent Photonics**
711 E Main St, Chicopee, MA, 01020 USA
+1 413 598 5200; fax +1 413 598 5201
contacts@convergent-photonics.com; www.convergent-photonics.com

**Featured Product:** CF6000 6kW fiber laser source and Lyrae Multi-emitter diode laser source

Convergent Photonics intends to be the pre-eminent supplier of robust, high power and high quality laser sources for Industrial Applications in the global machine tool industry. Taking advantage of our extensive applications knowledge, we develop customized and costs effective solutions tailored for the application. Our goal is to provide a range of flexible products offerings the option to purchase fully functional turn-key lasers, or the modules/kits to be integrated into a customized package. Contact: Maurizio Gattiglio, Chairman & CEO, maurizio.gattiglio@convergent-photonics.com; Kenneth Smith, Product Manager, kenneth.smith@convergent-photonics.com

**CooLED Ltd**
Westmarch Business Ctr, River Way, Andover, SP10 1NS United Kingdom
+44 1264 323040; fax +44 1264 723897
cooled.com/

**Featured Product:** pE-300lite, pE-300white, pE-300ultra, pE-340fura, pE-4000

The company has specialised in fluorescence microscopy since it introduced the first commercially available LED illumination system in 2006. LEDS are now the system of choice because they are more stable, longer lasting, and energy efficient than traditional mercury based illuminators as well as offering superior safety and environmental features. CooLED offers a comprehensive range of LED illumination systems- pE-100, pE-100wht, pE-300lite, pE-300white, pE-300ultra, pE-340fura, pE-4000. Contact: Raj Patey, US Sales Manager, raj.patey@cooled.com

**CorActive High-Tech Inc.**
121-2700 Jean-Perrin St, Quebec, QC, G2C 1S9 Canada
+1 418 845 2466
sales@coractive.com; www.coractive.com

**Featured Product:** Specialty Optical Fibers and Fiber laser modules

CorActive is a manufacturer of advanced Specialty Optical Fiber (SOF) and fiber laser modules products that uniquely enable its OEM customers to offer superior products and services. CorActive offers an extensive selection of products, including Double Clad (Er:Yb, Yb, Er, Tm, etc.), Mid-IR transmission, Erbium doped single clad, UV Sensitive and attenuating optical fibers that are suitable for a wide range of applications in the industrial, medical, telecom and sensing industries.

Contact: Michel Begin, Product Manager, michel.begin@coractive.com; Vinh N. Dan, Marketing Coordinator, vinh.dang@coractive.com

**Coresix Precision Glass, Inc.**
1737 Endeavor Dr, Williamsburg, VA, 23185 USA
+1 757 888 1361; fax +1 757 888 1366
sales@coresix.com; www.coresix.com

**Featured Product:** PPMgO:LN crystals, custom or ex stock, for wavelength conversion in visible and mid-IR applications

A UK manufacturer of PPMgO:LN, supporting a wide range of applications from stock: Spectroscopy, Sensing, Bio-Medical, Terahertz Imaging, fs/ps-laser SHG and many more. Our unique production process ensures the highest conversion efficiencies (uniform domains in x, y & z), enhancing both performance and ease-of-use. We can offer these key components in high volumes and at market-enabling prices. Large range of stock PPLN ships within 1 week for a cost effective and fast development cycle. Contact: Rongrong Xu, Senior Sales Engineer, sales@coresix.com
Our Main Products Are:
High Transmission Fluoride Crystal In Uv

T / %

Wavelength / nm

0 10 20 30 40 50 60 70 80 90 100

120 130 140 150 160 170 180 190 200 210 220 230

MgF2 CaF2 BaF2 LiF

Cristal Laser S.A.
Parc d’Activités du Breuil, 32 rue Robert Schuman, Messein, 54850 France
+33 3 8347 0101; fax +33 3 8347 2272
mail@cristal-laser.fr; www.cristal-laser.com

Featured Product: Non-linear Crystals applied to Military, Industry, Medical, R&D programs. LBO-KTP-KTA- RTP / QSWITCH

Cristal Laser: for more than 25 years, manufactures top Quality non-linear Crystals such as LBO, KTP, KTP.fr, KTA for frequency conversion. Also, RTP Pockel Cells for electro-optics applications: Qswitches or pulse pickers. Thanks to our highly skilled staff, high Quality and control equipment, we offer the best expertise to propose top rank Crystals for most demanding applications. We sell worldwide. Contact: Marc-André Herrmann, Sales Engineer, marc-andre.herrmann@cristal-laser.fr; Ophélie Wagner, Sales Manager, ophélie.wagner@cristal-laser.fr
Photonics West Exhibitor Listing

Critical Link, LLC #210
6712 Brooklawn Pkwy, Syracuse, NY, 13211-2158 USA
+1 315 425 4045; fax +1 315 425 4048
info@criticallink.com; www.criticallink.com

**Featured Product: Embedded Vision Development Platforms and Custom Design Services**

Critical Link’s depth of experience in image sensor technology, SoC & FPGA design, vision protocols, and signal processing expertise uniquely position us as a premier developer partner in imaging system design. We work with OEMs in industrial, scientific, medical, & defense markets to design and manufacture custom imaging platforms. Our engineering team has designed platforms around a wide array of image sensor technologies, including CMOS/sCMOS, CCD, Linescan, InGaAs, Infrared, NIR, & SWIR. Contact: Amber Thousand, Director of Marketing, athousand@criticallink.com; Omar Rahim, VP Sales, Imaging Solutions, omarr@criticallink.com

Crosslight Software #4447
230-3410 Lougheed Hwy, Vancouver, BC, V5M 2A4 Canada
+1 604 320 1704; fax +1 604 320 1734
info@crosslight.com; www.crosslight.com

**Crosslight Software is an industry leader in Technology Computer-Assisted Design (TCAD) simulation tools headquartered in the greater Vancouver area. For over twenty years, Crosslight has been dedicated to providing state-of-the-art TCAD tools for the simulation of semiconductor devices and processes. Crosslight is among the world’s top suppliers of semiconductor TCAD tools with a customer list extending to hundreds of semiconductor companies and research institutions around the world. Contact: Michel Lestrade, Director Technical Sales, info@crosslight.com; Zhi Qiang Li, Vice President Engineering, zqli@crosslight.com**

CryLaS GmbH #4529
Ostendstr 25, Berlin, 12459 Germany
+49 30 5304 2500; fax +49 30 5304 2525
info@crystal-gmbh.com; www.crystal-gmbh.com

**Featured Product: Custom-made optical components, Diffusion bonded laser crystals**

CryLaS GmbH is a company committed to highly developed technologies and products with and related to crystals such like CaF2, BaF2, Zinc Sulfide, Silicon, Nd:YAG, Nd:YVO4 and provides NLO crystals including: KBBF, BBO, LBO and KTP; as well as IR optics(Ge, Si, ZnS and ZnSe). Laser optics (mirrors, windows, lenses, etc.) and components are also available. Contact: Tiffany Liu, Sales Manager, sales@cryslaser.com; Hoya Liu, Sales Manager, sales@cryslaser.com

CryLight Photonics, Inc. #145
Jinshan Fuwan Industrial Park, 2/F Bldg 14 NO 756 Qian Road, Fuzhou, Fujian, 350008 China
+86 591 8377 2101; fax +86 591 8377 2103
sales@crylight.com; www.crylight.com

Cryslaser Inc. #5340
High-Tech District Western Zone, B2, 199 Western Rd., Chengdu, 611731 China
+86 28 6634 8331; fax +86 28 8798 8682
sales@cryslaser.com; www.cryslaser.com

**Featured Product: KBBF, Diffusion Bonded Crystal, YAG Crystals, IR Window of Detector, Various ranges of IR materials**

Cryslaser is one of largest manufacturer of YAG seriaals crystals in China. We specialize in laser crystals including YAG and YVO4 and provides NLO crystals including: KBBF, BBO, LBO and KTP; as well as IR optics(Ge, Si, ZnS and ZnSe). Laser optics (mirrors, windows, lenses, etc.) and components are also available. Contact: Tiffany Liu, Sales Manager, sales@cryslaser.com; Hoya Liu, Sales Manager, sales@cryslaser.com

Crystal Laser GmbH #4529
Ostendstr 25 Haus 4, Berlin, 12459 Germany
+49 30 5304 2500; fax +49 30 5304 2525
info@crystal-gmbh.com; www.crystal-gmbh.com

**Featured Product: Custom-made optical components, Diffusion bonded laser crystals**

Crystal Laser GmbH is a company committed to highly developed technologies and products with and related to crystals such like CaF2, BaF2, Zinc Sulfide, Silicon, Nd:YAG, Nd:YVO4 and provides NLO crystals including: KBBF, BBO, LBO and KTP; as well as IR optics(Ge, Si, ZnS and ZnSe). Laser optics (mirrors, windows, lenses, etc.) and components are also available. Contact: Tiffany Liu, Sales Manager, sales@cryslaser.com; Hoya Liu, Sales Manager, sales@cryslaser.com

Cryslaser Inc. #5340
High-Tech District Western Zone, B2, 199 Western Rd., Chengdu, 611731 China
+86 28 6634 8331; fax +86 28 8798 8682
sales@cryslaser.com; www.cryslaser.com

**Featured Product: KBBF, Diffusion Bonded Crystal, YAG Crystals, IR Window of Detector, Various ranges of IR materials**

Cryslaser is one of largest manufacturer of YAG seriaals crystals in China. We specialize in laser crystals including YAG and YVO4 and provides NLO crystals including: KBBF, BBO, LBO and KTP; as well as IR optics(Ge, Si, ZnS and ZnSe). Laser optics (mirrors, windows, lenses, etc.) and components are also available. Contact: Tiffany Liu, Sales Manager, sales@cryslaser.com; Hoya Liu, Sales Manager, sales@cryslaser.com

Crystal Laser LC #2415
4750 Longley Ln Ste 205, Reno, NV, 89502-5982 USA
+1 775 348 4820; fax +1 775 348 7047
sales@crystala laser.com; www.crystala laser.com

**Featured Product: Optical Isolators & picosecond Laser systems**

CryLaS GmbH is a company committed to highly developed technologies and products with and related to crystals such like CaF2, BaF2, Zinc Sulfide, Silicon, Nd:YAG, Nd:YVO4 and provides NLO crystals including: KBBF, BBO, LBO and KTP; as well as IR optics(Ge, Si, ZnS and ZnSe). Laser optics (mirrors, windows, lenses, etc.) and components are also available. Contact: Tiffany Liu, Sales Manager, sales@cryslaser.com; Hoya Liu, Sales Manager, sales@cryslaser.com

Crystalline Mirror Solutions #2509
114 E Haley St., Ste G, Santa Barbara, CA, 93101 USA
+1 805 899 1711
info@crystallinemirrors.com; www.crystallinemirrors.com

**Featured Product: xtal mir™ is our solution for mid-IR (2 - 5 µm) supermirrors with minimal absorption losses**

Crystalline Mirror Solutions (CMS) is the pioneer of ultra-high reflectivity and fundamentally low-noise crystalline supermirrors. These semiconductor-based interference coatings set new standards for a variety of applications spanning defense, astronomy, and laser-based manufacturing, being employed in the world’s most stable interferometers for cutting-edge metrology, while providing significant performance advantages for laser machining and mid-infrared cavity-enhanced spectroscopy systems. Contact: Mark White, Business Development Manager, mark.white@crystallinemirrors.com; Garrett Cole, Co-Founder and CEO, garrett.cole@crystallinemirrors.com
Cybel LLC
1195 Pennsylvania Ave, Bethlehem, PA, 18012-2026 USA
+1 610 691 7012; fax +1 610 691 7012
contact@cybel-llc.com; www.cybel-llc.com

Featured Product: MAKO 1.5µm & 1µm compact OEM Amplifiers and Nanosecond Pulsed Lasers with KiloWatt output power
Cybel, LLC designs and manufactures fiber lasers and fiber amplifiers for applications in the 1µm, 1.5µm and 2µm bands. Whether in our high power OEM SkyLine Series or our efficient and compact OEM Mako Series, our products offer the best combination of performance, cost and reliability. Cybel’s principal mission is to provide the optimal photonic solutions for our customer’s applications and in this regard, also distributes products from iXBlue Photonics, QDLaser, Eblana, Alnair Labs and more. Contact: Jean-Marc Delavaux, CEO, jm@cybel-llc.com; Bweh Esembeson, Director East Coast USA Sales, bweh.esembeson@cybel-llc.com

Cycle GmbH
Notkestr 85, Bldg 25, Hamburg, 22607 Germany
+49 40 8998 6538; fax +49 40 8994 6538
office@cyclelasers.com; www.cyclelasers.com

Cymatix, Inc.
1160 Industrial Ave Ste J, Petaluma, CA, 94952-6515 USA
+1 800 913 0555; fax +1 800 357 7776
info@cymatix.com; www.cymatix.com

Serving the motion control industrial market for 35 years, look to Cymatix for laser and photoelectric sensors, precision ball screw and linear motor stages, rotary stages with direct drive motors and worm drives, servo and stepping motors, gearboxes, linear and rotary encoders, servo controllers and drives with CANopen and EtherCAT interfaces, PLCs, AC Drives, Human Machine Interfaces (HMI), and value-added services. Contact: Terese Bowman, Marketing Manager, tbowman@cymatix.com

Daco Instrument Company
45 Woodmont Rd, Milford, CT, 06460 USA
+1 203 874 2515; fax +1 203 878 6655
info@dacoinstrument.com; www.dacoinstrument.com

Featured Product: Rotary Spring / Bi-Stable Solenoids, Shutters, Closed Loop System, High Torque Solenoids, Shielding
Daco is recognized as a leading provider of value-added products. Founded in 1929, the company started as a manufacturer of aircraft gearing systems. Today, we design and manufacture advanced optical shutter systems for thermal imaging, fiber optic networks, medical systems and aerospace applications. Contact: Dhaval Desai, Global Business Development Manager, ddesai@dacoinstrument.com; Luigi Cazzaniga, General Manager, lcazzaniga@practicalautomation.com

Crystran Ltd.
1 Broom Rd Business Park, Poole Dorset, BH12 4PA United Kingdom
+44 1202 307650; fax +44 1202 307651
sales@crystran.co.uk; www.crystran.co.uk

Crystran Ltd manufactures high quality optical components in England. Specialising in IR-VIS-UV materials to manufacture windows, lenses, prisms and specialist optics as standard or custom optics. Available as prototypes or production quantities. We have a reputation for excellent customer service and on-time deliveries. Working in CaF2, BaF2, MgF2, LiF, ZnSe, ZnS, Ge, Si and KRS5 plus many more exotic materials. Contact: Alaina Wright, Sales & Marketing Manager, alaina@crystran.co.uk;

CSEM SA
Marketing, Rue Jaquet-Droz 1, Neuchâtel, 2002 Switzerland
+41 32 720 5411
info@csem.ch; www.csem.ch

CSEM is a Swiss research and technology organization to transfer technology to the industrial sector. CSEM is an innovation accelerator with four principal tasks: develop and maintain technology platforms; integrate and combine technologies into workable systems; mature those technologies until using them will add value to our industrial clients; support the process of transferring those technologies to industry. Our expertise portfolio comprises among others packaging for photonic devices, MOEMS, scientific instrumentation, industrial automation, vision technologies, lighting and photovoltaics.

CST Global Ltd.
Hamilton Technology Park, 4 Stanley Blvd, Hamilton, G72 OBN United Kingdom
+44 1698 722072; fax +44 1698 821101
salesinfo@cstglobal.uk; www.cstglobal.uk

CST Global provides both a customer compound semiconductor foundry service, as well as a range of high-volume, standard laser products for the optical communications markets. Contact: Euan Livingston, VP Sales & Marketing, euan.livingston@cstglobal.uk; Kyle Kennedy, Staff Engineer, kyle.kennedy@cstglobal.uk

CST of America
492 Old Connecticut Path Ste 500, Framingham, MA, 01701 USA
+1 508 665 4400
info@us.cst.com; www.cst.com
Daheng Optical Thin Film Center

NO 7 Hailing Rd Fengtai Science Park, Beijing, 100070 China
+86 10 8368 1693; fax +86 10 6379 2951
sales@dahengoptics.com; www.dahengoptics.com

Featured Product: IR filter, Fluorescence filter, Biochemical filter, laser filter, PBS for AR&VR, laser lens laser window

Daheng Optical Thin Film Center is a leading supplier of the most advanced dielectric filters. For 50 years Delta enables customers to offer the highest performing analytical and diagnostic instruments by applying latest design and process control technologies. Delta offers a wide range of high efficiency durable hard coated filters that have set standards in the market place. With its unique design tools Delta is able to tailor filters to any application with competitive pricing at high volume. Contact: Brian Ebbing, Technical Specialist, brian@deltaopticalthinfilm.com; Mike Anderson, Technical Specialist, mike@deltaopticalthinfilm.com

Daylight Solutions Inc.

15379 Ave of Science Ste 200, San Diego, CA, 92128-3451 USA
+1 858 432 7500; fax +1 858 432 5737
sci-sales@daylight solutions.com; www.daylight solutions.com

Daylight Solutions Inc. was founded in 1988 to bring affordable, high-performance beam profiling to the photonics community. DataRay manufacture 16 µm MWIR/FIR beam profiler to any application with competitive pricing at high volume. Contact: Brian Ebbing, Technical Specialist, brian@deltaopticalthinfilm.com; Mike Anderson, Technical Specialist, mike@deltaopticalthinfilm.com

Dandong Elaser Electronic Technology Co., Ltd.

Building 70-42, Wenqing Road, Zhenxing District, Dandong, 118300 China
+86 415 6156 966; fax +86 415 6155 155
info@ddelaser.com; www.ddelaser.com/

Featured Product: 532nm integrated package laser diode, 532nm dot laser module, 532nm line laser module

Dandong Elaser Electronic Technology Co., Ltd. is a leading supplier of the most advanced dielectric filters. For 50 years Delta enables customers to offer the highest performing analytical and diagnostic instruments by applying latest design and process control technologies. Delta offers a wide range of high efficiency durable hard coated filters that have set standards in the market place. With its unique design tools Delta is able to tailor filters to any application with competitive pricing at high volume. Contact: Brian Ebbing, Technical Specialist, brian@deltaopticalthinfilm.com; Mike Anderson, Technical Specialist, mike@deltaopticalthinfilm.com
DenseLight Semiconductors #5673
POET Technologies, Inc., 6 Changi N St.2., 498831 Singapore
+65 6415 7989; fax +65 6415 4468
info@denselight.com; www.denselight.com

Featured Product: SLED, ILM, FBGL's, ELED's, DFB's
Dense light Semiconductors is a Singapore-based division of POET Technologies. We design, manufacture, and deliver leading photonics optical light source products and solutions to the communications, medical, instrumentation, industrial, defense, and security industries. DenseLight processes Indium Phosphide (InP) and Gallium Arsenide (GaAs) based optoelectronic devices and photonic integrated circuits through its in-house wafer fabrication and assembly & test facilities. Contact: Bryan Patmon, VP- Sales & Marketing (EU/USA), bkp@denselight.com; Maricris Englaterra, Sales Executive, maricris@denselight.com

Denton Vacuum Inc. #4567
Bldg 3, 1259 N Church St, Mooresville, NJ, 08057-1169 USA
+1 856 439 9100; fax +1 856 439 1111
info@dentonvacuum.com; www.dentonvacuum.com

Denton Vacuum technology enables innovation. As thin film industry pioneers, we provide thin film solutions used to create the world’s most innovative products and consistently raise the bar in product performance and outstanding service — and in delivering the latest in thin film technologies. Denton’s technology portfolio includes thermal evaporation, e-beam evaporation, ion-beam-assisted evaporation, magnetron sputtering, plasma-enhanced chemical-vapor deposition, among others. Contact: David Douglass, Ph. D., Sr. Product Manager, ddouglass@dentonvacuum.com; Colin Quinn, Vice President of Sales and Service, cqquinn@dentonvacuum.com

Deposition Sciences, Inc. #1449
3300 Coffey Ln, Santa Rosa, CA, 95403-1917 USA
+1 707 573 6700
solutions@depsci.com; www.depsci.com

Featured Product: Infrared Narrow Bandpass Filters. Bandwidths manufactured to customer specifications: 1% to 10% FWHM
DSI produces a wide variety of highly reliable, durable and heat-resistant optical coatings. Our exclusive technologies and custom deposition chambers offer coatings in the UV to LWIR wavelengths. In addition to offering standard products, we work in close collaboration with our customers to develop innovative coatings that achieve specific requirements. Known for our strong engineering services, we seek to understand your needs and provide creative solutions for real world applications. Contact: Carol Lueck, Prod. Marketing, lueckca@depsci.com

Diamond USA Inc. #5171
85 Rangeway Road, N Billerica, MA, 01862 USA
+1 978 256 6544; fax +1 978 256 3362
info@diausa.com; www.diausa.com

DIAMOND recently introduced modular fiber optic connectors for power solution applications. These connectors are designed to eliminate the need for splicing where multi-mode fibers are being used to transport high power. The DIAMOND E-2000™ PSm and DMI PSm products utilize optical interface PSm technology for such fibers and applications. For multi-mode fibers in particular, our PSm technology has been developed to guarantee power transportation at high power, Contact: David Fanning, Business Development Manager, dfanning@diausa.com; Federico Raffa, Engineer, fraffa@diausa.com

Diamond Coatings, Inc. #350
4830 S 36th St, Phoenix, AZ, 85040-2945 USA
+1 480 999 3456
sales@diamondcoatings.com; www.diamondcoatings.com

Featured Product: Automotive Touch Lighting system
Diamond Coatings is a supplier of high quality ITO Glass and Optical Coatings with a global customer base including companies producing a diversity of products and companies of varying sizes in industries including, among many others: Aerospace; Automobile; Defence & Military; Telecommunications; Medical; Education; & many more… Using our outstanding technical resources on a daily basis, we often have the privilege to participate in the innovation of truly ground-breaking concepts. Contact: Jason Elite, President / Owner, jason@diamondcoatings.co.uk; Chris Allen, Operations Manager, chrisallen@diamondcoatings.com

Diamond Coatings is a supplier of high quality ITO Glass and Optical Coatings with a global customer base including companies producing a diversity of products and companies of varying sizes in industries including, among many others: Aerospace; Automobile; Defence & Military; Telecommunications; Medical; Education; & many more… Using our outstanding technical resources on a daily basis, we often have the privilege to participate in the innovation of truly ground-breaking concepts. Contact: Jason Elite, President / Owner, jason@diamondcoatings.co.uk; Chris Allen, Operations Manager, chrisallen@diamondcoatings.com

DIAS Infrared Corp. #2530
75 Sterling St, West Boylston, MA, 01583 USA
+1 774 261 8699; fax +1 774 421 3002
sales@diasonline.com; www.dias-online.com

Featured Product: PYROSENS pyroelectric infrared detectors. Single, multi-element, and linear array IR detectors
DIAS Infrared is a leading supplier of infrared technology. We specialize in the design, development and production of pyroelectric infrared detectors for gas detection and spectroscopy, fixed-mount & handheld digital pyrometers, and IR cameras, made specifically for industrial use in process monitoring and control. DIAS Infrared is your premier source for any infrared detection requirements and radiometric non-contact temperature measurement systems from –40 °C to 3000 °C. Contact: Philip Gregor, VP, COO, pgregor@diasonline.com
### DiCon Fiberoptics, Inc. #4353

DiCon Fiberoptics, Inc.

1689 Regatta Blvd, Richmond, CA, 94804-7438 USA  
+1 510 620 5000; fax +1 510 620 4100  
sales@diconfiber.com; www.diconfiberoptics.com

DiCon Fiberoptics is the leading expert in fiber optic switches, and offers high quality solutions for Aerospace, Biomedical, Defense, Fiber Sensing, Network Monitoring, Network Security, and Optical Communications applications. DiCon's proven MEMS technology offers unsurpassed lifetime and reliability, with solutions optimized to the application. In addition, DiCon's ScopeLED division offers high intensity, tunable LED lighting solutions for BF and Fluorescence Microscopy. Contact: sales@diconfiberoptics.com

### Dicroptic Optics Ltd. #25

531, Enterprise Place, Hong Kong Science Park,, Hong Kong, China  
+852 2793 5976; fax +852 2793 1696  
sales@diffraction-optics.com; www.diffraction-optics.com

**Featured Product:** Plastic optics, diamond turned optics, multi-layer optical coatings, imaging and illumination optics.

Dicroptic Optics Ltd is an independent manufacturer of optical components, including plastic injection molded lenses for precision imaging, metalized reflectors for LED illumination and diamond turned metal optics. Plastic lens molding with monthly capacity over 7 million lenses is a 24/7 robotic operation with in-house fabricated optical molds and optical coaters. We serve across a wide spectrum of industries in biomedical, consumer electronics with customized optical design for all customers. Contact: Man Fok, Director, manfok@diffraction-optics.com; sales@diffraction-optics.com

### Dino-Lite Digital Microscope #4673

**Featured Product:** Dino-Lite Edge Series

Dino-Lite digital microscopes and eyepiece cameras provide high-quality microscopy video interfacing to PC and MAC with clear and steady imaging. Most models provide 10x-220x along with a multitude of software features. The included software makes it easy to take snapshots, record videos, manipulate images, and save email discoveries. New features include wireless adapter for use with iPad or Android tablet, Extended Depth of Field (EDOF), and email discoveries. New features include wireless adapter for use with iPad or Android tablet, Extended Depth of Field (EDOF), and Automatic Magnification Reading (AMR). Contact: Marisa de la Cruz, Trade-Show Coordinator, events@dunwell.com

### Diode Laser Concepts, Inc. #5058

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+1 541 773 5321; fax +1 541 773 1705  
sales@diodelaserconcepts.com; www.diodelaserconcepts.com

**Featured Product:** World-class Laser Solutions: OEM applications for medical, machine vision, measurement and alignment

Diode Laser Concepts - Custom, Integrated, Solutions. We leverage your engineering capabilities with our proven laser and optical design expertise. We solve manufacturing challenges by providing turnkey, high-quality optoelectronic and mechanical solutions. We deliver your production capacity needs from prototypes to full-scale OEM volume, with DLC-owned domestic and offshore manufacturing options. Our relationship-based business has been developing successful long-term partnerships since 1991. Contact: Mike Robinson, President, sales@diodelaserconcepts.com

### Dioptic GmbH #4529

Bergstr 92A, Weinheim, 69469 Germany  
+49 6201 65040 0; fax +49 6201 65040 04  
info@dioptic.de; www.dioptic.de

We develop custom optical metrology solutions in close cooperation with our customers. Our core competences are in the areas of optics design, measuring systems, LED-based light sources, data analysis, image processing, diffractive optics and interferometry. Our service portfolio spans optics development and development of inspection systems. Products we regularly provide are customer-specific infrared lenses, CGHs for asphere metrology, and the ARGOS surface inspection system. Contact: Jean-Michel Asfour, Managing Director, asfour_PW2018@dioptic.de; Florian Langhofer, Area Manager Infrared objectives, langhofer_PW2018@dioptic.de

### Disc Inspection Technology Co., Ltd. #5029

111-2 Itayamachi, Naka-ku Hamamatsu City, 430-7726 Japan  
+81 53 450 3791; fax +81 53 450 3782  
sales-web@discotech.co.jp; www.dsicotech.co.jp

**Featured Product:** VCSEL full auto and semi auto inspection system

We are one of the inspection machine maker in Japan. We are ready to make custom inspection machine. Contact: Yasushi Kudo, CEO, sales-web@discotech.co.jp; Mayu Fujii, Sales Assistant

### Discovery Semiconductors, Inc. #4238

119 Silvia St, Ewing, NJ, 08628-3200 USA  
+1 609 434 1311; fax +1 609 434 1317  
sales@discoverysemi.com; www.discoverysemi.com

### Dispelix Oy #4365

Spektri Business Park Duo, Metsaaineidokkuja 6, Espoo, 02130 Finland  
+358 40 775 7840  
sales@dispelix.com; www.dispelix.com

**Featured Product:** See-through-display for AR - Glasses

Dispelix designs and supplies optical see-through-displays for augmented reality device designers and manufacturers. Contact: Antti Sunnari, CEO, antti.sunnari@dispelix.com

### Diverse Optics Inc. #1917

10310 Regis Ct, Rancho Cucamonga, CA, 91730 USA  
+1 909 593 9330  
info@diverseoptics.com; www.diverseoptics.com

**Featured Product:** Custom, Precision, Injection Molded and Diamond Turned Polymer Optics

We know that your optics are as unique as you are. With our help, you can reduce cost, trim weight, simplify design, and improve the performance of your optics. For 30 years, we’ve been manufacturing the most challenging polymer optic components and assemblies for leading defense, medical, and commercial applications with advanced technology and an experienced team of professionals. With our knowledge of injection molding and diamond turning, we’ll show you how polymer optics are perfected. Contact: Letty Trevino, Sales Engineer, info@diverseoptics.com
**Dover Motion**  
159 Swanson Rd, Boxborough, MA, 01719 USA  
+1 508 475 3400; fax +1 508 836 3223  
sales@dovermotion.com; www.dovermotion.com  
**Featured Product:** Dover Objective Focuser (DOF): high-resolution, high bandwidth linear motor objective focusing stage  
Dover Motion is a premiere supplier of innovative, cost-effective motion control solutions. Proven experts in a complex field, Dover will collaborate with you to analyze your project and deliver an optimal solution. Whether that solution is a standard product, such as an MMX linear stage, an RTR rotary stage, or a fully customized multi-axis solution incorporating control electronics and optics, Dover Motion has the skills and experience to guide your project to success. Contact: Dave Larcenere, Director, Business Development, dave.larceneard@dovermotion.com; John Garrity, Marketing Manager, john.garrity@dovermotion.com

**DOWA Electronics Materials Co., Ltd.**  
4-14-1 Sotokanda, Chiyoda-ku Tokyo, 101-0021 Japan  
+81 3 6847 1253; fax +81 3 6847 1260  
**Featured Product:** Deep UV-LEDs (265nm-340nm), IR and Red LED Chips, GaAs Substrates, Nano Ag Paste, High Purity Metals  
DOWA is a Japanese manufacturer of Deep UV LEDs (265nm-340nm), Infrared and Red LEDs, GaAs substrates, Nano Ag paste, and High purity Metals. [Deep UV-LED] Released high power 270-280nm LEDs, the output power is over 70mW. 265nm-340nm is also available. [IR/ Red LED] Exhibits LED from 660nm to 1900nm with highest efficiency. [Nano Ag paste for Soldering] Over 200W/mK thermal conductivity and low soldering temperature. [N-type GaAs substrates] Highest crystal quality for LD and VCSEL applications. Contact: Hiromichi Asahara, Marketing Manager, asaharaha@dicnyc.com; Akhisha Yamaguchi, Marketing Manager, akhisha@dicnyc.com

**DOM CO., LTD.**  
157 Gungpyeong-ri Dobechek-myeon, Guangju-si Gyeonggi-do, 12814 Korea, Republic of  
+1 82 5 53 06 57; fax +1 415 729 1243  
www.don21c.com

**Dongguan Harmony Technology Co., Ltd.**  
No. 5 Lianxin Road, Chang an Town, Dongguan, 523878 China  
+86 769 81512121; fax +86 769 81512911  
anxu@kw-0769.com; www.kw-0769.com  
**Featured Product:** Injection molding Plastic Lens, Glass Molded Lens, Optical Tooling, Optical Insert  
Harmony Tech specializes in developing and manufacturing high precision polymer lens, glass molded lens and tooling, which widely used in cellular phone and automobile camera module, OFC optical module, collimating, sensor, wearable device, etc. Contact: Alan Xu, Sales and Customer Service Representative, kr-sales02@kw-0769.com

**Dopa Diamond tools**  
Zu den Krugwiesen 1, Berlin, 13057 Germany  
+49 3058542841; fax +49 3058542849  
info@dopa-diatools.com; www.dopa-diatoools.com  
**Featured Product:** Flat optics, Sapphire Substrates, Diamond Tools and Consumables  
We are a German company based in Berlin with a powerful and technology driven optic production specialized in processing optical flats made out of optical glass, sapphire, fused silica, CaF2, yag, metals, ceramics, germanium and silicon etc. Furthermore do we produce grinding wheels for single and double sided applications, generating tools, diamond pellets, coolants and diamond slurries, dressing tools, measuring equipment and others. Contact: Jens Mueller, Manager Business Unit Optics, jens.mueller@dopa-diatools.com; Marcel Patraschkov, CEO, marcel@dopa-diatoools.com

**Duma Optronics Ltd.**  
Oren Ctr, 1st Hazait St, Nesher, 367 5018 Israel  
+972 4 8200577; fax +972 4 8204190  
sales@duma.co.il; www.dumaoptronics.com  
**Featured Product:** High Resolution Electronic Autocollimator for IR range (1060nm and up), Beam Profilers for high power  
Duma Optronics is engaged in development & manufacturing of electro-optical instrumentation, specializing in computerized measurement systems for laser beams. The unique state-of-the-art technology developed and owned by the company is under patent pending. The family of products that were developed in Duma Optronics include: Beam analysis systems, including high power beam profilers, optical beam positioning and alignment systems, electronic autocollimators, as well as tailor made test stations. Contact: Oren Aharon, CTO, oren@duma.co.il; Judith Aharon, Project Manager, judith@duma.co.il
Photonics West Exhibitor Listing

Dutch Optics Centre
Stiltevsteeg 1, Delft, 2628 CK Netherlands
+31 620394663
www.dutchopticscentre.com

Dynamic Optics S.r.l.
Viale della Repubblica 15, Mantova, MN, 46100 Italy
+39 391 793796
contact@dynamic-optics.it; www.dynamic-optics.it

Dynamic Structures - Optics
SPIE Corporate Member
1515 Kingsway Ave, Port Coquitlam, BC, V3C 1S2 Canada
+1 604 639 8200; fax +1 604 294 4550
www.empireds.com

Dymanil Corporation of America
313 Washington St Ste 403, Newton, MA, 02458 USA
+1 617 668 6855
info@dynasil.com; www.dynasil.com

Dynasil Fused Silica
385 Cooper Rd, West Berlin, NJ, 08091 USA
+1 856 767 4600; fax +1 856 767 6813
sales@dynasilfusedsilica.com; www.dynasil.com

Since 1960, Dynasil has provided high quality synthetic fused silica and fused quartz products to customers for a wide range of applications. As an authorized distributor of Corning HPFS® 7980 and ULE® 7972 & 7973, as well as a variety of other manufacturers’ optical materials, we fabricate high quality precision machined blanks and other components. Our commitment to our customers is to provide fast, on-time delivery at a competitive price with the best customer service in the industry. Contact: Bruce Leonetti, General Manager, bleonetti@dynasilfusedsilica.com; Michael Orlando, Marketing & Inside Sales, morlando@dynasilfusedsilica.com

Dynavac
SPIE Corporate Member
110 Industrial Park Rd, Hingham, MA, 02043-4369 USA
+1 781 740 8600; fax +1 781 740 9996
sales@dynavac.com; www.dynavac.com

Featured Product: Hyperion Precision Optical Coating System
Dynavac designs and manufactures thin film deposition systems for a variety of applications including precision optics, electronics, automotive, and lighting. We offer batch and high-volume production systems, custom engineering, and unmatched installation and support services for our worldwide customer base. Dynavac’s global reputation for excellence is rooted in unparalleled engineering expertise, single-source manufacturing capabilities, and an unrelenting commitment to customer satisfaction. Contact: Steven Chiavaroli, Product Manager – Thin Film Systems, SChiavaroli@dynavac.com; Patty Katsaros, Director of Marketing, pkatsaros@dynavac.com

DZD Photonics Co., Ltd.
5f/Bldg 3, NO 12 Jinxing Road, Daxing Beijing, 102628 China
+86 10 60291816 x8018
info@dzdphotonics.com; www.dzdphotonics.com/en/

As a subsidiary company of DZD international, DZD Photonics is a pioneering developer as well as a leading manufacturer focusing on high power DPSS AND fiber lasers. DZD Photonics has developed 10-00W Q-switched pulsed IR with fiber delivery, Green and UV lasers with its own well-designed and patented pumping modules, which provides high beam quality, longer life time and cost effective solutions for fine material micro-processing. Contact: Phoebe Xin, Engineer, xinfl@dzdphotonics.com; Frank Chang, General Manager, changf@dzdphotonics.com

E.R. Precision Optical Corp.
SPIE Corporate Member
805 W Central Blvd, Orlando, FL, 32805-1808 USA
+1 407 292 7841
sales@eroptics.com; www.eroptics.com

Eagleyard Photonics GmbH
Viale della Repubblica 15, Mantova, MN, 46100 Italy
+31 620394663
info@eagleyard.com; www.eagleyard.com

Development, production and sale of innovative high-power laser diodes based on GaAs (Gallium Arsenide). Our portfolio contains laser diodes with wavelengths ranging from 633 nm to 1120 nm. These laser diodes are addressing a variety of applications such as space, aerospace and defense, metrology, spectroscopy, medical instrumentation, test & measurement and material analysis. eagleyard is represented worldwide, in particular in Europe, Asia and the US direct and also by sales partners. Contact: Michael Kneier, VP Sales and Marketing, michael.kneier@eagleyard.com; Sandra Chudek, Marketing Manager, sandra.chudek@eagleyard.com

Ealing Catalog
340 El Pueblo Rd Ste E, Scotts Valley, CA, 95066 USA
+1 831 461 1130; fax +1 931 461 1136
sales@ealingcatalog.com; www.ealingcatalog.com

Featured Product: Ealing Rectangular Apertures can be used to define the boundaries of an optical path
Founded as The Ealing Corporation in 1961, the company provides optical, opto-mechanical and motion control products for Research, OEM and Industrial applications. Contact: Olav Tabatabai, Product Manager, olav@hylandopticaltechnologies.com
We proudly present our Member Companies
South Hall, Isle 300 | Arizona’s Leaders in Optics, Photonics & Astronomy

Mark your Calendar: Arizona Photonics Days 2019,
Tucson, Arizona | January 31 - February 1, 2019
OpticsValleyAZ.org
Photonics West Exhibitor Listing

**East Tender Optoelectronics Corp.**  
No 14 Te Hsing 7th Rd, Su-Ao I-Lan, 270 Taiwan  
+886 39908671; fax +886 39908553  
sonyalo@east-tender.com; www.east-tender.com  
**Featured Product:** Optical Filters for Optical Communications  
East Tender Optoelectronics Corp, located in I-LAN Taiwan, is a professional thin film filters coating company. The main field is the optical communication industry which including cloud data center, passive/active optical components and other customized filters. EOC is cooperating with many optical companies and successfully developed mini size filter and wide angle filter to achieve the micronized components. The goal of EOC is to become one of the greatest coating company in the world.

**Eblana Photonics Ltd**  
Trinity College Enterprise Ctr, Unit 32, Pearse St, Dublin 2, Ireland  
+353 1 675 3228  
sales@eblanaphotonics.com; www.eblanaphotonics.com  
Eblana Photonics is the leading provider of advanced laser diodes for Gas Sensing, Metrology and Communications applications. Eblana’s patented Discrete-Mode (DM) technology enables the design of superior quality, mass-manufacturable, single-mode & Fabry-Perot lasers at wavelengths from 690nm to 2150nm, at an impressively competitive price point.

**ECP - A Unit of AMETEK**  
50 Welby Rd, New Bedford, MA, 02745 USA  
+1 508 998 3141; fax +1 508 995 7315  
www.ametek-ecp.com  
**Featured Product:** Optical Filters for Optical Communications  
ECP is a leading manufacturer of precision laser optical components. Product range includes laser optics, IBS coated optics and crystals, opto-mechanics, BBO, KTP Pockels cells and HV drivers, ultrafast pulse picking systems, nonlinear crystals LBO, BBO, KT, KDP, LiNbO3, LiO3, AgGaSe2, AgGaS2, ZnGeP2, GaSe, CdSe, Raman shift crystals KGW, Ba(NCO)2, BaWo4, SrWO4, SrMoO4, terahertz generation crystals ZnTe, GaSe, passive Q-switches, Cr:YAG, Co:Spinel and laser crystals Yb:KGW, Yb:KYW. Contact: Jurgita Meliutie, Sr. Sales Engineer, j.meliutie@eksmaoptics.com; Kevin Haines, Customer Support, k.haines@eksmaoptics.com

**EGIDE**  
4 Washington St, Cambridge, MD, 21613-2802 USA  
+1 410 901 6100; fax +1 410 901 2324  
sales@us.egide-group.com; www.egide-group.com  
**Featured Product:** Hermetic package solutions - GTMS, CTMS and HTCC technologies  
EGIDE is a leading provider of Innovative Hermetic Package Solutions to the world’s most demanding microelectronic and optronic applications. Since 1986 the company’s Glass-to-Metal-Seal (GTMS), Ceramic-to-Metal Seal (CTMS) and High-Temperature-Cofired-Ceramic (HTCC) technologies have supported solutions for Military, Aeronautic, Space, Security, Telecommunications and Industrial markets. Our world class manufacturing facilities are located Cambridge, Maryland and Bollene, France. Contact: Kirk Williamson, Director of Sales - North America, kwilliamson@us.egide-group.com; Ignace Dupon, Director of Sales - Europe, idupon@fr.egide-group.com

**EKSMA Optics**  
c/o Optolita UAB, Mokslinkinuk str 11, Vilnius, LT-08412 Lithuania  
+370 5 272 99 00; fax +370 5 272 92 99  
info@eksmaoptics.com; www.eksmaoptics.com  
**Featured Product:** Compact pulse picking system MP1 for pulse selection at up to 600 kHz rate from laser pulse train  
EKSMA Optics is a manufacturer of precision laser optical components. Product range includes laser optics, IBS coated optics and crystals, opto-mechanics, BBO, KTP Pockels cells and HV drivers, ultrafast pulse picking systems, nonlinear crystals LBO, BBO, KT, KDP, LiNbO3, LiO3, AgGaSe2, AgGaS2, ZnGeP2, GaSe, CdSe, Raman shift crystals KGW, Ba(NCO)2, BaWo4, SrWO4, SrMoO4, terahertz generation crystals ZnTe, GaSe, passive Q-switches, Cr:YAG, Co:Spinel and laser crystals Yb:KGW, Yb:KYW. Contact: Jurgita Meliutie, Sr. Sales Engineer, j.meliutie@eksmaoptics.com; Kevin Haines, Customer Support, k.haines@eksmaoptics.com

**EKPLA**  
Savanorius Av. 237, Vilnius, LT-02300 Lithuania  
+370 5 264 9629; fax +370 5 264 1809  
sales@ekpla.com; www.ekpla.com  
**Featured Product:** Microjoule industrial grade femtosecond fiber laser FemtoLux, 3 W output power, 300 fs - 5 ps  
Innovative manufacturer of solid state and fiber lasers, systems and components from unique custom system for basic research to small OEM series. In-house R&D team and more than 25 years experience enable to tailor products for specific applications and/or according to specific requirements. Main products are: femtosecond, picosecond and nanosecond lasers, tunable wavelength systems, ultrafast fiber lasers, spectroscopy systems and laser electronics. Contact: Lucian Hand, President, sales@altosphotonics.com; Laurie Dewar, Customer Support, laurie@altosphotonics.com

**El. En. S.p.A.**  
Via Baldanzese 17, Calenzano, FI, 50041 Italy  
+39 055 88 26 807; fax +39 055 88 32 884  
industrialdivision@elenigroup.com; www.elenigroup.com  
**Featured Product:** Self-Refilling & Semisealed RF CO2 Laser, CO2 laser up to 7000W, CO2 Galvo Scanner, OEM Solutions  
El.En. leads an international group of Hi-Tech companies aiming to excellence in research, engineering and production of laser systems and advanced solutions for medicine, industry and conservation of Cultural Heritage. The industrial division designs and manufactures CO2 laser sources and systems for cutting, welding, marking and engraving on countless materials. Customers’ success, social responsibility and respect for the environment have always inspired the El.En. route. Contact: Giovanni Masotti, VP Industrial Division, g.masotti@elen.it; Alessandra Bollì, Marketing Specialist, a.bollì@elen.it
Electro Optical Components, Inc. #4858
5464 Skyline Blvd Ste D, Santa Rosa, CA, 95403 USA
+1 707 568 1642; fax +1 707 568 1652
info@eoc-inc.com; www.eoc-inc.com

Featured Product: Signal Recovery Amplifiers; NDIR Gas Detector Systems; UV Detectors; Electrochemical Sensors
Electro Optical Components (EOC) provides advanced systems and components for laser and optoelectronic systems from the UV to the far IR including signal recovery amplifiers & photoreceivers; thermopile and pyroelectric detectors; MID IR LEDs & photodiodes; UV detectors; IR and visible laser diode modules; broadband IR sources; NDIR gas detection systems & components; NDIR laser diodes; Electrochemical sensors; Hydrogen sensors; Optics & coatings; IR Filters; Spectral imaging systems. Contact: Wally Tang, Sales, wallytang@eoc-inc.com; Andriko Zavadell, Sales Manager, andrikoz@eoc-inc.com

Electro Optical Industries, Inc. #4325
320 Storke Rd Suite 100, Goleta, CA, 93117 USA
+1 805 964 6701; fax +1 805 967 8590
eoi@electro-optical.com; www.electro-optical.com

Electro Optical Industries, a world pioneer of electro-optics test instruments, has been a provider of the highest quality, best performing infrared, visible, and ultraviolet testing and calibration equipment since 1964. Since the merger with HGH Infrared Systems in June 2016, EOI offers three product lines: electro-optics and infrared test equipment, thermographic cameras for process control monitoring and infrared wide area surveillance systems for protection of critical infrastructures. Contact: Brent Lindstrom, Brent.Lindstrom@electro-optical.com; Stephen Scopatz, General Manager, Stephen.Scopatz@electro-optical.com

Electro Optics Magazine #2133
4 Signet Ct, Cambridge, CB5 8LA United Kingdom
+44 1327 300069
info@europascience.com; www.electrooptics.com

Electro Optics (EO) is Europe’s original photonics title and multi-platform resource for anyone involved in the photonics industry. Readers have access to the latest technological developments, trends and opinions; independent, in-depth editorial content; and informed commentary and analysis. EO is published ten times a year in print and digital editions, with two monthly newsletters. It is available at no cost to readers working or engaged in the photonics industry.

Electronic Development Normandy #431
Parc Industriel de Cardonville, BP 3, Montville, 76710 France
+33 272 341 230; fax +33 235 370 589
contact@ednormandy.com; www.ednormandy.com/

Featured Product: Miniature plastic lens module for endoscope. Illumination lens for automobile. Plastic lens for FIR.
EDN designs and manufactures high voltage power supplies for Xenon flashlamps (PhotoFlash, IPL, Yag–Nd Lasers…). High Voltage Capacitor Chargers, Simmers, Laser Diode Drivers, racks, open-frames, modules. Designs according to customers specifications. EDN is the designer and Manufacturer from ELI-NP (Romania) 2x10Pw Laser power supplies and many other. Contact: Stephane Latrouite, General Manager, contact@ednormandy.com

Element Six (UK) Limited #4965
Global Innovation Centre, Fermi Avenue, Harwell Oxford, Didcot, Oxfordshire, OX11 0GR United Kingdom
+44 1235 441000
www.e6.com

Featured Product: CVD diamond heat spreader, optical windows, diamond ATR prisms, Raman crystals & Diamond Pure Optics
Element Six, a De Beers Group Company, designs, develops and produces diamond supermaterials. Poly- and single crystal diamond products and composites are used in fine machining and polishing applications. New technologies using CVD diamond include thermal management for laser diodes, power devices, RF amplifiers and resistors. Element Six also manufactures high power laser optics, beam splitters, IR spectroscopy accessories and high energy radiation sensors. Contact: Thomas Obeloer, Business Development Manager: Technologies, E6Marketing@e6.com

Elforlight, Ltd #3007
Nene House, Drayton Way, Daventry Northants, NN11 8EA United Kingdom
+44 1327 300069
info@elforlight.com; www.elforlight.com

Featured Product: Rapidly tunable visible laser systems for photoacoustic imaging. Nanosecond OPOs and Raman lasers
Elforlight is a worldwide supplier of advanced Diode Pumped Solid State (DPSS) lasers. Based in the UK, our products include CW and Q-switched, IR, visible and UV, featuring options for rapid tunability. We work closely with both researchers and OEMs to supply single quantity and higher volume production. Applications include photoacoustic microscopy, MALDI imaging, Raman spectroscopy, FLIM, LIDAR, holography, flow visualization, rapid prototyping, and printing plate imaging. Contact: Keith Oakes, Director, info@elforlight.com

ElITE Optoelectronics Co., Ltd. #5447
3-50102 Modern Business Ctr, #2 Zhangba Rd Yanta District, Xi’an Shaanxi, 710077 China
+86 29 68590 616; fax +86 29 685907 28
sales@s-laser.com; www.s-laser.com

Featured Product: EOT Tornos Series Compact 520-810nm Optical Isolators
EOT supplies enabling components and diagnostic equipment to manufacturers and users of high power laser systems. Products include Faradaya rotators and optical isolators for use with laser diodes, fiber lasers, and solid-state lasers. EOT stocks a complete line of photodetectors to monitor the output of pulsed, mode-locked, and externally-modulated CW lasers. Contact: Mike Torrance, VP Sales & Marketing, sales@eotech.com

Element Six, a De Beers Group Company, designs, develops and produces diamond supermaterials. Poly- and single crystal diamond products and composites are used in fine machining and polishing applications. New technologies using CVD diamond include thermal management for laser diodes, power devices, RF amplifiers and resistors. Element Six also manufactures high power laser optics, beam splitters, IR spectroscopy accessories and high energy radiation sensors. Contact: Thomas Obeloer, Business Development Manager: Technologies, E6Marketing@e6.com

Elforlight, Ltd #3007
Nene House, Drayton Way, Daventry Northants, NN11 8EA United Kingdom
+44 1327 300069
info@elforlight.com; www.elforlight.com

Featured Product: Rapidly tunable visible laser systems for photoacoustic imaging. Nanosecond OPOs and Raman lasers
Elforlight is a worldwide supplier of advanced Diode Pumped Solid State (DPSS) lasers. Based in the UK, our products include CW and Q-switched, IR, visible and UV, featuring options for rapid tunability. We work closely with both researchers and OEMs to supply single quantity and higher volume production. Applications include photoacoustic microscopy, MALDI imaging, Raman spectroscopy, FLIM, LIDAR, holography, flow visualization, rapid prototyping, and printing plate imaging. Contact: Keith Oakes, Director, info@elforlight.com

ElITE Optoelectronics Co., Ltd. #5447
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+86 29 68590 616; fax +86 29 685907 28
sales@s-laser.com; www.s-laser.com
Emberion Oy

Metsänteidonkuja 8, Espoo, 02130 Finland
sales@emberion.com; www.emberion.com/

Featured Product: Emberion will launch its nanotechnology based 1x512 VIS-SWIR detector designed for spectrometry

Emberion designs and produces high-performance optoelectronic devices based on graphene, other nanomaterials and in-house designed CMOS integrated circuits. Our primary products are infrared detectors for VIS-SWIR and thermal imaging. Emberion’s products combine high performance with competitive cost level and thus enable new application areas for infrared imaging. Contact: Jyri Hämäläinen, Director, Sales and Marketing, jyri.hamalainen@emberion.com; Vuokko Lantz, Product Manager, vuokko.lantz@emberion.com

EMD Performance Materials

400 Summit Drive, Burlington, MA, 01803 USA
+1 978 944 4815
photronicsUS@emdgroup.com; www.patinal.com

EMD Performance Materials is the North American high-tech materials business of Merck KGaA, Darmstadt, Germany. The Patinal® portfolio offers high quality evaporation materials for optical applications comprising more than 40 materials including fluorides, oxides, sulfides, & metals. The Optipur® portfolio offers a broad range of high purity anhydrous metal halides for single crystal growth. EMD is also a leading supplier of organometalic precursors for ALE & Epitaxy thin film applications. Contact: Kevin DaSilva, Account Manager, PM-ALT-U Regional Sales Americas, Kevin.DaSilva@emdgroup.com; Barry Seff, Product Manager, barry.seff@emdgroup.com

EMF Corp.

239 Cherry St, Ithaca, NY, 14850 USA
+1 800 456 7070; fax +1 800 456 3227
sales@emf-corp.com; www.emf-corp.com

Featured Product: Optical Coatings - Reflective Coatings, AR, Dielectric, Oleophobic, Hot/Cold Mirrors, HEAR, IR

EMF -most established thin film coating house in US- founded in 1936. Get the EMF Edge - “Same day service capability” “On time delivery” > 99% “Product Quality > 99% “Application/Technical Engineering Support “Precision Custom coatings, Very High Volume coatings and Large Optic capability. Capability to coat both small & large optics ranging from 2mm to 2.6 meters. Largest capacity in the industry- 27 chambers across 2 sites. We coat Glass, Metal, Ceramic, Composite & Plastic substrates. Contact: Michelle Henderson, Sales Account Manager, michelle@emf-corp.com; John McCartney, Sales Engineer, jmccartney@emf-corp.com

Energetiq Technology, Inc.

7 Constitution Way, Woburn, MA, 01801-1024 USA
+1 781 939 0763; fax +1 781 939 0769
info@energetiq.com; www.energetiq.com

Featured Product: Revolutionary Laser-Driven Light Sources

Energetiq Technology is the world’s leading developer and manufacturer of ultra-bright broadband light sources for a wide variety of advanced applications in life and materials sciences, semiconductor manufacturing, and R&D. Energetiq’s Laser-Driven Light Sources (LDSL) are based on a revolutionary technology that generates high brightness across the spectrum, with high reliability and long life. Contact: Karen Scammell, Vice President of Sales, ks@energetiq.com; Samuel Gunnell, Technical Sales Engineer, sgunnell@energetiq.com

Eoptolink Technology Inc., Ltd

NO. 127 West Wulian Street, Shuangliu District, Chengdu, 610213 China
+86 28 67087999; fax +86 28 67087979
sales@eoptolink.com; www.eoptolink.com

Featured Product: 8 channel WDM TOSA and ROSA

Eoptolink, headquarters is in Chengdu, China, is an EMS (Electronic Manufacturing Service) contract manufacture of advanced optoelectronics, sensors and silicon photonics integration. Eoptolink designs, manufactures and sells optical interconnect components for high performance and high speed optical communications, 100Mb, 10G, 40G, 100G, 400G applications. We are focus on the advanced devices package technology of high precision and high density. Contact: sales@eoptolink.com

Elliot Scientific Ltd.

3 Allied Business Ctr Coldharbour Ln, Harpenden Herts, AL5 4UT
+44 1582 766 300; fax +44 1582 766 340
sales@elliotscientific.com; www.elliotscientific.com

Elliot Scientific is a major UK manufacturer and distributor of photonics products including Optical Tweezers Systems, Automated Fiber Alignment/Fiber Launch solutions and components. Also lasers, LED, plasma and fiberoptics light sources. Spectrometers, spatial modulators, and cryogenic/magnetic systems for materials characterisation. Temperature sensors and controllers and Cold Atom research solutions. Contact: Colin Freeland, Photonics Product Manager, colin.freeland@elliotscientific.com

Empire Precision Plastics

500 Lee Rd Ste 400, Rochester, NY, 14606-4260 USA
+1 585 454 4995; fax +1 585 454 0449
kab@empireprecision.com; www.empireprecision.com

Empire Precision Plastics has a 25-year legacy of partnering with customers to satisfy their most challenging injection molding needs. Empire provides medical device, consumer, industrial and military/aerospace customers with plastic molded parts and optics, from prototype to high volume manufacturing and assembly. Their comprehensive in-house capabilities allow for faster time-to-market and better finished quality, improving profit margins for their customers. Contact: Keith Bradt, Business Development Manager, kab@empireprecision.com; Gary German, Application Engineer, ggh@empireprecision.com

Empire West, Inc.

9270 Graton Rd, Graton, CA, 95444-9375 USA
+1 707 823 1190
info@empirewest.com; www.empirewest.com

Featured Product: PET-G Optics Packaging

Empire West designs and manufactures thermoformed PET-G optics packaging containers for the full range of today’s optical lenses, filters, and mirrors. Our Safe-Guard line of unique, slip-fit, low outgassing optics containers are the industry standard for value and performance. Designed to contact optics on only the bevels, these versatile containers eliminate the need for lens paper and foam liners, and greatly reduce the opportunity for handling-generated surface degradation. Contact: Liz Faolain, info@empirewest.com

Eoptolink Technology Inc., Ltd

NO. 127 West Wulian Street, Shuangliu District, Chengdu, 610213 China
+86 28 67087999; fax +86 28 67087979
sales@eoptolink.com; www.eoptolink.com

Featured Product: 8 channel WDM TOSA and ROSA

Eoptolink, headquarters is in Chengdu, China, is an EMS (Electronic Manufacturing Service) contract manufacture of advanced optoelectronics, sensors and silicon photonics integration. Eoptolink designs, manufactures and sells optical interconnect components for high performance and high speed optical communications, 100Mb, 10G, 40G, 100G, 400G applications. We are focus on the advanced devices package technology of high precision and high density. Contact: sales@eoptolink.com
EPIC - European Photonics Industry Consortium
17 rue de L’Hamelin, Paris, 75016 France
www.epicassoc.com
EPIC is an industry association of that promotes the sustainable development of organisations working in the field of photonics. We foster a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement. EPIC publishes market and technology reports, organizes international delegations, participates in funding, investment, standards and roadmaps initiatives. EPIC has 350 companies in 30 countries. BE PART OF IT! Contact: Carlos Lee, Director General, carlos.lee@epic-assoc.com

EPIGAP Optronik GmbH
Köpenicker Str 325, Berlin, 12555 Germany
+49 30 6576 3760; fax +49 30 6576 3770
sales@epigap-optronik.de; www.epigap-optronik.de
Featured Product: LED Chips, LEDs and photodiodes in the range of UV VIS and NIR, Multiwavelength customized arrays
EPIGAP Optronik GmbH is an industrial leader in LED technology for state-of-the-art optoelectronics for industrial sensors, security and safety technology, diagnostics and biotechnology. EPIGAP offers high-end LED chips, LEDs and photodiodes beginning in the deep UV range at 265 nm up to the infrared region at 1750 nm which have a very good degradation stability and high efficiency. We realize customized housings or specially designed CoB modules from design and development to production. Contact: Antje Thamm, Sales Director, thamm@epigap-optronik.de

EPIX, Inc.
381 Lexington Dr, Buffalo Grove, IL, 60089-6934 USA
+1 847 465 1818; fax +1 847 465 1919
epix@epixinc.com; www.epixinc.com
Featured Product: E4tx2 Embedded Frame Grabber for TX2 and TX2
Camera, Frame Grabber, and Embedded Frame Grabber manufacturer with image processing, capture, and store software for automated and operator driven imaging applications. Our products find applications from microscopy to outer space and for customers performing research or high volume OEM solutions. We provide excellent customer support and can create custom products that suit your requirements. We have been solving imaging requirements for 34 years. Contact: chuck Petersen, Vice President, acp@epixinc.com; Doina Anderson, Sales Support, sales@epixinc.com

Epner Technology
279 Frost Street, Brooklyn, NY, 11225-5603 USA
+1 718 782 5948
info@epner.com; www.epner.com

Erattech Pte. Ltd.
5000 Ang Mo Kio Ave 5 Techplace II #01-06/09, 569870 Singapore
+65 6482 4666; fax +65 6482 3862
sales@erattechprecision.com.sg; www.erattechprecision.com.sg
Featured Product: Product for Optical Imaging (Metal Parts)

ESCO Optics, Inc.
95 Chamberlain Rd, Oak Ridge, NJ, 07438 USA
+1 973 697 3700; fax +1 973 697 3011
sales@escooptics.com; www.escooptics.com
Esco Optics manufactures the highest quality custom and precision optical components for Commercial, R&D, Medical and Military applications. Esco is ITAR-registered. We can produce components for IR to UV applications in optical materials from the common to the exotic. Esco has all the equipment in-house to completely manufacture your components: grind and polishing, coating, machining, and more. Whether you need a few parts to several thousand, Esco Optics can manufacture your components. Contact: Ron Schulmerich, Business Development Manager, ron@escooptics.com; Jason Wickersham, Manufacturing Engineer, jason@escooptics.com

ESPROS Photonics Corporation
St Gallerstrasse 135, Sargans, 7520 Switzerland
+41 56 281 21 52
info@espros.com; www.espros.com
Featured Product: ESPROS Evalkit epc660, ESPROS TOF > frame 660
ESPROS Photonics develops and produces photosensitive semiconductors for challenging industrial and scientific applications. For this purpose, ESPROS has developed and industrialized a dedicated process technology. The ESPROS Photonic CMOS™ process is a unique offering in todays semiconductor markets. ESPROS employs over 50 employees and provides a portfolio that reaches from classic foundry services to the complete development and supply chain for demanding imager solutions. Contact: hans Ebinger, VP Sales, hans.ebinger@espros.com; Beat De Coi, CEO, beat.decoi@espros.com

Eulitha AG
Studacherstrasse 7b, Kirchdorf, 5416 Switzerland
+41 58 411 03 00; fax +41 58 411 03 01
info@eulitha.com; www.eulitha.com
Eulitha provides nanolithography services and equipment for research and production. Its revolutionary PHABLE photolithography systems enable low-cost fabrication of periodic nanostructures over large areas. This proprietary technology has wide ranging uses in photonics, optoelectronics, electronics, biotechnology, telecommunication, photovoltaics, sensors and other areas. Eulitha’s custom and standard ranges of nano-patterned substrates are made with electron-beam or its own PHABLE lithography.

EUROMICRON Werkzeuge GmbH
Murnerstr. 635, 85453 Neuland, Germany
+49 8152 726 77 0; fax +49 8152 726 77 10
info@euromicron-fo.de; www.euromicron-fo.de
Featured Product: EUROLENS, expanded beam connector, now available up to 12 channel - highest density on the market!
EUROMICRON Werkzeuge GmbH is one of the leading manufacturers of optical connection technology components for fiber optics in Europe. Founded in 1972, the well-established company produces its components in Germany. From development, prototyping through to series production, EUROMICRON Werkzeuge GmbH is a leading supplier for customized and standardized components for laser applications and a lot of other industries. Contact: michael Ernst, Head of Product Management, m.ernst@euromicron-fo.de

ESPROS Photonics Corporation
St Gallerstrasse 135, Sargans, 7520 Switzerland
+41 56 281 21 52
info@espros.com; www.espros.com
Featured Product: ESPROS Evalkit epc660, ESPROS TOF > frame 660
ESPROS Photonics develops and produces photosensitive semiconductors for challenging industrial and scientific applications. For this purpose, ESPROS has developed and industrialized a dedicated process technology. The ESPROS Photonic CMOS™ process is a unique offering in todays semiconductor markets. ESPROS employs over 50 employees and provides a portfolio that reaches from classic foundry services to the complete development and supply chain for demanding imager solutions. Contact: Hans Ebinger, VP Sales, hans.ebinger@espros.com; Beat De Coi, CEO, beat.decoi@espros.com

Eulitha AG
Studacherstrasse 7b, Kirchdorf, 5416 Switzerland
+41 58 411 03 00; fax +41 58 411 03 01
info@eulitha.com; www.eulitha.com
Eulitha provides nanolithography services and equipment for research and production. Its revolutionary PHABLE photolithography systems enable low-cost fabrication of periodic nanostructures over large areas. This proprietary technology has wide ranging uses in photonics, optoelectronics, electronics, biotechnology, telecommunication, photovoltaics, sensors and other areas. Eulitha’s custom and standard ranges of nano-patterned substrates are made with electron-beam or its own PHABLE lithography.

EUROMICRON Werkzeuge GmbH
Murnerstr. 635, 85453 Neuland, Germany
+49 8152 726 77 0; fax +49 8152 726 77 10
info@euromicron-fo.de; www.euromicron-fo.de
Featured Product: EUROLENS, expanded beam connector, now available up to 12 channel - highest density on the market!
EUROMICRON Werkzeuge GmbH is one of the leading manufacturers of optical connection technology components for fiber optics in Europe. Founded in 1972, the well-established company produces its components in Germany. From development, prototyping through to series production, EUROMICRON Werkzeuge GmbH is a leading supplier for customized and standardized components for laser applications and a lot of other industries. Contact: Michael Ernst, Head of Product Management, m.ernst@euromicron-fo.de
Evaporated Coatings, Inc. #4328
SPIE Corporate Member
2365 Maryland Rd, Willow Grove, PA, 19090-1708 USA
+1 215 659 3080; fax +1 215 659 1275
sales@evapcoat.com; www.evaporatedcoatings.com

Featured Product: IBS Coatings for high power applications
ECI deposits optical coatings including IBS LWP/SWP, Tri-band & bandpass filters, anti-reflection and attenuation coatings, low-pol. beamsplitters, transparent conductive, enhanced metal and dielectric mirrors. ECI expertly coats glass, Ultraem, Zeonex, molded optics, semiconductors, crystals, ultrathin wafers, laser bars, prisms, fiber ends and ball lenses. Wide experience coating high stain glasses, metals, micro optics, CaF2 and crystals. Full aperture, IBS, APS & IAD deposition technologies. Contact: Stephen Schaffer, VP Marketing, sschaffer@evapcoat.com; Joe Brychell, Sales and Marketing Manager, jbrychell@evapcoat.com

Evatec NA Inc. #5459
780 Carillon Pkwy Ste 150, St Petersburg, FL, 33716 USA
+1 727 201 4313; fax +1 727 201 4605
info@evatecnet.com; www.evatecnet.com

From beam splitters for Head Up Display (HUD) to the filter technology for 3D Sensing and Gesture recognition and the antiscratch / anti smudge coatings our smart devices, Evatec delivers complete thin production solutions on a range of batch, cluster and inline production platforms according to substrate size and throughput. Advanced Process Control technologies including broadband optical monitoring deliver evaporation and sputter processes with enhanced throughput and repeatability. Contact: Daryl Florgan, Account Manager, daryl.florgan@evatecnet.com

EVERIX Optical Filters #4268
SPIE Corporate Member
2372 N Forsyth Rd, Orlando, FL, 32807 USA
+1 407 637 2987
info@everix.co; www.everix.co/

Featured Product: Ultra-Thin Optical Filters
Everix manufactures interference optical filters of various types in ultra-thin form (thickness range: 100 - 500 microns). These filters can be made both flexible and rigid, and in both cases shatter-free. We manufacture notch, multi-notch, longpass, shortpass, bandpass and multi-band pass filters. Economies of scale of this technology are beyond the possibilities of vacuum-coated optical filters. Contact: info@everix.co

Exalos AG #1941
SPIE Corporate Member
Wagistr 21, Schlieren, Zürich, 8952 Switzerland
+41 43 444 6090; fax +41 43 444 6099
sales@exalos.com; www.exalos.com

Featured Product: Superluminescent Light Emitting Diodes, Swept Sources, Broadband Light Sources, Balanced Receivers
Featured Product: Superluminescent Light Emitting Diodes, Swept Sources, Broadband Light Sources, Balanced Receivers

Exalos AG is a Swiss privately held, technology driven company, which focuses on the design, development, manufacturing and sales of advanced light source solutions based on Superluminescent Light Emitting Diodes (Visible and Near-IR) and External Cavity Lasers (Swept Sources). In addition, the EXALOS product portfolio includes Driver Electronics and Balanced Receivers which are complementary to our light source offerings. EXALOS has shipped more than 300,000 SLEDs. Contact: Eugene Covell, VP of Sales, covell@exalos.com; Bernd Nestmeier, European Sales Manager, nestmeier@exalos.com

Excelitas Technologies Corp. #1031
SPIE Corporate Member
200 West St Ste E403, Waltham, MA, 02451 USA
+1 855 382 2677; fax +1 781 290 4702
generalinquiries.na@excelitas.com; www.excelitas.com

Excelitas Technologies is a photonics technology leader focused on delivering innovative, market-driven solutions to meet the high-performance lighting, detection and optical technology needs of today’s global markets. We are committed to enabling our customers’ success in applications across the fields of biotechnology, consumer products, defense & aerospace, medicine, scientific discovery, safety & security, automotive, energy & environment, semiconductor and industrial manufacturing. Contact: generalinquiries.na@excelitas.com

Excell Technology #5231
SPIE Corporate Member
1001 Varian St, San Carlos, CA, 94070 USA
+1 800 891 9119; fax +1 650 592 6684
sales@excelltechnology.com; www.excelltechnology.com

EXCELL Tech specializes in: New Controls Systems/Software Engineering & Equipment Sales of new & rebuilt double side & single side lapping & polishing machines, grinders, slicers, dicers & more. Over 30 years of excellent service to industry w/new cutting edge upgrades. Top Brands include: Allen Bradley; Speedfam; Mitsubshi; STC; Lapmaster Wolters; Stahli; Disco; ADF; Strasbaugh; Engis; Blanchard; MB etc. Onsite training & installations. Located in SF Bay Area. Contact: David Hodges, GM, dhodges@excelltechnology.com

Fairchild Imaging #4269
BAE Systems Imaging Solutions, 1841 Zanker Rd Ste 50, San Jose, CA, 95112-4213 USA
+1 650 479 5749; fax +1 408 435 7352
cams.sales@baesystems.com; www.fairchildimaging.com

Fairfield Crystal Tech #2532
8 South End Plz, New Milford, CT, 06776-4200 USA
+1 860 354 2111; fax +1 860 354 3093
atimmerman@fairfieldcrystal.com; www.fairfieldcrystal.com

Fairfield Crystal grows high-purity single crystal materials for optical & semiconductor use and manufactures optical components for commercial, industrial, space and military applications. We not only have expertise in crystal growth but also in polishing crystals for a variety of optical components such as prisms, lenses, waveplates and other specialized, custom components. We have competitive prices because we manufacture & test our products in-house. We are your one-stop crystal shop! Contact: Andy Timmerman, VP Sales, atimmerman@fairfieldcrystal.com

Fast Scan Co., Ltd. #4312
Rm 50330 Bldg D, Galaxy SOHO Dongcheng District, Beijing, 100000 China
+86 10 65206939; fax +86 10 65206939 802
sales@fastscan.cn; www.fastscan.cn

Fast Scan is a high-tech company specializing in high precision beam positioning technologies. Embraced with an experienced team of professionals from electronics, optics, mechanics, automations, marketing and operations. Fast Scan is committed to the development, manufacturing, sales, and technical support of fast steering mirrors (FSM) and its related technologies. Contact: Ping Ji, jiping@fastscan.cn
### Photonics West Exhibitor Listing

<table>
<thead>
<tr>
<th>Company Name</th>
<th>#</th>
<th>Booth #</th>
<th>Address</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>FASTLITE</td>
<td>#841</td>
<td>#841</td>
<td>Bât D1-Les collines de Sophia, 1900 route des crêtes, Vaibonne, 06560 France</td>
<td>+33 498131751; fax +33 492957690 <a href="mailto:info@fastlite.com">info@fastlite.com</a>; <a href="http://www.fastlite.com">www.fastlite.com</a></td>
</tr>
<tr>
<td><strong>Featured Product:</strong> MIR OPCPA systems, Dazzler ultrafast pulse shaper, Wizzler pulse measurement, Fringeez CEP detector</td>
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<td>Fastlite proposes innovative solutions for the ultrafast laser user community. Products include the Dazzler pulse shaper, and the Wizzler spectral phase measurement system. The Dazzler / Wizzler feedback loop enables automated pulse compression and contrast optimization of amplified laser pulses. The Fringeez CEP detector allows high bandwidth feedback loop to reach ultimate CEP stability. Our new IR OPCPA systems deliver tunable, few-cycle, CEP-stabilized pulses with few 10s of uJ at 100 kHz.</td>
</tr>
<tr>
<td>FBGS Technologies GmbH</td>
<td>#4506</td>
<td>#4506</td>
<td>Winzerlaer Str 2, Jena, 07745 Germany</td>
<td>+49 3641150 8514 <a href="mailto:info@fbgs.com">info@fbgs.com</a>; <a href="http://www.fbgs.com">www.fbgs.com</a></td>
</tr>
<tr>
<td><strong>Featured Product:</strong> Fiber Bragg Gratings, Draw Tower Gratings, FemtoSecond Gratings</td>
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<td>FBGS is a Belgium / Germany based developer and manufacturer of high strength Fiber Bragg Gratings (FBG) during fiber drawing or using femtosecond based inscription technologies. FBGS supplies ‘Draw Tower Gratings‘ - DTG® and ‘FemtoSecond Gratings‘ - FSG® as an OEM component and our products can today be found in many applications and products developed by our customers worldwide. Contact: Nick Piescia, Sales Manager, <a href="mailto:piescia@fbgs.com">piescia@fbgs.com</a></td>
</tr>
<tr>
<td>Feinwerkoptik Zünd AG</td>
<td>#5432</td>
<td>#5432</td>
<td>Haldenstr 3, Werdenberg, 9470 Switzerland</td>
<td>+41 81 750 3939; fax +41 81 750 3930 <a href="mailto:info@feinwerkoptik-zuend.ch">info@feinwerkoptik-zuend.ch</a>; <a href="http://www.feinwerkoptik-zuend.ch">www.feinwerkoptik-zuend.ch</a></td>
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<tr>
<td><strong>Featured Product:</strong> Miniaturized camera</td>
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<td>Feinwerkoptik Zünd AG develops imaging and non-imaging photonic systems and produces miniaturized optical components and optoelectromechanical systems. Our product development services focus on optical and optomechanical design as well as software and electronics for miniaturized photonic systems e.g. cameras with fix and variable focus and illumination systems. Our fabrication departments works as a contract manufacturer and as in house production facility at the same time. Contact: René Zünd, CEO, <a href="mailto:info@feinwerkoptik-zuend.ch">info@feinwerkoptik-zuend.ch</a>; Dominic Buschauer, General Assistant, <a href="mailto:dominic.buschauer@feinwerkoptik-zuend.ch">dominic.buschauer@feinwerkoptik-zuend.ch</a></td>
</tr>
<tr>
<td>FemtoBlanc Inc.</td>
<td>#5253</td>
<td>#5253</td>
<td>243 N Union St, Ste 134, Lambertville, NJ, 08530 USA</td>
<td>+1 408 409 2900; fax +1 609 935 0937 <a href="mailto:info@femtoblanc.com">info@femtoblanc.com</a>; <a href="http://www.femtoblanc.com">www.femtoblanc.com</a></td>
</tr>
<tr>
<td><strong>Featured Product:</strong> Laser sources based on optical fiber emitting in the mid-infrared</td>
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<td>FemtoBlanc Inc.'s mission is to materialize the emergence of innovative laser technologies in the fields of health and the environment. FemtoBlanc's activities are focused on the development and marketing of laser sources based on optical fiber emitting in the mid-infrared. Unique in their kind, FemtoBlanc lasers are synonymous with simplicity, robustness and unparalleled optical performance. Contact: Louis-Rafael Robichaud, CEO and Founder, <a href="mailto:lrrobichaud@femtoprint.com">lrrobichaud@femtoprint.com</a>; Simon Duval, Founder and GTO, <a href="mailto:sduval@femtoprint.com">sduval@femtoprint.com</a></td>
</tr>
<tr>
<td>FemtoFiberTec GmbH</td>
<td>#4529</td>
<td>#4529</td>
<td>Ernst-Lau-Straße 18, Berlin, 12489 Germany</td>
<td>+49 30 62 88 73 0; fax +49 30 62 88 73 1 <a href="mailto:sales@femtofibertec.de">sales@femtofibertec.de</a>; <a href="http://www.femtofibertec.de">www.femtofibertec.de</a></td>
</tr>
<tr>
<td><strong>Featured Product:</strong> Femtosecond(fs)-laser-written Fiber Bragg Gratings</td>
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<td>As the first commercial supplier for femtosecond(fs)-laser-written Fiber Bragg Gratings worldwide, FemtoFiberTec provides FBGs, that open up completely new sensing possibilities for a wide range of industrial and medical sensing applications. In contrast to conventional FBG solutions, FemtoFiberTec can write FBGs into all optical transparent fiber materials with a broad variety of fiber coatings – e.g. high-end specialty fibers as well as low-cost commodity fibers. Contact: Dr. Margarethe Kampling, Head of Sales, <a href="mailto:sales@femtofibertec.de">sales@femtofibertec.de</a></td>
</tr>
<tr>
<td>FEMTOprint SA</td>
<td>#4320</td>
<td>#4320</td>
<td>Via Industria 3, Muzzano, 6935 Switzerland</td>
<td>+41 91960 10 70; fax +41 91960 00 48 <a href="mailto:info@femtoprint.ch">info@femtoprint.ch</a>; <a href="http://www.femtoprint.ch">www.femtoprint.ch</a></td>
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<tr>
<td><strong>Featured Product:</strong> FEMTOPRINT® - innovative 3D printing technology for glass microdevices</td>
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<td>FEMTOPrint is a Swiss high-tech company manufacturing 3D printed microdevices out of glass and other transparent materials. It equally develops and assembles its own 3D printing platforms for rapid prototyping and serial production. Through the innovative FEMTOPRINT® technology and the highly-qualified expertise in micromachining, FEMTOPrint is changing the way industrial, complex micro-systems are conceived. Contact: Nicoletta Casanova, CEO, <a href="mailto:nicoletta.casanova@femtoprint.ch">nicoletta.casanova@femtoprint.ch</a>; Andrea Lovera, CMO, <a href="mailto:andrealovera@femtoprint.ch">andrealovera@femtoprint.ch</a></td>
</tr>
<tr>
<td>Femtum</td>
<td>#4437</td>
<td>#4437</td>
<td>2750 Einstein St, Quebec, QC, G1P 4R1 Canada</td>
<td>+1 581 995 5157</td>
</tr>
<tr>
<td><strong>Featured Product:</strong> Laser sources based on optical fiber emitting in the mid-infrared</td>
<td></td>
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<td>Femtum’s activities are focused on the development and marketing of laser sources based on optical fiber emitting in the mid-infrared. Unique in their kind, Femtum lasers are synonymous with simplicity, robustness and unparalleled optical performance. Contact: Louis-Rafael Robichaud, CEO and Founder, <a href="mailto:lrrobichaud@femtum.com">lrrobichaud@femtum.com</a>; Simon Duval, Founder and GTO, <a href="mailto:sduval@femtum.com">sduval@femtum.com</a></td>
</tr>
<tr>
<td>Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik</td>
<td>#4529</td>
<td>#4529</td>
<td>Gustav-Kirchhoff-Str 4, Berlin, 12489 Germany</td>
<td>+49 30 6392 2600; fax +49 30 6392 2602 <a href="mailto:fbh@fbh-berlin.de">fbh@fbh-berlin.de</a>; <a href="https://www.fbh-berlin.com/">https://www.fbh-berlin.com/</a></td>
</tr>
<tr>
<td><strong>Featured Product:</strong> Especially small high-power pulse light source for LiDAR applications: up to 100 W in 3-15 ns pulses</td>
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<td>Ferdinand-Braun-Institut, researches electronic and optical components, modules and systems based on compound semiconductors. The institute develops light sources from the visible to the ultra-violet spectral range: high-power diode lasers with excellent beam quality, UV light sources, and hybrid laser modules. Applications range from medical technology, high-precision metrology and sensors to optical communications in space. Contact: Petra Immerz, Communications Manager, <a href="mailto:pr@fbh-berlin.de">pr@fbh-berlin.de</a></td>
</tr>
</tbody>
</table>
Ferrotec (USA) Corp. #2214; 2215
3945 Freedom Cir Ste 450, Santa Clara, CA, 95054 USA
+1 408 964 7700; fax +1 408 235 7775
jwindsor@ferrotec.com; www.ferrotec.com

Featured Product: TEC Thermoelectric modules, peltier coolers, electron beam coating components, machinable ceramics

Ferrotec is a world leader in advanced material, component, and system solutions. We make precision TECs, Peltier coolers for heat-pumping, thermal cycling and precise temperature control. We supply thermoelectric modules and assemblies to Telecom, Biomedical, Industrial, Instrumentation, Analytical, Automotive, and Consumer application manufacturers. Also featured, are our electron beam components and solutions for optical coating and machinable ceramic materials. Visit www.ferrotec.com

Ferson Technologies #72
5801 Gulf Tech Dr, Ocean Springs, MS, 39564-8225 USA
+1 228 875 8146; fax +1 228 875 5947
ferson@datasync.com; www.ferson.com

Fiber Optic Ctr., Inc. #2206
23 Centre St, New Bedford, MA, 02740 USA
+1 508 992 6464
sales@focenter.com; www.focenter.com

Featured Product: Ultimas-F SIO Flock Pile 5" - AngstromBrush LAPPING FILM Silicon Dioxide Abrasive Coated Flock Pile

Worldwide supplier of premium ÅngströmLink Optical Polymers, ÅngströmLap lapping film and ÅngströmBond adhesives. Distributing production polishing machines, automatic stripping, epoxy dispensing, crimping, test equipment, fusion-splicers, and termination tools, supplies, cables, ferrules, attenuators and cleaning supplies. Custom drillout and standard connectors stock. Complete fiber manufacturing systems: MCGD gas-delivery, lathes, draw-towers, rotary seats for research/production. Contact: Kathleen Skelton, Marketing, kskelton@focenter.com

Fiber Optic Valley (RISE Acreo AB) #4545
Käppuddsgatan 1, Hudiksvall, 824 30 Sweden
+46 70 6895771
info@fiberopticvalley.com; www.en.fiberopticvalley.com

Connecting Ideas. Creating business. Fiber Optic Valley - an international center for innovation in the area of Broadband- and Sensor technology. We initiate new collaborations between businesses, universities and the public sector in the areas of Broadband, Sensor Technology and Innovative leadership. We unite people with other people, needs with problems with ideas, and money with innovations. Please visit us and our co-exhibitor: RISE Acreo, NYFORS, SenseAir and LC Tec Display. Contact: Torbjörn Jonsson, CEO, torbjorn.jonsson@fiberopticvalley.com; Susanne Nylén, Customer Relations Manager & Cluster coordinator, susanne.nylen@fiberopticvalley.com

Fibercure #4961
Fibercure House, Southampton Science Park, Southampton, SO16 7QJ
United Kingdom
+44 23 8076 9893; fax +44 23 8076 5356
info@fibercure.com; www.fibercure.com

Founded 1982, Fibercure is a leading innovator, designer and manufacturer of specialty fiber serving customers across the world. Products include specialty fiber for the Aerospace, Defence, Telecommunications, Oil and Gas, Energy, Medical and Fiber Laser industries – the business is a global market leader. The company’s operations are headquartered in Fibercure House, a custom built Southampton based facility in the UK. Fibercure has four Queen’s Awards for Enterprise. Contact: Brian Herbst, Senior Vice President of Sales, sales@fibercure.com; Andy Gillooly, Sales & Technical Business Development Manager, info@fibercure.com

Fiberguide Industries, Inc. #5257
SPIE Corporate Member
3409 E Linden St, Caldwell, ID, 83605 USA
+1 208 454 1988
krauscher@fiberguide.com; www.fiberguide.com

Featured Product: Fiber Optics, Fiber Optic Assemblies, RARE Motheye Fiber, Optical Switching, Fiber Bragg Gratings

For more than three decades Fiberguide Industries has been a reliable, long-term, strategic partner with OEM manufacturers in providing efficient, cost-effective, practical fiber optic solutions engineered to meet their specific needs. We specialize in manufacturing large core specialty optical fiber, high temperature metalized optical fibers, and we package these fibers in a variety of assemblies / bundles used for optical power delivery and optical sensing applications. Contact: Kevin Rauscher, Marketing Associate, krauscher@fiberguide.com; Catherine Sutton, Customer Service Representative, csutton@fiberguide.com

Fiber optic Components, LLC #2416
2 Spratt Technology Way, Sterling, MA, 01564 USA
+1 978 422 0422; fax +1 978 422 0050
sales@lightguides.com; www.lightguides.com

For the last 25 years, Fiberoptic Components has been partnered with the world’s leading medical, industrial, and analytical device OEMs to design and produce the highest value, application-specific, fiber optic solutions. With all that experience, we've developed a comprehensive suite of capabilities and services for our OEM partners. Contact: Margaret Derezinski, Sales Administrator, Margaret.Derezinski@lightguides.com; Lawrence Kosiba, President, LKosiba@lightguides.com

Fiberoptic Systems, Inc. #115
60 Moreland Rd Unit A, Simi Valley, CA, 93065 USA
+1 805 583 2088; fax +1 805 583 4018
sales@fiberopticsystems.com; fiberopticsystems.com

Fiberoptic Systems, Inc. offers fiber optic assemblies to our OEM customers. In business for 35 years, we make our own borosilicate fiber here on the West Coast. We serve multiple markets including, medical, spectroscopy, machine vision, industrial, IR & UV. Visit our website to view examples of our capabilities, and check out our Online Design Guide to help you understand the various fibers available, the number of fibers, and the external transmission expected from your design. Contact: Todd Johnson, VP Engineering, todd@fiberopticsystems.com; Sandy Stark, President, sandy@fiberopticsystems.com

Fiberoptic Technology, Inc. #5664
1 Quassett Rd, Pomfret, CT, 06258 USA
+1 860 928 0443; fax +1 860 928 7664
www.fiberopticstech.com

Featured Product: LED light sources, Fiberoptic Lighting through lightguides, backlights, ringlights, and lightlines

Fiberoptic Technology Inc is the largest US manufacturer of fiber optic lightguides. We have the largest fiber draw capacity in our industry. We manufacture a family of LED light sources, along with fiberoptic backlights, lightlines, ringlights and backlights. We also specialize in OEM manufacturing of custom products. Contact: Tim Beeman, Sales Manager, tbeeman@fiberoptix.com

FIBERPRO, Inc. #4343
26-55 Gajeongbuk-ro Yuseong-gu, Daejeon, Taejon, 34059 Korea, Republic of
+82 42 360 0030
sales@fiberpro.com; www.fiberpro.com

26-55 Gajeongbuk-ro Yuseong-gu, Daejeon, Taejon, 34059 Korea, Republic of
+82 42 360 0030
sales@fiberpro.com; www.fiberpro.com
THE BEER IS ON US!

WEDNESDAY
JANUARY 31st
3:30 pm - 5:00 pm
Booth 1813

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Tech-X
Virtual Industries
**Photonics West Exhibitor Listing**

**Fibertech Optica Inc.**

330 Gage Ave Ste 1, Kitchener, ON, N2M 5C6 Canada  
+1 519 745 2763; fax +1 519 342 0128  
info@fto.ca; www.fto.ca

**Featured Product:** Integrated specialty fiber optic assemblies  
A leader in the design and manufacture of integrated specialty fiber optic solutions, FTO offers precision micro optical assemblies, bundles, v-groove arrays, Raman & reflectance probes, high power laser cables and vacuum feed through for use from Deep UV to MIR wavelengths. From prototype through production quantities, FTO supports applications in academia, aerospace, military, astronomy, analytical instrumentation, biomedical imaging, spectroscopy, laser power delivery and research. Contact: Jeff Dupuis, V-P Sales & Marketing, jeffdup@fto.ca; Cheryl Provost, Sales Engineer, cprovost@fto.ca

**Fibotec Fiberoptics GmbH**

Herpfer Str. 40, Meiningen, 98617 Germany  
+49 3693 8813 200; fax +49 3693 8813 201  
info@fibotec.com; www.fibotec.com

The Fibotec team supports OEM customers with “fiber optic engines” in their instrument products. Fibotec develops products for and with customers, respectively also is contract manufacturing partner for specialty fiber optics. Examples are many types of fiber optic light sources, interferometer type products and products related to time domain reflectometry. Applications in testing, measurement and sensing cover medicine/biotech (major market at the moment), security (fastest growing) and more. Contact: Gerald Werner, Director Sales & Marketing, gerald.werner@fibotec.com

**FiconTEC Corporation**

25 Calle Canela, San Clemente, CA, 92673 USA  
+1 949 388 5800; fax +1 949 388 1489  
info@ficontec.com; www.ficontec.com

**Featured Product:** High precision die bonders and opto-electronic test equipment!  
ficonTEC is a premier supplier of semi- and fully-automated optical device assembly and testing systems for the optical industry, including HPLD manufacturing, fiber-optics and opto-electronics, medical technology, security and military applications, R&D, telecommunications, and others. ficonTEC’s automation solutions are based on its expertise in process technology and systems engineering where each solution is appropriately customized from a proven line of system platforms. Contact: Soon Jang, President & CEO, soon.jang@ficontec.com; General Information, info@ficontec.com

**Film Sense**

500 W South St Ste. 7, Lincoln, NE, 68522 USA  
+1 402 937 9307  
sales@film-sense.com; www.film-sense.com

**SPONSOR**  
**Fimmetrics, Inc.**

10655 Roselle St Ste 200, San Diego, CA, 92121 USA  
+1 858 573 9300; fax +1 858 573 9400  
info@fimmetrics.com; www.fimmetrics.com

**Finetech**

560 E Germann Rd Ste 103, Gilbert, AZ, 85297 USA  
+1 480 893 1630; fax +1 480 893 1632  
sales@finetechusa.com; www.finetechusa.com

**Featured Product:** The FINELACER® Femto 2 is a fully-automated die bonder with placement accuracy of 0.5 µm @ 3 sigma  
Finetech manufactures innovative, sub-micron bonders for photonic packaging and die attach. Applications include bonding of laser bars and diodes, VCSELs, Si Photonics, transceivers, flip chip, microLEDs, PICs. Our systems provide process flexibility in one platform - manual to automated production models accommodate thermo-compression / -sonic, eutectic, epoxy, ACF & Indium bonding. We collaborate with customers to understand their applications and deliver a purpose-built solution. Contact: Robert Avila; Adrienne Gerarda

**Finger Lakes Instrumentation**

7287 W Main St, Lima, NY, 14485 USA  
+1 585 624 3760; fax +1 585 624 9879  
sales@flicamera.com; www.flicamera.com

FLI designs and manufactures cooled sCMOS and CCD cameras and high speed filter wheels and cube switches. The new Kepler back-illuminated KL400 CMOS camera has 95% peak QE with 1.6e- noise, with 4 megapixel resolution at video rates. Compact deep-cooled MicroLine CCD cameras are a favorite for OEMs and research labs for low-light applications, with sensors to 50 megapixels. High speed filter wheels change to the adjacent filter in as little as 23 milliseconds regardless of load or distribution. Contact: Gary McNally, Sales, Gary@flicamera.com; Tim DeLucca, Sales, Tim@flicamera.com

**Finisar Corporation**

1389 Moffett Park Dr, Sunnyvale, CA, 94089-1134 USA  
+1 408 548 1000; fax +1 408 541 6138  
sales@finisar.com; www.finisar.com

**Featured Product:** VCSEL technology, Optical Instrumentation, Coherent and Advanced Photodetectors and Receivers  
Finisar is the world’s largest supplier of optical communication products. For nearly three decades, we have led the industry in creating and delivering breakthrough optics technology and world-class products that improve the way we communicate. Visit Booth 4053 to see the industry’s broadest product portfolio including VCSELs, which are emerging as an enabling technology across a wide range of applications, including touchless sensing, chip-to-chip interconnect, and gesture recognition.

**First Light Imaging**

Europarc Sainte Victoire Bat 6, Route de Valbrillant Le Canet, Meyreuil, 13590 France  
+33 4 42 61 29 20  
contact@first-light.fr; www.first-light.fr

**Featured Product:** Ultra fast and low noise scientific Visible and SWIR cameras for Astronomy, Bio-imagery and Industry  
First Light Imaging designs and builds high-end scientific cameras that combine extreme sensitivity and ultra high speed for both visible and infrared spectra. First Light Imaging offers 4 cameras: OCAMPK, EMCCD visible camera, 2000 FPS FF, <1 electron RON; OCAMPS, same performances with an embedded shutter and minimal pulse width lower than 300 ns; C-RED One, e-APD MCT Infrared (SWIR) camera, 3500 FPS FF, <1 electron RON; C-RED 2, InGaAs Infrared (SWIR), >400 FPS FF, <10 electrons RON. Contact: David Boutolleau, CEO, david.boutolleau@first-light.fr; Cecile Brun, Marketing Manager, cecile.brun@first-light.fr
First Light Lamps Ltd #5145
9 Lancaster Way Business Park, Ely Cambridgeshire, CB6 3NW United Kingdom
+44 1353 659922; fax +44 1353 668883
www.firstlightlamps.com/

SPONSOR
First Sensor, Inc. #4553

5700 Corsa Ave #105, Westlake Village, CA, 91362 USA
+1 818 706 3400
us@first-sensor.com; www.first-sensor.com

First Sensor is one of the world’s leading suppliers in the field of sensor systems. Our company develops and manufactures both standardized and tailor-made sensor solutions for applications in the Industrial, Medical and Mobility growth markets. First Sensor develops and manufactures high-quality, customer-specific sensor solutions for the detection of light, radiation, pressure, flow, level and acceleration. We produce in-house and along the value-added chain from component to system level. Contact: Paul Sharmar, VP Sales & Marketing, us@first-sensor.com

SPONSOR
FISBA AG #1825

Rorschacher Str 268, St Gallen, 9016 Switzerland
+41 71 282 3131; fax +41 71 282 3130
info@fisba.com; www.fisba.com

FISBA is a worldwide leading supplier of customized optical components and systems for applications in life sciences, machine vision, optical communications, defense & security and more. Offering full service from initial feasibility studies and design, as well as serial production and assembly, has enabled FISBA to become one of the most innovative optical manufacturers in the industry today. Contact: Wallace Latimer, Sales Director, Customized Optical Systems, wallace.latimer@fisba.com; Jim Dooley, Sales Director, Advanced Optical Components, jim.dooley@fisba.com

Flexible Optical B.V. #5641

Polakweg 10-11, Rijswijk, 2288 GG Netherlands
+31 70 262 9420; fax +31 70 710 1400
oko@okotech.com; www.okotech.com

Featured Product: 96-channel 1” membrane deformable mirror with embedded electronics. Powered and controlled via USB.

Flexible Optical B.V. (OKO Tech) is a small Dutch business operating in the field of research and application-oriented development of laser and high resolution imaging adaptive optics. From its foundation in 1997, OKO offers high-quality deformable mirrors featuring extremely smooth surface with HR metal and dielectric coatings suitable for most demanding imaging and high power laser applications. Contact: Gleb Vdovin, Director, gleb@okotech.com; Oleg Soloviev, Senior Associate, oleg@okotech.com

FLIR Systems, Inc. #2134; 2135

27700 SW Parkway Ave, Wilsonville, OR, 97070-8238 USA
+1 503 498 3547
sales@flir.com; www.flir.com

FLIR Systems, Inc. designs, develops, manufactures, markets, and distributes technologies that enhance perception and awareness. We bring innovative sensing solutions into daily life through our thermal imaging systems, visible-light imaging systems, locator systems, measurement and diagnostic systems, and advanced threat detection systems.

Florida Photonics Cluster #1708

12424 Research Pkwy Ste 100, Orlando, FL, 32826 USA
+1 407 451 2199; fax +1 407 386 3426
jpearson@creol.ucf.edu; www.floridaphotonicscluster.org

Featured Product: FPC Membership!

The Florida Photonics Cluster (FPC) supports the growth and profitability of the Florida photonics industry through the strength of a unified voice, by enhancing the overall photonics industry through mutually beneficial collaborations, and by making Florida the place to go for photonics solutions. FPC membership is available to all organizations that provide optics and photonics products or services, and also to non-photonics companies who provide services and products to photonics companies. Contact: Jim Pearson, Executive Director, jpearson@creol.ucf.edu; Alex Fong, President, AFong@geoandhousego.com

FluxData, Inc. #216

176 Anderson Ave Ste F304, Rochester, NY, 14607-1169 USA
+1 800 425 0176; fax +1 800 425 0176
info@fluxdata.com; www.fluxdata.com

Featured Product: FD-D8-M2

FluxData, Inc., part of the Halma group of companies, is an industry leader in industrial color measurement and customizable imaging solutions and services. FluxData helps guide customers from camera specification to delivery of the final system. Our multispectral and polarimetric imaging systems offer solutions for aerospace, industrial, medical, defense and scientific markets. The company is headquartered in Rochester, New York, USA.

FOCtek Photonics, Inc. #5134

Minghou Tieling Ind’l District, No 8 the 7th Rd, Fuzhou, Fujian, 350100 China
+86 591 382 66618; fax +86 591 382 66619
sales@foctek.com; www.foctek.com

Featured Product: Optics Assemblies, CCTV Camera Lens, Machine Vision Lens, Automotive Camera Lens, Optical Components

FOCtek is one of China’s leading manufacturers of optical components, crystal components and optical assemblies. Founded in 2002, FOCtek has had over 700 staffs and owns facility of 17500 square meters now. FOCtek was ISO9001 & TS16949, ISO14001 certified. Foctek has the most advanced metrology instruments, include ZYGO GPI Interferometers, 3D digital CMM, Trioptics OptoSpheric Lens measurement, Trioptics Prism measuring, Lambda 950 Spectrophotometer, Trioptics Image Master MTF Measure. Contact: Daniel Wei, General Manager, daniel.wei@foctek.com; Linda Lin, Sales Engineer, linda.lin@foctek.com

Focuslight Technologies, Inc. #1415

High Tech Zone, 56 Zhangba 6th Rd, Xi’an, Shanxi, 710077 China
+86 29 8956 0050; fax +86 29 8177 5810
sales@focuslight.com.cn; www.focuslight.com.cn

Focuslight Technologies Inc. is a fast growing laser company that develops and manufactures high power diode lasers, for applications in advanced manufacturing, life science, research & engineering, and lighting & display. With its extensive engineering expertise in thermal, optical and mechanical design, die bonding, FAC assembling, fiber coupling and system integration, Focuslight is dedicated to providing customers with well-matched comprehensive solutions. Contact: Suki Duan, duanyt@focuslight.com
Fotofab, LLC #2015

3758 W Belmont Ave, Chicago, IL, 60618-5292 USA
+1 773 463 6211; fax +1 773 463 3387
sales@fotofab.com; www.fotofab.com

Featured Product: Precision Etched Metal Parts

Fotofab provides a wide range of high precision metal fabricating services to produce components with geometries from simple to complex. Whether the mission is a quick-turn prototype to a high-volume production run, Fotofab has been satisfying engineers for five decades. We are proud to have earned our ISO 9001:2008 certification and are diligently working on our AS9100 certification. Contact: Michael Leff, VP Sales & Marketing, mleff@fotofab.com

SPONSOR
Frankfurt Laser Company #2107

SPIE Corporate Member

An den 30 Morgen 13, Friedrichsdorf, 61381 Germany
+49 6172 27978 0; fax +49 6172 27978 15
sales@frlaserco.com; www.frlaserco.com

Featured Product: High Power Line Laser Module ML2040. Up to 2W output power in a small IP65 proved housing

FLC is a private company engaged in development, production & distribution of: FP, DFB & DBR laser diodes, SM individually addressable & broad area laser diode arrays, superluminescent diodes in visible and IR wavelength range from 650nm to 6µm and VCSELs & Quantum Cascade lasers. FLC also supplies laser diode modules, free space & fiber-coupled, DPSS CW and Q-switch frequency-doubled lasers and OEM modules. Its products cover 266nm to 16µm wavelength & 5mW to 1000W power range. Contact: Vsevolod Mazo, Sales Director, sales@frlaserco.com; Stefan Meier, Sales & Product Manager, stefan.meier@frlaserco.com

Fraunhofer Heinrich-Hertz-Institut (HHI) #4529

Einsteinufer 37, Berlin, 10587 Germany
+49 30 310 02 213
info@hhhi.fraunhofer.de; www.hhhi.de

From optical sensing to information technology – this is the range of solutions developed at HHI. These include the development and production of innovative, miniaturized fiber optic sensors and sensor networks for applications in process control, in safety engineering, and intelligent sensorics in offshore wind energy plants and power cables. A major aim of HHI’s R&D is to apply new technologies for high capacity optical communications.

Fraunhofer Institute for Applied Optics and Precision Engineering IOF #4529

Albert-Einstein-Str. 7, Jena, 07745 Germany
+49 36 41 807 600
info@iof.fraunhofer.de; www.iof.fraunhofer.de

Featured Product: Components for QKD, additive manufacturing of optical components, broadband antireflection coatings

The Fraunhofer IOF develops innovative optical systems to control light from the generation to the application. Our service range covers the entire photonic process chain from optomechanical and optoelectronic system design to the manufacturing of customized solutions and prototypes. The institute works in the business fields of Optical Components and Systems, Precision Engineering Components and Systems, Functional Optical Surfaces and Layers, Photonic Sensors and Measuring Systems and Lasers. Contact: Kevin Füchsel, Head of Strategy / Market / Coordination, kevin.fuechsel@iof.fraunhofer.de

Fraunhofer Institute for Microelectronic Circuits and Systems #4522

Finkenstr 61, Duisburg, Northrhn-Westf., 47057 Germany
+49 203 3783 266
info@iuma.fraunhofer.de; www.iuma.fraunhofer.de

Featured Product: LiDAR Camera Owl

Since 1984 scientists at Fraunhofer IMS deal with the development of microelectronic circuits, electronic systems, microsystems and sensors. Due to its comprehensive know-how, the access to technology and the high-quality development work the Institute is a worldwide recognized partner for the industry. In eight business units Fraunhofer IMS is dedicated to applied research, advance development for products and their applications.
Fraunhofer Institute for Photonic Microsystems IPMS #4522

Maria-Reiche-Str. 2, Dresden, 01109 Germany
+49 351 8823 0; fax +49 351 8823 266
info@ipms.fraunhofer.de; www.ipms.fraunhofer.de

Featured Product: Spatial light modulator, nanoscopic electrostatic drive, scanning mirrors & grating, micro spectrometer

Fraunhofer Institute for Photonic Microsystems IPMS carries out customer specific developments in fields of microelectronic and micro systems technology. We develop and fabricate modern MEMS and MOEMS devices in our own clean room facilities. In addition to R&D services we offer ramp-up within a pilot production. The range of projects and expertise covers micro scanner mirrors, spatial light modulators, electro-optical switches, sensor and actuator systems as well as wireless Microsystems.

Fraunhofer IPT #4529

Steinbachstr 17, Aachen, 52074 Germany
+49 241 8904 0; fax +49 241 8904 198
info@ipt.fraunhofer.de; www.ipt.fraunhofer.de

Featured Product: Wavefront-based active alignment of optical components; Glass molding monitoring software

The Fraunhofer IPT has a strong focus on optical technologies and over 25 years of experience in optical manufacturing and assembly technologies. Therefore, we focus all of our expertise on the production and evaluation of complex optical components and systems. At Fraunhofer IPT we cover the full depth of the development and manufacturing of optical systems throughout the entire supply chain - especially glass molding and precision assembly technologies for optical systems. Contact: Tim Grunwald, Research Fellow, tim.grunwald@ipt.fraunhofer.de; Tobias Müller, Group Manager, tobias.mueller@ipt.fraunhofer.de

Fraunhofer UK Research UK #317

Level 5 Technology and Innovation Ctr, 99 George St, Glasgow, G1 1RD United Kingdom
+44 141 548 4667
photronics@fraunhofer.co.uk; www.fraunhofer.co.uk


Fraunhofer CAP offers industry a flexible and practical R&D resource that responds to companies’ needs in the development of photonic technologies. We can help your company produce products and processes for the future. Our main areas of work are: Novel laser sources: Laser-based systems for sensing and materials processing; Laser Applications. Fraunhofer UK is part of the global Fraunhofer network and accesses a wide range of expertise from the Fraunhofer family of Institutes and Centres. Contact: Paul McCartney, Business Development Manager, paul.mccartney@fraunhofer.co.uk; David Armstrong, Business Development Manager, david.armstrong@fraunhofer.co.uk

Fraunhofer-Institut für Lasertechnik ILT #4529

Steinbacher Str 15, Aachen, 52074 Germany
+49 241 8906 0; fax +49 241 8906 121
info@ilt.fraunhofer.de; www.ilt.fraunhofer.de

Featured Product: Platform for spaceborne lasers (FULAS), Rugged OPO demonstrator model, High power diode laser module

With nearly 440 employees and more than 19,500 m² net floor space, the Fraunhofer Institute for Laser Technology ILT, founded in 1985, is one of the most important contracting research and development institutes of its sector worldwide. Its experts develop and optimize laser beam sources and laser processes. In close cooperation with its clients, it uses laser technology to solve tasks for production, measurement technology, environment, energy, medical technology and biotechnology. Contact: Hans-Dieter Hoffmann, Competence Area Manager Lasers and Laser Optics, photonics-west@ilt.fraunhofer.de; Martin Traub, Group Manager Optics Design and Diode Lasers, photonics-west@ilt.fraunhofer.de

Fraunhofer-Institut für Siliziumtechnologie (ISIT) #4529

Fraunhoferstr 1, Itzehoe, 25524 Germany
+49 48 2117 0; fax +49 48 2117 4250
info@isit.fhg.de; www.isit.fraunhofer.de

Featured Product: A hybrid integrated glass-silicon based interposer for data communication at a wavelength of 850 nm

Fraunhofer ISIT develops electronic packaging solutions. We help companies assemble robust and reliable electronic systems and integrate these into the application environment. One of our core competences is the development of innovative packaging systems comprising microelectronic, optical and microsystems components for tele- and datacom, lighting, sensors and other photonics applications. Demonstrators are realized using simulation, customer specific design, reliability and failure analyses. Contact: Gunnar Boettger, gunnar.boettger@izm.fraunhofer.de; Martina Creutzfeldt, m.creutzfeldt@mcc-pr.de

Microintegration IZM #4529

Building 17.3, Gustav-Meyer-Allee 25, Berlin, 13355 Germany
+30 464030
info@izm.fraunhofer.de; www.izm.fraunhofer.de

Featured Product: A hybrid integrated glass-silicon based interposer for data communication at a wavelength of 850 nm

Fraunhofer IZM develops electronic packaging solutions. We help companies assemble robust and reliable electronic systems and integrate these into the application environment. One of our core competences is the development of innovative packaging systems comprising microelectronic, optical and microsystems components for tele- and datacom, lighting, sensors and other photonics applications. Demonstrators are realized using simulation, customer specific design, reliability and failure analyses. Contact: Gunnar Boettger, gunnar.boettger@izm.fraunhofer.de; Martina Creutzfeldt, m.creutzfeldt@mcc-pr.de

Freedom Photonics, LLC #4245

41 Aero Camino, Santa Barbara, CA, 93117 USA
+1 805 967 4900
info@freedomphotonics.com; www.freedomphotonics.com

Featured Product: Photonic devices and systems for optical communication and sensing - high performance lasers and PDs

Freedom Photonics is a leading developer and manufacturer of opto-electronic components, such as integrated optical transmitters, receivers and sensors. The company also offers products in the areas of monolithic widely tunable lasers, high power lasers and high power photodiodes, spanning wavelengths from the visible to the infrared (SWIR). Freedom Photonics serves the sensor and communications markets with a wide range of standard products and also designs products to customer requirements. Contact: Daniel Renner, VP - Business Development, drenner@freedomphotonics.com; Milan Mashanovitch, CEO, mashan@freedomphotonics.com
**Photonics West Exhibitor Listing**

**French Pavilion**

**#431; 437**

Digital Technologies Department / Trade Division, 77 boulevard Saint Jacques, Paris Cedex 14, 75014 France

+33 407330000
nathalie.marchal@businessfrance.fr; www.businessfrance.fr

**Featured Product:** Business France, the national agency supporting the international development of the French economy

Business France is the national agency supporting the international development of the French economy, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France. It promotes France’s companies, business image and nationwide attractiveness as an investment location, and also runs the V.I.E international internship program. Contact: Nathalie Marchal, Project Coordinator, nathalie.marchal@businessfrance.fr

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**Fresnel Technologies Inc.**  

**#107**

SPIE Corporate Member

101 W Morningside Dr, Ft Worth, TX, 76110-2708 USA

+1 817 926 7474; fax +1 817 926 7146
sales@fresneltech.com; www.fresneltech.com

**Featured Product:** LSR (silicone) optics for high temperatures and the ultraviolet

Fresnel Technologies, Inc. makes molded plastics Fresnel lenses, general optics, infrared-transmitting materials and optics made from them. Specialties are lens arrays for the passive infrared, diffusers and microlens arrays for illumination, optics for 3.4 micrometers, and silicone optics for the UV. Design assistance, tooling and production are available. We also offer diamond machining for prototyping, tooling and production, including five-axis diamond machining of freeform optical surfaces. Contact: Linda Claytor, Vice president, lclaytor@fresneltech.com; Nelson Claytor, President, nclaytor@fresneltech.com

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**Frontier Optics, Inc.**  

**#5534**

+1 949 786 1919; fax +1 949 786 1907
sales@frontier-optics.com; www.frontier-optics.com

**Featured Product:** New Online Catalog

Manufacturer of standard and custom precision optical components. Products include spherical lenses, doublets, triplets, cylindrical lenses, prisms, windows, mirrors, beamsplitters and filters. Capabilities include in-house custom coatings and multi-element assembly. Standard off-the-shelf optics are offered on line and can be delivered to customers the next day. Contact: Lee Shaw, lshaw@frontier-optics.com

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**Fuzhou Alpha Optics Co., Ltd.**  

**#6023**

Bldg 14 Gulou Industrial Park, Jinshan Juyuanzhu, Fuzhou, Fujian, 350002 China

+86 591 88037773; fax +86 591 88261253
sales@100optics.com; www.100optics.com

**Featured Product:** LBO BBO Crystals, Lens, Prism

Hundred Optics Inc. is a professional manufacturer of optical crystal (especially in LBO BBO crystals) and high-precision optical components. It is capable of supplying large quantities of LBO and BBO crystals, with top quality, high damage threshold and competitive prices for both OEM and R&D customers. Now Hundreds Optics Main production includes: Optical Crystals Series/Optics components Series/Glen Polarizer/Window/Prism/Lens, Welcome customers to call to consult. Contact: Jason Weng, Business Director, sales@100optics.com; Glen Lin, CEO, Glen.lin@100optics.com

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**Fuzhou Intpho Technology Co., Ltd.**  

**#2604**

Sales Department, Bldg #4 Gulou Industrial Park, Jinshan Juyuanzhu, Fuzhou, Fujian, 350002 China

+86 591 88203311 8013; fax +86 591 88203328
sales@intpho.com; www.intpho.com

**Featured Product:** Spherical lens, infrared lens, window, cylinder lens, prisms, aspherical lens, optical assembly, crystal

Intpho Technology Co., Ltd. was founded in 2008 and located in China. We are dedicated to designing, developing and manufacturing high quality optical and crystal products. Our products are widely used for the commercial and research marketplace including laser, semiconductor and telecommunication applications. Over the year, we work hard to establish friendly and lasting relationships with our customers. With our experiences in production, strictly ISO9001 quality-control system guarantee. Contact: Zoe Zheng, Sales Manager, zoe@intpho.com; Steve Lin, General Manager, steve.lin@intpho.com

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**Fuzhou Solid Photon Inc.**  

**#1507-F**

No. 13 3F Building 9 Rongcheng park, 10 South Rd, Jinrong Cangshan, 350002 China

+86 591 87886596; fax +86 591 87886396
sales@solid-photon.com; www.solid-photon.com

**Featured Product:** Optical and crystals, filters, mirrors, prisms, lenses, waveplates, beamsplitters, polarizers

Solid Photon Inc (SOLID) specializes in optical and crystals products for the industrial and research marketplace including laser, semiconductor, metrology, imaging, surveying, telecommunication, biomedical applications, etc. Our crystals solution include BBO, KTP, LنبO3, Nd YAG crystal and much more. Optical solutions include windows, mirrors, prisms, lenses, waveplates, beamsplitters, polarizers, filters, micro optics and much more. Contact: Dong Fu, Business Director, dong.fu@solid-photon.com; Sunny Don, Marketing Director, sales@solid-photon.com

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**Intpho Technology Co., Ltd.**

**Featured Product:** Business France, the national agency supporting the international development of the French economy

Business France is the national agency supporting the international development of the French economy, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France. It promotes France’s companies, business image and nationwide attractiveness as an investment location, and also runs the V.I.E international internship program. Contact: Nathalie Marchal, Project Coordinator, nathalie.marchal@businessfrance.fr

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**Hitronics Technologies Inc.**

**Featured Product:** Business France, the national agency supporting the international development of the French economy

Business France is the national agency supporting the international development of the French economy, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France. It promotes France’s companies, business image and nationwide attractiveness as an investment location, and also runs the V.I.E international internship program. Contact: Nathalie Marchal, Project Coordinator, nathalie.marchal@businessfrance.fr

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**Fuzhou Alpha Optics Co., Ltd.**

**Featured Product:** LBO BBO Crystals, Lens, Prism

Hundred Optics Inc. is a professional manufacturer of optical crystal (especially in LBO BBO crystals) and high-precision optical components. It is capable of supplying large quantities of LBO and BBO crystals, with top quality, high damage threshold and competitive prices for both OEM and R&D customers. Now Hundreds Optics Main production includes: Optical Crystals Series/Optics components Series/Glen Polarizer/Window/Prism/Lens, Welcome customers to call to consult. Contact: Jason Weng, Business Director, sales@100optics.com; Glen Lin, CEO, Glen.lin@100optics.com

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**Fuzhou Intpho Technology Co., Ltd.**

**Featured Product:** Spherical lens, infrared lens, window, cylinder lens, prisms, aspherical lens, optical assembly, crystal

Intpho Technology Co., Ltd. was founded in 2008 and located in China. We are dedicated to designing, developing and manufacturing high quality optical and crystal products. Our products are widely used for the commercial and research marketplace including laser, semiconductor and telecommunication applications. Over the year, we work hard to establish friendly and lasting relationships with our customers. With our experiences in production, strictly ISO9001 quality-control system guarantee. Contact: Zoe Zheng, Sales Manager, zoe@intpho.com; Steve Lin, General Manager, steve.lin@intpho.com

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**Fuzhou Solid Photon Inc.**

**Featured Product:** Optical and crystals, filters, mirrors, prisms, lenses, waveplates, beamsplitters, polarizers

Solid Photon Inc (SOLID) specializes in optical and crystals products for the industrial and research marketplace including laser, semiconductor, metrology, imaging, surveying, telecommunication, biomedical applications, etc. Our crystals solution include BBO, KTP, LنبO3, Nd YAG crystal and much more. Optical solutions include windows, mirrors, prisms, lenses, waveplates, beamsplitters, polarizers, filters, micro optics and much more. Contact: Dong Fu, Business Director, dong.fu@solid-photon.com; Sunny Don, Marketing Director, sales@solid-photon.com
GAM Laser, Inc.  #5136
7100 TPC Dr Ste 200, Orlando, FL, 32822 USA
+1 407 851 8999; fax +1 407 850 0700
sales@gamlaser.com; www.gamlaser.com

Featured Product: EX5A; Industrial laser. High reliability industrial grade mini excimer laser
GAM Laser, Inc. manufacturers Excimer lasers and CO₂ TEA lasers. High reliability Excimer lasers feature lifetimes of Billions of pulses, Soft preionization, high pointing stability, low trigger jitter, long gas life, high energy density, all metallic/ceramic design, internal vacuum pump & halogen filter, internal energy monitor, jitter, long gas life, high energy density, all metallic/ceramic design, internal vacuum pump & halogen filter, internal energy monitor, computer controlled. Wavelengths (nm): 157, 193, 248, 308, 337, 351. Energy Output. 14 – 150 mJ @ 193 nm. Contact: Joe Batcho, Sales Director, flora@toptecoptics.com; Jiayuan Xu, General Manager, info@toptecoptics.com; Jia Yang, Sales Director, flora@toptecoptics.com

GAM Dan Optics  #29
2362 Qume Dr Ste B, San Jose, CA, 95131 USA
+1 408 318 9253; fax +1 408 519 3760
contact@gamdan.com; www.gamdan.com

GD Optical Competence GmbH  #4529
Herborn Str 7-9, Sinn, Hesse, 35764 Germany
+49 2772 5744 0; fax +49 2772 5744 165
kontakt@gdoptics.de; www.gdoptics.de

Featured Product: New off the shelf product: Molded Powell lenses - highly homogenous line, highly replicable
We develop & produce precision molded glass optics for highest requirements in high-end applications. We focus on individual customized solutions for a broad array of applications. From optical design of the lens, design of the tools, ultra-precision machining of all necessary tools to the point of molding of the glass components itself-all production steps are performed in-house. Our innovative molding technologies allow for the economic production of both very large and rather low volumes. Contact: Michael Wolz, Director R&D, m.wolz@gdoptics.de; Florian Lucas, Production Manager, f.lucas@gdoptics.de

Gel-Pak  #1617
31398 Huntwood Ave, Hayward, CA, 94544-7818 USA
+1 510 576 2220; fax +1 510 576 2282
info@gelpak.com; www.gelpak.com

Featured Product: Gel-Pak Vacuum Release Carriers protect photonic components during process steps and shipping.
Gel-Pak products are used extensively by the world’s leading Photonic component manufacturers to protect fragile devices during shipping, handling and processing. Our Gel-coated boxes, trays, slides, and films hold these devices in place to ensure they remain damage free while being handled. We offer a wide assortment of products that serve as ideal carriers for components including bare die, lasers, OSAs, filters, and optics. Our R&D team can also design custom carriers for your application. Contact: Raymund Abiera, Sales Manager, raymund@gelpak.com; Darby Davis, VP Sales, darby@gelpak.com

General Dynamics Mission Systems  #4031
6717 Alabama Hwy 157, Cullman, AL, 35057 USA
+1 256 737 5200
precisionsupport@gd-ms.com; www.gdmissionsystems.com

Featured Product: Telescopes, Fast Steering Mirrors, Precision Optics and Structures
GD manufactures precision metal optics and optical assemblies including complex structures, mirrors, telescopes, gimbals, fast steering mirror systems, high speed scanning systems, gyro components and connectors. We machine flat, aspheric, spherical mirrors which can be nickel/gold plated, diamond turned, polished, heat treated and anodized in-house. With diameters up to 1.5M, our optics support critical ground, airborne and space-based targeting, surveillance and observation missions. Contact: Lance Whalen, Director, Business Development, lance.whalen@gd-ms.com; Lee Vandermark, Director, Business Development, lee.vandermark@gd-ms.com

Gasera Ltd.  #4365
Lemminkäisenkatu 59, Turku, 20520 Finland
+358 405222611
contact@gasera.fi; www.gasera.fi/

Gavish, Inc.  #449
360 Route 101 Ste 4A, Bedford, NH, 03110-5033 USA
+1 603 472 5900; fax +1 603 472 8333
info@gavish.com; www.gavish.com

Featured Product: Sapphire Products/Components
Sapphire optics include windows, imaging arrays, optical lightpipes, lenses & skin cooling optics for cosmetic surgical lasers. Optics are produced to end user specifications for finish & flatness with AR & other specialty coatings including solderable metallization. Final turn-key parts, soldered & brazed multi-element assemblies are also available. Gavish is ISO 9001:2008 certified / ITAR registered. Contact: Cathy Schult, Account Manager, cschult@gavish.com
Genicom Co., Ltd. #4858
273 Baug 1-ro Yuseong-gu, Dajeon, 30436 Korea, Republic of
+82 42 862 3982; fax +82 42 862 2982
uvsensor@geni-uv.com; www.geni-uv.com

Featured Product: UV Index monitoring, UV-lamp & UV-LED monitoring, Flame/Flame detection, UV absorption Spectroscopy
As a professional UV sensor manufacturer, we incorporate new technologies such as MEMS and nano-scale materials. These give rise to industry-leading products such as UV sensors with no required cut-off filters. Our specialty lies in GaN / AlGaN-based senor, with unique features to suit a range of applications from UV index monitoring and flame detection to UV absorption spectroscopy and UV curing. Contact: Jin Lee, Sales Manager, uvsensor@geni-uv.com

Gentec Electro Optics #542
445 Saint-Jean-Baptiste Ste 160, Quebec, QC, G2E 5N7 Canada
+1 418 651 8003
info@gentec-eo.com; www.gentec-eo.com

Featured Product: Introducing BLU, our first wireless laser power meters. Easily connect your iOS, Android or PC
With a 45-year track record of innovation and providing quality solutions for laser power and energy measurement applications, Gentec-EO stands ready to serve you now and in the future. Our product line includes a complete range of laser power & energy meters, photo detectors, THz detectors, OEM detectors and beam diagnostics. We also have calibration centers on 3 continents for fast turn-around times, just what you need to keep pace with today’s rapid market. Contact: Burt Mooney, Sales Development Manager, bmooney@gentec-eo.com; Felicien Legrand, Technical Sales Physicist, flegrand@gentec-eo.com

Germany Trade & Invest #4529
Friedrichstr 60, Berlin, 10117 Germany
+49 30 200 099 0; fax +49 30 200 099 111
office@gtai.de; www.gtai.de/GTAI/Navigation/EN/Meta/About-us/What-we-do/investor-consulting.html

Featured Product: Investor Consulting - GTAI Advises Foreign Investors Locating to Germany
Germany Trade & Invest (GTAI) is the economic development agency of the Federal Republic of Germany. The organization advises and supports international businesses seeking to expand into the German market. Our free services include: Project-specific legal and tax support, Incentives and financing option consultancy, Strategic market entry consultancy, Site visits, contact initiation and local support. Contact: Claus Habermeyer, Director, Claus.Habermeyer@gtai.com; Jerome Hull, Senior Manager, jerome.hull@gtai.com

Germany-Federal Ministry for Economic Affairs & Energy (BMWi) #4529
Villemombier Str. 76, Bonn, 53123 Germany
info@bmiw.bund.de; www.bmiw.de


Giai Photonics Co., Ltd. #1521-H
F2 Blk C Shen Chang Gang Industrial Park, 1st Rd Jinlong Baolong Industry Zone, Longgang District Shenzhen, 518116 China
+86 755 89926386; fax +86 755 89663926
susan@giaitech.com; www.giaiphotonics.com/

Featured Product: Optical Lens, optical prisms, optical filters, lens module assembling, infrared filters, Window, Mirror
Giai Photonics Co., Ltd specializes in all kinds of optical components, optical Lens, prisms, filters etc. Products are widely used in high-precision precision optical equipment, laser processing equipment, measuring instruments machine vision and other fields. There are 2 factories in our company, manufacture all the optics by ourselves. From CNC cutting, polishing, Carving, profile modeling, chamfer, doing coating, silk screen. We are striving to provide the best products to clients around the world. Contact: Susan Deng, Sales Manager, susan@giaitech.com; Shelly Liu, Sales Assistant, lincoln@giaitech.com

GigA Concept #4437
11811 Suzor-Côté, Montréal, QC, H3M 2H8 Canada
+1 514 745 8877; fax +1 514 626 6784
egilard@gigaconcept.com; www.gigaconcept.com/

Featured Product: AnyWave Fiberbench Fiber Optic Mode Control, GigA Concept Patented
AnyWave is our ability to use any optical fiber type i.e. Silica, ZrF4, InF3, Chalcogenides, GeO2, rare earth doped, hollow core and other exotic fibers; even plastic waveguides. Our OEM, enclosed instruments and active parchcords use lightweight fiber armoring; Fiber type, pigtails, connector, etc. set using interactive forms. Fiberbench is our powerful modular fiber optomechanics system for fiber optic polarization control and spatiotemporal mode scrambling. Contact: Éric Girard, Sales Engineering, egilard@gigaconcept.com

Gitterwerk GmbH #4529
Montz-von-Rohr-Str 1a, Jena, 07745 Germany
+49 36413161120; fax +49 36413161130
info@gitterwerk.com; gitterwerk.com

Featured Product: Diffraction Gratings optimized for Ultra Short Pulse and High Power Lasers
Industrial manufacturer of the best diffraction gratings for ultra short pulse and high power lasers. Diffraction gratings of the highest quality according to the current state of the art – efficiency, wavefront accuracy, damage threshold optimized for your application! The periodic 100% fused silica gratings provide efficiency of up to 99.5% (incl. AR-Coating) and an excellent homogeneity for perfect beam quality. Contact: Frank Fuchs, Managing Partner, frank.fuchs@gitterwerk.com; Max Tarantik, Marketing Director, max.tarantik@gitterwerk.com

Glass Fab, Inc. #208
257 Ormond St, Rochester, NY, 14605-3024 USA
+1 585 262 4000; fax +1 585 454 4305
info@glassfab.com; www.glassfab.com

Manufacture of custom blanks. Products include fused quartz, fused silica, optical glasses, filter glasses and low/ultra low expansions glasses. Capabilities include annealing, slumping, sawing, grinding, edging, drilling, waterjet cutting, CNC shaping, CNC generating and wire saw slicing. Contact: Daniel Saltzman, President, d_saltzman@glassfab.com; George Dean, Sales, g_dean@glassfab.com
Welcome to the China Pavilion @Photonics West 2018

DayOptics 1521-A
JPT 1521-BC
HB-OPTICAL 1521-D
SINO-GALVO 1521-E
YAGCRYSTAL 1521-G
Giai 1521-H
GUOGUANG 1507-A
恒光光电 1507-B
Bellin Laser 1507-C
BJP 1507-D
YUNFENG 1507-E
SOLID 1507-F
OLIGHTEK 1507-G
华特知新 1507-H
HAN’S SCANNER 1507-I
JOT 1507-J
connet 1507-K
CeNing Optics 1507-L
O&M 1507-M
GOLDEN SCIENTIFIC 1507-N
Optowide 4542-A
CECEP 4552-A
HTOE 4552-B
Coral 4552-C
CHINESE LASER PRESS 4552-D
**Photonics West Exhibitor Listing**

**Glenair, Inc.**  
1211 Air Way, Glendale, CA, 91201-2497 USA  
+1 818 247 6000  
sales@glenair.com; www.glenair.com

**Featured Product:** Glenair offers full-spectrum high-reliability, ruggedized tactical fiber optic & photonics solutions

Glenair optical interconnect technologies deliver high data rate & bandwidth performance in land, sea, air, & space applications. Our precision-engineered fiber optic termini & tight tolerance connectors deliver low data loss, reliable, repeatable performance over long distances in mission-critical applications. Our full-spectrum fiber optic solutions include ruggedized optics, single & multi-channel connectors, backshells, & custom cables with full engineering, design, fabrication & termination. Contact: Ramzi Sawires, rsawires@glenair.com; Ron Logan, rlogan@glenair.com

**Global Laser Ltd**  
Unit 9-10 Roseheath Business Park, Abertillery Gwent, NP13 1SP United Kingdom  
+44 1495 21213; fax +44 1495 214004  
sales@globallasertech.com; www.global-lasertech.co.uk/

**Featured Product:** Ask us about our new range of direct drive green laser diode modules and laser safety glasses!

Specializing in a wide range of OEM, high performance laser products for use within many niche applications including Machine Vision, Alignment, Medical, Measurement, Positioning and Military. Standard products include Red, Green, Blue, and IR wavelengths with powers up to 200mW. Outputs include spots, lines, crosses and DOE’s. Inbuilt control electronics provide excellent power stability over time and temperature as well as a range of modulation features that are unmatched in the marketplace. Contact: Nikki Powell, Sales Manager, nicolap@globallasertech.com; Simon Mattin, Product Development Manager, simonn@globallasertech.com

**GLOphotons**  
123 avenue Albert Thomas, Limoges Cedex, 87060 France  
+33 5 87 50 67 25  
contact@glophotons.fr; www.glophotons.fr

**Featured Product:** Kagemé HC-PCF (Hollow Core Photonic Crystal Fibers), USP Beam Delivery System (BDS)

GLOphotons is a spin- off of a research group, led by Professor Fetah BENABID, which develops, manufactures and markets gas phased photonic components using Hollow Core Photonic Crystal Fibers (HC-PCF). The unique features of this innovative fiber technology provide a flexible and cost effective way to shape and transport Ultra Short laser Pulses (USP) with extremely low attenuation and nearly-free temporal and spectral distortion. Contact: Jérôme ALIBERT, President & CEO, Jeromealibert@glophotons.fr; Fetah BENABID, Lead Founder, fetahbenabid@glophotons.fr

**GMT Global Inc.**  
No. 3, Ln. 34, Minzhu St. Xiushui Township, Changhua County, 50442 Taiwan  
+886 4 7688320  
sales@gmtglobalinc.com; www.gmtglobalinc.com/en

**Featured Product:** Fiber alignment stage. Motorized positioning stage. Microscope positioning stage. Fine screws.

With ISO 9001:2008 certification, GMT GLOBAL INC. is one of the leading companies for manufacturing linear motion system and has marketed as a global supplier since 1994. GMT specializes in manufacturing and developing automatic linear components applied for Industrial Automation, Optics and Photonics. With the beginning of 2017, GMT initiated to promote pick and place series for industrial automation technology needs, also help others fields with the manufacturing of positioning stage elements. Contact: Josephine Chang, Head of International Business, sales@gmtglobalinc.com

**Gould Fiber Optics**  
1121 Benfield Blvd, Millersville, MD, 21108-2540 USA  
+1 410 987 5600; fax +1 410 987 1211  
info@gouldfo.com; www.gouldfo.com

**Featured Product:** Low Wavelength 1060nm Planar Waveguide available for SM and PM ideal for OCT, Bio/Medical & Sensor

Designs, develops, manufactures and distributes passive fiber optic components for OCT, Bio/medical, telecom, military, aerospace, gyroscope, oil/gas and sensor market applications. Specializes in volume production of customized optical assemblies. Products include planar, PM products, SM, MM, Dual Clad Fiber couplers/ splitters, RGBV/multimode/pump combiners, WDMs, DWDMs, CWDMs, attenuators, isolators, circulators, connectors, cable assemblies, and filter-based products. ISO 9001 certified. Contact: Saeed Pilevar, VP and General Manager, spilevar@gouldfo.com; Peter Smiley, Sales Manager, psmiley@gouldfo.com

**GPD Optoelectronics Corp.**  
7 Manor Pkwy, Salem, NH, 03079-2842 USA  
+1 603 894 6865; fax +1 603 894 6866  
sales@gpd-ir.com; www.gpd-ir.com

**Featured Product:** Large area InGaAs APD for high sensitivity applications with die on ceramic, TO46, or fiber formats.

GPD Optoelectronics Corp., is a global supplier of Ge & InGaAs photodetectors operating in the 0.8 to 2.6 micron short wave infrared (SWIR) spectrum. The Ge photodiodes, InGaAs photodiodes and InGaAs APDs are available in die on carrier, TO package, TEC module, single/multi- mode fiber (with high reliability packaging), SMA/FC/SC/ST active mount, & custom designs. GPD has Si over Ge, Si over InGaAs, InGaAs over InGaAs “two-color sandwich” sensors for ratio pyrometry & InGaAs quadrant sensors. Contact: Rufus Ward, President, rward@gpd-ir.com; George Gasparian, Sales/Applications Engineer, ggasparian@gpd-ir.com

**Gooch & Housego PLC**  
Dowlash Ford, Ilminster Somerset, TA19 0PF United Kingdom  
+44 1460 256440; fax +44 1460 256441  
sales@goochandhousego.com; goochandhousego.com

**Featured Product:** 6000 series drivers offer unprecedented AO deflector and tunable filter configuration flexibility.

We are G&H. We generate, control, amplify, connect, and measure lasers and light sources. Our expertise enables customers to push the boundaries of commercially applied photonics technology. We work with the world’s leading OEMs and system integrators in the development of subsystems and devices for applications in an incredibly broad range of applications. Visit us and challenge us to show how our expertise can work for you. Contact: Adrian Chance, Marcomms Manager, info@goochandhousego.com; Tom McGunigal, US Sales Director, tmcgunigal@goochandhousego.com
GS Plastic Optics
408 St Paul St, Rochester, NY, 14605-1788 USA
+1 585 295 0200; fax +1 585 232 2314
info@gsoptics.com; www.gsoptics.com

Featured Product: Precision Polymer Optics
GS Plastic Optics works with executives and program managers to solve complex optical challenges. We manufacture high-performance injection molded polymer optics specifically designed to help customers improve their competitiveness and market share. Our in-house team consists of experts in diamond turning, thin film coating, mold fabrication, and opto-mechanical assembly. We have all of the advanced metrology equipment needed to control performance and quality.
Contact: Contact: Steve Orth, Sales Executive, south@gsoptics.com; Will Bierch, Director of Sales and Marketing, wbeich@gsoptics.com

GT Crystal Systems, LLC
27 Congress Street, Salem, MA, 01970 USA
+1 978 745 0088; fax +1 978 744 5059
sapphire.sales@gtat.com; www.gtat.com
GT Crystal Systems manufacturers Sapphire and Ti:Sapphire for optics, IR applications, windows, domes, laser rods, lenses, prisms, filters, substrates and for other optical and non-optical applications. We can provide a wide range of material grades to meet customers’ requirements for demanding applications in defense, laser technology, electronics, life sciences and research.
Contact: William Ripley, Sales Manager, bill.ripley@gtat.com

GuangDong KingDing Optical Technology Co., Ltd.
No. 2 Qinye Road Torch High Technology Industry Development Zone, Zhongshan, 528437 China
+86 760 28194399 858; fax +86 760 28193666
liangz@kdomgd.com; www.kdomgd.com

Featured Product: Glass Lens, Camera Lens, Glass lens processing equipment
Guangdong Kingding Optical Technology Co., Ltd was established in 2012, which is specialized in the development, manufacture and sale of optical machinery and equipment and its automation, optical glasses, camera lenses, coating technology and aspheric glasses, products are mainly exported to Japan, the United States, Germany, Korea, Hong Kong, Taiwan and other countries and regions. Our main customers include Nikon, Fujifilm, Tamron, Pentax, Canon and others.
Contact: Liang Zhang, Sales Director, liangz@kdomgd.com

Guangzhou CKLaser Co., Ltd.
No 63 Yayao Mid Road Huadu District, Guangzhou, 510540 China
+86 20 8690 1699; fax +86 20 8680 9399
cklaser@163.com; www.fibrelasermachine.com

Featured Product: 2D/3D fiber/CO2/UV laser marking machine
CKLASER is a company specialized in the research, development, production, sales of FB/CO2/UV laser marking machine. We has a professional R&D team, our engineers can sincerely provide a complete laser solution for you, which assists you to solve the process problem or technical barrier. With eleven years experience in the laser manufacturing industry, we always pursue for the detail perfect and quality first. Partners/distributors wanted now, we go after an interactive and win-win partnership.
Contact: Jason Liu, Sales Manager, 13926294759@cklaser.cn; Sunny Yang, Sales, 18819496018@cklaser.cn
Photonics West Exhibitor Listing

Guanzhou New CKLaser Co., Ltd. #4205-A
Rm 105, No 8 Lingxi Rd Tanbu Town Huadu District, Guangzhou, Guangdong, 510800 China
+86 11552175225
2813501725@qq.com
Featured Product: 2D/3D fiber/CO2/UV laser marking machine
NEW CKLASER is a company specializing in the research, development, production, sales of laser marking machine for eleven years. We have a professional R&D team, our engineers can sincerely provide a complete laser solution for you, which assists you to solve the process problem or technical barrier. Our products exported more than 30 countries, total capacity is over 10 thousands. Partners/distributors wanted now! Contact: Jason Liu, Sales Manager, 13926294759@cklaser.cn; Sunny Yang, Sales, 18819496018@cklaser.cn

Guernsey Coating Labs., Inc. #1913
SPIE Corporate Member
1788 Goodyear Ave, Ventura, CA, 93003-8080 USA
+1 805 642 1508
sales@guernseycoating.com; www.guernseycoating.com
Featured Product: Optical coatings. Thin-film deposition on glass, metal, plastic and fiber optics.
DURABLE METAL COATINGS. Specializing in vacuum deposited thin-films for over 35 years from the UV to the NIR. Precise handling of smaller optics (2-165mm). Coatings on glass, metal, plastic and fiber optic substrates. High reflectors, aluminum, silver, gold, BBAR, V-coat, beamsplitters, bandpass, ND & dichroic filters & ITO (to <100 ohms) applications. R&D, custom design, prototype through high volume production. 100% woman owned. Contact: Robert Mendenhall, Director of Business Development, rmendenhall@guernseycoating.com; Ty Guernsey, Owner, ty@guernseycoating.com

Guild Optical Associates, Inc. #108
11 Columbus Dr, Amherst, NH, 03031-2300 USA
+1 603 889 6247; fax +1 603 889 8361
info@guildoptics.com; www.guildoptics.com
Featured Product: Sapphire Windows and Sapphire Lenses
The Authority in Sapphire Optics. Guild Optical Associates is a widely recognized leader in the manufacturing of custom sapphire windows and sapphire lenses. We set ourselves apart from other optics providers by doing our own manufacturing in house using high quality raw sapphire. The results are some of the best performing precision optics in the industry. Contact: Jon Lavoie, Manager, jlavio@Guildoptics.com

Guangzhou New CKLaser Co., Ltd. #4205-A
Rm 105, No 8 Lingxi Rd Tanbu Town Huadu District, Guangzhou, Guangdong, 510800 China
+86 11552175225
2813501725@qq.com
Featured Product: 2D/3D fiber/CO2/UV laser marking machine
NEW CKLASER is a company specializing in the research, development, production, sales of laser marking machine for eleven years. We have a professional R&D team, our engineers can sincerely provide a complete laser solution for you, which assists you to solve the process problem or technical barrier. Our products exported more than 30 countries, total capacity is over 10 thousands. Partners/distributors wanted now! Contact: Jason Liu, Sales Manager, 13926294759@cklaser.cn; Sunny Yang, Sales, 18819496018@cklaser.cn

Gulf Photonics, Inc. #3039
640 Brooker Creek Blvd Ste 460, Oldsmar, FL, 34677-2934 USA
+1 813 448 5220; fax +1 813 448 5224
sales@gulfphotonics.com; www.gulfphotonics.com
Featured Product: Deep UV Specialists! Custom Industrial Sensing for Turbidity/Haze, Color, Temperature, & RI/Gravity
Manufacturer of engineered, high-quality, quick turn fiber optic assemblies for spectroscopy, sensing, and light routing applications. Unique capabilities for DUV applications. Offering custom solutions for all environments. Serving the medical, academic, research and instrumentation manufacturer markets. Options include a wide range of fiber types, sheathing and terminations. Offering custom/OEM patch cables, bifurcated assemblies and reflection probes for general spectroscopy applications Contact: Craig Vogeley, Business Development, cvogeley@gulfphotonics.com; Chris Bailey, Engineering, cbailey@gulfphotonics.com

Gurley Precision Instruments, Inc. #231
514 Fulton St, Troy, NY, 12180 USA
+1 518 272 6300; fax +1 518 274 0336
info@gurley.com; www.gurley.com
Featured Product: A37H Hollow Shaft Absolute Rotary Encoder - Resolutions up to 23-bits SSI format
GPI manufactures high-end optical encoders, components and assemblies to the optics, medical, aerospace and defense industries. From design phase to volume runs, we manufacture custom and cataloged components that are designed to meet your specific requirements. Our product line includes; linear and rotary encoders, lenses, windows, mirrors, prisms, reticles, and full coating services for most types of substrates. For more information, stop by our booth or visit our website at www.gurley.com Contact: Christopher Guiry, Director, Encoder Sales, c.guiry@gurley.com; Simon Miner, Director, Optics Sales, s.miner@gurley.com

Haas Laser Technologies, Inc. #4169
37 Ironia Rd, Flanders, NJ, 07836 USA
+1 973 598 1150; fax +1 973 598 1151
sales@haaslti.com; www.haaslti.com
Featured Product: Laser Beam Delivery Components and Laser Beam Diagnostic and Measurement Equipment
Since 1992 Haas Laser Technologies, Inc. has been supplying laser beam delivery components for all laser wavelengths and laser powers. In addition the company builds custom laser systems and has developed the BWA Laser Beam Measurement system. The BWA measurement system is the fastest, most repeatable and lowest cost M2 measurement device in the world. Contact: Gilbert Haas, President, ghaas@haaslti.com

HAGITEC Ltd. #147
Sales, 246-7 Dainichi, Yotsukaido-shi Chiba-ken, Chiba, 284-0001 Japan
+81 43 423 8741; fax +81 43 423 8684
info@hagitec.co.jp; www.hagitec.com

Hamamatsu City #5029
105-2 Motoshiro-cho Naka-ku, Hamamatsu City, 430-0807 Japan
+81 53 457 2319; fax +81 53 457 2283
sangyo@city.hamamatsu.shizuoka.jp; www.city.hamamatsu.shizuoka.jp/

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, UV light and x-rays. These devices include silicon photomultipliers, photodiodes, photomultiplier tubes, image sensors, cameras, and light sources. Hamamatsu Photonics also offers specialized systems for select applications.

HAGITEC Ltd. #147
Sales, 246-7 Dainichi, Yotsukaido-shi Chiba-ken, Chiba, 284-0001 Japan
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105-2 Motoshiro-cho Naka-ku, Hamamatsu City, 430-0807 Japan
+81 53 457 2319; fax +81 53 457 2283
sangyo@city.hamamatsu.shizuoka.jp; www.city.hamamatsu.shizuoka.jp/

HAGITEC Ltd. #147
Sales, 246-7 Dainichi, Yotsukaido-shi Chiba-ken, Chiba, 284-0001 Japan
+81 43 423 8741; fax +81 43 423 8684
info@hagitec.co.jp; www.hagitec.com

Hamamatsu City #5029
105-2 Motoshiro-cho Naka-ku, Hamamatsu City, 430-0807 Japan
+81 53 457 2319; fax +81 53 457 2283
sangyo@city.hamamatsu.shizuoka.jp; www.city.hamamatsu.shizuoka.jp/

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, UV light and x-rays. These devices include silicon photomultipliers, photodiodes, photomultiplier tubes, image sensors, cameras, and light sources. Hamamatsu Photonics also offers specialized systems for select applications.
Hangzhou Multi IR Technology Co., Ltd. #2234

Bldg 3, No 503 Xingguo Rd Qianjiang Development Zone, Hangzhou, Zhejiang, 311106 China
+86 571 899 05370; fax +86 571 899 05376
info@mirhz.com; www.mirhz.com

Featured Product: IR filters, gas sensors, temperature sensors

Multi IR specialize in the researching, designing and producing the most durable, and reliable IR optical thin film coatings. We are the leading provider of IR optical thin film coating services and products. Our exclusive thin film coating services and capabilities are concentrated in near infrared (NIR), mid-wave infrared (MWIR) and out to the far infrared (FIR), or the long-wave infrared (LWIR). We provide you with the highest quality IR Filters.

Contact: Emma Shen, Marketing Specialist, SZT@mirhz.com; Mark Zheng, Sales Manager, zb@mirhz.com

Hangzhou Techwin Precision Instrument Co., Ltd. #5161

8th Fl, No 206 Zhenhua Road Unit A Block 2, Hangzhou, Zhejiang, 310030 China
+86 571 882 84299; fax +86 571 851 21892
sales@techwin-china.com; www.techwin-china.com

Han’s TianCheng Semiconductor Co., Ltd. #4664

No 2 St, 6th Fl #17 Building Han’s Enterprise Bay, Daxing, 100176 China
+86 10 6780 8515
sales@tc-semi.com; www.tc-semi.com

Featured Product: The World 1st 808nm 400W Fiber Coupled Diode Laser for Hair Removal, 50 Million Shorts Lifetime

Han’s TianCheng Semiconductor Co., Ltd. is a subsidiary company of Han’s Laser. Han’s TCS has advanced research, technological infrastructure and experience in the development and production of diode lasers with self-developed technology, especially in fiber coupled laser modules. Han’s TCS provides 635-1550nm diode lasers from 10-1000 watts which are widely used in the fields such as material processing, DPSS, fiber laser pumping, laser display, medical application and scientific research.

Contact: Shenglian Xuan, Product Manager, xuanshengfan@tc-semi.com; Yide Lu, Sales Manager, louie@tc-semi.com

HC Photonics Corp. #1921

4 Fl Hsinchu Science Park, No 2 Technology Rd V, Hsinchu, 30078 Taiwan
+886 3 6662123
service@hcphotonics.com; www.hcphotonics.com

Featured Product: PPLN & PPLT crystal/waveguide, Technologies for frequency conversion modules and packaging services

HCP specializes in custom solutions of optical wavelength converters for initial development and commercialization of project and product based on Periodically Poled nonlinear Materials-MgO:PPLN/PPLT Bulk/Waveguide crystals and fiber packaged mixers. HCP provides cost-effective and fast turnaround products for full spectrum applications range from UV to mid-IR and THz, enabling scientific and industrial applications, e.g. Quantum Information, Organic Gas sensing, Bio-medical surgeon and etc.

Contact: Karin Wu, Sales Director, karin@hcphotonics.com

Hebei Plasma Diamond Technology #5065

Qiaoxi District, No 46 Youyi South St, Shijiazhuang, Hebei, 050081 China
+86 311 83034449
sales@hediamond.cn; www.hediamond.cn

Hefei Shengda Electronics Technology Industry Co., Ltd. #4770

High Tech Zone, No.19 Hehuan Road, Hefei, 230000 China
+86 551 65845106; fax +86 551 65845105
hpl@sdetec.com; WWW.SDETEC.COM

Featured Product: Metal package, silver paste, electronic materials, ALN substrates, DBC and so on

Package Department, one of earliest enterprises which involved package, was established in 1988. With over 20 years history, this department owns an entire platform of design, manufacture and test. Shengda Industry Company, one of the Anhui Hi-Tech Companies, was established in 1993. Shengda’s main business includes electronics material, ALN substrates, DBC, etc. ECRM determined to combine the two units together to enhance the core-competitiveness in package and electronics material of CETC. Contact: Hui Wang, Sales Manager, hpl@sdetec.com; Feng Wang, Senior Engineer, kitty.wang@sdetec.com

Heidelberg Instruments Inc. #4348

2807 Oregon Ct Ste E2, Torrance, CA, 90503-2635 USA
+1781 281 8447; fax +1 310 212 5254
info@himt.de; www.himt.de

Featured Product: MLA (Maskless Aligners), DWL (Direct Write Lithography Systems), and VPG (Volume Pattern Generators)

Heidelberg Instruments Mikrotechnik GmbH is the world leader in the production of high precision photolithography systems and Maskless Aligners. Heidelberg Instruments has an installation base of over 800 systems in more than 50 countries. Our optical direct write lithography systems are installed in academic and industrial sites and are used in research, development and production. Applications Include Photomask Manufacturing, MEMS, MOEMS, Micro-fluidics, CMOS, LED and Display Technologies.
HEIDENHAIN Corp. #5547

333 E State Pkwy, Schaumburg, IL, 60173-5337 USA
+1 847 490 1191; fax +1 847 490 3931
marketing01@heidenhain.com; www.heidenhain.us

HEIDENHAIN Corporation is the North American subsidiary of the German company DR. JOHANNES HEIDENHAIN GmbH, a leading international manufacturer of precision measurement and control equipment. This superior technology is utilized within high precision motion control and machining systems worldwide. The product lines include linear and angle encoders, rotary encoders, length gauges digital readouts (DROs), numerical controls (TNCs), and touch probes for demanding positioning tasks. Contact: Kevin Kaufenberg, Product Manager, kkaufenberg@heidenhain.com

HEIDSTAR CO., LTD. #5667
Albert House Torch Hi-tech Zone Huli District, Xiamen, Fujian, 361009 China
+86 592 570 8071; fax +86 592 570 8071 x805
sales@heidstar.com; www.heidstar.com

Heidstar designs and manufactures a wide range of motorized stages for microscopic industry. Our component products include piezo motor stages, linear motor stages, stepper motor stages and DC motor stages. We are one of the first companies in the world that introduced high speed, nanometer precision linear motor driven stage to optical microscopic systems. We also provides fully automated microscopes and customized solutions for our clients ranging from life sciences, metrology and electronic industry.

Heimann Sensor GmbH #322
Maria-Reiche-Str. 1, Dresden, Saxony, 01109 Germany
+49 351 888885 0; fax +49 351 888885 27
sales@heimannsensor.com; www.heimannsensor.com

Helia Photonics Ltd #317
Rosebank Park, Kirton Campus, Livingston West Lothian, EH54 7EJ United Kingdom
+44 150 641 4800; fax +44 150 641 4070
enquiries@helia-photonics.com; www.helia-photonics.com

HELIOWORKS, INC. #322
1275 4th St Ste 614, Santa Rosa, CA, 95404-4057 USA
+1 707 578 7200; fax +1 707 578 7200
info@helioworks.com; www.helioworks.com

Featured Product: Pulsable IR Source Model EF-8532R. Includes CaF2 window and Au plated reflector. Input Max 4.0 watt.

HelioWorks manufactures a wide range of infrared lamps primarily for the OEM market. Our products are used in near infrared (NIR) spectroscopy, non-dispersive infrared (NDIR) gas detectors for medical and industrial applications including: CO, CO2, alcohol, hydrocarbon and other noxious gases, thermal reference calibration, thermal markers, thermal beacons and many other applications. Filament materials include: Nichrome (NiCr), Kanthal, and Tungsten. All packages are standard TO-style. Contact: Don Wood, CEO, info@helioworks.com

Hellma USA, Inc. #1117

80 Skyline Dr, Plainview, NY, 11803-2518 USA
+1 516 939 0888
info.us@hellma.com; www.hellma.com

Mfg. of Optics, Spectrometric Cells, Fiber Optic Probes, Photometric Reference Materials, Quartz Microplates, CaF2 and more. Optics include Cylindrical/Flat Optics, Beam Splitters and Mirrors. Manufacture of optical components to superior quality for exacting applications in laser engineering and other applications. Additional lines distributed by Hellma USA: Nikkiso UV-LEDs down to 255nm with >10,000hr lifetime, Heraeus Analytical lamps Inc. D2 & PID, Zeiss Gratings and Mini Spectrometer Modules.

Heracle GmbH #5543

Hans Knöll Strasse 6, Jena, 07745 Germany
+49 3641 5277825
heracle@heracle.de; www.heracle.de

Featured Product: Customized and Standard specialty optical fiber, Consulting, measurement and test services

Heracle develops and manufactures specialty optical fiber for various applications in medical, industrial and sensor markets. The ISO 9001 certified Company is your innovative solution partner for custom-designed OEM fiber solutions as well as your reliable source for the full product range of off-the-shelf specialty fibers, such as Graded and Step index Multimode fiber as well as active fibers for fiber laser. Contact: Peggy Baerenklau, CEO, peggy.baerenklau@heracle.de; Ralitsa Rosenow, Sales, ralitsa.rosenow@heracle.de

Heraeus #1631

Optics, 100 Heraeus Blvd, Buford, GA, 30518-3456 USA
+1 678 714 4350; fax +1 678 714 4355
sales.hqs.optics.us@heraeus.com; www.heraeus.com/en/home.html

Hermetic Solutions Group #4344

434 Olds Station Rd, Wenatchee, WA, 98801 USA
+1 509 667 5480
sales@pacaero.com; www.hermeticsolutions.com

Featured Product: Complete Hermetic Packaging, Component and Interconnect Solutions for High-Reliability Applications

The Hermetic Solutions Group combines three leading manufacturers (PA&E, Hi-Rel Group and Litron) in the hermetic product/service space. We provide an end-to-end hermetic solution that includes: hermetic connectors and electronic packaging; lids, getters, preforms, thermal management. components, lead/ring frames; as well as laser welding/sealing and integration services. Visit booth 4344 and learn how we can simplify your supply chain and provide state of the art hermetic technology. Contact: Rick Kalkowski, Marketing, rkalkowski@pacaero.com
HG Optronics Inc.
3F Bldg 4 M9511 Industrial Park, 18 Majiang Rd Mawei, Fuzhou Fujian, 350015 China
+86 591 88023630; fax +86 591 88023637
sales@hgoptronics.com; www.hgoptronics.com
Featured Product: Laser Crystals (Bonded crystals Nd:YAG, Nd:YVO4, Q-switch (Cr:YAG), (LBO,BBO,KTP,KTP), Optics, lens, prism
HG Optronics, Inc. founded in 2008, is located in Fuzhou city of China. HG O’s main products include bonding crystals, Nd:YVO4, Nd:GdVO4, TGG, Nd:YAG, Cr:YAG, Yb:YAG, Ti:sapphire, Er/Yb:Glass, LBO, BBO, KTP, CaF2, MgF2 etc. and a wide range of spherical and flat optics components. HG O is certified ISO9001:2008 and also established a complete inspection system combined with advanced metrology instruments. HG O is a reliable partner and seek for long-term business with worldwide customers. Contact: Fred Zhang, Sales Manager, fredzhang@hgoptronics.com

Hilger Crystals, Ltd
Unit R1 Westwood Est, Margate, Kent, CT9 4JL United Kingdom
+44 1843 231166; fax +44 1843 290310
sales@hilger-crystals.com; www.hilger-crystals.com
Hilger Crystals produces a range of high quality synthetic crystals. Materials such as NaI(Tl), CsI(Tl), CsI(Na), BGO, OdWO4, ZnWO4, LSO, LYSO etc. for use as scintillation crystals for x-ray and gamma ray detection. These can be fabricated to provide pixelated detector arrays for imaging applications, manufactured for particle physics experiments or constructed for routine monitoring applications. Contact: Chris Smissen, Sales Manager, Chris.smissen@hilger-crystals.co.uk; Lee Lythe, Business Development Manager, lee.lythe@hilger-crystals.co.uk

HILLTOP Technology Laboratory, Inc.
9301 Irvine Blvd, Irvine, CA, 92618 USA
+1 949 680 2525; fax +1 949 289 9940
sales@hilltop21.com; www.hilltop21.com

Hind High Vacuum Co. Pvt. Ltd.
Thin Films Division, Site No 17 Phase 1 Peenya Industrial Area, Bangalore, Andhra Pradesh, 560 058 India
+91 80 4193 1090; fax +91 80 2839 4874
info@hhv.in; www.hhv.in
Featured Product: Infrared AR-DLC coatings, Laser goggles, ZnS domes, Fiber optic reflectors, MiC, UV-VIS-IR coatings
HHV PVT LTD based in Bangalore, India is a leader in vacuum technology and thin film coatings with 53 years of experience. Thin films division at HHV provides optical components and coating services for OEMs. Our coatings are qualified for space and defense. Our precision optical fabrication facility is capable of producing flat optical windows, spherical lenses and domes. We offer UV reflectors, thin film circuits, laser goggles, ITO coatings, EMI shield coatings and optical filters. Contact: Ramakrishna Siddam, Senior Manager, ramakrishna@hhv.in; Suman Racha, Manager, suman@hhv.in

Hinds Instruments, Inc.
7245 NW Evergreen Pkwy, Hillsboro, OR, 97124 USA
+1 503 690 2000; fax +1 503 690 3000
sales@hindsinstruments.com; www.hindsinstruments.com

Hi-Tech Optoelectronics Co., Ltd.
Shahe Industrial Park, Changding District, Beijing, 102206 China
+86 10 60769887; fax +86 10 60769887
info@htoe.com.cn; www.htoe.com.cn/English/
Hi-Tech Optoelectronics Co., Ltd (HTOE) is one of the leading providers of laser and laser-based solution in China. Founded in 1999, HTOE specializes in commercial, industrial and medical fields, providing standard and customized highest quality commodities of first grade service. We manufacture various mounting types of laser diode device, photo detector, high power laser diode array, diode-pumped solid-state laser, laser diode characteristics testing system and high power surgical diode laser. Contact: Shiyi Sun, Product Manager, sunsy@htoe.com.cn; Di Liu, Department Manager, liud@htoe.com.cn

HiWin Corp.
12455 Jim Dhamer Dr, Huntley, IL, 60142 USA
+1 847 827 2270; fax +1 847 827 2291
info@hiwin.com; www.hiwin.com
HiWin Corp. manufactures an extensive line of both linear motion components and complete solutions. With a goal of supplying superior quality at the most competitive prices, the company offers a variety of precision ground and rolled ballscrews, linear guideways, electric actuators, ballscrew-driven stages, and linear motors, with many fully integrated value-added features. Contact: Shawn Lawrence, Marketing Manager, s.lawrence@hiwin.com
Photonics West Exhibitor Listing

Holland Avenue #5328
Prins Bernhardstraat 64, Koudekerken den Rijn, 2396 GN Netherlands
+31 628615334
info@photonicsnl.org; www.photonicsnl.org/index.php

PhotronicsNL is the unique portal for Photonics in the Netherlands. Photonics is worldwide being recognized as a key enabling technology and especially in Europe by the European Commission but also in the Netherlands by the High Tech Topsector. Our mission is to stimulate photonics innovation by enabling collaborations and cross-fertilization between companies and industries, to increase the level of awareness of the importance of photonics for our economy and at all levels of education. Contact: Guus Taminiau, Director, guus.taminiau@photonicsnl.org; Petra Wicherink, Marketing & Communication Manager, petra.wicherink@photonicsnl.org

HOLO/OR Ltd. #123
Kiryat Weizmann High Tech Industrial Park, PO Box 1051, Rehovot, 76114 Israel
+972 8 9409687; fax +972 8 9409606
holoor@holoor.co.il; www.holoor.com

Featured Product: Diffractive Optics, Top-Hat, Beam-splitter, Homogenizer, multi-focal, beam sampler, vortex & custom
HOLO/OR Ltd., est. 1989, are experts in developing, designing and manufacturing of diffractive and micro-optical elements for the laser industry. HOLO/OR produces both standard & custom products and holds the largest stock of DOEs and designs. Our DOEs are suitable for high power lasers, from UV to IR. Among our products: beam splitters, beam shapers (top-hat), beam samplers, homogenizers, vortex lenses, multi-focal and more. We welcome you to visit the HOLO/OR website at http://www.holoor.com Contact: Michal SHECHTER, Purchasing & Admin Manager, michal@holoor.co.il; Benjamin Huss, Application Engineer, benjamin@holoor.co.il

HOLOEYE Photonics AG #1734
Volmerstr. 1, Berlin, 12489 Germany
+49 30 4036 9380; fax +49 30 4036 93899
contact@holoeye.com; www.holoeye.com

Featured Product: Spatial Light Modulators, Diffractive Optical Elements, LCOS Microdisplays
HOLOEYE Photonics AG and its US-subsidiary, HOLOEYE Corp, are providing customized design, fabrication and replication services of Diffractive Optical Elements (DOE) as well as a broad range of standard DOEs. Besides that HOLOEYE offers Spatial Light Modulators (SLM) for phase or amplitude modulation, which are based on high-resolution translucent or reflective microdisplays and a variety of high resolution LCOS microdisplays types and products for monochrome or color field sequential operation.

Holographix LLC #4414
140 Locke Drive, Suite A, Marlboro, MA, 01752 USA
+1 978 562 4474
info@holographix.com; www.holographix.com

Featured Product: High Quality Custom Wafer-Level Manufacturing
Holographix is the industry leader in nano- and micro-replication. Our proprietary replication technology enables us to produce state-of-the-art structured surfaces and optical devices that are used in a wide array of industries. Holographix has earned a reputation for providing superior custom photonic solutions for an extensive range of applications. Core products include binary and blazed transmission and reflection gratings, micro lens arrays, optical diffusers, and diffractive waveguides. Contact: David Rowe, CEO/President, david_rowe@holographix.com; Jesse Van Ven Roy, Technical Marketing Manager, jesse_vanvenroy@holographix.com

Hong Kong Productivity Council #2524
Automotive & Electronics Division, 78 Tat Chee Avenue, Kowloon Tong, Hong Kong, China
+852 2788 5678; fax +852 2788 5900
hkpcenq@hkpc.org; www.hkpc.org/optics

Featured Product: Optical Design, Prototyping, Precision Tooling & Fabrication, Precision Injection Molding (Plastics)
The Hong Kong Productivity Council (HKPC) is a multi-disciplinary organization established by statute in 1987. HKPC’s mission is to promote productivity excellence through the provision of integrated support across the value chain of Hong Kong firms, in order to achieve a more effective utilization of resources, to enhance the value-added content of products and services, and to increase international competitiveness. Contact: Bryan So, Principal Consultant, bryanso@hkpc.org; Ferris Poon, Cadet Engineer, ferrispoon@hkpc.org

HORIBA Instruments #1106; 1107
OEM Spectroscopy Div, 3880 Park Ave, Edison, NJ, 08820-2417 USA
+1 732 494 8660
info.sci@horiba.com; www.horiba.com/scientific

Featured Product: Syncerity VUV BI deep TE-cooled CCD camera. FUV sensitivity, 58% QE @ 120nm & no anti-reflect coat
HORIBA Scientific: The leading manufacturer of holographic gratings, modular spectrometer systems with InGaAs detectors, and spectrophotometers. We offer OEM CCD & CMOS miniature spectrometers, deep-cooled Scientific cameras including EM CCDs and our PoliSpectra® OEM line of multi-fiber spectrometers to monitor multiple samples at one time (from 1-100+ fiber inputs), MicrOS Microscope Optical Spectrometer for luminescence, TCSPC components, laser diodes, timing modules & single photon detectors. Contact: Joanne Lowy, Marketing Manager, Joanne.lowy@horiba.com; Nicolas Vezard, VP Gratings & OEM Spectrometers Division, nicolas.vezard@horiba.com
HOYA Corp. USA

**Features Product:** W Series - Sharp Cut Filters & ND filters, UV-VIS-NIR Color Filters, Specialty and Optical Glasses

HOYA CORP USA Optics Division is a leading supplier of filter, optical and specialty glasses in semi-finished and finished forms. We operate around the worldwide network of R&D, precision manufacturing and mass scale production facilities, enabling HOYA to offer End-to-End Solutions unmatched by our competitors. Large selection of standard stock and custom components. ND-UV-VIS-NIR Color Filter, Optical & Specialty glasses in various forms: Lenses, blanks, strips & blocks. Contact: Lynn Brown, Division Manager, lynn.brown@hoya.com; Sean Wilson, Sales Engineer, sean.wilson@hoya.com

HTA Photomask

**Features Product:** Optical Components and Photomasks, Microlithography services

HTA Photomask patterns Optical Apertures, Apodizers, optical targets, reticles, micro lens array masks, fresnel lenses and Photomasks. We cut, dice, machine and etch glass into custom shapes including hole drilling. We pattern many substrate types with chromium, gold, aluminum, ITO, copper and various other thinfilm metals. We custom pattern to the Customers specification with patters as small as sub micron. Millions or Billions of patterns not a problem. Contact: Mykola Kulishov, Director of Sales & Business Development, sales@htaphotomask.com; Jim Campi, Manufacturing Manager, sales@htaphotomask.com

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Photonics West Exhibitor Listing

Huanic Corp. #4224
SPIE Corporate Member
Hi-tech Zone, No 67 Jinye Rd, Xi’an Shaanxi, Anhui, 710077 China
+86 29 8188101; fax +86 29 8188101
sales@huanic.com; www.huanic.com

Featured Product: Different color laser modules and accessories
Huanic Corporation is located at Xi’an high tech zone, which has more than 20 thousands square meters of working area. We produce more than 5 million pieces of laser module annually, ranking one of the largest manufacture for laser light source making in China. We have got ISO9001 quality certification and ISO14001 environmental management system, we can provide our customer with high quality products and excellent services Contact: Hui Yang, Sales Manager, sales@huanic.com

HUBNER Group GmbH #2119
Heinrich-Hertz Str 2, Kassel, 34123 Germany
+49 6251 770 6686
photronics@hubner-germany.com; www.hubner-photronics.com

HUBNER Photonics is the youngest division in the HUBNER Group consolidating all activities in the Photonics markets. Key products, apart from Cobolt lasers, are the tunable cw-laser source C-WAVE, Terahertz solutions as well as HF-Technologies. These products help enhance human well-being and security, increase quality and efficiency in industrial processes and improve our environment. Contact: Thorsten Sprenger, Div Manager, Photonics@hubner-germany.com

HySpex #5466
SPIE Corporate Member
Prost Stabels Vej 22, Skedsmokorset, 2019 Norway
+47 40 00 18 58; fax +47 67 97 49 00
hyspexsales@neo.no; www.hyspex.no

Featured Product: HySpex - scientific grade hyperspectral cameras for all applications
Norsk Elektro Optikk AS (NEO) is a privately owned, Norwegian research oriented company within the field of electro-optics. HySpex, NEO’s line of hyperspectral cameras, are compact, high performance and versatile instruments for a multitude of applications, ranging from airborne to laboratory and industrial use of imaging spectroscopy. Contact: Hallvard Skjerping, Product Manager, hallvard@neo.no

I2S #437
Parc Technologique Europarc, 28-30 rue Jean Perrin, Pessac Cedex, 33608 France
+33 557 26 69 00; fax +33 557 26 68 99
i2s@i2s.fr; www.i2s.fr/default.asX_Lang_languageID=2

Featured Product: Terahertz real time camera, Fluorescence imaging, High resolution cameras, 3D probes
I2S is specialized in machine vision for more than 40 years. Located in France, we develop tailored solutions for industries such as manufacturing, aerospace, life science and NDT. Our latest products include a Terahertz camera, a fluorescence camera, a smart printing inspection solution and a 3D probe. We are looking for customers/partners who are willing to develop customs solutions around our latest range of products. We are able to design, to manufacture and to deliver the complete solution. Contact: Christophe Lacroix, Director of Innovation, c.lacroix@i2s.fr; Alexandre Besson, Business Development Manager, a.besson@i2s.fr

IBM #4437
23 De l’Aéroport Blvd, Bromont, QC, J2L 1A3 Canada
+1 450 534 6000; fax +1 450 534 6855
www.ibm.com/ca/

Featured Product: Leading-edge semiconductors and new low cost optical coupling technologies
The IBM site in Bromont has packaged the world’s leading-edge semiconductors for 45 years. We are known for our comprehensive approach to heterogeneous integration and large area packaging. The IBM mindset is one of quality and performance. We offer full turnkey management, from materials characterization to mechanical, thermal and electrical design, assembly, burn-in and final test. We are accredited as a North American Microelectronics Trusted source. Contact: Louis Achard, Technical Sales Specialist, lachard@ca.ibm.com; Gaétan Cossette, Business Development Manager, gcossett@ca.ibm.com

Ibsen Photonics A/S #5232
SPIE Corporate Member
Ryttermarken 15-21, Farum, 3520 Denmark
+45 44 34 7000; fax +45 44 34 7001
inquiry@ibsen.dk; www.ibsen.com

Featured Product: The DISB electronics comes with a SPI and offers fast read out – up to 550 Hz for 2048 pixels
Ibsen Photonics is a global leader in transmission gratings and OEM spectrometer modules for a wide range of telecom, analytical, sensing, and laser markets. Spectrometer products: 1) FREEDOM for ultra-compact size, 2) ROCK for high throughput, 3) EAGLE for high resolution, and 4) I-MON interrogation monitors for FBG sensing. Grating products: 1) Phase masks for FBG writing, 2) PG for laser pulse compression, 3) PING for telecom WSS, tunable filters, and OCM’s, and 4) Spectrometer gratings. Contact: Kristian Buchwald, VP Grating, kjb@ibsen.com; Heidi Olson, North America Representative, ho@ibsen.com

id Quantique SA #5142
Chemin de la Marbrerie 3, Carouge Geneva, 1227 Switzerland
+41 22 301 83 71; fax +41 22 301 83 79
info@idquantique.com; https://www.idquantique.com/single-photon-systems/overview/

Featured Product: ID900 Time Controller; Timing, delay and pattern generation all with 20 picoseconds precision
IDQ is a leading manufacturer of optical instrumentation products for single-photon applications. The company’s core quantum photonics technologies provide innovative solutions for industrial, commercial and research applications. Its product offering includes photon counters for the visible and infrared regions of the optical spectrum, short-pulse laser sources, timing devices, as well as QKD platforms for R&D applications. Contact: Michael Desert, VP Single-Photon Systems, info@idquantique.com; Rik van Gorsel, Region Manager America, rik.vangorsel@idquantique.com

IDEX Health & Science LLC #631
SPIE Corporate Member
600 Park Ct, Rohnert Park, CA, 94928-7906 USA
+1 707 588 2000; fax +1 707 588 2020
IHSFluidicConnections@idexcorp.com; www.idex-hs.com

IDEX Health & Science is the global optofluidic authority for the life sciences market. Respected worldwide for solving complex problems, we deliver complete life science instrumentation development innovation for analytical, diagnostic and biotechnology applications. Product offerings include: connections, valves, pumps, degassers, column hardware, manifolds, microfluidics, consumables, optical filters, lenses, laser sources, light engines and integrated optofluidic assemblies. Contact: Brian Hermes, V.P. of Sales, Optical Systems, BHermes@idexcorp.com

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Photonics West Exhibitor Listing

**IDX Optical Technologies**  #631

**SPIE Corporate Member**

200 Dorado Pl SE, Albuquerque, NM, 87123-3605 USA
+1 505 296 9541
cvisales@indexcorp.com; www.civilaseroptics.com

**Featured Product:** Advanced optical and photonics products offering both custom and standard components and systems

IDX Optics Technologies (OT) platform currently consists of four brands: Advanced Thin Films, CVI Laser Optics, CVI Infrared Optics, and Melles Griot. The platform combines top-of-the line technology, design, manufacturing, and distribution capabilities. OT serves the life science, medical, scientific, industrial, semiconductor, and defense markets. The OT manufacturing and sales teams may be found worldwide. Our industry and customer knowledge is second to none.

**IGI / Photonics**  #4409

4611 E Lake St, Minneapolis, MN, 55406-2305 USA
+1 612 721 6285; fax +1 612 721 3802
sales@igi.com; www.igi.com

**Featured Product:** Photomasks, Micro/Nano Structures, Optical Design, Wafer Level Micro-Optics, Large Area Photomasks

IGI does micro/nano structure design and prototyping for wafer level optics to large area displays. IGI’s Phototooling Toolbox software is a hierarchical editor/translator supporting many formats. Photronics is the global leader in photomask and reticle technology for advanced packaging, displays, optics, and other applications. They are a trusted supplier of 7mm to large area technology, EUV, and binary phase-shift photomasks (EAPSM and AAPCM). Over 47 years of manufacturing experience. Contact: Suzi McDonough, Sales, smcdonough@photonics.com; Cliff Stritch, CEO, cstritch@igi.com

**SPONSOR**

**II-VI**  #1230

375 Saxonburg Blvd, Saxonburg, PA, 16056-9430 USA
+1 724 352 4455; fax +1 724 352 5284
info@ii-vi.com; www.ii-vi.com

**II-VI Incorporated,** a global leader in engineered materials and opto-electronic components is a vertically integrated manufacturing company that develops innovative products for diversified applications in the industrial, optical communications, military, life sciences, and consumer markets. Headquartered in Saxonburg, PA, with research and development, manufacturing, sales, service, and distribution facilities worldwide. For more information, visit www.ii-vi.com Contact: John Ryan, Vice President Sales - Laser Solutions, John.Ryan@ii-vi.com; Tom Neff, Director of Sales - Americas Laser Solutions, Tom.Neff@ii-vi.com

**IKO International, Inc.**  #5263

Silicon Valley Sales Office, 1500 Wyatt Dr Ste 10, Santa Clara, CA, 95054-1522 USA
+1 408 492 0240; fax +1 562 941 4027
wco@ikonet.co.jp; www.ikonit.com

**Featured Product:** The most precise linear motion guides, positioning tables & needle roller bearings

With more than 60 years of experience, IKO specializes in quality needle bearings, linear motion rolling guides, precision positioning tables and machine components. IKO guides, bearings and tables are used in a wide range of applications: lasers, photonics, optics, semicon, packaging, medical, machine tools, automation, etc. At IKO, we offer our patented C-Lube technology in many of our products. This built-in lubrication system remains maintenance-free for 5 years or 12,500 miles. Contact: Steven Burley, Regional Sales Representative, sburley@ikonet.co.jp; Christian Buquid Jr., Regional Sales Representative, cbuquid@ikonet.co.jp

**Imagine Optic**  #841

**SPIE Corporate Member**

18 rue Charles de Gaulle, Orsay, 91400 France
+33 16 486 1560; fax +33 16 486 1561
contact@imagine-optic.com; www.imagine-optic.com

**Featured Product:** HASO RFlex NIR, performant optical metrology tool now available for UV and NIR

Imagine Optic is a leading provider of wavefront sensors and adaptive optics solutions for optical metrology, lasers and microscopy. The company offers high performance wavefront for applications in the X-EUV, UV, VIS and NIR and developed 2 innovative technologies of deformable mirror to address applications in microscopy and ultra-high intensity lasers. Imagine Optic SA is located in France, it is distributed in Europe by Acal BFI and has subsidiaries in the US, China and Spain. Contact: Jerome Ballesta, US Sales Manager, jbalette@imagine-optic.com; Isabelle Serre, International Sales Manager, iserre@imagine-optic.com

**Imaging Solutions Group**  #2616

**SPIE Corporate Member**

1387 Fairport Rd Ste 890, Fairport, NY, 14450-2004 USA
+1 585 388 5220
sales@isgcameras.com; www.isgcameras.com

**Featured Product:** Allegro USB3 Vision compact industrial cameras are high performance and customizable for OEM design

Imaging Solutions Group is a privately held company founded in 2003 in Rochester, NY. We design and manufacture compact industrial cameras for applications including medical, machine vision, inspection, microscopy, traffic, and surveillance. Our design team has accumulated an impressive array of intellectual property that we leverage to rapidly develop custom products. Our experience includes IEC 60601 medical design compliance and ISO 13485 compliant medical device manufacturing. Contact: Dahl Angus, Business Development Mrg, danguis@isgcameras.com

**IMEC**  #4321

**SPIE Corporate Member**

Kapeldreef 75, Leuven, 3001 Belgium
+32 16 28 12 11; fax +32 16 22 94 00
info@imec.be; www.imec-int.com

**Featured Product:** CMOS based hyperspectral imaging systems - specialty imagers - silicon photonics

Imec is a world-leading research and innovation hub in nanoelectronics with a fully integrated on-chip integrated optical solution based on 200mm cleanroom for a wide range of applications, including specialty sensor, telecom devices and datacom. Leveraging on our strong background in heterogeneous integration, CMOS imagers, image processing and system design, prototyping, and our flex-fab environment geared towards low-volume manufacturing, imec develops low-cost and fast hyperspectral systems. Contact: Jerome Baron, Business Development Manager hyperspectral, jerome.baron@imec.be; Piet De Moor, Business Development Manager imagers, Piet.DeMoor@imec.be

**IM Photonics GmbH**  #4529

Ohmstr. 4, Unterschleissheim, 85716 Germany
+49 89 3214 12 0; fax +49 89 3214 1211
sales@im Photonics GmbH; www.im Photonics GmbH

Your challenges drive us in our pursuit for customer-specific solutions. Together with you, IM Photonics develops solutions which swiftly launch your products on the market and ensure economic success. Take advantage of our experience with customers in measurement technology and analytics, medical engineering, biophotonics, in particular, in fluorescence microscopy, as well as in the area of optical data transmission and manifold applications in industrial production. Contact: Christian Raith, Director Sales & Marketing, sales@im Photonics GmbH
IMOS Gubela GmbH
Kniebisstr. 1, Renchen, 77871 Germany
+49 7843 99511 0; fax +49 7843 99511 55
info@imos-gubela.de; www.imos-gubela.com

Featured Product: High-precision (micro-) optical structures, components, lenses and modules
IMOS has been a specialist in the sector of industrial optics for over 20 years now. The company is well known for the development of accurate optical structures and competent project supervision from the idea of an optical system up to the finished product. IMOS develops, manufactures and distributes innovative and technologically high-quality plastic and metal optical systems. Not only for the industry, but also for research and science. Contact: Andreas Kaul, Sales Director, info@imos-gubela.de

IMRA America, Inc.
1044 Woodridge Ave, Ann Arbor, MI, 48105 USA
+1 734 930 2560
lasers@imra.com; www.imra.com

Featured Product: FCPA MicroJewel Lasers
The most experienced femtosecond fiber laser company, providing compact, reliable products since 1990. IMRA's pioneering technologies, rigorous quality control and high volume manufacturing operation make our lasers the sound choice for scientific, OEM and industrial use. Applications include processing of transparent materials, thin film ablation, waveguide writing, pulsed laser deposition, multiphoton microscopy, non-linear spectroscopy, terahertz generation, and refractive surgery. Contact: Jason Alexander, Senior Business Development Manager, jalexand@imra.com; Emily Grish, Marketing & Sales Specialist, egrish@imra.com

IMT Precision on Glass
Im Langacher 46, Greifensee, 8606 Switzerland
+41 44 943 1900; fax +41 44 943 1901
order@imtag.ch; www.imtag.ch

IMT comprises profound knowledge in microtechnology and offers foundry services for all kinds of microstructures on respectively in glass. Standard semiconductor technology enables us to provide our customers with state of the art reticles for riflescopes, encoder discs, flow cells, spatial filter arrays, electrically conductive structures, and various other elements where glass is first choice! Contact: Juergen Rieck, Area Sales Manager, jrieck@imtag.ch

Incom, Inc.
294 Southbridge Rd, Charlton, MA, 01507 USA
+1 508 909 2200; fax +1 508 909 2323
sales@incomusa.com; www.incomusa.com

Incom is a manufacturer of glass and polymer fused fiber optic face plates and tapers, as well as polymer and glass microstructures. Our products have made critical contributions to drug research, medical applications, and military and homeland security. We have participated in the design and development of large format tapers for X-ray crystallography, microwell arrays for genome sequencing, 17”x17” face plates for medical X-ray, and microcapillary arrays for TOF and neutron detection. Contact: Jeff Solari, Director Business Development, jsolari@incomusa.com

Infinite Optics Inc.
1712 Newport Cir Ste F, Santa Ana, CA, 92705-5118 USA
+1 714 557 2299; fax +1 714 557 2170
info@infiniteoptics.com; www.infiniteoptics.com

Featured Product: Optical Thin-Film Coatings ranging from 193nm’s to 20 microns
Infinite Optics specializes in optical thin-film coatings ranging from 193nm’s to 20 microns. We support astronomical, industrial, medical and military markets by fabricating and coating optics required for telescopes, lasers and optoelectronic devices. Our services include special applications, development, production runs and quality control. We are DDTC registered and ITAR compliant. Contact: Stan King, Sales Manager, stan@infiniteoptics.com; Geza Keller, Sales, geza@infiniteoptics.com

Infintegra, Inc.
2 Chome 2-8 Yokohama, Yokohama, 222-0033 Japan
sales@infinteegra.co.jp; www.infinteegra.co.jp/en/

InfraRed Associates, Inc.
2851 SE Monroe St, Stuart, FL, 34997 USA
+1 772 223 6670; fax +1 772 223 6671
irassoc@irrassociates.com; www.irrassociates.com

Manufacturer of PV InSb (1-5.5um) and PC MCT (1-25um). PC MCT arrays, up to 128 elements available. Matched preamplifiers are available and cooling options include, TE, LN2 and Stirling Coolers. Contact: Irwin Kudman, Director Sales & Marketing, irassoc@irrassociates.com; Taylor Abramson, Technical Sales, irassoc@irrassociates.com

Infrared Materials, Inc.
5460 Skyline Blvd, Suite B, Santa Rosa, CA, 95403 USA
+1 707 620 0160
info@irmatl.com; www.infraredmaterials.com

InfraTec Infrared LLC
5048 Tennyson Pkwy Ste 250, Plano, TX, 75024 USA
+1 877 797 6748; fax +1 877 389 2668
info@infratec-infrared.com; www.infratec-infrared.com

Featured Product: LRM-244: Four channel pyroelectric IR detector with a wide FOV and high signal for flame detection
With headquarters in one of the leading European R&D centers, Dresden/Germany, InfraTec offers a wide range of high-quality, innovative products and services in the field of infrared technology. We develop and manufacture pyroelectric infrared detectors in a large variety and of highest quality. These detectors are incorporated by leading global manufacturers of infrared pyrometers and devices for infrared gas analysis and infrared spectroscopy. Contact: Benjamin Du, Applications Manager, b.du@infratec.de

InfraRed Associates, Inc.
2851 SE Monroe St, Stuart, FL, 34997 USA
+1 772 223 6670; fax +1 772 223 6671
irassoc@irrassociates.com; www.irrassociates.com

Manufacturer of PV InSb (1-5.5um) and PC MCT (1-25um). PC MCT arrays, up to 128 elements available. Matched preamplifiers are available and cooling options include, TE, LN2 and Stirling Coolers. Contact: Irwin Kudman, Director Sales & Marketing, irassoc@irrassociates.com; Taylor Abramson, Technical Sales, irassoc@irrassociates.com

Infinite Optics Inc.
1712 Newport Cir Ste F, Santa Ana, CA, 92705-5118 USA
+1 714 557 2299; fax +1 714 557 2170
info@infiniteoptics.com; www.infiniteoptics.com

Featured Product: Optical Thin-Film Coatings ranging from 193nm’s to 20 microns
Infinite Optics specializes in optical thin-film coatings ranging from 193nm’s to 20 microns. We support astronomical, industrial, medical and military markets by fabricating and coating optics required for telescopes, lasers and optoelectronic devices. Our services include special applications, development, production runs and quality control. We are DDTC registered and ITAR compliant. Contact: Stan King, Sales Manager, stan@infiniteoptics.com; Geza Keller, Sales, geza@infiniteoptics.com

Infinteira, Inc.
2 Chome 2-8 Yokohama, Yokohama, 222-0033 Japan
sales@infinteegra.co.jp; www.infinteegra.co.jp/en/

InfraRed Associates, Inc.
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irassoc@irrassociates.com; www.irrassociates.com

Manufacturer of PV InSb (1-5.5um) and PC MCT (1-25um). PC MCT arrays, up to 128 elements available. Matched preamplifiers are available and cooling options include, TE, LN2 and Stirling Coolers. Contact: Irwin Kudman, Director Sales & Marketing, irassoc@irrassociates.com; Taylor Abramson, Technical Sales, irassoc@irrassociates.com

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InfraTec Infrared LLC
5048 Tennyson Pkwy Ste 250, Plano, TX, 75024 USA
+1 877 797 6748; fax +1 877 389 2668
info@infratec-infrared.com; www.infratec-infrared.com

Featured Product: LRM-244: Four channel pyroelectric IR detector with a wide FOV and high signal for flame detection
With headquarters in one of the leading European R&D centers, Dresden/Germany, InfraTec offers a wide range of high-quality, innovative products and services in the field of infrared technology. We develop and manufacture pyroelectric infrared detectors in a large variety and of highest quality. These detectors are incorporated by leading global manufacturers of infrared pyrometers and devices for infrared gas analysis and infrared spectroscopy. Contact: Benjamin Du, Applications Manager, b.du@infratec.de

Infinteira, Inc.
2 Chome 2-8 Yokohama, Yokohama, 222-0033 Japan
sales@infinteegra.co.jp; www.infinteegra.co.jp/en/
**INGENERIC GmbH**

Dennewartstr 25-27, Aachen, 52068 Germany  
+49 241 963 13 40; fax +49 241 963 13 49  
contact@ingeneric.com; www.ingeneric.com  
**Featured Product: Optical Components: FAC, SAC, beamPROP, MLA, C-Module, Asphere/Acylinder; Optical & Laser Systems**  
The German INGENERIC GmbH develops and manufactures optical components for High-Power-Applications as well as optical systems and laser systems for scientific research and for medical and measurement applications. For its worldwide customers it offers the complete process chain starting from lens and system design over prototyping and small-series manufacture up to mass production. INGENERIC is a leading supplier of beam shaping optics for semiconductor lasers and further provides laser systems. Contact: Stefan Hambuecker, Managing Partner, contact@ingeneric.com; Christina Ferwer, Sales and Marketing, contact@ingeneric.com

**Inlight Precision Optics Co Ltd**

1902, 19/F, Global Gateway Tower, Wing Hong St No 63, Hong Kong, China  
+852 2887 6018  
inlight@inlightcn.com; www.inlightcn.com  
**Featured Product: UV-VIS-IR optics, SiC galvo mirrors, balls, triplets, cylindrical lenses, opto-mechanical assembly**  
Inlight is a precision optics and machinery manufacturer for UV-VIS-IR optics. We manufacture precision custom lenses eg. cemented cylindrical lens, triplets, balls, domes, ultra-thin windows, SiC galvo mirrors etc. We keep inventory for a variety of standard optics and reference spheres and precision flats. We provide thin film coatings and carry out opto-mechanical assembly at our clean rooms. We are flexible and quick responding to demands of prototypes or medium batch to volume quantity. Contact: Mos Yip, mos@inlightcn.com

**Innolas Laser**

Justus-von-Liebig-Ring 8, Krailling, 82152 Germany  
+49 89 899 360 0  
info@innolas-laser.com; innolas-laser.com  
Innolas is a leading German manufacturer of pulsed Nd:YAG lasers for scientific and industrial markets. Innolas offers models from 200-2000mJ, available in flash lamp or diode pumped lasers in order to go up to 200Hz. SHG, THG, FSG, OPO combos, seeding and PIV systems as well as many industrial models with KHz operation and small packages. Contact: Alain Bourdon, US Sales, arbi@alliedlasersolutions.com

**InnoLas Photonics GmbH**

Justus-von-Liebig-Ring 8, Krailling, 82152 Germany  
+49 89 899 360 1200; fax +49 89 899 360 1299  
info@innolas-photonics.com; www.innolas-photonics.com  
**Featured Product: The Innolas FEMTO is an ultra-short pulse solid state laser with a pulse width down to 500fs**  
InnoLas Photonics designs and manufactures industrial Diode and DPSS lasers for high precision micro machining applications like PV, electronic- and SEMI manufacturing or laser marking, soldering, spot- and plastics welding. Contact: Philip Crowley, phil@markettechnic.net

**Innolume GmbH**

Konrad-Adenauer-Allee 11, Dortmund, 44263 Germany  
+49 231 4773 0200; fax +49 231 4773 0250  
info@innolume.com; www.innolume.com  
Innolume has a complete integrated solution for fabrication of a broad assortment of GaAs-based optoelectronic devices in the wavelength range of 780 to 1330 nm. Combination of wavelength coverage with Quantum Dots Technology and advanced chip design enables a number of novel industrial, medical, and communications applications. Innolume runs full vertically integrated fab which allows fast turn-around in product development and modification of standard items for custom inquiries. Contact: Alexey Shkolnik, Director Business Development, Alexey.Shkolnik@innolume.com

**Inno-spec GmbH**

Sigmundstraße 220 / B7, Nürnberg, 90431 Germany  
+49 911 3766910; fax +49 911 37669110  
info@inno-spec.de; www.inno-spec.de  
**Featured Product: The RedEye is a linescan (pushbroom) hyperspectral imaging camera in the NIR spectral range**  
inno-spec is a manufacturer for spectroscopic measurement equipment and provides optimized solutions for any individual applications, from customized OEM components for system suppliers up to fully integrated turnkey solutions for the end user. inno-spec’s core competencies are the development and production of spectroscopic measurement systems, including corresponding accessories for both industrial process and laboratory applications.

**Innovations in Optics, Inc.**

82 Cummings Park, Woburn, MA, 01801-2125 USA  
+1 781 933 4477; fax +1 781 933 0007  
info@innovationsinoptics.com; www.innovationsinoptics.com  
Innovations in Optics, Inc. offers high power LED light sources for science and industry that provide maximum photon delivery, illumination uniformity, and stable optical power. Products offer system-level advantages over lasers and arc lamps in OEM equipment for many applications. Available LED wavelengths range from UV 365 nm through the near-infrared, including broadband white and multiband options. System accessories include thermal management devices, wire harnesses and driver/controllers. Contact: Kevin Carr, VP Business Development, kevinc@innovationsinoptics.com

**Innovative Photonic Solutions**

4250 US Hwy 1 Ste 1, Monmouth Junction, NJ, 08852 USA  
+1 732 355 9300; fax +1 732 355 9302  
sales@ipslasers.com; www.ipslasers.com  
**Featured Product: Dual Laser Source - 2 Stabilized Single Frequency Collinear Diode Lasers - 2x2.7x0.8 mm package**  
IPS specializes in the manufacture of high performance wavelength stabilized lasers and custom systems for use in Raman spectroscopy, sensing, metrology, fiber laser seeding & other applications. Our technology enables us to lock the laser to any wavelength without complex feedback mechanisms. Products include multi-mode and single frequency lasers & span the 405 nm to 1800 nm range and are available in OEM packages or in turn-key modules with integral laser and temperature control electronics. Contact: Scott Rudder, VP Marketing & Sales, srudder@ipslasers.com; Tina Gong, Sales Manager, tging@ipslasers.com

**Inno-spec GmbH**
Photonics West Exhibitor Listing

**SPONSOR**

**Innowit Co., Ltd.**

No 2600 Yingxiu Rd High Tech Zone, Jinan, 250101 China
+86 531 85198982; fax +86 531 88873658
sales@innowit.com; www.innowit.com

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**INNO**

2740 rue Einstein, Quebec City, QC, GIP 4S4 Canada
+1 418 657 7006; fax +1 418 657 7009
info@ino.ca; www.ino.ca

**Featured Product:** Active Multiclad Specialty Fibers, 3-14 um Hyperspectral Uniform, Response Camera

INO is a world-class technology developer and provider; using is core expertise in optics and photonics to bring to the industry custom solutions that enable more competitive products and production processes. INO produces in-house prototypes and short run products tailored to the needs of partners & clients. INO designs and produces active, PM, and multiclad specialty fibers engineered for high beam quality. INO has introduced a 3-14 um hyperspectral uniform response camera. Contact: Pierre Talbot, Business Development Manager, pierre.talbot@ino.ca

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**InPhenix, Inc.**

250 N Mines Rd, Livermore, CA, 94551-2238 USA
+1 925 606 8809; fax +1 925 606 8810
info@inphenix.com; www.inphenix.com

**Featured Product:** 880nm-1600nm SOA, 700nm-1650nm SLD, Broadband Light Source, Swept Light Source, DFB Laser & FP Laser

InPhenix: Superluminescent Diode and Semiconductor Optical Amplifier Manufacturer. InPhenix corporation is a leading developer and manufacturer of Indium-Phosphide (InP) and Gallium Arsenide (GaAs) based active optoelectronic chips, devices and modules for the telecom, datacom, defense, biomedical and industrial markets. InPhenix's products include Semiconductor Optical Amplifiers (SOAs), Superluminescent Diodes (SLDs), Fabry-Perot Lasers and Swept Light Sources. Contact: Wei-Wei Zhang, Sales Manager, wzwang@inphenix.com; Steve Vitkovsky, Sales Manager, svitkovsky@inphenix.com

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**InPhotech**

UI Dzika 15/12, Warsaw, 00-172 Poland
48 501227478; fax 48 224099145
sales@inphotech.eu; inphotech.pl/index.html

**Featured Product:** Lens Thickness Measurement Device - a portable device for fast non-contact thickness measurement

InPhotech specializes in development and fabrication of optical fibers and optical fiber systems of the future. We offer a range of optical fiber based sensors (including sensors operating in harsh environments), next generation telecommunications solutions (such as multicore passive and active fibers, fan connectors) and fully customized products (optical instruments, splitters, splices of specialty fibers, fiber coatings). Contact: Anna Makowska, Project Manager, amakowska@inphotech.pl

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**SPONSOR**

**Inrad Optics**

181 Legrand Ave, Northvale, NJ, 07647-2498 USA
+1 201 767 1910; fax +1 201 767 9644
sales@inradoptics.com; www.inradoptics.com

Inrad Optics manufactures exceptional crystalline materials, precision glass and metal optical components and photonic devices. Vertically integrated from growth through systems, products include non-linear crystals, Pockels cells, UV filters, neutron scintillation crystals, thin crystal x-ray focusing monochromators, large transmission flats, electro-optical window assemblies, waveplates, toroids, and aspheric off-axis mirrors. Contact: Sales Team, sales@inradoptics.com

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**Insaco Inc.**

1365 Canary Rd, Quakertown, PA, 18951-3880 USA
+1 215 536 3500; fax +1 215 536 7750
sales@insaco.com; www.insaco.com

**Featured Product:** Precision machining/grinding and polishing Services for custom ceramics and sapphire components

Insaco provides custom grinding and machining services to fabricate precision parts from Sapphire, Quartz and most technical ceramics including Alumina, Zirconia, Silicon Carbide, Silicon Nitride, Aluminum Nitride and others. Engineers are available to discuss material options and alternatives and design concepts to minimize fabrication costs. Insaco has a top reputation based on over 70 years of reliably meeting the toughest customer requirements for these difficult materials. Contact: Scott Mittl, Sales Engineer, smittl@insaco.com; Scott Buchanan, Sales Representative, dsb@insaco.com

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**Insight Photonic Solutions, Inc.**

2650 Crescent Drive, Ste. 201, Lafayette, CO, 80026 USA
+1 303 604 5160; fax +1 720 890 5904
info@sweptlaser.com; www.sweptlaser.com

**Featured Product:** Akinetic™ Swept Source Lasers

Insight Photonic Solutions provides unique high-speed sweeping laser solutions for optical coherence tomography, fiber sensing, precision spectroscopy, general interferometry, and interferometric reflectometry. Insight’s laser technology is akinetic and all semiconductor, providing unprecedented levels of linearity, tri-level repeatability, low noise, and programmability. Contact: Simon Gray, Worldwide Sales Manager, sgray@sweptlaser.com; Mike Crawford, Director, Applications Engineering, mcrawford@sweptlaser.com

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**INSION GmbH**

Weipertstr 8-10, Heilbronn, 74076 Germany
+49 7131 973606 0; fax +49 7131 973606 99
info@insion.de; www.insion.de/

**Featured Product:** Micro spectrometers in the UV / VIS, NNIR and NIR range with robustness stability smallest dimension

INSION was founded in 2011 in Germany, the core team stemming from Boehringer Ingelheim microParts GmbH and has been working for more than 15 years in micro system technology. We focus on the development and the production of miniaturized spectral sensors and spectrometers for OEM applications. Our stable and robust micro spectrometers are in widespread use in medical diagnostic, process analytical, safety technologies and colorimetry. We innovate together with our customers in the development. Contact: Sven Schoenfelder, CEO, sven.schoenfelder@insion.de
Interfiber Analysis LLC
8 Manhs Hill Crescent, Sharon, MA, 02067 USA
+1 781 806 0659; fax +1 973 488 7134
info@interfiberanalysis.com; www.interfiberanalysis.com

Featured Product: IFA-100 Optical Fiber Analyzer for measuring fiber refractive index, axial stress, and fiber dopants
Interfiber Analysis manufactures industry leading equipment for measurement and characterization of optical fibers including the FMA-100 Fiber Mode Analyzer and the IFA-100 Refractive Index Profiler. Our customers span the range of fiber and cable manufacturers, academic research groups, and government laboratories. In addition to our line of measurement instruments, we also provide fiber measurement and consulting services.
Contact: Andrew Yablon, andrew_yablon@interfiberanalysis.com

International Light Technologies
Gilway & International Light Division, 10 Technology Dr, Peabody, MA, 01960-7976 USA
+1 978 818 6180; fax +1 978 818 6181
ilsales@intl-lighttech.com; www.intl-lighttech.com

Featured Product: ILT2400 Hand-Held Light Meter
International Light Technologies has been a leader in developing light measurement systems for over 50 years. We offer an array of light measurement systems including light meters, radiometers, spectrometers, input optics, filters and detectors. We engineer our products to withstand the harsh environments required from underwater applications to direct exposure to high levels of UV, to last years of use. We are an ISO17025 calibration lab and all meters come with a calibration certificate.
Contact: Jill Fowler, Director, Systems and Sources, jfowler@intl-lighttech.com; Jennifer LaCroix, Manager, Customer Service & Sales, jlcroix@intl-lighttech.com

International OptoIndex
Alte Koelner Str 33, Ratingen, 40885 Germany
+49 2102 1678 0; fax +49 2102 1678 28
info@opto-index.de; www.optoindex.com

Featured Product: International OptoIndex 2018 - print and online
International OptoIndex is the “who is who” in the world of photonics. Published annually in January with search function from more than 600 keywords. Technical information in detail, worldwide distribution and well-known in the market for 16 years! Contact: Constanze Classen, Media Consultant, constanze.classen@opto-index.de

Intlvac Thin Film
1401 Duff Dr Ste 600, Fort Collins, CO, 80524-4751 USA
+1 716 284 0830; fax +1 716 284 0842
sales@intlvac.com; www.intlvac.com

Featured Product: Pleiades Cluster System is a customizable, multi-chamber array for complex processes under vacuum.
Intlvac Thin Film Our in-house development lab designs, engineers and manufactures machinery and processes using PVD (Physical Vapor Deposition) and IBE (Ion Beam Etch) systems for magnetic materials, metals and oxides. We specialize in engineering solutions for industry, government, and institutions creating a variety of specific outcomes using our process lab.
Intlvac’s strength is that we offer a high degree of technical and process support.
Contact: Dino Deligiannis, President, dino@intlvac.com; Greg Dawn, Sales, gdawn@intlvac.com

Plan to attend FREE Exhibitor product demonstrations
Refer to page 108-109 for complete times, schedules, and locations
Photonics West Exhibitor Listing

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Temple Circus, Temple Way, Bristol, BS1 6HG United Kingdom
+44 117 929 7481; fax +44 117 929 4318
custserv@iop.org; www.ioppublishing.org
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IPG Photonics Corp. #831
SPIE Corporate Member
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sales.us@ipgphotonics.com; www.ipgphotonics.com

IQE #6043
Pascal Close, St Mellons Cardiff, CF3 OLW United Kingdom
+44 2920 839 400; fax +44 2920 794 592
sales@iqep.com; www.iqep.com
IQE is the leading global supplier of advanced wafer products that cover a diverse range of applications. The group offers the industry’s broadest product portfolio, with a choice of technology platforms from multiple, global manufacturing facilities across Europe, Asia and the USA. The Company is able to provide a ‘one stop shop’ for the wafer needs of the world’s leading compound semiconductor manufacturers. Contact: sales@iqep.com

Iradion Laser, Inc. #66
51 Industrial Dr, North Smithfield, RI, 02896 USA
+1 401 762 5100; fax +1 401 762 5111
sales@iradion.com; www.iradion.com
Featured Product: Ceramic Laser Tubes
Iradion Laser, Inc. is focused on the design and manufacturing of patented, RF excited, ceramic core CO2 lasers. Iradion’s RF excited CO2 lasers are available with powers of 30 to 250 watts. As a result of the recent joint worldwide Sales and Distribution agreement with Rofin-Sinar UK, Iradion will now be able to offer a complete product line ranging from 30 watt to 1 kWatt, CW and pulsed. Applications include laser cutting, laser welding, laser marking, laser coding, laser drilling. Contact: Stephanie Faxas, HR Administrator, sfaxas@iradion.com; Claudia Reygadas, Production & Sales Support, claudia@iradion.com

IRD Glass #3031
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ird@irdglass.com; www.irdglass.com

IRflex Corporation #5264
SPIE Corporate Member
300 Ringgold Industrial Pkwy, Danville, VA, 24540-5548 USA
+1 434 483 4304; fax +1 434 793 9200
irflex@irflex.com; www.irflex.com
Featured Product: Chalcogenide glass based mid-infrared fibers and devices for wavelength from 1.5 to 12 micron.
IRflex is the only U.S. company totally dedicated to the development and manufacture of mid-infrared fibers and devices for wavelength from 1.5 to 12 micron. Our Mid-IR fibers manufactured from extra high purity chalcogenide glass, whose proprietary fiber technology and know-how support the production of fiber-based devices: Mid-IR transmission cable, fused fiber combiner, imaging fiber bundle and molded freeform lens serving industrial, sensing, defense, medical and scientific research. Contact: Helen Gu, Sales and Marketing Manager, helen.gu@irflex.com

Iridian Spectral Technologies Ltd. #114
2700 Swansea Crescent, Ottawa, ON, K1G 6R8 Canada
+1 613 741 4513; fax +1 613 741 9986
sales@iridian.ca; www.iridian.ca
Featured Product: Optical filters from UV to LWIR for telecom, spectroscopy, 3D cinema, sensors/detectors, and more
Iridian designs and manufacturers a wide variety of custom optical thin film filter solutions ranging from one-off large and complex filters, such as those for astronomical or satellite (EO) applications, to very high volumes of low cost filters used in telecom/datacom or consumer related applications such as 3D cinema. We invite you to discuss your requirements with us and our team will work with you to find a high quality, reliable technical solution at the lowest possible cost. Contact: Jason Palidwar, jason.palidwar@iridian.ca; Hongbai Lao, hongbai.lao@iridian.ca

Iris AO, Inc. #3071
SPIE Corporate Member
2930 Shattuck Ave Ste 304, Berkeley, CA, 94705-1883 USA
+1 510 849 2375; fax +1 510 217 9646
info@irisao.com; www.irisao.com

IRISIOME #437
Institut d’Optique d’Aquitaine, 1 rue François Mitterrand, Talence, 33400 France
+33 6 17 03 32 16
contact@irisiome.com; www.irisiome-solutions.com
Featured Product: MANNY highly flexible picosecond fiber laser based on pulse gating
Irisiome Solutions develops and markets picosecond fiber laser based on an innovative picosecond pulse generation method, the picosecond pulse gating. Thanks to this method, the parameters of the pulses are highly flexible with finely adjustable pulse duration and repetition rate. Irisiome Solutions is a startup company founded in 2015 based in Bordeaux. Contact: Julie Siv, Sales, siv@irisiome.com

IRTronix, Inc. #46
SPIE # Member
Bldg B, 20900 Normandie Ave, Torrance, CA, 90502-1602 USA
+1 310 787 1100; fax +1 310 787 1166
uv@irtronix.com; www.irtronix.com

Featured Product: LG Innotek UV LED Packages and Chips
IRTronix is one of the fastest growing suppliers of UV LED components, modules and products with embedded technology serving customers globally. We accelerate our partners success by connecting the world’s leading technology suppliers with a broad base of customers to provide cost-effective, value-added services and solutions. Working with our integration members to leverage their expertise throughout every stage from design to manufacturing. With over a decade of industry experience. Contact: Danny Oh, CEO, doh00@irtronix.com; Gerald Kim, CTO, gkim00@irtronix.com

ISDI #5665
4 Dartmouth Park Rd, London, NW5 1JN United Kingdom
+44 7782 408 942
t.anaxagoras@isdicmos.com; www.isdicmos.com

ISDI provides imaging solutions for cutting-edge medical, scientific and other technological application domains through re-thinking the entire imaging acquisition process. Many of ISDI’s core team have wide-ranging involvement in delivering some of the world’s most complex imaging systems, from charged particles to infra-red. By outsourcing manufacturing yet maintaining a proven system of quality management, ISDI can offer exceptional imaging solutions at reasonable cost. Contact: James Brodrick, CTO, james.brodrick@isdicmos.com; Thalis Anaxagoras, CEO, t.anaxagoras@isdicmos.com

Isomet Corporation #2331
SPIE # Member
5263 Port Royal Rd, Springfield, VA, 22151-2103 USA
+1 703 321 8301; fax +1 703 321 8546
isomet@isomet.com; www.isomet.com

Featured Product: High speed dual axis AO scanner with our latest computer controlled quad output synthesizer
ISOMET’s foundation is in the design, development & high volume manufacture of acousto-optic (AO) devices, RF drivers and sub-systems. Our customers are global and range from small R&D facilities to major system integrators. Application areas cover the near UV to far IR spectrum at optical powers ranging from a few µW to greater than 500W. We offer a broad range of AO devices; modulators, deflectors, freq’ shifters, tunable filters and Q-switches. Custom and bespoke designs are our specialty. Contact: Michael Hillier, CEO, mikeH@isomet.co.uk; Roman Yasinsky, Dir. of Sales and Marketing, ryasinsky@isomet.com

ISOwave / Deltronic Crystal #5229
SPIE # Member
64 Harding Ave, Dover, NJ, 07801-4710 USA
+1 973 328 7000; fax +1 973 328 7036
info@isowave.com; www.isowave.com

Featured Product: The broadest available range of high-performance optical isolators, from 390 to over 2300nm.
ISOwave has been designing and manufacturing optical isolators since 1986. Using vertically integrated production facilities shared with Deltronic Crystal, ISOwave offers a full range of free-space models with apertures from 2 to 8mm, narrow-band, tunable and broadband versions, single or double-stage configurations, and several power ratings. Also offered are miniature and surface-mountable OEM models (0.6 to 1.8mm apertures). Tell us what you need, we will design and manufacture it for you! Contact: Stuart Samuelson, President, ssamuelson@isowave.com; Thomas Pelnar, Sales Manager, tpelnar@isowave.com
ISP Optics Corporation
50 S Buckhout St, Irvington, NY, 10533-2203 USA
+1 914 591 3070; fax +1 914 591 3715
sales@ispoptics.com; www.ispoptics.com

Featured Product: IR Optical Components & Lens Assemblies
ISP Optics manufactures in-house precision optical components including spherical, aspherical and diffractive coated IR lenses. In addition to our built-to-print optical elements product line, we also offer custom opto-mechanical assemblies, coatings and diamond turning services along with IR catalog optics. We manufacture optics from various infrared crystals such as: Ge, Si, ZnS, ZnSe, CaF2, GaAs, BaF2, Amtr, GASIR, IGG and others. Contact: Devin Standard, Vice President of Corporate Development, DStandard@Lightpath.com; Kimberly Clifton, Director of Sales Operations and Marketing, kclifton@lightpath.com

ISP System
Zone Industrielle de la Herray BP 10047, Vic en Bigorre Cedex, 65501 France
+33 5 62 33 44 44; fax +33 5 62 33 44 45
contact@isp-system.fr; www isp-system.fr

Featured Product: Deformable mirror, motorized mounts for optics, micro and nanopositioning, special machines
ISP System is specialized in design and manufacturing of High Precision mechatronics products. We design and manufacture products for high power lasers such as: Electro-mechanical deformable mirrors for intense lasers, Large aperture motorized mounts (high stiffness, Gimbal, multi-axes...). We design and manufacture also: Micro- and nano-positioning systems, Special machines such as laminar coating machines, Optics quality control machine, Fiber optics winding machine. Contact: Laurent Ropert, Export Account Manager, contact@isp-system.fr

ISS, Inc.
1602 Newton Dr, Champaign, IL, 61822 USA
+1 217 359 8681; fax +1 217 359 7879
iss@iss.com; www.iss.com

Featured Product: Alba STED
ISS manufactures research-grade spectrofluorometers (PC1, K2, Chronos) for time-resolved and steady-state measurements and confocal microscope with single-molecule sensitivity & STED Imaging (Alba, Q2, PL1). Applications include FRET, FLIM, FCS, FCQS, PCH, scanning FCS, N&B, particle tracking & STED. The medical division provides instruments for the absolute measurements of oxygen saturation in tissue (Oxygen1S), metabolic rate of oxygen consumption (MetaOx) & functional brain imaging (Imagent). Contact: Beniamino Barbieri, Marketing, Beniamino.barbieri@iss.com; Yuansheng Sun, Microscopy Specialist, yuansheng.sun@iss.com

Isuzu Glass, Inc.
23505 Crenshaw Blvd Ste 130, Torrance, CA, 90255-5225 USA
+1 310 517 1866; fax +1 310 517 1869
sales@isuzuglass.com; www.isuzuglass.com

Featured Product: Optical Colored Glass - Produced by Isuzu’s Unique Composition process, Glass Molded Lens
For around 110 years, Isuzu Glass has been developing original techniques and know-how and supplying a variety of optical lens to customers using unique manufacturing methods. Our Mold division, Melting division, Polishing division, Coating division and R&D division, all 5 division will make it possible to offer the largest line-up of functional glass products used in the wavelength range of invisible ultraviolet and far-infrared rays. Contact: Hiro Yokoi, sales@isuzuglass.com; Naoko Kaga, nkaga@isuzuglass.com

ITF Technologies Inc.
400 Montpellier Blvd, Montreal, QC, H4N 2G7 Canada
+1 514 748 4848; fax +1 514 744 2080
info@itftechnologies.com; www.itftechnologies.com

ITF Technologies Inc. is a leading provider of innovative optical products and solutions for Telecom, Laser, Sensor, Industrial and Defense markets. We design, manufacture and market high reliability active and passive optical components and modules for the telecom, industrial and security, medical and R&D applications. We develop ultra-reliable fiber-optic systems including high-power fused components, Optical Fiber Sensors and fiber laser components. Contact: Julien Tremblay, Product Line Manager-Optical Components, jtemblay@itftechnologies.com; Hélène Stievenard, Sales Manager - APAC - Industrial Market, hstievenard@itftechnologies.com

iXBlue
34 rue de la Croix de Fer, Saint Germain en Laye, 78100 France
+33 1 3008 9888
www.ixblue.com

Featured Product: iXblue Photonics releases a double clad PM Neodymium fiber
iXBlue Photonics helps photonics engineers all around the world to get the most out of the light by providing high performance, innovative and reliable photonics solutions. We offer specialty fibers, Bragg gratings and optical modulation solutions based on the company integrated modulators for a variety of applications including: optical communications, fiber lasers and amplifiers, fiber optics sensors, space and sciences. Contact: Hervé Gouraud, Sales Manager, herve.gouraud@ixblue.com; Nicéphore Nicolas, Sales Manager, nicéphore.nicolas@ixblue.com

J. Hauser GmbH & Co. KG
Steinstr. 4a, Solms, 35606 Germany
+49 6442 938830; fax +49 6442 938831
info@hauser-optik.de; www.hauser-optik.de

Featured Product: Ball lenses, half ball lenses, aspherical and spherical lenses, reflectors, drum lenses, mirror
Since 1921, the name of Hauser has been a guarantee for high quality and precision in the optical industry. We are able to offer made by one or double-sided blank moulding process aspherical, spherical lenses as well mirror and other moulded glass shapes in a diameter ranging from 3mm - 100 mm. We have also high expertise in the field of precision ball lenses production. We produce ball lenses, half-ball lenses and ball lenses segments in a diameter range from 0.5mm - 100mm in highest precision. Contact: Stefan Hauser, CEO, info@hauser-optik.de

J.A. Woolam Co., Inc.
645 M St Ste 102, Lincoln, NE, 68508-2243 USA
+1 402 477 7501; fax +1 402 477 8214
sales@jawoollam.com; www.jawoollam.com

For all your ellipsometry needs, from measuring your thin film sample to the installation and training of your very own ellipsometer, the J.A. Woolam Company is here for you every step of the way. We offer a wide variety of ellipsometers to help you characterize your thin films, covering spectral ranges from vacuum ultra-violet to far infrared. We have 30+ years of experience and offer unrivaled customer support. Contact us today to learn more about our products lineup at sales@jawoollam.com.

Japan Pavilion
The Optronics Co., Ltd., 555 Shin Ogawamachi, Shinjuku-ku, Tokyo, 162-0814 Japan
+8 1 3269 3550; fax +8 1 5229 7253
info@optronics.co.jp; www.optronicsjp.com

J. Hauser GmbH & Co. KG
Steinstr. 4a, Solms, 35606 Germany
+49 6442 938830; fax +49 6442 938831
info@hauser-optik.de; www.hauser-optik.de

Featured Product: Ball lenses, half ball lenses, aspherical and spherical lenses, reflectors, drum lenses, mirror
Since 1921, the name of Hauser has been a guarantee for high quality and precision in the optical industry. We are able to offer made by one or double-sided blank moulding process aspherical, spherical lenses as well mirror and other moulded glass shapes in a diameter ranging from 3mm - 100 mm. We have also high expertise in the field of precision ball lenses production. We produce ball lenses, half-ball lenses and ball lenses segments in a diameter range from 0.5mm - 100mm in highest precision. Contact: Stefan Hauser, CEO, info@hauser-optik.de

J.A. Woolam Co., Inc.
645 M St Ste 102, Lincoln, NE, 68508-2243 USA
+1 402 477 7501; fax +1 402 477 8214
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For all your ellipsometry needs, from measuring your thin film sample to the installation and training of your very own ellipsometer, the J.A. Woolam Company is here for you every step of the way. We offer a wide variety of ellipsometers to help you characterize your thin films, covering spectral ranges from vacuum ultra-violet to far infrared. We have 30+ years of experience and offer unrivaled customer support. Contact us today to learn more about our products lineup at sales@jawoollam.com.

Japan Pavilion
The Optronics Co., Ltd., 555 Shin Ogawamachi, Shinjuku-ku, Tokyo, 162-0814 Japan
+8 1 3269 3550; fax +8 1 5229 7253
info@optronics.co.jp; www.optronicsjp.com

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info@optronics.co.jp; www.optronicsjp.com
Japan Science and Technology Agency  #5041  
Joho Jigyo-Honbu, 5-3-4 Bancho, Chiyoda-Ku Tokyo, 102-0081 Japan

Jasper Display Corp.  #4253  
7F-16, No 81 Shull Rd East District, Hsinchu City, 30059 Taiwan  
+886 3 563 2781; fax +886 3 563 2628  
info@jasperdisplay.com; www.jasperdisplay.com

JAYCO Cleaning Technologies  #4672  
8812 Beckett Rd, West Chester, OH, 45069 USA  
+1 513 737 9600  
info@jaycoclean.com; www.jaycoclean.com  
Featured Product: Precision Ultrasonic Cleaning  
JAYCO Cleaning Technologies is the North American partner for ELMA Ultrasonics, international leader in meeting the precision cleaning requirements of optics, micro-optics, infrared optics, and display. Contact: Steve Cramer, VP Sales and Applications Engineering, scrimerer@jaycoclean.com; Jay Nawani, President, info@jaycoclean.com

JCMwave GmbH  #4529  
Bolivarallee 22, Berlin, 14050 Germany  
+49 3084 185 480; fax +49 3222 173 9611  
info@jcmwave.com; www.jcmwave.com  
Featured Product: JCMsuite V3.12 - The most efficient finite-element (FEM) solver for nanooptics simulations  
JCMwave offers FEM software for precise optics simulations. Applications include solar cells, nano-metrology, nanostructured fibers, plasmonics, OLED & VCSEL design, and others. Contact: Sven Burger, info@jcmwave.com

Jiangxi Lianchuang Electronic Co., Ltd.  #4366  
No. 1699 Jingdong Ave Hi-Tech Development Zone, Nanchang, 330096 China  
+86 791 88165920; fax +86 791 88165436  
948723065@qq.com; www.lceoptics.com  
Featured Product: HD Wide-angle lens, Automotive lens, Projection lens, VR tracking lens, Iris recognition lens, etc.  
Established in Sept. 2009. LCE Optics business group specializes in developing, manufacturing and selling of various optical lens element, optical lens. Our core competence capabilities, such as optical lens design, precision tool making, molding glass, HD wide-angle lens production, hit first level in the world. We have been ranking the biggest action camera lens supplier in the world. Both custom design lens and off-the-shelf lenses are available from LCE. Contact: Kelvin Chen, Foreign Market Supervisor, sale5@lcetron.com; Sky Liu, Project Owner, sale4@lcetron.com

JML Optical  #212  
820 Linden Ave, Rochester, NY, 14625-2710 USA  
+1 585 248 8900; fax +1 585 248 5556  
BobB@jmloptical.com; www.jmloptical.com  
JML Optical is an engineered optical solutions provider located in Rochester NY. We develop and manufacture optical solutions that meet customer product development needs from prototype through production with an emphasis on speed. We have evolved to become an industry leader in rapid design and prototyping and also support all levels of production. Contact us for quickly custom fabricated cylinders, aspheres, spheres or flatwork built up into full systems or assemblies. Contact: Bob Bicksler, President / CEO, BobB@JMLoptical.com; KC Kamesneca, VP Engineering, KC@JMLoptical.com

JoinCast Ltd.  #4253  
No 56-2 Singgong Rd Shenggang Township, Changhua, 50971 Taiwan  
+86 4 797 8018; fax +86 4 797 8020  
info@joincast.com.tw; www.joincast.com.tw/  
Featured Product: Outboard parts, Nailer parts, Mower parts, Vehicle parts, Compressor parts, Transmission parts  
JoinCast was specialized in Alum. die casting OEM & ODM manufacturer & fabricating industrial productions based in Taiwan. Skilled points on machining after coating and no chipping on the edge. Please visit our website at www.joincast.com.tw for more information on Aluminium die casting finished productions. Contact: Antony Lai, Overseas Sales, info@joincast.com.tw; Anthony Lai, Section Manager, info@joincast.com.tw

Joining and Welding Research Institute, Osaka University  #4945  
Joining and Welding Research Institute, 1-1 Mihogaoka, Ibaraki, Osaka, 567-0047 Japan  
+81 668798689  
www.osaka-u.ac.jp

Kao-Yu International Co., Ltd.  #4661  
6018 Yuehua Autotech Bldg, Taoyuan Rd Luohu District, Shenzhen, 518004 China  
+86 755 83546610; fax +86 755 83546620  
leonardwang@kaoyu.com; www.kaoyu.com  
Featured Product: Sapphire window, rod, tube, prism, lens, cylindrical. coating: AR, HR, special effects, DLC, beam  
Kaoyu focus on the sapphire optical products: window, tube, rod, prism, lens, cylindrical, dome, polished to 10/5, flatness: lambda/10, and vacuum coating: AR, HR, Special effects, DLC, beam splitter. We also supply Si,Ge,ZNS,ZNSe, CAF2, MGF2, quartz products. Contact: Leonard Wang, Sales Manager, leonardwang@kaoyu.com; Tina Tong, Customer Service, tina@kaoyu.com
Kaufman & Robinson, Inc.  #1811
1330 Blue Spruce Dr, Ft Collins, CO, 80524-2030 USA
+1 970 495 0187; fax +1 970 484 9350
info@ionsources.com; www.ionsources.com

Kelvin Nanotechnology Ltd  #5145
Rankine Bldg, Oakfield Ave, Glasgow, G12 8LT United Kingdom
+44 141 330 4869
enquiries@kelvinnanotechnology.com; www.kelvinnanotechnology.com
Featured Product: We provide nanofabrication solutions to industry and academia
We provide a wide range of fabrication services for the semiconductor, quantum technology, photonics, optoelectronic, bioelectronic and nanoelectronic market places. We specialise in high resolution, large area, multi-level electron beam lithography for applications such as laser gratings, diffractive optical elements, photonic crystals, nanotextured surfaces and many more. Our core services include: Electron Beam Lithography, Technology Prototyping and Proof of Concept, Custom Components. Contact: David Burt, Business Development Manager, enquiries@kelvinnanotechnology.com; Brendan Casey, CEO, enquiries@kelvinnanotechnology.com

Kentek Corp.  #4469
32 Broadway St, Pittsfield, NH, 03263-3800 USA
+1 603 223 4900; fax +1 603 435 7441
info@kenteklaserstore.com; www.kenteklaserstore.com

Keopsys Group  #417
2 rue Paul Sabatier, Lannion, 22300 France
+33 2 96 05 08 00
websales@keopsys.com; www.keopsys.com
Featured Product: Pulsed Erbium Fiber Laser : PEFL-KULT
Keopsys is the leader in designing and manufacturing ultra compact pulsed fiber lasers. Since 20 years Keopsys is one of the major players in fiber lasers and amplifiers. Starting from an innovative company, Keopsys is now a well-organized and industrial company with more than 130 people. Keopsys brings solutions for defense, space, telecom, Lidar and scientific domains with rugged design fiber lasers. The recent business combination with Quantel is opening new synergies for new applications. Contact: Marc Le Flohic, CEO, websales@keopsys.com

Kerdry  #431
5 rue Louis de Broglie, Lannion, 22300 France
+33 2 96 488 477; fax +33 2 96 488 478
contact@kerdry.com; www.kerdry.com

KETEK GmbH  #4560
Hofer Str 3, München, 81737 Germany
+49 8967346770
info@keteck.com; www.keteck.net
Featured Product: Silicon Photomultiplier, SiPM, MPPC, Array
KETEK is a leading manufacturer of Silicon Photomultipliers and Drift Detectors. Contact: Werner Hartinger, Sales and Marketing, werner.hartinger@keteck.net; info@keteck.net

Keysight Technologies  #5167
1400 Fountaingrov Pkwy, Santa Rosa, CA, 95403 USA
+1 800 829 4444
AFM-info@keysight.com; www.keysight.com
Featured Product: Keysight Monolithic Laser Combiner for microscopy - Guarantees permanent laser alignment
Keysight Technologies Nano Scale Science Division supplies multi-wavelength laser combiner illuminators for super resolution microscopy applications, laser interferometer systems for position measurement, custom and monolithic optical assemblies. Keysight monolithic laser combiner products are ideally suited for confocal, fluorescence and super resolution microscopy applications. Other on-display instruments include multi-wavelength meter and lightwave measurement system. Contact: Russell Hobson, MLC Product Manager, russell_hobson@keysight.com; Stefan Loeffer, stefan_loeffer@keysight.com

Kigre, Inc.  #1011
100 Marshland Rd, Hilton Head Island, SC, 29926-2368 USA
+1 843 681 5800; fax +1 843 681 4559
info@kigre.com; www.kigre.com
Kigre manufactures 1.54 µm “eye-safe” diode pumped erbium glass laser transmitters. These transmitters can be used in applications including laser range finding, range gated imaging, Lidar and Laser Induced Breakdown Spectroscopy (LIBS). Kigre’s lasers range from 0.2 to 10 mJ and 1 to 30 Hz with a 6 ns pulse width. Contact: Franziska Roth, Quality Manager, franz@kigre.com; Jeff Myers, CEO, jeff@kigre.com

Kimmon Koha USA, Inc.  #1910
7002 S Revere Pkwy Ste 85, Centennial, CO, 80112-6703 USA
+1 303 754 0401; fax +1 303 754 0324
www.kimmon.com
Featured Product: New UV fiber laser: 100mW at 318nm. TEM00 transverse mode with coherence length greater than 1m.
Kimmon is the world’s oldest and largest manufacturer of helium cadmium lasers offers a total of 36 different HeCd laser models at 325nm (2-100mW), 442nm (14-180mW), or both simultaneously. Fiber laser also available at 20W at 1064nm, with a high polarization ratio and low noise. Additionally we manufacture a line of solid state UV and blue lasers at 375nm, 405nm, 445nm, and 488nm. Contact: Patrick Townsend, Vice President, p.townsend@kimmon.com

Kimmy Photonics Ab Oy  #4365
Maapallonkuja 1B, Espoo, 02210 Finland
+358 456 158 705
info@kimmy.fi; https://www.kimmy.fi
Featured Product: NANORULER & NANOSTAR nm 3D-imaging calibration standards and NanoJet super-resolution microscopes
With over 30 years of providing high-technology, laser-and light-based measurement solutions and components to researchers, engineers and end-users, we believe our knowledge and experience will benefit our clients in their own developments and designs. Our commitment is to provide the most precise and reliable optical instruments, sensors and components available on the market. We combine the best technology and engineering talent, enabling us to offer a perfect solution for your applications. Contact: Kim Grundström, Managing Director, kim.grundstrom@kimmy.fi; Antton Nolvi, Development Director, anton.nolvi@helsinki.fi

Kiyohara Optics Inc.  #345
Optical Component, 6-23-2 Shinjuku, Shinjuku-ku, WA, 160-0022 Japan
+81 3 3352 1919; fax +81 3 3352 3348
www.koptic.co.jp/opt/eng
Photonics West Exhibitor Listing

KMLabs #1816
4775 Walnut St, Ste 102, Boulder, CO, 80301-2579 USA
+1 303 544 9068; fax +1 419 821 2284
sales@kmlabs.com; www.kmlabs.com
KMLabs is a manufacturer of high-performance, ultrafast femtosecond laser systems. Fiber lasers feature sub-100 femtosecond pulse widths and 0.5 microjoules to >3 microjoules pulse energy. Regenerative and multi-pass Ti:Sapphire amplifiers: a single-stage series, systems capable of tunable repetition rates from 1 kHz to 1 MHz, & multistage systems up to 50 W or 30 mJ. We also produce the world’s only production-grade test instrument for measuring Group Delay Dispersion. Contact: MaryEl Smith, Executive Assistant/Marketing, maryel@kmlabs.com

Knight Optical (UK) Ltd. #5137
Roebuck Business Park, Ashford Rd, Harrietsham, Kent, ME17 1AB
United Kingdom
+44 1622 859444; fax +44 1622 859555
info@knightoptical.com; www.knightoptical.com
Featured Product: Custom and stock Domes, from 10-200mmDia, In Silicon, Sapphire, Quartz, Filter Glass, BK7 & Acrylic
Bringing quality into focus with 26 years’ experience in the global optics market. A leading provider of high-quality metrology tested (UV-VIS-IR) custom precision optical components. Our technical advisors are here to support your needs, we consider ourselves part of your team. We are ISO 9001 UKAS certified, with over 3000 stock components available for fast delivery. Discover how Knight Optical’s high-quality optics and service can improve your instrumentation and supply chain experience. Contact: Todd Heimer, Technical Sales Advisor, todd.heimer@knightoptical.com; Gabriel Boxall, Technical Sales Advisor, gabielsboxall@knightoptical.com

Kohoku America Inc. #4605
4 Virginia Ln, Stoneham, MA, 02180 USA
+1 781 438 4625
sales@kohokuamerica.com; www.kohokuamerica.com

Kreischer Optics, Ltd. #4327
1729 Oak Dr, McHenry, IL, 60050-0306 USA
cody@kreischer.com; www.kreischer.com

KrellTech #4322
11-13 Evergreen Ave, Neptune City, NJ, 07753 USA
+1 732 775 7355; fax +1 732 775 7356
sales@krelltech.com; www.krelltech.com
Featured Product: Nova Fiber Optic Polisher
KrellTech manufactures advanced polishing systems and equipment for processing photonic components for markets ranging from telecom/ datacom to industrial, and bio-medical to avionics. Our innovative approach to optical processing incorporates polishing with in-line inspection techniques for immediate quality feedback, reduced material handling and increased throughput, encompassing all facets of optical termination. Contact: Christine Kritch, Account Manager, ckritch@krelltech.com; Al Cheswick, VP, acheswick@krelltech.com

Kugler of America #4511
74-D Palomma Drive, Enfield, CT, 06082 USA
+1 860 749 6400; fax +1 860 749 6600
info@kuglerofamerica.com; www.kuglerofamerica.com
Featured Product: MicroMaster, Hydrostatic Saxis micro freeform machining system with 250 nm accuracy
MicroMaster, 5 axis freeform ultra precision Micro Machining System with hydrostatic bearing with repeatable overall positioning accuracy of < 25 nm. This is a rugged system and is intended for the display/ lightning / automotive / aerospace / medical markets and has optional features such as CMM, laser integration, automated toolbox, customized versions. The modular design and options platform allows for coverage of the widest range of applications. Contact: Meinrad Schirmeister, Manager, info@kuglerofamerica.com

Kurt J. Lesker Company #2505
1925 Route 51, Jefferson Hills, PA, 15025-3681 USA
+1 412 387 9200; fax +1 412 384 2745
salesus@lesker.com; www.lesker.com
Featured Product: HIPIMS IMPULSE™ pulsed power module—a versatile and affordable thin-film coating solution
KJILC is on the cutting edge of thin film technology & innovation, while offering unparalleled customer support. R&D & batch production tools for the optical, photonics, & polyvoltaic/solar industries. We offer automated PVD & ALD thin film deposition systems; chambers; thin film deposition sources, including: sputter sources, e-beam sources, thermal evaporation sources, & low temp sources for organic films; sputtering targets & evaporation materials; feedthroughs; pumps & oils; valves. Contact: Bill Zinn, Marketing Spec, billz@lesker.com

KYOCERA International, Inc. Semiconductor Component Group #4057
8611 Balboa Ave, San Diego, CA, 92123-1580 USA
+1 858 576 2600
kaicorp@kyocera.com
Featured Product: Ceramic Packaging, Power Modules, Package Assembly, Package Design, Modeling, and Simulation
Kyocera International, Inc., Semiconductor Components Group (KII-SCG) offers open-tooled and custom packages, high power laser modules, optoelectronic packaging, and complex ceramic modules for industrial, commercial, and government applications including machining / photolithographic equipment, biosensors, power semi, SiPho, radar, telecom, image sensor, & space. KII-SCG Assembly Technologies Division has a fully integrated assembly facility with flip chip, wirebond, and class Y operations. Contact: Iris Labadie, Market Development, iris.labadie@kyocera.com; John Hatakeyama, New Business Development Manager, John.Hatakeyama@kyocera.com

Kyosemi Opto America Corp. #4509
4655 Old Ironside Ste 230, Santa Clara, CA, 95054 USA
+1 408 492 1486; fax +1 408 492 9843
info@kyosemi-opto.com; www.kyosemi-opto.com
Featured Product: High Performance NIR InGaAs Photodiodes, Typical Dark Current is 1nA, with Active Area of 0.86mm-sq.
Kyosemi has over 37 years experience designing and manufacturing components for Optical Sensing, Optical Communication and Photo-Voltaic Energy using Silicon and Compound Semiconductor materials. Products include: High Performance InGaAs NIR-LED and Photodiodes, GaN UV Detectors, SiAPD, InGaAs APD, P0-Arrays, VCSEL, Parallel Beam LED, Point-Source LED, Multi-wavelength LED, Power Over Fiber Module, Hermetic TOCAN, Plastic and Molded SMD Packaging. Contact: Steve Iwashita, iwashita@kyosemi.co.jp

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest

Kurt J. Lesker Company #2505
1925 Route 51, Jefferson Hills, PA, 15025-3681 USA
+1 412 387 9200; fax +1 412 384 2745
salesus@lesker.com; www.lesker.com
Featured Product: HIPIMS IMPULSE™ pulsed power module—a versatile and affordable thin-film coating solution
KJILC is on the cutting edge of thin film technology & innovation, while offering unparalleled customer support. R&D & batch production tools for the optical, photonics, & polyvoltaic/solar industries. We offer automated PVD & ALD thin film deposition systems; chambers; thin film deposition sources, including: sputter sources, e-beam sources, thermal evaporation sources, & low temp sources for organic films; sputtering targets & evaporation materials; feedthroughs; pumps & oils; valves. Contact: Bill Zinn, Marketing Spec, billz@lesker.com

KYOCERA International, Inc. Semiconductor Component Group #4057
8611 Balboa Ave, San Diego, CA, 92123-1580 USA
+1 858 576 2600
kaicorp@kyocera.com
Featured Product: Ceramic Packaging, Power Modules, Package Assembly, Package Design, Modeling, and Simulation
Kyocera International, Inc., Semiconductor Components Group (KII-SCG) offers open-tooled and custom packages, high power laser modules, optoelectronic packaging, and complex ceramic modules for industrial, commercial, and government applications including machining / photolithographic equipment, biosensors, power semi, SiPho, radar, telecom, image sensor, & space. KII-SCG Assembly Technologies Division has a fully integrated assembly facility with flip chip, wirebond, and class Y operations. Contact: Iris Labadie, Market Development, iris.labadie@kyocera.com; John Hatakeyama, New Business Development Manager, John.Hatakeyama@kyocera.com

Kyosemi Opto America Corp. #4509
4655 Old Ironside Ste 230, Santa Clara, CA, 95054 USA
+1 408 492 1486; fax +1 408 492 9843
info@kyosemi-opto.com; www.kyosemi-opto.com
Featured Product: High Performance NIR InGaAs Photodiodes, Typical Dark Current is 1nA, with Active Area of 0.86mm-sq.
Kyosemi has over 37 years experience designing and manufacturing components for Optical Sensing, Optical Communication and Photo-Voltaic Energy using Silicon and Compound Semiconductor materials. Products include: High Performance InGaAs NIR-LED and Photodiodes, GaN UV Detectors, SiAPD, InGaAs APD, P0-Arrays, VCSEL, Parallel Beam LED, Point-Source LED, Multi-wavelength LED, Power Over Fiber Module, Hermetic TOCAN, Plastic and Molded SMD Packaging. Contact: Steve Iwashita, iwashita@kyosemi.co.jp

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Exceptional stability and repeatability. Our engineering department operation. Our fixturing machine is made of stable cast iron for precision bench-top polishing and fixturing machines. The polishing machines have stainless steel bodies and sealed bearings for the reject the high level of precision and quality demanded by our customers. ISO 2001:2008, ITAR certified and compliant. Contact: Kenny Raines, Technical Sales and Manufacturing Engineer, kenny@lacroixoptics.com; Clayton Carpenter, Technical Sales and Manufacturing Engineer, clayton.carpenter@lacroixoptics.com

Lambda Research Corp. #310

25 Porter Rd, Littleton, MA, 01460-1434 USA +1 978 486 0766; fax +1 978 486 0755 sales@lambdares.com; www.lambdares.com

Featured Product: TracePro 2018, RayViz 2018 and OSLO 7.0

Lambda Research Corporation sets itself apart as a cost effective, single source solution for optical and illumination design. Lambda sells TracePro®, opto-mechanical software differentiated by its ease-of-use, CAD interface and accuracy in illumination design, OSLO®, renowned for its power and flexibility in lens design and RayViz™, a full integrated seamless add-in for Solidworks. Lambda also distributes the ScatterMaster ScatterScope3D™ scatterometer for fast and accurate surface measurement. Contact: Michael Gauvin, VP Sales, mgauvin@lambdares.com

Larsen Equipment Design, Inc. #3035

1117 NW 52nd St, Seattle, WA, 98107-5130 USA +1 206 789 7121; fax +1 206 789 7756 erik@larsenequipment.com; www.larsenequipment.com

Larsen Equipment Design is the designer and manufacturer of precision bench-top polishing and fixturing machines. The polishing machines have stainless steel bodies and sealed bearings for the spindles to give you a robust machine for worry free long term operation. Our fixturing machine is made of stable cast iron for exceptional stability and repeatability. Our engineering department has the ability to design and make any tooling you may want. Visit table #3035. Contact: Erik Larsen, President, erik@larsenequipment.com; Andrew Larsen, andrew@larsenequipment.com

LASEA #4072

1920 Cordell Ct Ste 104, El Cajon, CA, 92020 USA +1 619 749 0749 info@lasea.com; www.lasea.com

LASEA #4072

204 SPIE Photonics West 2018 • www.spie.org/PW • Tel: +1 360 676 3290
Laser Components Pyro Group, Inc #1931
116 S River Rd, Bldg C, Bedford, NH, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
delli@laser-components.com; www.laser-components.com

Featured Product: True Differential Pyroelectric IR Detector
boosting detectivity performance for spectroscopy
Laser Components Pyro Group – Manufactures LTO (Lithium Tantalate) and DLATGS (Deuterated Lanthanum a Alamine doped Triglycine Sulfate) pyroelectric detectors. With a spectral range from Visible to Terahertz, supplied in many different configurations including sizes, amplifier response, and with or without thermoelectric (TE) cooling. Built in preamplifiers can be specified in either CM (current mode) or VM (voltage mode). A wide range of filters are available. Contact: Susan Wells, Sales Account Manager IR Components, wells@laser-components.com; Myriam Gillisjans, Marketing, mgillisjans@laser-components.com

Laser Components USA, Inc. #1931
Bldg C, 116 S River Rd, Bedford, NH, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
info@laser-components.com; www.laser-components.com

Featured Product: Triple bending laser mirrors designed for customized combinations of wavelengths
Laser Components USA specializes in sales and distribution of components in the laser and optoelectronics industry. We have been serving customers over 15 years in North America with products from our manufacturing sites in Germany, Canada and the US, as well as from well-selected international suppliers. We serve a wide variety of photonics applications with APDs, IR detectors, photon counting modules, laser diodes and modules, PLDs, laser diode drivers, fiber optics, laser optics, polarizers. Contact: Matt Robinson, Sales Director PLD, APD, IR Components, robinson@laser-components.com; Huyen Vu, Sales Director Laser Optics, Diodes, and Modules, hvu@laser-components.com

Laser Focus World #1607
PennWell Technology Div, 61 Spit Brook Rd Ste 401, Nashua, NH, 03060-5614 USA
+1 603 891 0123; fax +1 603 891 0574
info@laserfocus.com; www.laserfocusworld.com

Contact: Alan Bergstein, Publisher, alabn@pennwell.com; Conal Holton, Editor in Chief, cholton@pennwell.com

Laser Institute of America #3059
13501 Ingenuity Dr Ste 128, Orlando, FL, 32826-3274 USA
+1 407 380 1553; fax +1 407 380 5588
lia@lia.org; www.lia.org

Laser Institute of America is the international society dedicated to fostering lasers, laser applications and laser safety worldwide. For four decades, LIA has served the laser community through conferences, symposia, publications and courses. The LIA is the secretariat and publisher of the ANSI Z136 series of laser safety standards. Contact: Jim Naugle, Marketing Director, lia@lia.org

Laser Materials Corporation #752
12706 NE 95th St #102, Vancouver, WA, 98682 USA
+1 360 254 4180; fax +1 360 254 4182
sales@lasermaterials.com; www.lasermaterials.com

Featured Product: Laser Rods
Laser Materials Corporation produces Nd:YAG, CTH:YAG, Yb:YAG, and ruby in our facility in Vancouver, WA (USA). In business since 1992, we produce laser rods and slabs from large diameter Czochralski grown boules using a highly automated, well developed growth process. Our high yield and high quality growth process allows us to provide our customers with both a high quality and low cost product. Contact: Paul Collins, President, paul@lasermaterials.com; David Collins, Vice President, dcollins@lasermaterials.com

Laser Mechanisms, Inc. #2347
25325 Regency Dr, Novi, MI, 48375 USA
+1 248 474 9480; fax +1 248 474 9277
info@lasermech.com; www.lasermech.com

Laser Mechanisms specializes in innovative laser beam delivery components and articulated arm systems for high power CO₂, YAG, Fiber Lasers and other wavelengths that suit all facets of industrial, medical and military applications. Staff of laser system engineers can custom design a performance guaranteed beam delivery system for your laser application. Laser Mechanisms is also the exclusive North American distributor of the PRIMES line of laser beam analysis equipment. Contact: Mike DeBussco, Sales Engineer, mdebussco@lasermech.com

Laser Point #2623
Via Burona 51, Vimodrone MI, MI, 20090 Italy
+39 02 2740 0236; fax +39 02 2502 9161
sales@laserpoint.it; www.laserpoint.eu

Featured Product: Laser Measurement Instruments for R&D, Medical, Industry: microW to MultiKw
Laser Point manufactures laser measurement instruments for OEM and laboratory applications. Laser Point’s has in-house the capability for the complete design of its products, from thermal modelling to 3D CAD design. The premises are fully equipped for the sensors deposition, assembling, testing and calibrations with NIST and PTB traceability. Laser Point products are marketed by a network of worldwide Distributors in Europe, Japan, China. Contact: Flavio Ferretti, Marketing Mgr., ferretti@laserpoint.it; Daniele Zanato, Sales Mgr, zanato@laserpoint.it

Laser Quantum Inc #731
47673 Lakeview Boulevard, Fremont, CA, 94538 USA
+1 408 510 0079
info@laserquantum.com; www.laserquantum.com

Featured Product: Venteon ultra, designed and optimised to offer the shortest available laser pulses of sub 5.5.
Laser Quantum is a world-class manufacturer of high quality solid-state and ultrafast laser sources. Our products are known for their reliability, compactness, performance-excellence and long operational lifetimes. You will find our products, with their patented technology, in laboratories and integrated into systems and machines worldwide, for numerous applications. Meeting the needs of each application is essential in the research and design to achieve exceptional lasers. Contact: Dave Stockwell, Ultrafast Sales Manager, dstockwell@laserquantum.com; Barney Mitchell, Vice President, bmitchell@laserquantum.com

Laser Research Optics #1720
120 Corliss St, Providence, RI, 02904-2602 USA
+1 401 331 4004
sales@laserresearch.net; www.laserresearch.net

OAC Photonics West Exhibitor Listing
Sponsor: #SPIEPhotonicsWest
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Phone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lattice Electro Optics, Inc.</td>
<td>+1 714 449 0532</td>
<td><a href="http://www.latticeoptics.com">www.latticeoptics.com</a></td>
</tr>
<tr>
<td>Lattice Materials LLC</td>
<td>+1 406 586 2122</td>
<td><a href="http://www.latticematerials.com">www.latticematerials.com</a></td>
</tr>
<tr>
<td>LAYERTEC GmbH</td>
<td>+49 3641 3530 0</td>
<td><a href="http://www.lej.de">www.lej.de</a></td>
</tr>
<tr>
<td>LBP Optics Ltd.</td>
<td>+44 1767 600877</td>
<td><a href="http://www.lbp.co.uk">www.lbp.co.uk</a></td>
</tr>
<tr>
<td>LC-Tec Displays AB</td>
<td>+46 243 79 40 70</td>
<td><a href="http://www.lc-tec.se">www.lc-tec.se</a></td>
</tr>
<tr>
<td>LE VERRE FLUORE</td>
<td>+33 2 9905 3130</td>
<td><a href="http://www.leverrefluore.com">www.leverrefluore.com</a></td>
</tr>
<tr>
<td>LECC Technology Co., Ltd.</td>
<td>+886 3 4511967</td>
<td><a href="http://www.lecc.com.tw">www.lecc.com.tw</a></td>
</tr>
<tr>
<td>LEJ Lighting &amp; Electronics Jena</td>
<td>+49 361 3530 70</td>
<td><a href="http://www.lej.de">www.lej.de</a></td>
</tr>
<tr>
<td>Lecia Microsystems CMS GmbH</td>
<td>+49 621 7028 08</td>
<td><a href="http://www.leica">www.leica</a> Microsystems.com</td>
</tr>
<tr>
<td>LC-Tec Displays AB</td>
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<td>Lattice Materials LLC</td>
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**Contact Information:**
- **Lattice Electro Optics, Inc.**
  - Telephone: +1 714 449 0532
  - Website: www.latticeoptics.com
- **Lattice Materials LLC**
  - Telephone: +1 406 586 2122
  - Website: www.latticematerials.com
- **LAYERTEC GmbH**
  - Telephone: +49 3641 3530 0
  - Website: www.lej.de
- **LBP Optics Ltd.**
  - Telephone: +44 1767 600877
  - Website: www.lbp.co.uk
- **LC-Tec Displays AB**
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  - Website: www.lc-tec.se
- **LE VERRE FLUORE**
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  - Website: www.leverrefluore.com
- **LECC Technology Co., Ltd.**
  - Telephone: +886 3 4511967
  - Website: www.lecc.com.tw
- **LEJ Lighting & Electronics Jena**
  - Telephone: +49 361 3530 70
  - Website: www.lej.de
- **Lecia Microsystems CMS GmbH**
  - Telephone: +49 621 7028 08
  - Website: www.leica Microsystems.com
LEONI Fiber Optics  #4966
209 Bullfants Blvd, Williamsburg, VA, 23188-5729 USA
+1 757 258 4805; fax +1 757 258 4694
cusme-s.contact@leoni.com; www.leoni-northamerica.com

Featured Product: Fiber Optics
LEONI develops & manufactures specialty fiber optic high quality products for individual applications prototypes through production. We specialize in design & development, preform & fiber fabrication, fiber assembly, for Spectroscopy, HP Laser, Process Control, Pharmaceutical & Class II Medical probes. We also offer standard & custom FO switches (SM & MM), Planar Light Channels (PLC) & Fiber Bragg Sensors. LEONI is an integrated global manufacturer with mfgr. sites in the USA, Germany & China. Contact: Lisa Young, lisa.young@leoni.com

SPONSOR
LETI, CEA Grenoble  #431
17 rue des Martyrs, Grenoble Cedex 9, 38054 France
+33 4 38 78 22 49; fax +33 4 38 78 94
leti@cea.fr; www.leti-cea.com

Featured Product: R&D for Displays, Guided Photonics, IR/THz sensing & imaging, Visible & lens-free imaging, LED Lighting
Founded in 1967, Leti is a French technology research institute at CEA Tech, based in Grenoble. Leti is a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry. With 1,900 people, a portfolio of 2,700 patents, 91,500 sq. ft. of cleanroom space and a clear IP policy, Leti tackles critical challenges in healthcare, energy and digital migration, and has launched 60 startups. Follow us at www.leti-cea.com and @ CEA_Leti. Contact: Laurent Fulbert, Deputy Head of Optics & Photonics Division, laurent.fulbert@cea.fr; Ludovic Poupinet, Head of Optics & Photonics Division, ludovic.poupinet@cea.fr

LEUKOS  #4058
ZI Nord, 37 rue Henri Giffard, Limoges, 87280 France
+33 5 87 20 00 23
contactus@leukos-systems.com; www.leukos-systems.com

Featured Product: Supercontinuum lasers UV Visible NIR Mid-IR, White light lasers, Microchip Nd:YAG lasers
LEUKOS is a leading developer and manufacturer of supercontinuum lasers. Our broad portfolio includes solutions covering UV 270nm, Visible, NIR, SWIR, Mid-IR > 4µm, delivering high power or high energy. With more than 10 years of experience we offer a great variety of standard and custom made supercontinuum lasers, enabling various technics in Spectroscopy and Imaging. Our expert team will take your project from prototype to production with the highest level of support. Contact: Karine Weck, Technical Sales, contactus@leukos-systems.com

LEW Techniques Ltd  #5137
Cook Way, Taunton Somerset, TA2 6BG United Kingdom
+44 1823 286698; fax +44 1823 333697
info@lewtec.co.uk; www.lewtec.com

Featured Product: Custom precision submounts and carriers for laser diodes, laser bars, laser stacks, and photodiodes
LEW Techniques specializes in the manufacture of miniature components and microcircuits for mounting of semiconductor devices. Typically our components are used for mounting LEDs, laser diodes and photodiodes, RF circuits, hermetic packages and windows and other associated items. Our in-house capabilities include thin-film, thick-film and refractory metallization of ceramics and metals, electropolishing, precision dicing, laser machining, atmosphere/vacuum brazing and solder assembly. Contact: Richard Beesley, Technical Sales Coordinator, richard.beesley@lewtec.co.uk; Andrew Walker, Technical Director, andrew.walker@lewtec.co.uk

Leysop Ltd.  #4858
Repton Close, 18 Repton Ct, Basildon, Essex, SS13 1LN United Kingdom
+44 1268 522 111; fax +44 1268 522 111
sales@leysop.com; www.leysop.com

Featured Product: Electro-Optic modulators and drivers for all applications
Leysop have been established for >20 years and are the only UK manufacturer of electro-optic components, including Pockels cells for Q-switching, modulation and pulse slicing, Faraday isolators and calcite polarisers of all forms. Of particular note are our special ultra fast Pockels cells for sub-ns pulses and systems for high speed pulse picking. We also manufacture many special components to customer specifications in both active and passive devices and welcome your enquiries. Contact: Steve Payne, Technical Director, steve.payne@leysop.com

LIGENTEC SA  #4061
EPFL Innovation Park, Lausanne, 1015 Switzerland
+41 76 74 92 873
info@lignantec.com; www.lignantec.com

Featured Product: Low loss thick film silicon nitride photonic chip with integrated fast modulation heater module
Ligentec is offering wafer scale fabrication of silicon nitride photonic integrated circuits (PIC) for applications in telecom/ datacom, quantum optics, optical (bio)-sensing. The proprietary low loss waveguide technology together with the low bending losses that thick film nitride enables paves the way to new integrated applications. Thick silicon nitride chips can thus scale down to four times in cost compared to thin film silicon nitride.

Light Conversion  #639
Keramiku st. 2B, Vilnius, LT-10223 Lithuania
+370 5249 1830; fax +370 5210 2785
sales@lightcon.com; www.lightcon.com

Featured Product: Light Conversion CARBIDE - compact, all-in-one femtosecond industrial laser system
Light Conversion is the world-leader for tunable ultrafast OPA systems with the worldwide recognized TOPAS series products. Light Conversion is also an established manufacturer of Ytterbium laser PHAROS and CARBIDE, harmonics generators, parametric amplifier ORPHEUS, and nonlinear spectrometers. Together the portfolio forms a best-in-class set of devices for femtosecond applications in industry, medicine, and fundamental research. Contact: Lucian Hand, President, Altos Photonics, sales@altosphotonics.com; Laurie Dewar, Customer Support, Altos Photonics, laurie@altosphotonics.com

LIGHT TEC  #4444
Pôle d’Activité Hyérois, 1128 Route de Toulon, Hyères, 83400 France
+33 494 12 18 49; fax +33 494 12 18 49
sales@lighttec.eu.com; www.lighttec.fr

Featured Product: Synopsys optical software, Mini-Diff V2 & REFLET 180S measurement systems
Light Tec is an optical engineering company providing optical design software and connected services for professionals in the lighting, automotive, aerospace, electronics sectors and a lot more. Light Tec activities are: Optical design software (Code V, LightTools, LucidShape and RSOFT). Technical support and trainings are connected services, Measurement service through our laboratory and the sale of optical instruments, Consulting service to design customer projects. Contact: Yan Cornil, CEO, yan.cornil@lighttec.fr
LightFab produces 3D precision glass parts from customers CAD high precision 3D glass parts now for 8” wafer. Curran, VP-Sales & Marketing, mark.curran@lightel.com

LightComm Technology Co., Ltd.<br>2F Bldg A Jia’an Industry Park Xin’an Subdistrict, No 72 zone of Bao’an District, Shenzhen, 518101 China +86 75586157878; sales@lightcomm.com; www.lightcomm.com

LightFab GmbH<br>Steinbachstr 15, Aachen, Nordrhein-Westfalen, 52074 Germany +49 241 5908272; fax +49 241 8906121 info3d@lightspace3d.com; www.lightspace3d.com

LightGuideOptics, USA<br>1101 S. Winchester Blvd Ste L-238, San Jose, CA, 95128 USA +1 408 244 0686; fax +1 408 244 0714 dspecial@lgoptics.com; www/lgoptics.com

LightMachinery Inc.<br>80 Colonnade Rd N Unit 1, Nepean, ON, K2E 7L2 Canada +1 613 749 4895; fax +1 613 749 8179 sales@lightmachinery.com; www.lightmachinery.com

LightPath Technologies, Inc.<br>2603 Challenger Tech Ct Ste 100, Orlando, FL, 32826-2716 USA +1 407 382 4003; fax +1 407 382 4007 sales@lightpath.com; www.lightpath.com

Lightspace Technologies<br>Ziedleju Iela 1, Marupe, Marupe, 2167 Latvia +371 6780 0009; fax +371 6504 9087 info3d@lightspace3d.com; www.lightspace3d.com
LightTrans International UG (haftungsbeschr.)

Kahlaische Str 4, Jena, 07745 Germany
+49 36 41 5312950; fax +49 36 41 5312901
service@lighttrans.com; www.lighttrans.com

Featured Product: VirtualLab Fusion – Fast Physical Optics modelling and design software

LightTrans group is based in Jena in the state of Thuringia, the historical and present center of optics in Germany. Our products and services shorten or even enable development cycles of optical components and systems. All our activities are based on the Fast Physical Optics design software “VirtualLab Fusion”, which provides ray tracing and physical optics field tracing methods. Our products include optical design software, optical engineering, training and consulting as well as prototyping.

LIMO GmbH

Bookenburgweg 4-8, Dortmund, North Rhine-Westphalia, 44319 Germany
+49 231 22 24 1 0
info@limo.de; www.limo.de

Featured Product: Micro- and precision optics, beam shaping systems, line shaped laser beams, industrial laser systems

LIMO is a leading international specialist for laser beam shaping. At our headquarters in Dortmund, Germany, a team of more than 200 engineers, physicists, technicians and a host of other specialized employees work together to develop, manufacture and sell micro-optics and precision optics (e.g. free-form microlens arrays) as well as beam shaping systems / modules and industrial laser systems for many applications like plastic welding, surface treatment and more. Contact: Dirk Hauschild, Vice President Marketing, d.hauschild@limo.de

Lingbao Shenghe Optical Glass Material Co., Ltd.

South Rd Guxian County, Guxian Town Lbingao, Henan, 472541 China
+86 3986833258; fax +86 3986833258
ljmysy@126.com; www.shenghekuangye.com

Featured Product: Metaphosphate, fluoride, fluoride crystal, rare earth metaphosphate, rare earth fluoride

We mainly engaged in the development and usages of Precious metals, Rare earth Mine, Scattered Metal Mining: Au, Ag, Li, Ta, Nb, La, Rb, Cs, Bo. Meanwhile, it also produces and sells more than 80 special materials: special optical glass materials, laser fusion glass materials, laser fusion crystal materials, rare earth laser glass materials, magnetogyric glass materials, fluoride laser glass materials (metaphosphate, fluoride, fluoride crystal. Contact: Jianmin Luo, ljmysy@126.com

LioniX International

Hengelozaatstraat 500, Enschede, 7521AN Netherlands
+31 53 203 0053; fax +31 53 201 1303
info@lioniX-int.com; www.lioniX-international.com

Featured Product: Photonic Integrated Circuit based modules from 405 to 2350 nm.

LioniX International is a leading global provider of customized microsystem solutions, in particular integrated photonics-based, in scalable production volumes. We provide customized solutions for OEM’s and System Integrators by vertical integration in scalable production volumes. We focus on Photonic Integrated Circuits (PIC) enabled modules based on our propriety waveguide technology (TriPleX®), in addition to our other core competences micro-fluidics, opto-fluidics and MEMS. Contact: Arne Leinse, Chief Commercial Officer, a.leinse@lioniX-int.com; Douwe Geuzebroek, VP Marketing & Sales, d.h.geuzebroek@lioniX-int.com

Liquid Instruments

The Australian National Univ, Bldg 38A Science Rd, Canberra, ACT, 2601 Australia
+61 2 6125 2810; fax +61 2 6125 0741
info@liquidinstruments.com; www.liquidinstruments.com

Featured Product: Moku:Lab replaces 10+ test and measurement instruments in an all-in-one, network-enabled device!

Liquid Instruments makes a new breed of test and measurement equipment by combining reconfigurable hardware and advanced digital signal processing with breakthrough user interfaces. Founded by a team of experimental physicists and engineers with expertise in precision measurement and gravitational wave detector instrumentation, the company provides equipment that will help scientists, engineers, students and professionals seamlessly acquire data, run measurements and control their experiments. Contact: info@liquidinstruments.com

Litron Lasers Ltd.

8 Consul Road, Rugby, Warwickshire, CV21 1PZ United Kingdom
+44 1788 574444; fax +44 1788 574888
sales@litron.co.uk; www.litronlasers.com

Logintech

Ul. Ks. Jerzego Popieluszki 28E/6, Lublin, 20-052 Poland
48 533 315 746
orders@logintech.org.pl; www.logintech.org.pl/

Featured Product: Research modules, optical components thickness measurement, fiber optic coatings

LOGInTECH is a Polish company focused on consulting, design, integration and implementation of highly-specialized instrumentation into photonics laboratories. We handle entire lab-design or upgrade process from choosing the right infrastructure for the customer’s needs, supply chain logistics and delivery of fully functional research module into facility. We support industrial R&D departments in a wide variety of fields: state-of-the-art photonics, fiber optics, mining, oil & gas, etc. Contact: Marek Kowaluk, R&D Infrastructure Manager, mkowaluk@logintech.org.pl

LSTTECH

33-3, 38 Beon-gil, Cheomdan Venture So-ro, Buk-gu, Gwangju, 61007 Korea, Republic of
+82 62 942 0170; fax +82 62 842 1080
info@lsttech.kr; www.lsttech.kr

Featured Product: PM or Non-PM High Power Combiners & Endcaps, HP Pump Modules, Fused Fiber Bundles, HP Fused Couplers

LSTTECH is a passive component manufacturer for lasers, telecom, fiber optics and biophotonics. We focus on high power components and modules for fiber laser applications, specialized in PM or non-PM high power combiners and endcaps, pump modules, specialty fiber couplers for lasers. Also, we provide a specialty fiber optic solutions based on long-term experiences and techniques to fulfill customer requirements. Our Mission is customer satisfaction with high quality products. Contact: Seon-Ju Kim, CEO, sales01@lsttech.kr
LTI Optics, LLC    #1812

10850 Dover St Ste 300, Westminster, CO, 80021-2652 USA
+1 720 891 0030; fax +1 720 891 0031
sales@ltioptics.com; www.ltioptics.com

**Featured Product:** Photopia Optical Design Software and Optical Design Consulting

LTI Optics has provided illumination optical design software and optical design consulting services for over 30 years. We are experts in illumination optics, including applications ranging from architectural lighting to consumer and medical products, and from UV and IR to daylighting and horticulture. Our software, Photopia and Photopia for SOLIDWORKS allow engineers to create and optimize optical systems in a fraction of the time of building physical prototypes. Contact: Ryan Kelley, VP, ryan@ltioptics.com

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LUCEO CO., LTD.    #4847

30-9 Ohyamakanai-cho, Itabashi-ku, Tokyo, 173-0024 Japan
+81 3 3956 4111; fax +81 3 3956 2335
info@luceo.co.jp; www.luceo.co.jp/en/

**Featured Product:** Waveplate, Super-Broadband Waveplate, Polarizer, Polariscope, fully automated polariscope LSM-9000LE/S

Since its establishment in 1966, we have manufactured polarizing plates for optical applications and been engaged in optical businesses consistently. Super-Broadband Waveplate realizes constant linear 1/4, 1/2 retardation for any wavelength ranging from visible (VIS) to near infrared (NIR) by one plate. Fully automated Polariscope LSM-9000LE/S makes it possible to inspect strain or residual stress in a transparent material easily for an operator by a single click. Contact: Shozo Imura, imura@luceo.co.jp; Takao Mano, mano@luceo.co.jp

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Lucid Vision Labs, Inc.    #4411

130-13200 Dell Place, Richmond, BC, V6V 2A2 Canada
sales@thinklucid.com; www.thinklucid.com

**Featured Product:** The Phoenix is the world's smallest industrial GigE Vision PoE camera, measuring only 24 x 24 mm

Lucid Vision Labs, Inc. designs and manufactures innovative machine vision cameras and components that utilize the latest technologies to deliver exceptional value to customers. Our compact, high-performance GigE Vision cameras are suited for a wide range of industries and applications such as factory automation, medical, life sciences and logistics. We innovate dynamically to create products that meet the demands of machine vision for Industry 4.0. Contact: Hiroko Mukohata, Senior Sales Manager - Americas, hiroko.mukohata@thinklucid.com

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Lumatec    #4613

Linienstr 9-13, Deisenhofen, 82041 Germany
+49 89 742 82 20; fax +49 89 742 82 26 4
sales@lumatec.de; www.lumatec.de

**Featured Product:** Liquid Light Guides and UV Light Sources

Our company’s story began in 1976 with an innovation, the first flexible laser light guide. In time our company branched out, going on to patent liquid light guides that inspired a host of unprecedented industrial applications. Our innovative UV light guides are a case point: Far more efficient at transmitting light than conventional silica fibers, they are also a good deal more affordable. Since 40 years we offer as well multispectral and high power UV light sources for several applications. Contact: Maria Reichenberger, Sales Manager, sales@lumatec.de

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LumenFlow Corp.    #2526

3685 Hagen Dr, Wyoming, MI, 49548 USA
+1 269 795 9007
solutions@lumenflow.com; www.lumenflow.com

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Lumentron, Inc.    #4039

Complex Ctrs for Engg Pukyong Univ Yongdang Campus, Shinseon-ro 365, Ste 109, Busan, Kyonggi, 48547 Korea, Republic of
+82 31 345 8950; fax +82 31 345 8951
info@lumentron.com; www.lumentron.com

**Featured Product:** 3D Sensing, Industrial Diode lasers, Commercial and Ultrafast lasers will be featured

Lumentron is a market-leading manufacturer of innovative optical and photonic products enabling optical networking and commercial laser customers worldwide. Lumentron’s optical components and subsystems are part of virtually every type of telecom, enterprise, and data center network. Lumentron’s 3D sensing applications, formerly referred to as our gesture recognition products, include our light source product. Contact: Andre Wong, Sr. Director - PLM, andre.wong@lументum.com; Tomoko Ohtsuki, PLM, tomoko.ohsuki@lumentum.com

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Lumencor, Inc.    #121

14940 NW Greenbrier Parkway, Beaverton, OR, 97006 USA
+1 503 213 4269
info@lumencor.com; www.lumencor.com

Lumencor is a leading manufacturer of lighting for clinical instruments including microscopes. Unlike traditional lamps, our bright, light engines are energy efficient and mercury free. Contact: Claudia Jaffe, Co-Founder & Executive Vice President, claudia.jaffe@lumencor.com

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Lumentum    #1123

400 N McCarthy Blvd, Milpitas, CA, 95035 USA
+1 408 546 5483; fax +1 408 546 4300
media@lumentum.com; www.lumentum.com

**Featured Product:** INTERCONNECT - Photonic Integrated Circuit Simulator

Lumentum develops photonic simulation software - tools which enable product designers to understand light, and predict how it behaves within complex structures, circuits, and systems. Photonics, the science of light and its interaction with matter, unlocks many possibilities for the world’s leading technology companies across diverse fields including biotechnology, data communications, information storage, solar energy, environmental sensing, and consumer electronics. Contact: Mike Yeager, Vice President, myeager@lumentum.com; Sales, info@lumentical.com

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Lumenera Corporation    #4032

7 Capella Ct, Ottawa, ON, K2E 8A7 Canada
+1 613 736 4077 x120; fax +1 613 736 4071
securitysales@lumenera.com; www.lumenera.com

Lumenera Corporation, a division of Roper Industries Inc., is a leading developer and manufacturer of high performance digital cameras and custom and OEM imaging solutions used worldwide for industrial, scientific, surveillance and astro applications. As a global market leader Lumenera provides an extensive range of high quality digital cameras with unique combinations of speed, resolution and sensitivity to satisfy the demands of today’s imaging applications. Contact: Lyara Brine, lyara.brine@lumenera.com

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Lumenera Corporation    #2526

3685 Hagen Dr, Wyoming, MI, 49548 USA
+1 269 795 9007
solutions@lumenflow.com; www.lumenflow.com

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Lumentron, Inc.    #4039

Complex Ctrs for Engg Pukyong Univ Yongdang Campus, Shinseon-ro 365, Ste 109, Busan, Kyonggi, 48547 Korea, Republic of
+82 31 345 8950; fax +82 31 345 8951
info@lumentron.com; www.lumentron.com

**Featured Product:** 3D Sensing, Industrial Diode lasers, Commercial and Ultrafast lasers will be featured

Lumentron is a market-leading manufacturer of innovative optical and photonic products enabling optical networking and commercial laser customers worldwide. Lumentum’s optical components and subsystems are part of virtually every type of telecom, enterprise, and data center network. Lumentum’s 3D sensing applications, formerly referred to as our gesture recognition products, include our light source product. Contact: Andre Wong, Sr. Director - PLM, andre.wong@lumentum.com; Tomoko Ohtsuki, PLM, tomoko.ohsuki@lumentum.com

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Lumenera Corporation    #4032

7 Capella Ct, Ottawa, ON, K2E 8A7 Canada
+1 613 736 4077 x120; fax +1 613 736 4071
securitysales@lumenera.com; www.lumenera.com

Lumenera Corporation, a division of Roper Industries Inc., is a leading developer and manufacturer of high performance digital cameras and custom and OEM imaging solutions used worldwide for industrial, scientific, surveillance and astro applications. As a global market leader Lumenera provides an extensive range of high quality digital cameras with unique combinations of speed, resolution and sensitivity to satisfy the demands of today’s imaging applications. Contact: Lyara Brine, lyara.brine@lumenera.com

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Lumics GmbH
Schwarze-Pumpe-Weg 16, Berlin, 12681 Germany
+49 30 912 074 400; fax +49 30 912 074 426
info@lumics.com; www.lumics.com

Featured Product: Super-compact LuOcean Mini8, power up to 110W, possible wavelengths 650-1940nm, multiple accessories
Lumics is a key player for design and manufacturing of high power multi & single mode diode lasers from 650nm to 1940nm. In-house capabilities range from chip level up to fiber-coupled modules & systems based on single emitter technology. LuOcean series offers unmatched choice of wavelengths and accessories, with powers from 1W to >1kW. Other packages include 2-pin TO, 14-pin BTF, 8-pin miniDIL. Manifold applications in Medical, Life Science, Material Processing, Sensing, Metrology, Seeding etc.
Contact: Beate Sauter, VP Sales & Marketing, info@lumics.com

Lumina Power, Inc.
26 Ward Hill Ave, Bradford, MA, 01835 USA
+1 978 241 8260; fax +1 978 241 8262
sales@luminapower.com; www.luminapower.com

Featured Product: LDDHP Pulsed laser diode driver. Output to 8KW, 300amps, 150V, pulse widths: 50us to CW. 3D input
Lumina Power manufactures a complete line of power supplies for the high-power laser and electro-optic industries. Lumina Power’s products include laser diode drivers, capacitor charging power supplies, semiconductor power supplies as well as xenon and argon arc lamp power supplies. New products include pulsed laser diode drivers from 75 to 18,000 watts. The company maintains a 28,000 square-foot design and manufacturing facility in Bradford, Massachusetts. Contact: Barry Essig, VP Sales & Marketing, bessig@luminapower.com; Donna O’Neill, Customer Service Manager, doneil@luminapower.com

Luminar Technologies
12601 Research Parkway, Orlando, FL, 32826 USA
hello@luminartech.com; luminartech.com

Featured Product: Built from the chip level up, Luminar’s LiDAR delivers new level of performance.
Luminar is a breakthrough autonomous vehicle sensor company that came out of stealth after five years in development with $36M in seed funding and four strategic partners. The company was founded in 2012 by applied physicist and inventor, Austin Russell, and was later joined by advisor and photonics industry pioneer, Jason Eichenholz as co-founder and chief technology officer. To date, Luminar has four strategic partners and begins a 10,000 unit run out of its Orlando facility this year. Contact: Kristin Faris, Events, kristin@luminartech.com

Luminit LLC
1850 W 205th St, Torrance, CA, 90501-1526 USA
+1 310 320 1066
sales@luminito.com; www.luminito.com

Featured Product: Luminit Light Shaping Diffusers and HOE Technology
Founded in 2006, Luminit is a world leader in holographic and light shaping diffuser technology. Our patented holographic master recording process reshapes and redirects light sources, and our highly efficient Holographic Optical Elements (HOEs) direct light beams without the need for conventional optics. Staffed by some of the world’s leading optical scientists and engineers, Luminit technology is used in lighting, display, automotive, machine vision and other high-tech applications. Contact: Suleyman Turgut, VP of Sales & Marketing, sturgut@luminito.com; Seth Coe-Sullivan, Vice President and Chief Technology Officer, socoe-sullivan@luminito.com

Luna Optoelectronics
1240 Avenida Acaso, Camarillo, CA, 93012-8727 USA
+1 805 987 0146; fax +1 805 484 9935
garciak@lunainc.com; lunainc.com

Luoyang Silicon Electronics Co., Ltd.
279 Daobei Rd Jianxi District, Luoyang City, Henan, 471000 China
+86 379 64515189; fax +86 379 62239128
info@optics-si.com; www.optics-si.com

Featured Product: Infrared silicon/germanium blank/window; CO2 laser mirror; silicon laser scanning mirror
Just for Silicon material. Luoyang Silicon Electronics Co., Ltd is a company for silicon material which is used in infrared optics and laser optics. We are precision optics manufacturing since 2009. Mainly products: infrared silicon/germanium blank/window lenses; CO2 laser mirror; silicon laser scanning mirror; Monocrystalline/Polycrystalline silicon sputtering target. Contact: Yanbo Cui, President, sales@optics-si.com; Yanping Xue, Sales Manager, info@optics-si.com

Luvantix SSCP
22 Quail Run, Warren, NJ, 07059 USA
+1 732 271 0350; fax +1 732 348 9496
info@sscppusa.com; www.sscpusa.com

Featured Product: Low refractive index UV curable resin for fiber lasers, specialty fibers, bio-medical sensor
In 1997 Luvantix pioneered the application of low refractive index UV curable materials for polymer cladded optical fibers. Our PC (Polymer Clad) products have been thoroughly tested, qualified, and are in use by major PC optical fiber industry leaders for various applications including optical fiber lasers, specialty fibers, bio-medical sensors, and micro capillary fibers. Luvantix looks forward to leading the charge in the R&D and manufacturing of advanced photonics materials. Contact: Duck Hyang Suh, Director, dhsuh@sscppusa.com; Sang Soo Oh, Director, sangsoo.oh@luvantixadm.com

LuxFlux GmbH
Gerhard-Kindler-Straße 13, Reutlingen, 72770 Germany
+49 7121 69 63 60 0
info@luxflux.de; www.luxflux.de/en/imprint/

Featured Product: LuxFlux.software takes Hyperspectral Imaging from the lab to industrial and embedded applications
LuxFlux is a software company that specializes in analyzing hyperspectral data. The company’s main product LuxFlux.software comprises 2 applications: 1) fluxTrainer and 2) fluxRuntime. The company serves industrial and academic customers. Industries covered include Sorting, Pharma, MedTech, Food, Precision Farming and Recycling. The company has been awarded for its innovative products. Contact: Jan Makowski, CEO; Marc Henzler, COO.

Luxmux Technology Corp.
#120, 3510 29th St NE, Calgary, AB, T1Y 7E5 Canada
+1 403 474 4661
www.luxmux.com
Photonics West Exhibitor Listing

Luxottica
2150 Bixby Road, Lockbourne, OH, 43137 USA
+1 513 870 4648; fax +1 513 492 6652
info.exciton@luxotticaretail.com; www.exciton.com

Featured Product: Fluorescent Laser Dyes, Infrared Dyes, Security Dyes, and Narrow Band Visible Dyes
Certain assets of Exciton, Inc. were acquired by Oakley, Inc. in January 2017, forming a new chemistry of dyes and materials organization within Luxottica, the leader in the design, manufacture and distribution of fashion, luxury and sports eyewear, based in Milan, Italy. The chemistry operations transitioned to a new facility in Columbus, OH in late 2017. We continue to serve all of Exciton, Inc.’s former customers and carry out a wide range of chemistries to support both old and new customers.
Contact: Paul Cahill, Vice President, pcahill@luxotticaretail.com; Carrie Brown, Senior Manager of Operations, cbrown@luxotticaretail.com

M Squared Lasers Ltd.
#2019

M Squared Lasers Ltd.
1 Kelvin Campus WSSP/Venture Bldg, Maryhill Rd, Glasgow, G20 0SP United Kingdom
+44 141 945 0500; fax +44 141 945 0505
mail@m2lasers.com; www.m2lasers.com

Featured Product: SolTiS DFM - CW, narrow linewidth, gapless tunable light across the IR region from 1.1µm to 4.5µm
M Squared is a leading developer of photonic and quantum technologies, harnessing the power of light to drive society changing innovation. The tools it designs and manufactures are used in collaboration with Nobel Prize-winning scientists, the world’s top universities and innovative manufacturers. For more information visit m2lasers.com. LinkedIn or follow the company on Twitter @m2lasers Contact: Julie Phinn, Marketing & Events Executive, mail@m2lasers.com

M3 Measurement Solutions
#5564

M3 Measurement Solutions
938 S Andresen Dr Ste I, Escondido, CA, 92029-1920 USA
+1 760 561 1400
sales@m3msi.com; www.m3msi.com

Marktech Optoelectronics
#221

Market Tech, Inc.
340 E Pueblo Rd Ste C, Scotts Valley, CA, 95066-4237 USA
+1 831 461 1101; fax +1 831 461 1136
info@markettechinc.net; www.markettechinc.net

Featured Product: BrixX Hub Multi-wavelength, High Power Laser Light Engine
Market Tech Inc. is a leading supplier of Lasers and Measurement Instrumentation for life science, medical, metrology, aerospace, quality control and research applications including Diode Pumped Solid State, Gas and Diode Lasers covering UV, visible and IR spectrum both pulsed and CW. We also offer Laser beam stabilization systems, Monochromators, Spectrometers, Spectroradiometers, Colorimeters, Light Meters, Detectors, Conoscopic Systems and Imaging Cameras. Contact: Philip Crowley, President, phil@markettechinc.net

Mars Inc.

Mars Inc.
150 N Tucson Blvd, Tucson, AZ, 85716-4740 USA
+1 520 296 3068
sales@esdimetrology; mahr.com

Featured Product: Mahr Inc. - ESDI
Mahr has over 150 years’ experience in manufacturing dimensional metrology tools from hand held gages to advanced measurement systems for form, contour, surface finish and length. Mahr produces custom engineered gages and provides calibration and contact measurement services. Mahr also provides optical metrology solutions for astronomical, aerospace, automotive, and optical production applications. Contact: Steve Moore, Applications, steve.moore@mahr.com; Mason Wilson, Applications, mason.wilson@mahr.com

Marina Photonics, Inc.
#3001

Marina Photonics, Inc.
1290 Castro Rd, Monterey, CA, 93940 USA
+1 831 601 2120; fax +1 831 384 6780
marinaphotonics@gmail.com; www.marinaphotonics.com

Featured Product: Affordable Gigahertz Photon counting into time correlated bins with interface and accessories
Marina Photonics is dedicated to affordable Gigahertz Time-Correlated single photon counting systems and accessories. Two to four channels of photon counting into bins are available with 1 GHz per channel sustained count rates and no dead time or lost counts. Additional digital inputs are available for scanning systems. The PVT16 GHz interface to detectors has 32dB of variable gain, 64db maximum gain, and 300 micro-Volt sensitivity with bipolar output. Contact: Jerry Lentz, Physicist, marinaphotonics@gmail.com; Susan Abercrombie, Sales, Marinaphotonics@gmail.com

Market Tech, Inc.
#2041

Market Tech, Inc.
340 E Pueblo Rd Ste C, Scotts Valley, CA, 95066-4237 USA
+1 831 461 1101; fax +1 831 461 1136
info@markettechinc.net; www.markettechinc.net

Featured Product: BrixX Hub Multi-wavelength, High Power Laser Light Engine
Market Tech Inc. is a leading supplier of Lasers and Measurement Instrumentation for life science, medical, metrology, aerospace, quality control and research applications including Diode Pumped Solid State, Gas and Diode Lasers covering UV, visible and IR spectrum both pulsed and CW. We also offer Laser beam stabilization systems, Monochromators, Spectrometers, Spectroradiometers, Colorimeters, Light Meters, Detectors, Conoscopic Systems and Imaging Cameras. Contact: Philip Crowley, President, phil@markettechinc.net

Market Tech, Inc.
340 E Pueblo Rd Ste C, Scotts Valley, CA, 95066-4237 USA
+1 831 461 1101; fax +1 831 461 1136
info@markettechinc.net; www.markettechinc.net

Featured Product: BrixX Hub Multi-wavelength, High Power Laser Light Engine
Market Tech Inc. is a leading supplier of Lasers and Measurement Instrumentation for life science, medical, metrology, aerospace, quality control and research applications including Diode Pumped Solid State, Gas and Diode Lasers covering UV, visible and IR spectrum both pulsed and CW. We also offer Laser beam stabilization systems, Monochromators, Spectrometers, Spectroradiometers, Colorimeters, Light Meters, Detectors, Conoscopic Systems and Imaging Cameras. Contact: Philip Crowley, President, phil@markettechinc.net

Marktech Optoelectronics
#221

Marktech Optoelectronics
3 Northway Ln N, Latham, NY, 12110-2281 USA
+1 518 956 2980; fax +1 518 785 4725
info@marktechopto.com; www.marktechopto.com

Featured Product: Marktech introduces its new broad-band detector, ranging from 365nm-1700nm in a TO-5 package
Marktech Optoelectronics a manufacturer and provider of high-performance, high reliability emitters, LEDs, Silicon and InGaAs detectors & materials. Our in-house optoelectronic design, prototyping, serial production & test offer cost-effective innovative solutions for application including: Biomedical, safety/security, semiconductor, industrial & defense/aerospace. Contact: Kevin Ward, Sales Manager, k.ward@marktechopto.com; Tom Behringer, Vice President - Sales, t.behringer@marktechopto.com

SPIE Industry Events
Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees. Refer to pages 21-36.
FLORIDA
INNOVATION
STARTS HERE

Visit us in the Florida Photonics Cluster Pavilion

UCF, one of the most dynamic universities in the USA, offers 225 degree programs in 13 colleges including CREOL, The College of Optics and Photonics. CREOL provides exceptional education for BS, MS, and PhD degrees. Active and strong partnerships with industry, government, and universities for innovative R&D collaborations.

Aggressive support system for technology commercialization | Booming high-tech sectors
State sponsored financial advantages and incentives | Nationally ranked climate
Exceptionally strong optics and photonics knowledge and industry base

CREOL, The College of Optics and Photonics
UNIVERSITY OF CENTRAL FLORIDA

Marubeni America Corp. #4618
3945 Freedom Cir Ste 1000, Santa Clara, CA, 95054-1274 USA
+1 408 330 0650
info@tech-led.com; www.tech-led.com

Featured Product: Through-hole and surface mount packages in different performance classes and brightness levels
Tech-LED is the web site run by the Epitex LED business unit of Marubeni America Corporation. Our goal is to support your LED requirements by offering more than 50 wavelengths from 365 to 1650 nm, available in SMD, thru-hole packages, multi-chip arrays and chip form. We will also offer custom LED and chip-on-board solutions.

Marysol Technologies, Inc. #2421
1444-C Belcher Rd #136, Clearwater, FL, 33764 USA
+1 727 712 1523
laser@marysol2002.com; www.marysoltechnologies.com

Masimo Semiconductor #5172
25 Sagamore Park Rd, Hudson, NH, 03051 USA
+1 603 595 8900; fax +1 603 595 0975
sales@masimosemi.com; www.masimosemiconductor.com

Featured Product: Custom Optoelectronic devices, III-V Compound Semiconductor Epitaxial Wafers & Foundry Services
Masimo Semiconductor, a wholly owned subsidiary of Masimo Corp, has over 30 years experience in custom optoelectronic device development & manufacturing. These services include epitaxial design & growth, wafer processing & testing. Our scientists & engineers hold a deep knowledge and understanding of design of LED's, VCSEL's, Photodiodes, Lasers & Photovoltaic Cells with a focus upon manufacturing for the Biotech, Energy, Defense, Industrial and Enterprise markets. Contact: Brad Siskavich, Business Development Mgr, bsiskavich@masimosemi.com; Ed Gagnon, VP of Operations, egagnon@masimosemi.com

Materion Advanced Materials #2602
2978 Main St, Buffalo, NY, 14214 USA
+1 800 327 1355
advancedmaterials@materion.com; www.materion.com/advancedmaterials

Featured Product: Optical Coating Materials, Inorganic Chemicals, Evaporation Materials, Sputtering Targets
Materion Advanced Materials is the industry leader in supplying quality specialty optical coating materials to support the entire photonic spectrum (UV – IR) including defense, aerospace, ophthalmic, laser optics, communications, IR and medical applications. We offer the broadest range of materials including: fluorides, oxides, sulfides, silicides, precious & non-precious metals, e-beam pre-melted shaped sources, sputtering targets and multiple types of granules. Custom products available. Contact: Christopher Helwig, Sales, Christopher.Helwig@materion.com

Materion Precision Optics #2007
2 Lyberty Way, Westford, MA, 01886 USA
+1 978 692 7513
MPO@materion.com; www.materion.com/precisionoptics

Featured Product: Precision Optical Filters, Wafer Level Processing, Projection Display Components
Materion Precision Optics is the world’s leading provider of precision optical filters and custom thin film coating services. We employ innovative process technologies to produce a broad array of products including complex optical filters, filter arrays, wafer level coatings, thin film getters, mirrors, color wheels, and complex optical sub-assemblies. Materion Beryllium & Composites is a global producer of structural components and mirror systems for optical applications.

MaxEmil Photonics Corporation #2431
14125 Telephone Ave. Suite 7, Chino, CA, 91710 USA
+1 909 465 1800
sales@maxemilphotonics.com; www.maxemilphotonics.com

Featured Product: Diamond Turning, Imaging & Lighting optics, High Precision Tooling & Molding Capabilities, Assembly
MaxEmil offers state-of-the-art in-house optics equipment, facilities and experienced engineers. Services include optical system design, custom close tolerance molding, high-precision tooling, and optical mechanical and electronic system integration and assembly. In-house tooling facilities allows us to provide quick turn-around with high precision quality. Also, for quality assurance, we are ISO 9000 certificated. Contact: Eric Carlson, Director, sales@maxemilphotonics.com

Meadowlark Optics, Inc. #1916
5964 Iris Pkwy, Frederick, CO, 80530 USA
+1 303 833 4333; fax +1 303 833 4335
sales@meadowlark.com; www.meadowlark.com

Featured Product: High speed, High Power, High Resolution 1920x1152 Spatial Light Modulator, Achromatic FLC Rotator
Meadowlark Optics designs, develops, and manufactures an extensive range of high quality polarization systems and components including liquid crystal devices from the UV to MWIR. Standard products include Spatial Light Modulators, Waveplates, Rotators, Tunable Optical Filters, Tri-Color Filters, Polarizers, Polarmeters, Pockels Cells and more. We can also customize a solution to exactly fit your needs. Ask us about our fabrication services and custom capabilities. Contact: Kelly Gregorak, VP of Sales & Marketing, marketing@meadowlark.com

MechOnics ag #4529
Unnuetzstr 2/B, Muenchen, 81825 Germany
+49 89 4202 4207; fax +49 89 4202 4206
info@mechonics.de; www.mechonics.de

Featured Product: Micro-/Nanopositioning devices with slip-stick drive for standard, HV, UHV and cryogenid applications
The company mechOnics ag was founded in year 2003 in Germany and is specialized on development, production and sales of innovative piezo inertial drives (slip-stick motion) with very good price/performance ratio. We offer: One axis positioners up to 50 mm, travel range and repeat abilities up to 1 nm, Ultra-compact 3D positioners with 2 or 10 mm travel range, Compact tip/tilt mirror positioners, Cryogenic positioners, Battery driven controllers, USB-controllers for open and closed loop. Contact: Hubert Muenzer, CEO, muenzer@mechonics.de

MegaWatt Lasers, Inc. #116
PO Box 24190, Hilton Head Island, SC, 29925-4190 USA
+1 843 342 7221
sales@megawattlasers.com; www.megawattlasers.com

MegaWatt Lasers manufactures application specific solid-state lasers and components for medical, industrial, and defense applications. Standard products include a complete line of high-quality diffuse-reflector pump chambers for solid-state laser applications. Our pump chamber designs are well suited for both breadboard experimentation as well as OEM applications. MegaWatt Lasers is known for its line of Eyesafe Er-Glass microlasers for various remote sensing applications. Contact: Scott Hamlin, President, sales@megawattlasers.com
Meller Optics, Inc. #1720
120 Corliss St, Providence, RI, 02904-2602 USA
+1 401 331 3717; fax +1 401 331 0519
sales@melleroptics.com; www.melleroptics.com
Meller Optics has been providing high quality optics to defense, medical, laser and industrial markets for over 50 years. Specializing in grinding and polishing of hard, durable materials. Meller has developed high-speed, low-cost finishing processes for Sapphire, Ruby, Laser Glasses, Fused Silica, Zinc Selenide, Germanium, Silicon, Fluorides and Ceramics. Configurations include windows, substrates, lenses, domes and prisms. Meller Optics is an ISO9001:2008 certified and ITAR Registered. Contact: Craig Schweriner, Sales Mgr, craig@melleroptics.com

Menlo Systems GmbH #707
Am Klopferspitz 19A, Martinsried, Bavaria, 82152 Germany
+49 89 189166 0; fax +49 89 189166 111
sales@menlosystems.com; www.menlosystems.com
Featured Product: SmartComb, FC1500-250-ULNL, YLMO-930, ELMO 780, TERA K15
Precision in Photonics. Together we shape light. Menlo Systems, a leading developer and global supplier of instrumentation for high-precision metrology, was founded in 2001. Known for the Nobel Prize-winning optical frequency comb technology, the company offers complete solutions based on ultrafast lasers and synchronization electronics. Applications for our products and solutions span from research laboratories to truly industrial tasks. Contact: Jason Reeves, Sales Engineer, j.reeves@menlosystems.com; Ida Kozma, Head of Sales and Marketing, i.kozma@menlosystems.com

Meopta - optika, s.r.o. #4313
Kabelkova 1, Prerov, 75002 Czech Republic
+420 581 241 111; fax +420 581 242 222
meopta@meopta.com; www.meopta.com

MERSEN OptoSiC #5441
Businesspark Geb 6407, Rupert-Mayer-Str 44, Munich, 81379 Germany
+49 89 7807 239 0; fax +49 89 7807 239 211
optosic@mersen.com; www.optosic.com
Featured Product: OptoSiC manufactures high-performance laser galvo scanning mirrors from 10mm - 500mm in SiC Material
optoSiC, a division of the MERSEN Group, develops and produces innovative Laser galvo scanning mirrors made of the futuristic Material SiC (Silicon Carbide). SiC optoSiC+ scanning mirrors have Low moment of inertia, High resonant frequency, Thermal Stability, Low dynamic flatness PV and are non toxic (Beryllium replacement). Our customers are established in the high-end markets. Contact: Matthias Struckmeyer, Director Sales Laser Industry, m.struckmeyer@optosic.com; Natalie Bauer-Carlozzo, Sales & Marketing, natalie.bauer-carlozzo@optosic.com

Mesa Photonics, LLC #4266
1550 Pacheco St, Santa Fe, NM, 87505 USA
+1 505 216 5015; fax +1 866 569 6994
info@mesaphotonics.com; www.mesaphotonics.com

MeshTel #6003
2562 Silver State Pkwy Ste F1, Minden, NV, 89423 USA
+1 775 267 5959; fax +1 775 267 5958
info@meshtel.com; www.meshtel.com
Featured Product: High Efficient Laser Diode Source (400 - 1600nm, up to 200mW) with Versatile Fiber Coupling Assembly
MeshTel (Intellite, Inc.) Manufacturer & supplier of laser diodes, standard / custom made diode / DPSS free space or SM / MM fiber coupled, CW or Q-switched (AOM) laser modules / systems, including but not limited to Low Noise, Single Longitudinal Mode types, in visible (375nm - 680nm) and IR (700 nM - 1600nM) spectrum with output power up to 20 W. High Density laser safety goggles. Flexible silica / silica side emitting optical fibers. Closed-Loop galvanometers / actuators. Beam shaping optics. Contact: Michael Eshaghnia, Technical Sales, info@meshtel.com; Steve Ozad, Email Manager, info@meshtel.com

Meyer Burger (Germany) GmbH #4529
An der Baumschule 6-8, Hohenstein-Ernstthal, 09337 Germany
+49 3723 671 101; fax +49 3723 641 1000
info-hohenstein@meyerburger.com; www.meyerburger.com
Featured Product: IonScan - Systems for ultra-precise film thickness trimming and ion beam figuring
Meyer Burger is a leading global technology company specialising on innovative systems and processes based on semiconductor technologies. The company’s focus is on photovoltaics (solar industry) while its competencies and technologies also cover important areas of the semiconductor and the optoelectronic industries as well as other selected high-end markets based on semiconductor materials. Contact: Don Veri, Area Sales Manager, don.veri@meyerburger.com; Sebastian Kranais, Communication & Marketing Manager, sebastian.kranais@meyerburger.com

MH GoPower Company Limited #5268
No 6-2 Luke 3rd Rd Luzhu District, Kaohsiung City, 821 Taiwan
+886 7 695 5900; fax +866 7 695 5950
info@mhgopower.com; www.mhgopower.com
MH GoPower Company Limited (MHGP) is a Taiwanese manufacturer of high performance Vertical Multi-Junction PV cells that enable laser power transmission for Power over Fiber and power beaming applications using 9xx nm lasers. MHGP recently released a line of photovoltaic receivers with unparalleled flexibility in size, voltage, and power that is fueling the emergence of new PoF applications, including driving high voltage, high power IGBTs, and high power delivery to remote sensors and UAVs. Contact: Mico Perales, VP of Business Development, mico.perales@mhgopower.com; John Wu, VP of System Engineering Dept., john.wu@mhgopower.com
**Micro Laser Systems, Inc.**

**Featured Product: Fiber Collimators for Quantum Optics, Lidar & Communications**

We are a manufacturer of Diffraction Limited Fiber Coupled Laser Systems, Optical Systems and Fiber Optic Systems from 240nm to 2000nm. Unique products include Fiber Collimators & XHV gauge for use in Quantum Optics, various size Fiber Collimators and collectors for Lidar, Large Fiber Collimators for Free Space Communications and lasers for metrology. We design and build all our optics, lasers and fiber optics at our factory in California. Use our expertise on your next project. Contact: Rich Richardson, President, rich@microcircuitlabs.com

**MicroCircuit Laboratories LLC**

**Featured Product: Hermetic package leak rates E10-atm-cm³/sec air; controlled internal environment; low temperature**

MCL's hermetic package sealing processes provide air leak rates E10 atm-cm³/sec, magnitude lower than MIL-STD-883 Test Method 1014 for Aerospace Class K Devices. Developmental services include the complete hermetic package sealing process with automated leak testing. Standard hermetic packages range from 1.2 x 1.6 mm surface mount chip carriers to more complex, larger systems with multiple glass feedthroughs. Contact: Rich Richardson, President, rich@microcircuitlabs.com

**Microfluidic ChipShop GmbH**

**Featured Product: The os7500 Accelerometer: Offering unmatched multiplexing capabilities with other FP and FBG sensors**

Micron Optics Inc., a leading provider of tunable optical technologies, offers a comprehensive portfolio of components and instruments including the best-in-class OEM swept laser sources, optical test and measurement systems, and Fiber Fabry-Perot tunable filters and interferometers. Micron Optics’ products enable broad-range applications in fiber-optic sensing, laser imaging, optical coherence tomography, as well as optical communications. Contact: Mike Baez, sales@micronoptics.com

**Micro-Hybrid Electronic GmbH**

**Featured Product: Infrared components (IR emitter, pyroelectric and thermoelectric detectors), gas sensors**

Micro-Hybrid Electronic GmbH is a high technology company for microsystems technology and infrared components. We develop customer specific mechanical microelectronics and infrared systems and are internationally leading in the field of infrared sensors. Micro-Hybrid designs leading-edge hybrid applications and LTCC technology for the global core markets of medical and environmental technology as well as aviation. Micro-Hybrid is part of the Micro-Epsilon group. Contact: Christina Fiedler, Product Manager, C.Fiedler@micro-hybrid.de; Annekathrin Rüdiger, Sales, A.Ruediger@micro-hybrid.de

**Micron Optics, Inc.**

**Featured Product: The Quantum Optics, Lidar & Communications**

We design and build all our optics, lasers and fiber optics at our factory in California. Use our expertise on your next project. Contact: Norma Adachi, Marketing Dir., norma@microlaser.com

**Microfluidic ChipShop GmbH**

**Featured Product: The os7500 Accelerometer: Offering unmatched multiplexing capabilities with other FP and FBG sensors**

Micron Optics Inc., a leading provider of tunable optical technologies, offers a comprehensive portfolio of components and instruments including the best-in-class OEM swept laser sources, optical test and measurement systems, and Fiber Fabry-Perot tunable filters and interferometers. Micron Optics’ products enable broad-range applications in fiber-optic sensing, laser imaging, optical coherence tomography, as well as optical communications. Contact: Mike Baez, sales@micronoptics.com

**LiDAR Demonstration**

**Monday - Thursday 29 January – 1 February**

Location: North Exhibit Level, outside Hall D

LiDAR is the core component of optical sensing technology powering autonomous vehicles, and high-performance data is required for safe self-driving. Stop by to see Luminar’s breakthrough LiDAR perception capabilities enabling the autonomous future.

**Industry Keynote Talk: Room 21 • 11:00 am Thursday**
Micro Photon Devices
Via Stradivari 4, Bolzano, AG, 39100 Italy
+39 31 286 0103; fax +39 31 286 0104
info@mikrotron.de; www.mikrotron.de

Mikrotron GmbH
Landschuter Str 20-22, Unterschleißheim, 85716 Germany
+49 89 7263 4200; fax +49 89 7263 4299
info@mikrotron.de; www.mikrotron.de

Mikro-Tasarim Elektronik Sanayi VE Ticaret Anonim Sirketi
ODTU-Teknokent ODTU-MET, Alani A-1 Blok 4 Bolum Ofis 3/A, Ankara, 06530 Turkey
+90 312 286 0103; fax +90 312 286 0104
sales@mikro-tasarim.com.tr; www.mikro-tasarim.com.tr

Mindrum Precision, Inc.
10000 4th St, Rancho Cucamonga, CA, 91730-5723 USA
+1 909 989 1728; fax +1 909 987 3709
sales@mindrum.com; www.mindrum.com

Minus K Technology Inc.
460 Hindry Ave Ste C, Ingolden, CA, 90301-2044 USA
+1 310 348 9656; fax +1 310 348 9638
sales@minusk.com; www.minusk.com

MOS is a professional manufacturer of optical components, producing prism, lens, filter and so on used in many industries such as electricity, telecommunication, electronics, optical research institutes, and making precision optical components related to major industries such as space equipment, core parts for defense, advanced medical equipment, laser equipment, core parts for precision instruments, semiconductor equipment, etc. Contact: Amy Kang, Sales, sales@mosoptics.com

Mightex Systems
1241 Quarry Lane, Suite 105, Pleasanton, CA, 94566 USA
+1 416 840 4991; fax +1 416 840 6541
sales@mightex.com; www.mightex.com

Featured Product: Lens, Prism, Mirror, Filter, Assembly, IR lens

Mindrum Precision, Inc. #1724
10000 4th St, Rancho Cucamonga, CA, 91730-5723 USA
+1 909 989 1728; fax +1 909 987 3709
sales@mindrum.com; www.mindrum.com
Custom machining and polishing of ultra-precision components and assemblies. Complex shaping ability with 5-axis CNC milling, CNC turning and CNC surface grinding. Plano, spherical and cylindrical polishing using spindle, continuous and double-sided equipment. We work with hard materials i.e. glass, quartz, sapphire and ceramics etc. Also work with conventional materials i.e. aluminum, steel and titanium etc. Other capabilities include glassblowing, acid etching, soldering, wire EDM and dicing. Contact: Linda Kondris, Technical Sales, linda@mindrum.com; Adam Pohl, VP Engineering, adam@mindrum.com

Minus K Technology Inc. #5073
460 Hindry Ave Ste C, Ingolden, CA, 90301-2044 USA
+1 310 348 9656; fax +1 310 348 9638
sales@minusk.com; www.minusk.com

Featured Product: New LC-4 isolator supports heavier payloads, requires no air or electricity and uses little room

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, micro-hardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: table-top platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems. Contact: Steve Varma, Operations Manager, stevev@minusk.com

Mindrum Precision, Inc. #1724
10000 4th St, Rancho Cucamonga, CA, 91730-5723 USA
+1 909 989 1728; fax +1 909 987 3709
sales@mindrum.com; www.mindrum.com
Custom machining and polishing of ultra-precision components and assemblies. Complex shaping ability with 5-axis CNC milling, CNC turning and CNC surface grinding. Plano, spherical and cylindrical polishing using spindle, continuous and double-sided equipment. We work with hard materials i.e. glass, quartz, sapphire and ceramics etc. Also work with conventional materials i.e. aluminum, steel and titanium etc. Other capabilities include glassblowing, acid etching, soldering, wire EDM and dicing. Contact: Linda Kondris, Technical Sales, linda@mindrum.com; Adam Pohl, VP Engineering, adam@mindrum.com

Minus K Technology Inc. #5073
460 Hindry Ave Ste C, Ingolden, CA, 90301-2044 USA
+1 310 348 9656; fax +1 310 348 9638
sales@minusk.com; www.minusk.com

Featured Product: New LC-4 isolator supports heavier payloads, requires no air or electricity and uses little room

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, micro-hardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: table-top platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems. Contact: Steve Varma, Operations Manager, stevev@minusk.com

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10000 4th St, Rancho Cucamonga, CA, 91730-5723 USA
+1 909 989 1728; fax +1 909 987 3709
sales@mindrum.com; www.mindrum.com
Custom machining and polishing of ultra-precision components and assemblies. Complex shaping ability with 5-axis CNC milling, CNC turning and CNC surface grinding. Plano, spherical and cylindrical polishing using spindle, continuous and double-sided equipment. We work with hard materials i.e. glass, quartz, sapphire and ceramics etc. Also work with conventional materials i.e. aluminum, steel and titanium etc. Other capabilities include glassblowing, acid etching, soldering, wire EDM and dicing. Contact: Linda Kondris, Technical Sales, linda@mindrum.com; Adam Pohl, VP Engineering, adam@mindrum.com

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460 Hindry Ave Ste C, Ingolden, CA, 90301-2044 USA
+1 310 348 9656; fax +1 310 348 9638
sales@minusk.com; www.minusk.com

Featured Product: New LC-4 isolator supports heavier payloads, requires no air or electricity and uses little room

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, micro-hardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: table-top platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems. Contact: Steve Varma, Operations Manager, stevev@minusk.com

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sales@mindrum.com; www.mindrum.com
Custom machining and polishing of ultra-precision components and assemblies. Complex shaping ability with 5-axis CNC milling, CNC turning and CNC surface grinding. Plano, spherical and cylindrical polishing using spindle, continuous and double-sided equipment. We work with hard materials i.e. glass, quartz, sapphire and ceramics etc. Also work with conventional materials i.e. aluminum, steel and titanium etc. Other capabilities include glassblowing, acid etching, soldering, wire EDM and dicing. Contact: Linda Kondris, Technical Sales, linda@mindrum.com; Adam Pohl, VP Engineering, adam@mindrum.com

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460 Hindry Ave Ste C, Ingolden, CA, 90301-2044 USA
+1 310 348 9656; fax +1 310 348 9638
sales@minusk.com; www.minusk.com

Featured Product: New LC-4 isolator supports heavier payloads, requires no air or electricity and uses little room

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, micro-hardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: table-top platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems. Contact: Steve Varma, Operations Manager, stevev@minusk.com
Photonics West Exhibitor Listing

**SPONSOR**
**MIRPHAB** #4062
17 Rue Hamelin, Paris, 75016 France
www.mirphab.eu

**Featured Product:** Mid-Infrared Chemical Sensors
MIRPHAB is an all-services Pilot Line for the fabrication of Mid-Infrared sensors, a single access point to the best technology, facilities and expertise provided by a consortium of leading companies in the field of photonics. MIRPHAB provides services for device design and fabrication from chip processing on wafer level to packaging and testing. MIRPHAB reduces the barriers to introduce your chemical sensor into the market by granting your proposal up 230k€. www.mirphab.eu. Contact: Ana González, Project Leader, ana.gonzalez@epic-assoc.com; Jose Pozo, Director of Technology and Innovation, jose.pozo@epic-assoc.com

**MIRPHAB** #3077
6 F Shin-Kokusai Bldg, 3-4-1 Marunouchi Chome, Chiyoda-ku Tokyo, 100-8303 Japan
+81 3 3216 3947; fax +81 3 3216 3999
info@mitsubishi-cable.co.jp; www.mitsubishi-cable.co.jp

Mitsubishi Cable Industries is Japan’s leading developer and supplier of specialty optical fiber, cables, fiber bundles and other assemblies for high power laser delivery, DUV to IR spectroscopy, and medical applications. We offer complete solutions from initial design and prototyping through high volume production. Our engineers would welcome the opportunity to meet you and discuss solutions to your application challenges at Photonics West 2018. Contact: James Stevens, Fiber Optics Marketing Manager, James-Stevens@comcast.net

**Mirracle Technologies, Inc.** #4214
4905 Central Ave Ste 200, Richmond, CA, 94804 USA
+1 510 524 8820; fax +1 510 542 8806
info@mirracletech.com; www.mirracletech.com

**Featured Product:** Dual-axis, quasi-static optical MEMS mirror scanners and related driver electronics and hardware
Mirracle (MTI) offers beam-steering MEMS mirrors and supporting hardware and software. Based on patented MEMS technology, products include the world’s fastest large scan-angle two-mirrors capable of point-to-point, vector, and other types of scanning. MTI is the only provider of tip-tilt MEMS actuators in combination with mirrors from 0.8 to 7.5mm diameter with a variety of specifications. Plug-and-play R&D packages include three MEMS, hardware, electronics and a software development kit. Contact: Sales Team, Sales, sales@mirracletech.com

**Mirracle Technologies, Inc.** #4212
800 Westchester Ave Ste 5306, Rye Brook, NY, 10573-1354 USA
+1 914 253 0777; fax +1 914 253 0790

Mirracle is a world leader in mid-IR Quantum Cascade lasers (QCL) development and manufacturing. Our latest product is a very compact QCL based gas analyzer module based on photoacoustics. Our patented technology is a game changer because it can measure in real time and in very small quantities pollutants and industrial process gas components: NO, NO 2, N2O, formaldehyde, ammonia, CO2, methane. We also manufacture multi-watt level QCL lasers for military countermeasure and spectroscopy DFB-QCL. Contact: Mathieu Carras, President, mathieu.carras@mirsense.com; Adrien Dequaire, Sales & marketing manager, adrien.dequaire@mirsense.com

**Mirracle Technologies, Inc.** #4418
965 Corporate Blvd, Aurora, IL, 60502-9176 USA
+1 630 820 9666; fax +1 630 978 5394
info@mitutoyo.com; www.mitutoyo.com

Mitutoyo America Corporation, the world’s largest provider of measurement and inspection solutions, offers a complete selection of machines, sensors, systems and services with a line encompassing CMMs, vision, form, precision tools and instruments, and metrology data management software. Mitutoyo’s nationwide network of metrology centers provides application, calibration, service, repair and educational programs for our 8,500+ metrology products. Contact: Paul Nuara, Optics Specialist, info@mitutoyo.com

**MIRPHAB** #5369
216 Bowen Hall/Princeton Univ, 70 Prospect Ave, Princeton, NJ, 08540-5211 USA
+1 609 258 2043; fax +1 609 258 1177
mirthe@princeton.edu; www.mirthecenter.org

**Featured Product:** Mid infrared gas sensors, quantum cascade lasers, detectors, sensor systems
MIRTHE+ Photonics Sensing Center at Princeton University advances the knowledge and technology pertaining to mid-infrared photonics sensing technologies for health, the environment, and homeland security applications. Through Academia-Industry Collaboration Program, member companies leverage a unique access to innovative research and network of highly respected expertise from academia and industry ultimately focused on moving photonics sensing technologies towards commercialization. Contact: Bernadeta Wysocka, Industrial Liaison, bwysocka@princeton.edu

**MIRPHAB** #507
1791 Deere Ave, Irvine, CA, 92606-4814 USA
+1 949 863 3144; fax +1 949 253 1680
sales@newport.com; www.newport.com

MKS Instruments, Inc. is a global provider of instruments, subsystems and process control solutions that measure, control, power, monitor, and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity. Our primary served markets include semiconductor capital equipment, industrial manufacturing, environmental, medical, life sciences and scientific research. Additional information can be found at www.mksinst.com. Contact: Bill Casey, bill_casey@mksinst.com

**MIRPHAB** #507
220
www.spie.org/PW • Tel: +1 360 676 3290
Photonics West Exhibitor Listing

ML Optic Corp. #2047
Jiangning Development Zone, 398 Pugang St, Nanjing, Jiangsu, 21100
China
+86 25 844 36288; fax +86 25 844 33188
info@mloptic.com; www.mloptic.com
Featured Product: Advanced optics, assemblies and integrated
system of opto-mechatronics.
MLOptic is a leading worldwide manufacturer of customized optical
components, assemblies & systems. With an innovative facility based in
Nanjing (China) since 1996, and global sales & support offices at
key global locations, MLOptic utilizes cutting edge technologies,
top advanced fabrication equipment and state-of-the-art testing
instrumentation & methods to turn ideas and prototypes into high-quality
cost-effective solutions scaled up to serial production. Contact: Edward
Patton, VP Business Development, edward.edward@mloptic.com

Monocrom #1925
Vilanova 6, Vilanova i la Geltrú, 08800 Spain
+34 93 814 9450; fax +34 93 814 3767
info@monocrom.com; www.monocrom.com
Featured Product: High power diode lasers, solid state lasers,
gain modules, low power diode lasers, laser electronics
Monocrom is a young spirit, fast growing company, with a global
presence. Since 1993, we are designing and manufacturing high
quality laser devices and laser electronic components for an array of
industries. Monocrom is an UNE EN ISO 9001:2008 registered
company with a clear insight into regulatory compliance and
sustainable business practices. A growth mindset team, flexibility
and deep understanding of customers’ needs make of Monocrom a
valuable partner for every business. Contact: Elad Volfin, VP Sales &
Business Development, e.volfin@monocrom.com; Carles Oriach,
Director of Strategy & Development, c.oriach@monocrom.com

MLD Technologies, LLC #5233
2672 Bayshore Pkwy Ste 701, Mountain View, CA, 94043-1023 USA
+1 650 938 2488; fax +1 650 938 3113
info@mldtech.com; www.mldtech.com
MLD offers high-performance optical coatings and components;
specializing in the design, development and manufacture of ion-
beam-sputtered, low optical-loss, laser-damage resistant thin-films
for the UV-visible-IR spectral region. Product applications include
lasers, laser devices, non-linear crystals, medical instruments
and other photonic devices. MLD has specialized capabilities in
Large Area IBS coatings and Atomic Layer Deposited (ALD)
coatings for optical applications. Contact: Gary DeBell, Principal,
info@mldtech.com; Len Mott, Principal, info@mldtech.com

MONTFORT Laser GmbH #5363
Im Holderlob 6A, Goetzis, Vorarlberg, 6840 Austria
+43 720 733 462; fax +43 660 335 191260
info@montfortlaser.com; www.montfortlaser.com
Featured Product: M-NANO: extremely compact, all-in-one
Nd:YAG nanosecond lasers, up to >100mJ energy, <10ns pulses
MONTFORT Laser makes extremely compact pulsed DPSSL
lasers with a performance unique for their small form factor. The
M-NANO compact Nd:YAG nanosecond laser generates up to
>100mJ pulse energy from a palm-sized nanosecond laser head
product for applications including LIBS, PIV, LIF, Photoacoustics,
LIDAR, LIDT, etc. MONTFORT Laser offers Specialty Ultrafast
Lasers such as an Ytterbium-doped DPSSL laser oscillator with
multi-Watt and sub-100-fs pulse duration with amplification up
to 100W. Contact: Daniel Kopf, CEO, dk@montfortlaser.com

Modulight #1547
Hermiankatu 22, Tampere, 33720 Finland
+358 20 743 9000
usmail@modulight.com; www.modulight.com
Featured Product: Modulight manufactures lasers and SLDs for
400 – 2000nm wavelength in our 40,000sq.ft. fab in Tampere,
Finland
Modulight designs & manufactures lasers and optics. We deliver
lasers from processed wafer to chip to system for many well-
known companies ranging from medical, industrial to military.
Several have been in production for 10 years. We support our
OEMs with design and manufacturing of semiconductor, optics,
software, mechanics, electronics, industrial design, usability
and system/subsystem architecture. We make our lasers in our
wholly owned 40,000 sq. ft. fab in Tampere, Finland. Contact:
Seppo Orsila, Executive Chairman, seppo.orsila@modulight.
com; Kati Reiman, Coordinator, kati.reiman@modulight.com

Moore Nanotechnology Systems, LLC #5129
230 Old Homestead Hwy, Swanzey, NH, 03446-2120 USA
+1 603 352 3030; fax +1 603 352 3363
sales@nanotechsys.com; www.nanotechsys.com
Featured Product: Our Nanotech 250UPLv2 is the most
compact ultra-precision CNC lathe style system
Moore Nanotechnology Systems, LLC is a leading global supplier of
ultra-precision machining systems for diamond turning, micro-milling,
micro-grinding, and glass press molding. With machine installations in
33 different countries, Nanotech’s 2 - 5 axes symmetric and freeform
optical machining systems offer the flexibility and reliability to cover
R&D or production needs in a broad range of current and emerging
markets. Sub-nanometer finish and sub-micron form is possible
directly off machines. Contact: Jeff Perra, Sales Engineer, perr@
nanotechsys.com; Bob Gassín, VP of Sales, cassin@nanotechsys.com

Moulded Optics GmbH #4529
Steinstr 13-15, Schöffengrund, 35641 Germany
+49 720 733 462; fax +49 660 335 191260
info@montfortlaser.com; www.montfortlaser.com
Featured Product: Blank moulded optical lenses, prisms and
other optical components
Moulded Optics GmbH, an ISO 9001:2008 certified and ITAR
registered global OEM optics supplier headquartered in Germany.
Moulded Optics GmbH offers many types of standard precision
molded Aspheric Lenses, in diameter sizes from 4 mm to 80 mm and
LED Half-Ball Lenses, in diameter sizes of 3 mm, 4 mm, 5 mm and 6
mm, of B270, F2 and Borosilicate glass materials, as well as, many
other types of custom designed and manufactured precision molded
GLASS and injection-molded optical components. Contact:
Martin Pfeil, Managing Director, martin.pfeil@mouldedoptics.com

Mox - Polymicro #1947
18019 N. 25th Ave., Phoenix, AZ, 85023-1200 USA
+1 602 375 4100
polymicrosales@mox.com; www.mox.com/polymicro
Featured Product: Mox - Polymicro is a world premier
manufacturer of silica optical fibers and fiber assemblies
Mox – Polymicro manufactures multimode fused silica optical
fibers for industrial, medical and spectroscopy applications.
Providing radiation resistant, deep-UV, and broad-spectrum
optical fibers; hollow silica waveguides; fiber optic cables and
assemblies; optical fiber bundles and multi-fiber arrays. Contact:
Teo Tichindelean, Global Product Manager Optical Fiber
Moveon Technologies Pte. Ltd. #4510
4 Kaki Bukit Ave 1, Singapore, 417939 Singapore
+65 6741 1181; fax +65 6741 1187
enquiry@moveon.bz; www.moveon.bz

Featured Product: Replication Optics withstanding Solder Re-flow (265c 3 passes) Nanoscribe 2 Photon Absorption
Our team of experienced optical engineers are opening new doors for advanced solutions. Ensuring the precision and feasibility of our designs, we use cutting-edge simulation software like Trace-Pro, OSLO, Zemax and Code-See. Injection Molding and Replication are the two main processes that we apply. In injection molding, we make use of highly precise, electric injection molding machines that are equipped with optical screws and barrels calibrated in the nano to sub-microns. Contact: Jordan, New Prod - R&D, Jordan@moveon.bz; Rick Brideran, Tech Dir, Rick@moveon.bz

MOXTEK, Inc. #149
SPIE Corporate Member
452 W 1260 N, Orem, UT, 84057-2941 USA
+1 801 225 0930; fax +1 801 221 1121
info@moxtek.com; www.moxtek.com

MPA Crystal Corp. #1835
SPIE Corporate Member
1702 Meridian Ave Ste 234, San Jose, CA, 95125-5586 USA
+1 408 300 0301; fax +1 408 300 0282
pmpa@mpa-crystal.com; www.mpa-crystal.com

Featured Product: Optics of Sapphire, Fused silica, optical glass; window, lens, rod, waveguide, light-guide, and more
MPA Crystal is the US Office of our manufacturer-Nanjing Sapphire Electro-Optics Co. in China. We specialize in producing crystal optics mainly made of Sapphire, Fused Silica, Glass, Silicon. Coating is also available as request. Products include Windows, Lenses (Plano-Convex, Plano-Concave, Bio-Convex, Bio-Concave), Ball lenses, Rods, Tips, Waveguides, Lightguides, Micro-Optics and more, all custom made to your drawings and design. Contact: Pauline Liang, Manager, pmpa@mpa-crystal.com

MPS Micro Precision Systems AG #1452
Ch du Long-Champ 95, Biel/Bienne, 2504 Switzerland
+41 32 138 00 00; fax +41 32 138 01 01
info@mpmg.ch; www.mpsmg.ch

Featured Product: Laser beam stabilization systems - automated compensation of beam deviations is position and angle
MRC Systems shows its laser beam stabilization products. The systems are used to stabilize the position and direction of laser beams against spatial fluctuations. Such fluctuations can be due to thermal or mechanical drift, vibrations, laser pointing, or shocks. Deviations resulting from a beam transfer over separate mechanical bases or optical tables can also be compensated. The systems can be integrated into production processes or scientific/engineering laser applications. Contact: Jochen Kurz, Sales Manager, j.kurz@mrc-systems.de; Marcus Dr. Goetz, CEO, info@mrc-systems.de

MRSI Systems #4568
101 Billerica Ave. Bldg 3, North Billerica, MA, 01862 USA
+1 978 667 9449; fax +1 978 667 6109
sales@mrsystems.com; www.mrsystems.com

Featured Product: MRSI Systems - High Speed, Flexible, 3 Micron Die Bonder for High Volume Manufacturing
MRSI Systems is a leading manufacturer of fully automated, ultra-precision, high speed die bonding and epoxy dispensing systems. We enable customers to optimize the performance of their process including yield, throughput and uptime by building systems that use our unique expertise. Our solutions deliver the best financial returns in the industry, while integrating seamlessly into our customer's production. Markets include Telecom/Datacom, Aerospace & Defense, Medical Devices and Computers. Contact: Daniel Crowley, VP of Sales, sales@mrsystems.com; Jennifer Russo, Marketing, marketing@mrsystems.com

MPNICS Co. Ltd. #68
45 Cheomdan Venture so-ro, Buk-gu Gwangju, 61003 Korea, Republic of
+82 62 973 9520; fax +82 62 973 9521
www.mpnics.com

Featured Product: Micro Glass Lens
MPNICS Co., Ltd. provides development and manufacturing solution to customers by suggesting specialized products and services based on optical design and manufacturing technology specialized in micro-glass optical components such as optical communication micro lens and high-power laser beam delivery. Contact: Jesse Chao, C.E.O, jesse.chao@mpnics-usa.com; Tae Sung, Sales Manager, tae.sung@mpnics-usa.com

MRC Systems GmbH #2443
Hans-Bunte-Str 10, Heidelberg, 69123 Germany
+49 6221 13803 00; fax +49 6221 13803 01
info@mrc-systems.de; www.mrc-systems.de

Featured Product: Laser beam stabilization systems - automated compensation of beam deviations is position and angle
MRC Systems shows its laser beam stabilization products. The systems are used to stabilize the position and direction of laser beams against spatial fluctuations. Such fluctuations can be due to thermal or mechanical drift, vibrations, laser pointing, or shocks. Deviations resulting from a beam transfer over separate mechanical bases or optical tables can also be compensated. The systems can be integrated into production processes or scientific/engineering laser applications. Contact: Jochen Kurz, Sales Manager, j.kurz@mrc-systems.de; Marcus Dr. Goetz, CEO, info@mrc-systems.de

MPS Micro Precision Systems AG #1452
Ch du Long-Champ 95, Biel/Bienne, 2504 Switzerland
+41 32 138 00 00; fax +41 32 138 01 01
info@mpmg.ch; www.mpsmg.ch

Featured Product: Laser beam stabilization systems - automated compensation of beam deviations is position and angle
MRC Systems shows its laser beam stabilization products. The systems are used to stabilize the position and direction of laser beams against spatial fluctuations. Such fluctuations can be due to thermal or mechanical drift, vibrations, laser pointing, or shocks. Deviations resulting from a beam transfer over separate mechanical bases or optical tables can also be compensated. The systems can be integrated into production processes or scientific/engineering laser applications. Contact: Jochen Kurz, Sales Manager, j.kurz@mrc-systems.de; Marcus Dr. Goetz, CEO, info@mrc-systems.de

MRSI Systems #4568
101 Billerica Ave. Bldg 3, North Billerica, MA, 01862 USA
+1 978 667 9449; fax +1 978 667 6109
sales@mrsystems.com; www.mrsystems.com

Featured Product: MRSI Systems - High Speed, Flexible, 3 Micron Die Bonder for High Volume Manufacturing
MRSI Systems is a leading manufacturer of fully automated, ultra-precision, high speed die bonding and epoxy dispensing systems. We enable customers to optimize the performance of their process including yield, throughput and uptime by building systems that use our unique expertise. Our solutions deliver the best financial returns in the industry, while integrating seamlessly into our customer's production. Markets include Telecom/Datacom, Aerospace & Defense, Medical Devices and Computers. Contact: Daniel Crowley, VP of Sales, sales@mrsystems.com; Jennifer Russo, Marketing, marketing@mrsystems.com
Multiphoton Optics GmbH #4529
Bldg C, Friedrich-Bergius-Ring 15, Würzburg, 97076 Germany
+49 170789186
www.multiphoton.de

Featured Product: High Precision 3D Printing Platform LithoPro3D® - the step from prototyping to volume production
Multiphoton Optics offers the High Precision 3D Printing Platform LithoPro3D® for the fabrication of miniaturized designs in automated, scalable processes. The equipment provides real 3D techniques suitable to create structures with a unique degree of freedom, high quality surfaces, industrial scale throughput, highest resolution. Legacy processes for complex structure fabrication can be simply avoided, enabling a significant reduction of resources, of production cost, and time to market.
Contact: Felix Kiesel, Director of Sales, info@multiphoton.de

MW Technologies, Ltda #4432
SPIE Corporate Member
Rua Engenheiro Frederico Ulrich 2650, Maia, Porto, 4470-605 Portugal
+351 220 168 902
info@m-w-technologies.com; www.mw-technologies.com

Featured Product: Pulsed fiber lasers, optical fiber amplifiers, optical ASE sources, laser diode drivers
MW Technologies offers innovative optical sources based on fiber-optic technologies, as well as product design, product development, and engineering services aimed at developing and selling cost-effective and reliable products and solutions that fulfill customer needs. Operating in several markets, its line of products is valuable in many applications such as LIDAR, remote sensing, military testing and targeting, materials processing, imaging, optical communications and R&D. Contact: Miguel Melo, Director, info@m-w-technologies.com

Naked Optics Corp. #1715
SPIE Corporate Member
1090 Delacroix Cir, Nokomis, FL, 34275-4563 USA
+1 908 685 0352; fax +1 908 325 0250
sales@nakedoptics.com; www.nakedoptics.com

Featured Product: Optical Design & Manufacturing
Supplier of optical glass, IR materials and optical components including IR Chalcogenide Glass, ZnS, Si, optical glass strip; molded and CNC-machined blanks of all optical materials. Lenses with aspheric, diffractive & free-form surfaces in IR materials, plastics and metals; optical design services; Polished & coated windows and substrates from prototype to high-volume production.
Contact: Buzz Nesti, buzz@nakedoptics.com; Glen Dunn, Sales Manager, glen@nakedoptics.com

Nalux Co., Ltd. #2633
2-1-7 Yamazaki Shimamato-cho, Mishima-gun Osaka, 618-0001 Japan
+81 75 963 3450; fax +81 75 963 3456
sales@nalux.co.jp; www.nalux.co.jp

Featured Product: Miniature plastic lens module for endoscope. Illumination lens for automobile. Plastic lens for FIR
We are capable of designing, prototyping, and manufacturing of both plastic and glass ultrahigh precision optical elements and good at precision lenses such as micro lens arrays and diffraction gratings, and free-form surfaces. It is also possible to propose not only single optical elements but also optical modules from design to mass production.
Contact: sales@nalux.co.jp; Takuya Odagaki, Sales, odagaki@nalux.co.jp

NANEO Precision IBS Coatings GmbH #4529
SPIE Corporate Member
Heuriedweg 31a, Lindau, 88131 Germany
+49 8382 9113950; fax +49 8382 9113399
sales@naneo.com; www.naneo.com

Featured Product: Beamcombiner, GDD-Mirrors, Beamsplitter, Dichroitic Mirrors, HR +AR-Coatings, customized Coatings
NANEO is specialized in the production of custom made optical coatings for high quality optics in industry and science. Your needs are spectrally, technically, or environmentally challenging - NANEO should be your first solution. We produce high quality optical coatings for applications in the fields of high power lasers, optical measurement systems, telecommunication, aerospace and for scientific research. Contact: Christian Breuss, MBA, christian.breuss@naneo.com; Volker Scheuer, Dr, volker.scheuer@naneo.com

Nanjing Chunhui Science & Technology Industrial Co., Ltd. #4653
30 Andeli, West Yuhua Road, Jiangsu, 210012 China
+86 25 85017564; fax +86 25 52436126
yinh@china-light-guides.com; www.china-light-guides.com

Featured Product: Multi-compound glass optic fiber, silica optic fiber, polymer optic fiber
Nanjing Chunhui is a hi-tech enterprise, focusing on the researching and manufacturing optical fibers for over 40 years. The major products consist of glass/silica/polymer/liquid optic fibers and industrial endoscope etc. The products have wide application in industry, medical aviation, military, illumination, sensor and decoration etc. Moreover, it has the most advanced technology and devices in this field in China. It passed ISO9001 and ISO13485 certification in 2001 and 2016 respectively. Contact: Lihua Yin, Foreign Trade Clerk, yinh@china-light-guides.com; Yan Zhang, Vice General Manager, 12193071@qq.com
Nanjing Co-Energy Optical Crystal Co., Ltd. #2422
Jiangning District, No 1001 Fuying Rd (Union East U-Valley #19 Building), Nanjing JiangSu, 210008 China
+86 25 83616456; fax +86 25 83161456
sales@coeoptics.com; www.coeoptics.com
Featured Product: Sapphire, UV/IR Optics & Sub-Aperture COE Optics is an expert in UV/IR industry. Led by a staff of skilled optical engineers and technicians, COE Optics is application focused and pursues new ways to implement optical technology, enabling advancements in semiconductor manufacturing, industrial metrology, analytical Chemistry and Applied Spectroscopy and medical instrumentation. Contact: Rena Jin, Sales Engineer, renajin@coeoptics.com; William Ma, Sales Manager, sales@coeoptics.com

Nanjing Jason Optoelectronic Technology Co., Ltd. #1507-J
No 72 Wenhua St, Dongshan Rd, Jiangning Nanjing, 21101 China
+86 25 52150831; fax +86 25 52155831
info@jot-tech.cn; www.jot-tech.cn
Featured Product: ZnSe, ZnS, Ge, Si, CaF2, Sapphire, IG6 Windows, Mirror, Spherical and Aspherical optical elements Nanjing Jason Optoelectronic Technology Co., Ltd. is a professional supplier of IR lenses. The Company specializes in processing and coating of a wide array of IR materials, mainly materials including ZnSe, ZnS, Si, Ge, chalcogenide glass, fluorides and sapphire etc. Products of the Company are mainly applied in areas such as high/medium/low power lasers, biomedical optics, thermal imaging, IR windows, measuring, city security and border control surveillance etc. Contact: May Cheng, General Manager, info@jot-tech.cn; Robert Ye, Sales Manager, robertye@jot-tech.cn

Nanjing Yongning Technology Instrument Co., Ltd. #2510
4th Floor, B1 building, Think & Science Park, Nanjing Economic & Technology Development Zone, Nanjing, 210028 China
+86 25 86756175; fax +86 25 86756175
ynzhoubai@163.com; www.yntechs.com
Featured Product: Objective Measuring Solution, High-precision lens The Factory specializes in developing, researching, manufacturing & producing microscopes. We have a team that boasts of experience in optical industry for many years. Covering such fields as industry, medicine, electronics, education, information, telecommunication. The major products are industrial microscope, metallographic microscope, polarizing microscope, planachromatic objective, plan apo objective with long working distance, large field eyepiece, and various accessories of microscopes. Contact: Bei Zhou, Chairman of the Board, ynzhoubeiz@163.com

NanoCanada #4445
11421 Saskatchewan Dr, Edmonton, AB, T5Y 3C1 Canada
+1 780 641 1661
info@nanocanada.com; www.nanocanada.com
NanoCanada is a national organization based in Alberta, Canada that endeavors to coordinate the activities of its nanotechnology hubs and stakeholders, both nationally and internationally, and it does so by working closely with SMEs, MNEs, and other groups, with an objective of more effectively commercializing nanotechnologies for the overall socio-economic benefit of Canada. Contact: Janice Warkentin, External Relations Manager, janice.warkentin@nanocanada.com; Patricia Tokunaga, Partnership Manager, patricia.tokunaga@nanocanada.com

Nanocomp Oy Ltd. #4365
Ensolantie 6, Lehma, 80710 Finland
+35 850 463 6970; fax +35 850 463 6970
contact.nano@nanocomp.fi; www.nanocomp.fi

Nanomagnetics Instruments Ltd. #39
Mustaf Kemal Mahallesi Dumlupinar Bulvari, ODTU MET No 280 B-Blok No 31, Ankara, Ankara, 06510 Turkey
+90 312 299 21 71; fax +90 312 299 21 73
info@nanomagnetics-inst.com; www.nanomagnetics-inst.com

Nanomotion Inc. #4357
1 Comac Loop Ste 14B2, Ronkonkoma, NY, 11779 USA
+1 800 821 6266; fax +1 631 585 1947
nano@nanomotion.com; www.nanomotion.com
Featured Product: Piezoelectric motors, Precision stages, Motion modules Nanomotion’s motors and motion modules have a strong application base in the Optics and Photonics market. The unique relationship of motor force to size makes, motion performance and flexibility of axis design makes this technology well suited for focus, stabilization and beam steering applications. Nanomotion’s products are available in standard and vacuum compatible configurations for motors and precision stages. Linear, rotary, Z-wedge and Goniometer stages are available. Contact: Mike Bryant, National Sales Manager, mike.bryant@nanomotion.com; David Grinere, Sales Engineer, david.grinere@nanomotion.com

nanoplus America, Inc. #2147
777 29th Street, Suite 100, Boulder, CO, 80303 USA
+1 720 453 2454
sales@nanoplus.us; www.nanoplus.us
Featured Product: Distributed Feedback (DFB Lasers at any wavelength between 760 nm and 14000 nm.) nanoplus America, Inc. represents nanoplus Nanosystems and Technologies GmbH in the United States. We distribute the entire range of nanoplus Distributed Feedback Lasers through our office in Boulder, Colorado. nanoplus America, Inc. also offers you technological advice, sales assistance and after sales service for all high-precision lasers and OEM modules of nanoplus. Contact: Johannes Koeth, CEO, koeth@nanoplus.com; Lars Hildebrandt, Divisional Director Sales, lars.hildebrandt@nanoplus.com

Nanoscribe GmbH #4368
Hermann-von-Helmholtz-Platz 1, Eggenstein-Leopoldshafen, 76344 Germany
+49 721 9819800; fax +49 721 981980130
info@nanoscribe.com; www.nanoscribe.com
Featured Product: Photonic Professional GT: 3D Printer for Nano- and Microfabrication Nanoscribe is a worldwide leader in high-precision additive manufacturing on the nano-, micro- and mesoscale. With more than 10 years on the market, we supply 3D printers, resins and related process solutions. Our customers are pioneers and innovation leaders in science and industry, e.g. producing DOEs, micro-optics as well as photonic wire bonds for ICT. More than 1,000 users in 30 countries rely on our products and services. Contact: Alexander Legant, Sales Manager, legant@nanoscribe.com; Benjamin Richter, Sales Manager, richter@nanoscribe.com
nanyang Kaixin Optical & Electronic Co., Ltd. #4766
No569, Xin Chen West Road, Nanyang, 473000 China
+86 377 63563609; fax +86 377 63555039
kaixin@nykaixin.com; www.nykaixin.com
Featured Product: Flat glass, optical prism, IR-CUT, sapphire glass, general IR-CUT filter, optical lens, CCTV lens
Nanyang Kaixin Optical & Electronic Co., Ltd major optical element, component processing and assembly enterprise with longer history. It has a 16,000 square meter production area. Kaixin has a strict Total Quality Management system, and passed the ISO9001:2008 and other international certification system. It has formed four major industrial sectors: projector products, camera accessory products, precision optical measurement and inspection instruments’ products and mobile lens parts. Contact: Zheng Xu, Managing Director, will@nykaixin.com; Yu Chen, Vice General Manager, mickey@nykaixin.com

Nantong Ruisen Optical Element Technology Co., Ltd. #4318
No 55 Shuangong Rd Qutang Town Haian County, Nantong, Jiangsu, 226671 China
+86 513 88793988; fax +86 513 88791396
info@rsgx.net; www.rsgx.net
Featured Product: OptoSpin ultrafast alignment with intelligent loading concepts increases throughput dramatically
Nanosystec provides state-of-the-art alignment and assembly stations for optoelectronics packaging. The stations offer a large degree of automation, high yield and maximum coupling efficiency. The product portfolio includes high precision Alignment and Laser Welding Systems, Alignment and Epoxy Gluing Stations, Laser Soldering and Pick-and-Place Systems. NanoTest performs optical and electrical characterization for Silicon Photonics Devices on wafer and chip level. Contact: Christiane Hummelt, Director of Sales, christiane.hummelt@nanosystec.com; Guenter Hummelt, CTO, guenter.hummelt@nanosystec.com

Nantong Guouguang Optical Glass Co., Ltd. #1507-A
Hai An Industrial Park, No 111 guo Tai Road, Nantong, 226600 China
+86 513 88780295; fax +86 513 88780866
gggbjl@163.com; www.gggxbl.com
Featured Product: Mobile phone camera lens; optical prism; horizontal lying reading glasses; climbing belay glasses
We have developed a number of products, have two invention patents and six patents of utility model through cooperating with several universities including Nanyang Institute of Technology and Henan Industrial Vocational and Technical College. We have a Nanyang Prism Engineering Technology Center qualification and the second prize winner of Nanyang Scientific and Technological progress in May, 2015. And we won Provincial Prism Tooling Engineering Technology Center Certification and National high. Contact: Xinyu Huang, General Manager, xinyusales@126.com; Qiuping Lu, Sales Manager, qiuping6862@126.com

Nanyang Best Optical & Electronic Co., Ltd. #4552-C
FI 1, Bldg Q, Photoelectric Huting Area, High-Tech Zone, Nanyang, China
+377 63298058
bestopticaltech.com; best81.en.alibaba.com
Featured Product: Mobile phone camera lens; optical prism; horizontal lying reading glasses; climbing belay glasses
We have a strict Total Quality Management system, and passed the ISO9001:2008 and other international certification system. It has formed four major工业 sectors: projector products, camera accessory products, precision optical measurement and inspection instruments’ products and mobile lens parts. Contact: Zheng Xu, Managing Director, will@nykaixin.com; Yu Chen, Vice General Manager, mickey@nykaixin.com

NASA Technology Transfer Program #5637
Mail Code: ST22, NASA Marshall Space Flight Center, Huntsville, AL, 35812 USA
+1 256 544 5608; fax +1 256 544 4810
paul.hale@nasa.gov; technology.nasa.gov
Whether putting rovers on Mars or sustaining life in extreme conditions, NASA develops technologies to solve some of the most difficult challenges ever faced. Through our Technology Transfer Program, we are bringing these same technologies down to Earth so that they can be applied to solving real-life problems. We offer a portfolio of patents that are available for licensing, as well as hundreds of free software codes. Stop by our booth and see what we have to offer your business. Contact: Paul Hale, Technology Transfer Specialist, paul.hale@nasa.gov; Tom Knight, Technology Transfer Specialist, tommy.w.knight@nasa.gov

National Aperture, Inc. #1942
Motion Systems Dept., 5 Northwestern Dr, Salem, NH, 03079 USA
+1 603 893 7393; fax +1 603 893 7857
wgrenier@naimotion.com; www.nationalaperture.com
Featured Product: NE Face-Cooled disc lasers overcome cooling limits, scaling beams to kJs w/high beam qual & rep rate
National Energetics is the leading innovator of high-energy and ultra-intense lasers and laser systems based on Chirped Pulse Amplification (CPA) with peak power from 1 TW to above 10 PW. Our CPA lasers feature OPCPA technology and either Ti: sapphire or Nd: glass amplification techniques. We offer CPA lasers not only at traditional near-IR wavelengths but also at longer wavelengths out to the mid-IR. Contact: Curt Frederickson, VP Sales and Marketing, cfrederickson@nationalenergetics.com; Lucian Hand, President, Altos Photonics, sales@altospotonics.com

National Energetics #646
Bldg 1, 4616 W Howard Ln Ste 105, Austin, TX, 78728 USA
+1 512 224 7865
info@nationalenergetics.com; www.nationalenergetics.com
Featured Product: NE Face-Cooled disc lasers overcome cooling limits, scaling beams to kJs w/high beam qual & rep rate
National Energetics is the leading innovator of high-energy and ultra-intense lasers and laser systems based on Chirped Pulse Amplification (CPA) with peak power from 1 TW to above 10 PW. Our CPA lasers feature OPCPA technology and either Ti: sapphire or Nd: glass amplification techniques. We offer CPA lasers not only at traditional near-IR wavelengths but also at longer wavelengths out to the mid-IR. Contact: Curt Frederickson, VP Sales and Marketing, cfrederickson@nationalenergetics.com; Lucian Hand, President, Altos Photonics, sales@altospotonics.com

SPIE Industry Events
Free seminars, workshops, and keynote talks—open to all exhibitors, exhibition visitors, and conference attendees. Refer to pages 21–36.
National Research Council Canada
Bldg M-58, 1200 Montreal Rd, Ottawa, ON, K1A 0R6 Canada
+1 613 993 9101; fax +1 613 952 9907
info@nrc-cnrc.gc.ca; www.nrc-cnrc.gc.ca

The National Research Council (NRC) is Canada’s research organization, and has world-leading expertise in sensing. We design and fabricate DFB diode lasers (2-3.3 µm range) and DFB quantum cascade lasers (4 µm+) for sensing CO, CO₂, HF, H₂S, H₂, CH₄. We also design, fabricate, and prototype trans-jacket, femtosecond-inscribed, fiber Bragg gratings (FBGs) ideal for harsh environment temperature and pressure sensing. Contact: Aaron Rodericks, Client Relationship Leader, aaron.rodericks@nrc-cnrc.ca.ca; James Gupta, Research Officer, james.gupta@nrc-cnrc.gc.ca

National Scientific Optics, Inc.
12650 E Briarwood Ave Unit 200, Centennial, CO, 80112-6855 USA
+1 303 768 8481; fax +1 303 474 5843
Sales@NationalOptic.com; www.nationaloptic.com
National Scientific Optics, Inc. (NSO) is a supplier of high quality precision optics Offering standard and custom specifications from the Ultraviolet to Far IR spectrum, Waveplates, Flats, Spherical Optics, Doublets, Prisms, Wedges, Opto-Mechanical Assemblies, Optical Design and prototype to production products. To complement these products, we offer a variety of coatings. These range from Anti-Reflective varieties, High Reflection, multi-Layer coatings, and dielectric coatings. Contact: Mike Pagano, Vice President- Sales, Mike@NationalOptic.com; Jessie Kwon, Sales, jessie@NationalOptic.com

Natsume Optical Corp.
3461 Kamichaya Kanae, Iida-shi Nagano, 395-0808 Japan
+81 265 22 2434
overseas@mflens.co.jp; www.mflens.com

Featured Product: Customized precision optics such as Aspheres, Axicons, Freeforms and Cylindrical lens

Natsume Optical Corp. located in Japan, produces a wide range of customized precision optics such as Aspheres, Axicons, Freeforms, Cylindrical lens, Spherical lens, Assembled units, Fly-eye lens, Windows, Prisms and Ball lens. Our products are utilized in various fields and applications worldwide, and production can start from 1 piece prototype to higher volumes. With over 70 years of experience and our leading edge polishing technologies, we provide various solutions to you. Contact: Mieko Miyazawa, Sales, overseas@mflens.co.jp

Navitar Inc.
200 Commerce Dr, Rochester, NY, 14623-3506 USA
+1 585 359 4000; fax +1 585 359 4999
info@navitar.com; www.navitar.com

Featured Product: Innovative custom and off-the-shelf optical solutions

Navitar, Inc. designs, develops, and manufactures innovative optical solutions for clients and enterprises worldwide. We utilize conventional optics, diamond turned components, precision mechanics and world class assembly to deliver full OEM lens modules that meet demanding image quality requirements. We produce large volume commercial orders and complex, custom built prototypes - to exact customer specifications. Contact: Craig Fitzgerald, VP Business Development, craig.fitzgerald@navitar.com; Brett Canarozzo, VP Domestic Sales, brett.canarozzo@navitar.com

neaspec GmbH
Bunsenstr 5, Martinsried Muenchen, Bavaria, 82152 Germany
+49 89 45 24 206 0; fax +49 89 45 24 206 99
sales@neaspec.com; www.neaspec.com

Featured Product: The new cryo-neaSNOM: The first cryogenic near-field microscope and spectrometer at the nanoscale

See the nanoworld: neaspec GmbH is the world-leading manufacturer of ultra-stable & easy-to-use near-field and advanced optical imaging and spectroscopy tools that can be used for microscopy and spectroscopy at the 10-nanometer scale. The company was founded in 2007 by the pioneers of nanoscale infrared microscopy to revolutionize nanoscale analytics, with the ultimate goal to enable technological & scientific progress in every lab around the world. Contact: Max Eisele, Senior Application Engineer, max.eisele@neaspec.com

Necsel IP, Inc.
801 Ames Ave, Milpitas, CA, 95035-6322 USA
+1 408 940 0751; fax +1 408 719 9411
sales@necsel.com; www.necsel.com

Featured Product: NETA has designed and manufactured the JAX-M1: the only turnkey ASOPS imaging system

NETA is a young startup specialized in ASOPS imagery systems. This patented state-of-the-art technique has enabled material to be characterized at nanometric scale without contact and causing no destruction. Our products are dedicated to industrial and scientific applications with the aim to be very user-friendly. Our turnkey ASOPS imaging solutions are well adapted to different applications: nondestructive test for thin film characterization as well as cell’s nanometric ultrasound. Contact: Julien Michelon, CEO, jmichelon@neta-tech.com; Wilfried Vogel, Sales Manager, wvogel@neta-tech.com

New England Photoconductor Corp.
PO Box M, 253 Mansfield Ave, Norton, MA, 02766-0927 USA
+1 508 285 5561; fax +1 508 285 6480
nepcorp@nepcorp.com; www.nepcorp.com

Featured Product: Infrared Detectors, Sources, Multiplexed arrays, IR Filters, Windows and Detector

Lead Selenide (PbSe), Lead Sulfide (PbS), Indium Gallium Arsenide (InGaAs) and Pyroelectric infrared detectors. Infrared narrow, wide band and long pass filters. IR window materials with and without AR coatings. Linear multiplexed arrays. Room temperature and thermoelectrically cooled assemblies, standard and custom hermetic packages with optical filters. Quad detectors, amplifiers, TE cooler controllers and custom electronics. Contact: Richard Brennan, Operations Manager, nepcorp@nepcorp.com; Paul Brennan, Engineer, pbr@nepcorp.com
AN INVITATION TO SEE THE WORLD IN A WHOLE NEW LIGHT.

Novus Light Technologies Today is the online publication that illuminates and informs a worldwide audience of engineers and scientists who develop, use, commercialise, and install light-based technologies.

Experts from around the globe provide original reporting featuring local knowledge with a global perspective.

Please join us every day for information, insights, commentary, industry perspective, and discerning discussions.

Visit us at booth 2442

www.novuslight.com
New Infrared Technologies (NIT) #4218
Calle Vidrieros 30 Nave 2, Boadilla del Monte Madrid, 28660 Spain
+34 91 632 4363; fax +34 91 576 4939
sales@niteurope.com; www.niteurope.com

Featured Product: Tachyon 16k Camera: uncooled high-speed MWIR camera (WLpk®@3.7 µm), 128x128, 2000 fps, GigE, PoE

New Infrared Technologies (NIT) brings into the market innovative and affordable infrared cameras with detection in the MWIR range (1 - 5 µm), offering advanced performance at high-speed (2000 fps), compact size and uncooled operation at room temperature. The cameras are based in VPD PbSnS FPAs with diverse Defense and Industrial applications, as monitoring and control systems of laser processes (welding, AM, cladding). Additionally, NIT offers scanning array cameras and single point detectors. Contact: Rodrigo Linares, Business Development Mgr, sales@niteurope.com; German Vergara, CTO, sales@niteurope.com

New Scale Technologies #225

121 Victor Heights Pkwy, Victor, NY, 14564-8938 USA
+1 585 924 4450; fax +1 585 924 4468
NSTSales@newscaletech.com; www.newscaletech.com

Featured Product: M3-LS Linear Smart Stage: Piezo microstage has embedded controller for smallest size, is easy to use

We help designers transform large, expensive systems into smaller, easy-to-use instruments and devices with unmatched precision and performance. M3 Modules adjust micro optics or mechanical parts within handheld, portable and mobile systems. They have micron precision and work on battery power, at any orientation. The embedded controller takes high-level input over standard serial interface, making M3 modules the smallest, easiest-to-integrate solution for designers of miniaturized products. Contact: Heidi Quinlivan, Sales Manager, NSTsales@newscaletech.com; Stefan Friedrich, Products and Systems Salesperson, NSTsales@newscaletech.com

New Source Technology, LLC #4606

6678 Owens Dr Ste 105, Pleasanton, CA, 94588 USA
+1 925 462 6888; fax +1 925 462 8388
sales@newsourcetechnology.com; www.newsourcetechnology.com

Featured Product: A High Power, Lamp-pumped 200µm Diameter Fiber-Coupled Holmium Laser Resonator

New Source Technology, LLC (NST), an ISO 9001-2015 certified limited liability company, specializes in the design, manufacture, and distribution of high performance lamp-pumped laser subsystems and critical components with a special emphasis on optical pump cavities, laser rods, flash lamps, capacitor-charging power supplies, optics, and laser diode drivers. Our focus is in cosmetic, surgical, and dental market demands ensure device manufacturers that reliability and repeatability are built in. Contact: Gregory Pon, President, gpon@newsourcetechnology.com; Jenny Jiang, Business Development Manager, jjiang@newsourcetechnology.com

New York Photonics Industry Association #236

1565 Jefferson Rd Ste 420, Rochester, NY, 14623-3190 USA
+1 585 329 4029; fax +1 585 214 2458
www.newyork photonics.org

Featured Product: We create solutions

New York Photonics is the Industry Cluster for the Optics, Photonics and Imaging industry of New York State. Comprised of over 120 companies employing more than 17,000 people with an economic output of over $3.5 billion annually, we are the most robust, sophisticated and highly integrated optics, photonics and imaging supply chain in the nation, responsible for generating vast numbers of the nation’s patents in optics, photonics and imaging technologies. We sell solutions. Contact: Tom Battley, Executive Director, tbattley@newyorkphotonics.org

NewPion Photonics Inc. #4661

108 Fengqin Road, Kunshan, 215334 China
+86 512 57902829; fax +86 512 57902829
Honggu.jiang@newpion.com; newpion.com

Featured Product: High Temp Fiber, Active LMA Double Clad Fiber, Laser Delivery Fiber

NewPion Photonics Technology Co., Ltd. has been a reliable, long-term, strategic partner with OEM manufacturers in providing efficient, cost-effective, practical fiber optic solutions designed to meet customers’ specific needs. We specialize in manufacturing large core optical fiber, high temperature optical fibers, and active double clad fiber and我们也将这些纤维在一个商业应用程序/包中使用用于光纤电源和光学感应应用。Contact: Honggu Jiang, CEO, honggu.jiang@newpion.com; Chengfeng Wang, Overseas Sales Manager, sales@newpion.com

Newport Thin Film Lab., Inc. #4519

13824 Magnolia Ave, Chino, CA, 91710-7027 USA
+1 909 591 0276; fax +1 909 902 1638
sales@newportlab.com; www.newportlab.com

Featured Product: UV/VIS/IR Custom Coatings

NTFL is a fully equipped clean room thin film coating facility specializing in the design and manufacture of vacuum deposited optical thin films in the ultraviolet, visible and infrared spectrum. We produce a wide variety of coatings most of which are designed and manufactured to specific customer specifications. Our large chambers allow us high volume capabilities resulting in competitive pricing. However, we also work closely with you to develop prototypes as well. Contact: Ever Mata, General Manager - Sales, emata@newportlab.com; P. Scott Powers, Director of Engineering, pspowers@newportlab.com

Newport, a division of MKS Instruments #507

1791 Deere Ave, Irvine, CA, 92606-4814 USA
+1 949 863 3144; fax +1 949 253 1680
sales@newport.com; www.newport.com

Newport, now part of MKS Instruments, is the world’s largest photonics company providing innovative solutions and industry leading product brands to multiple markets. Our combined product portfolio includes Corion®, ILX Lightwave™, New Focus™, Ophir, Oriel® Instruments, Richardson Gratings™, and Spectra-Physics® Lasers. We provide complete photonic solutions to manage, and measure light. Contact: Tom Miller, tom.miller@newport.com

Next Scan Technology bvba #2025

Noorwegenstraat 29, Evergem, B9940 Belgium
+32 92 44 7520; fax +32 92 44 7521
info@nextscan technology.com; www.nextscan technology.com

Featured Product: Polygon Scanner Systems

Next Scan Technology – NST – enables best of class material processing through the introduction of novel scanner systems for both legacy and ultra short pulsed lasers. NST offers the widest range of polygon scanner systems: different large area scan fields, different operating wavelengths and focused spot size. The key to Next Scan Technology is a compact all-in-one polygon scanner head, featuring its patented mirror optics providing small spot sizes fully telecentric over the entire scan area. Contact: Lars Penning, CEO, lars@nextscan technology.com

Nexxtrom #4455

1240 25th St SE, Hickory, NC, 28602 USA
+1 828 464 2543; fax +1 828 464 5314
office.usa@rosendahlnextrom.com; www.rosendahlnextrom.com
Instruments at 800-52-NIKON. Contact: microscopysales@nikon.net

edge instruments include microscopes, digital imaging products that offer optimal versatility, performance and productivity. Cutting-

Now in its 100th year, Nikon provides complete optical systems

Instruments Inc. is a world leader in the development and manufacture

About Nikon Instruments Inc. (www.nikoninstruments.com) Nikon

Featured Product: Ultra-pure optical materials through to finished optics and modules for advanced applications

Founded in July 1917, Nikon has had a consistent focus on the development of high quality optical materials for use in the most demanding applications. With 100 years of history in providing products based around these developments, Nikon's key focus on pushing the boundaries of optical materials remains at the heart of our success now and in the future. Our main materials include, Synthetic Silica Glass (Fused Silica), CaF₂, Sapphire, i-line and optical glass as well as finished optics. Contact: Naoyasu Uehara, Sales, Naoyasu.Uehara@nikon.com; Kosuke Kamada, Sales, Kosuke.Kamada1@nikon.com

Nikon Instruments Inc. #5660

1300 Walt Whitman Rd, Melville, NY, 11747-3001 USA
+1 800 52 NIKON
microscopysales@nikon.net; www.nikoninstruments.com

About Nikon Instruments Inc. (www.nikoninstruments.com) Nikon Instruments Inc. is a world leader in the development and manufacture of optical and digital imaging technology for biomedical applications. Now in its 100th year, Nikon provides complete optical systems that offer optimal versatility, performance and productivity. Cutting-edge instruments include microscopes, digital imaging products and software. Product-related inquiries may be directed to Nikon Instruments at 800-52-NIKON. Contact: microscopysales@nikon.net

Nikon Metrology, Inc. #34

12701 Grand River Rd, Brighton, MI, 48116-8506 USA
+1 810 220 4360; fax +1 810 220 4300
sales.nm-us@nikon.com; www.nikonmetrology.com

Nikon Metrology offers the most complete and innovative metrology product portfolio, including state-of-the-art vision measuring instruments complemented with optical inspection and mechanical 3D metrology solutions. These reliable and innovative products respond to the advanced inspection requirements of manufacturers active in consumer, automotive, aerospace, electronics, medical and other industries. Contact: sales.nm-us@nikon.com

NIL Technology ApS #5651

Diplomvej 381, Kongens Lyngby, 2800 Denmark
+45 3111 1797; fax +45 7014 1916
contact@nilt.com; www.nilt.com

Featured Product: Masters/molds/stamps for replication of slanted gratings

NIL Technology is providing master for replication of micro- and nanostructures. Masters are made with feature sized from below 20 nm and up to micrometers. Masters support replication by nanoimprint, hot embossing, UV-replication, roll printing and injection molding. Masters are made from silicon, glass, nickel, steel, polymers and polymer materials. Especially optical structures such as DOE, MLA, blazed-, slanted-, and binary gratings are supported. Contact: Niklas Hansson, Sales Director, nh@nilt.com; Theodor Nielsen, CEO, theo@nilt.com

Ningbo Yongxin Optics Co., Ltd. #5163

No 385 Mingzhu Rd, Hi-Tech Park, Ningbo, Zhejiang, 315040 China
+86 57478906088; fax +86 57487908111
office@yxopt.com; www.yxopt.com

NKT Photonics is the leading supplier of high performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, Photonic Crystal Fibers

NKT Photonics Inc. #1336

3514 N Vancouver Ave Ste 310, Portland, OR, 97227-2026 USA
+1 503 914 1664
sales-us@nktphotonics.com; www.nktphotonics.com

Featured Product: Supercontinuum white light lasers, Ultrafast Lasers, Low noise fiber lasers, Photonic Crystal Fibers

NKT Photonics is the leading supplier of high performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide. Contact: Landry Molimbi, Director of Sales, sales-us@nktphotonics.com

nLIGHT Inc. #1241

5408 NE 88th St, Vancouver, WA, 98665-0989 USA
+1 360 566 4460; fax +1 360 546 1960
sales@nlight.net; www.nlight.net

nlIGHT is a vertically integrated supplier of high-performance lasers enabling innovation in materials processing, defense and medical applications. nLIGHT develops and manufactures direct diode and fiber lasers based on industry-leading semiconductor laser and optical fiber technology. nLIGHT is headquartered in Vancouver, Washington with additional sites in North America, Europe and Asia. We’re committed to working together to deliver breakthrough solutions that help innovate and grow. Contact: Melissa Taylor, Marketing Manager, melissa.taylor@nlight.net
NM Laser Products, Inc. #1839
337 Piercy Rd, San Jose, CA, 95138-1403 USA
+1 408 227 8299
sales@nmlaser.com; www.nmlaser.com

**Featured Product:** Clean Room Grade OEM Laser Shutters
Laser Shutter development, manufacture and sales. OEM Specialist; 30 years + refining technical solutions for High Irradiance lasers. Safety Interlocks, Processing Shutters and Pulse Gating models. For average powers to hundreds of Watts and Fluence levels to 10 J/cm². Highly integrated and compact solutions achieving laser industry requirements such as Damage Threshold, Thermal Gradients/Flow, Particle Generation, Out-gassing, Photo-chemical material changes, and Fail-Safe closure. Contact: Nilm Patel, Sales Assoc., sales@nmlaser.com; David Woodruff, Sales Engr., sales@nmlaser.com

North American Coating Labs. #4167
9450 Pineneedle Dr, Mentor, OH, 44060-1828 USA
+1 440 357 7000; fax +1 440 357 7001
info@nacol.com; www.nacol.com

**Featured Product:** Thin-film coating solutions for polymeric and glass optics including ITO, hydrophobic, and Ars
North American Coating Laboratories provides optical coatings for a variety of customers in the polymer and glass optics markets. Our experience in both dip and vacuum-applied processes make NACL one of the most respected organizations in the optical coatings field. Our coating competencies include protective, scratch-resistant, reflective, anti-reflective, filter, conductive, ITO, and chemically resistive coatings. North American Coating Laboratories is an ISO 9001 certified organization. Contact: Dan Fiore, Director of Business Development, dfiore@nacol.com; Brian Wilson, President/CEO, bwilson@nacol.com

NoIR Laser Shield #3015
Laser Shield, 6155 Pontiac Trl, South Lyon, MI, 48178-9647 USA
+1 734 769 5565; fax +1 734 769 1708
noirsales@noirlaser.com; lasershields.com

**Featured Product:** Introducing the #43 universal frame for all polycarb LaserShields. Widest field of view, best fit. NoIR LaserShields® provide industry-defining protection and visibility for the world of laser applications. Made in the USA and CE-Certified, LaserShields® deliver performance and protection with an eye on comfort. With more than 125 filters—over 75 CE-certified—and a frame to fit any face, LaserShields® are the point where Form and Function converge. Contact: David Bothner, david.bothner@noirlaser.com

Norland Products Inc. #4339
2540 Rte 130 Ste 100, Cranbury, NJ, 08512-3519 USA
+1 609 395 1966; fax +1 609 395 9006
sales@norlandproducts.com; www.norlandproducts.com

**Featured Product:** NOA 1665 -High refractive index adhesive for bonding glass, plastics and metal
Manufacturer of high quality optical and electronic UV, visible light and heat curing adhesives. These one component, solventless adhesives cure quickly when exposed to UV light and are designed for precision bonding applications. Our Optical adhesives are designed for bonding components where low strain, optical clarity or low outgassing are required in military, aerospace, fiber optics and commercial optics applications. Norland Products also sells a selection of UV curing light sources. Contact: Timothy Norland, President, tnorland@norlandproducts.com

Northrop Grumman Cutting Edge Optronics #1015
SPIE Member
20 Point West Blvd, Saint Charles, MO, 63301-4430 USA
+1 636 916 4900; fax +1 636 916 4994
st-ceolaser-info@ngc.com; www.northropgrumman.com/ceolaser

Northrop Grumman Cutting Edge Optronics is a leading manufacturer of laser diodes, DPSS laser modules and complete DPSS laser systems for demanding commercial and military environments. CEO products and systems are used in applications including High Energy lasers, Ti:Sapphire pumping, PIV, LIDAR and Material Processing. Contact: Donna Berns, Sales Manager, donna.berns@ngc.com; Wade Collins, Sales Manager, wade.f.collins@ngc.com

Northrop Grumman SYNOPTICS #1015
1201 Continental Blvd, Charlotte, NC, 28273-6320 USA
+1 704 588 2340; fax +1 704 588 2516
st.synoptics@sales@ngc.com; www.as.northropgrumman.com/synoptics

**Featured Product:** IBS Coatings and MRF Correction
Northrop Grumman SYNOPTICS is the world’s leading manufacturer of crystals for use in solid-state lasers. We also manufacture a line of specialty crystals and Air Spaced Polarizers for use at 1064nm. Products are used in applications in the military, medical, industrial and scientific markets. Materials include Nd:YAG, CTH:YAG, Er:YAG, Ruby, Undoped YAG, Nd:YLF, Alexandrite, TGG, Nd:YVO₄, KTP, Cr⁺³:YAG, Co:Spinel, and Yb:YAG. Diffusion bonding and contract crystal growth is also available. Contact: Scott Griffin, Director, Global Business Development, scott.e.griffin@ngc.com; Michelle Hooker, Business Development Engineer, michelle.hooker@ngc.com

NorPix Inc. #4442
1751 Richardson St Ste 6117, Montreal, QC, H3K 1G6 Canada
+1 514 846 0009; fax +1 514 846 0117
sales@norpix.com; www.norpix.com

**Featured Product:** StreamPix multiple camera acquisition. Troublopix, high speed trouble shooting solutions
Norpix provides leading high speed video acquisition software and solutions. StreamPix is the company’s flagship product and provides a state of the art interface. StreamPix simplifies the setup, control, and acquisition from over 200 different types of machine vision and scientific cameras and frame grabbers including USB3, GigE, Camera Link, 10 GigE and CPX. Capture in uncompressed or compressed format with time stamp, GPS, IrigB and DAQ data with video sync. Web streamer module for streaming. Contact: Luc Nocente, President, ln@norpix.com; Philippe Candelier, CTO, pc@norpix.com

NOVAE #5435
Zi du Moulin Cheyroux, Aixe sur Vienne, 87700 France
+33 6 58 09 12 89
info@novae-laser.com; www.novae-laser.com

**Featured Product:** 2 µm femtosecond high energy laser and supercontinuum laser emitting in the mid-IR
NOVAE was founded in 2013 in Limoges, France by the inventors (CORIA, Xlim and CNRS) of a disruptive laser architecture design and photonics industry entrepreneurs. Since its foundation, NOVAE has focused in industrialization and commercial development of a new generation advanced mid-infrared fiber lasers for scientific and industrial applications. Novae released for the past 3 years a supercontinuum spanning from 2 µm up to 4 µm and a µJ class femtosecond laser emitting around 2 µm. Contact: Nicolas Ducros, CEO, n.ducros@novae-laser.com

Northrop Grumman SYNOPTICS is the world’s leading manufacturer of crystals for use in solid-state lasers. We also manufacture a line of specialty crystals and Air Spaced Polarizers for use at 1064nm. Products are used in applications in the military, medical, industrial and scientific markets. Materials include Nd:YAG, CTH:YAG, Er:YAG, Ruby, Undoped YAG, Nd:YLF, Alexandrite, TGG, Nd:YVO₄, KTP, Cr⁺³:YAG, Co:Spinel, and Yb:YAG. Diffusion bonding and contract crystal growth is also available. Contact: Scott Griffin, Director, Global Business Development, scott.e.griffin@ngc.com; Michelle Hooker, Business Development Engineer, michelle.hooker@ngc.com

Northrop Grumman SYNOPTICS #1015
1201 Continental Blvd, Charlotte, NC, 28273-6320 USA
+1 704 588 2340; fax +1 704 588 2516
st.synoptics@sales@ngc.com; www.as.northropgrumman.com/synoptics

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NorPix Inc. #4442
1751 Richardson St Ste 6117, Montreal, QC, H3K 1G6 Canada
+1 514 846 0009; fax +1 514 846 0117
sales@norpix.com; www.norpix.com

**Featured Product:** StreamPix multiple camera acquisition. Troublopix, high speed trouble shooting solutions
Norpix provides leading high speed video acquisition software and solutions. StreamPix is the company’s flagship product and provides a state of the art interface. StreamPix simplifies the setup, control, and acquisition from over 200 different types of machine vision and scientific cameras and frame grabbers including USB3, GigE, Camera Link, 10 GigE and CPX. Capture in uncompressed or compressed format with time stamp, GPS, IrigB and DAQ data with video sync. Web streamer module for streaming. Contact: Luc Nocente, President, ln@norpix.com; Philippe Candelier, CTO, pc@norpix.com

NOVAE #5435
Zi du Moulin Cheyroux, Aixe sur Vienne, 87700 France
+33 6 58 09 12 89
info@novae-laser.com; www.novae-laser.com

**Featured Product:** 2 µm femtosecond high energy laser and supercontinuum laser emitting in the mid-IR
NOVAE was founded in 2013 in Limoges, France by the inventors (CORIA, Xlim and CNRS) of a disruptive laser architecture design and photonics industry entrepreneurs. Since its foundation, NOVAE has focused in industrialization and commercial development of a new generation advanced mid-infrared fiber lasers for scientific and industrial applications. Novae released for the past 3 years a supercontinuum spanning from 2 µm up to 4 µm and a µJ class femtosecond laser emitting around 2 µm. Contact: Nicolas Ducros, CEO, n.ducros@novae-laser.com
Novus Light Technologies Today  #2442
16830 Ventura Blvd, Suite #360, Encino, CA, 91436 USA
+1 970 672 1109
info@novustoday.com; www.novuslight.com

Featured Product: Novus Light Technologies Today - News and analysis from the world of light
Novus Light Technologies Today illuminates and informing a worldwide audience of engineers and scientists, who develop, use, commercialize and install the light-based technologies that create a brighter, more efficient tomorrow. Novus Light offers expert commentary, industry perspective and vital online discussions on a comprehensive array of subjects: Optics, Automation, Electronics, Lasers, MEMs/Nanotech, LEDs, Imaging and Machine Vision, Displays and Cameras. Contact: Ron Sherwood, Senior Account Manager, ron.sherwood@novustoday.com

NuPhoton Technologies, Inc.  #2440
41610 Corning Pl, Murrieta, CA, 92567-7023 USA
+1 951 696 8366; fax +1 951 696 8394
info@nuphoton.com; www.nuphoton.com

Featured Product: NuPhoton Technologies, Inc. is a leader in the design and development of high-performance fiber laser systems and components.
NuPhoton Technologies, Inc. is a leader in the design and development of high-performance fiber laser systems and components. Our products include laser diode pump modules, fiber amplifiers, and fiber lasers, which are used in a wide range of applications, including material processing, medical, scientific, and communications. Contact: Yoshiki Nishida, Project Leader, nishida-ys@ntt-el.com

NTKJ Co., Ltd. (Nihon Tokushu Kogaku Jushi)  #5049
Nihon Tokushu Kogaku Jushi Co., Ltd. 2-16-10, Hasune, Itabashiki Tokyo, 174-0046 Japan
+81 3 5916 0801; +81 3 5916 0802
rhk@ntkj.co.jp; www.ntkj.co.jp/index_en.html

Featured Product: Fresnel Lens; MLA; Roll mold; Lenticular; Diffraction optics; Linear prism; IR, UV lens; free form
NTKJ, Japanese manufacturer of plastic sheet lenses offers not only various off-the-shelf lenses, including Fresnel and microlens arrays, but also customized lens manufacturing services such as the largest class 200-inch Fresnel. Using its ultra-precision lens mold manufacturing facility and technology, NTKJ is capable of producing Fresnel lenses up to 1450x100mm in size and with a maximum aperture of 5000 mm, and deploys a roll mold manufacturing capability for lenses of up to 3500mm width. Contact: Koichi Sato, President, rhk@ntkj.co.jp

NUBURU, Inc.  #4139
7442 S Tucson Way Ste 130A, Englewood, CO, 80112 USA
+1 720 767 1400
sales@nuburu.net; www.nuburu.com

Featured Product: High Power Blue Laser
NUBURU® is leading the transformation to a world of high-speed, high quality metal machining and processing using a first-to-market class of high-power, high-performance blue lasers. NUBURU lasers break new ground by enabling radical gains in speed and quality in existing metal processes, as well as also unlocking a path to new designs for both conventional laser-metal machining and additive manufacturing (3D printing). Contact: Jean-Michel Pelaprat, CM & SO, jmp@nuburu.net; Mark Zediker, CEO, mark.zediker@nuburu.net

NP Photonics, Inc.  #342
UA Science & Technology Park, 9030 S Rita Rd Ste 120, Tucson, AZ, 85747-9102 USA
+1 520 799 7400
info@npPhotonics.com; www.npphotonics.com

NP Photonics Inc. is a leading manufacturer of fiber lasers and specialty fiber for the sensing, defense, metrology and research markets. The NP Photonics proprietary fiber technology is used across a broad family of products including narrow line-width, low phase-noise fiber lasers, short pulse fiber amplifiers, and mid-IR transport fibers- specifically designed for operation in an industrial environment. NP continues to grow through technology innovation and strategic partnerships.

nPoint, Inc.  #4960
3030 Laura Ln Ste 100, Middleton, WI, 53562-1872 USA
+1 608 824 1770; fax +1 608 824 1774
info@npoint.com; www.npoint.com

Designs & manufactures nano-positioning tools for OEM and research applications. Products include piezo-actuated flexure stages and digital control electronics. Nano-positioning systems provide closed-loop translation in the X, XY, XYZ and tip/tilt. Enables high-speed, high-resolution, sub-nanometer precision for optics, semiconductor, defense, aerospace and bio-industries.

NTT Advanced Technology Corp.  #4940
150 University Ave Ste 600, East Palo Alto, CA, 94303-2250 USA
+1 408 392 4280; fax +1 408 573 7721
ktn@ml.ntt-at.co.jp; www.ntt-at.com

Featured Product: DFB-LD, SOA, PPLN, UTC-PD
NTT Electronics Corporation provide DFB LDs ranging from 1260 nm to 2330 nm for gas sensing application. We also provide PPLN wavelength conversion modules for visible (SHG and SFG) and mid-IR (DFG) application and UTC-PDs for THz generation and ultra-broadband photo-detection. These are useful for academic research and industrial sensing applications. Technologies are based on ones for high-reliable telecom components. Contact: Yoshiba Nishida, Project Leader, nishida-ys@ntt-el.com

NTT Electronics Corporation  #548
New Stage Yokohama, 1-1-2 Shin-urashimacho Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0031 Japan
+81 50 9000 6001; fax +81 45 453 9720
dev-info-w@ntt-el.com; www.nel-world.com

Featured Product: DFB-LD, SOA, PPLN, UTC-PD
NTT Electronics Corporation provide DFB LDs ranging from 1260 nm to 2330 nm for gas sensing application. We also provide PPLN wavelength conversion modules for visible (SHG and SFG) and mid-IR (DFG) application and UTC-PDs for THz generation and ultra-broadband photo-detection. These are useful for academic research and industrial sensing applications. Technologies are based on ones for high-reliable telecom components. Contact: Yoshiba Nishida, Project Leader, nishida-ys@ntt-el.com

NUBURU, Inc.  #4139
7442 S Tucson Way Ste 130A, Englewood, CO, 80112 USA
+1 720 767 1400
sales@nuburu.net; www.nuburu.com

Featured Product: High Power Blue Laser
NUBURU® is leading the transformation to a world of high-speed, high quality metal machining and processing using a first-to-market class of high-power, high-performance blue lasers. NUBURU lasers break new ground by enabling radical gains in speed and quality in existing metal processes, as well as also unlocking a path to new designs for both conventional laser-metal machining and additive manufacturing (3D printing). Contact: Jean-Michel Pelaprat, CM & SO, jmp@nuburu.net; Mark Zediker, CEO, mark.zediker@nuburu.net

NuPhoton Technologies, Inc.  #2440
3030 Laura Ln Ste 100, Middleton, WI, 53562-1872 USA
+1 608 824 1770; fax +1 608 824 1774
info@nuphoton.com; www.nuphoton.com

Featured Product: NuPhoton Technologies, Inc. is a leader in the design and development of high-performance fiber laser systems and components.
NuPhoton Technologies, Inc. is a leader in the design and development of high-performance fiber laser systems and components. Our products include laser diode pump modules, fiber amplifiers, and fiber lasers, which are used in a wide range of applications, including material processing, medical, scientific, and communications. Contact: Yoshiki Nishida, Project Leader, nishida-ys@ntt-el.com
Nutfield Technology #1447
SPIE Corporate Member
1 Wall St., Ste 115, Hudson, NH, 03051 USA
+1 603 893 6200; fax +1 603 893 6214
info@nutfieldtech.com; www.nutfieldtech.com

Featured Product: BLINK! 50Gs, 100% duty-cycle removable lens focuser. Blazingly fast performance @ under 2.5 amps!
Nutfield Technology designs and manufactures the most advanced galvanometer-based optical scanners, scan heads, laser scan kits, control electronics and software products available. Our high-quality galvanometers and 2 & 3-axis scan heads are powerful and accurate, providing superior performance for every laser application including high-speed scanning, marking, and 3D scanning. We produce complete laser control systems. Nutfield Technology is the source for complete laser scanning solutions! Contact: Nina LaBonte, Marketing Specialist, nina.labonte@faro.com; Rick Colonna, Director, Sales (HNH), rick.colonna@faro.com

Nuvu Cameras Inc. #4448
SPIE Corporate Member
355 Peel Street Ste 603, Montreal, QC, H3C 2G9 Canada
+1 514 733 8666
sales@nuvucameras.com; www.nuvucameras.com

Featured Product: HNü 128, HNü128AO, HNü 512, HNü 1024
Nuvu Cameras specializes in scientific EMCCD cameras by reinventing the electronics behind EMCCD detectors. The patented technology offers an ultimate sensitivity level due to the highest SNR for low light imaging (total background noise<0.001e/pixel/s for an EM gain of up to 5000) and the best image quality (Charge Transfer Efficiency>0.999993) to meet the needs of the most demanding low light imaging applications. Receive more reliable data with less exposure time and faster acquisition rates. Contact: Yoann Gosselin, Applications Scientist, ygosselin@nuvucameras.com; Fabliha Chowdhury, Marketing & Business Development, fchowdhury@nuvucameras.com

NYFORS #4545
Solkraftsvägen 12, Stockholm, 135 70 Sweden
+46 8 712 10 21
info@nyfors.com; www.nyfors.com

Featured Product: SMARTSPLICER™
The SMARTSPLICER™ is an advanced laser fusion splicing and glass processing system designed for the production of high power and sensitive photonic components of various kinds. It features a powerful and clean laser heat source which enables completely contamination free glass shaping with low maintenance requirements and no need for consumables such as process gas, filaments or electrodes. Contact: Erik Böttcher, CEO, erik.bottcher@nyfors.se

O/E Land Inc. #3053
7639 Cordner, LaSalle, QC, H8N 2X2 Canada
+1 514 334 4588; fax +1 514 334 0216
sales@o-eland.com; www.o-eland.com

Ocean Optics, Inc. #723
SPIE Corporate Member
8060 Bryan Dairy Rd., Largo, FL, 33777 USA
+1 727 733 2447; fax +1 727 733 3962
info@oceanoptics.com; www.oceanoptics.com

Featured Product: Ocean-FX
Ocean Optics is the leader in spectroscopy applications knowledge. We provide modular optical sensing solutions for applications such as medical and biological research, environmental regulation, science education, and process control. Our comprehensive range of complementary technologies includes light sources, chemical sensors, Raman instrumentation, Multi Spectral Imaging and other accessories. Our spectrometers and sensors are ideal for integration into OEM and custom instruments. Contact: Application Engineer, info@oceanoptics.com

OEwaves, Inc. #3047
465 N Halstead St Ste 140, Pasadena, CA, 91107 USA
+1 626 351 4200; fax +1 626 351 4230
info@oewaves.com; www.oewaves.com

Featured Product: Ultra-Narrow Linewidth Lasers and Measurement System; High-Q WGM Micro-Resonator Cavities & Filters
OEwaves, Inc. transforms novel microwave photonic technologies, from concept to the marketplace, enabling new capabilities in radar, fiber optic sensing, LIDAR, and test and measurement systems. The company’s core technologies include the opto-electronic oscillator (OEO) and whispering gallery mode (WGM) optical resonator. Additionally, OEwaves has developed unique homodyne microwave and optical phase noise measurement system for characterization of low phase noise microwave and laser sources. Contact: Danny Fung, Director of Marketing, danny.fung@oewaves.com; Stephanie Barragan, Office Manager, stephanie.barragan@oewaves.com

OFS #1430
SPIE Corporate Member
2000 Northeast Expressway, Norcross, GA, 30071 USA
+1 770 798 5555
www.ofsoptics.com

Featured Product: Specialty optical fiber solutions
OFS is a world-leading designer, manufacturer and provider of optical fiber, optical cable, connectivity, fiber-to-the-subscriber (FTTX) and specialty photonics products. We provide reliable, cost-effective solutions for a broad range of applications including telecommunications, medicine, industrial automation, sensing, government, aerospace and defense. These products help our customers meet the needs of consumers and businesses, both today and into the future. Visit us at www.ofsoptics.com Contact: John Earnhardt, Director Specialty Sales, jearnhardt@ofsoptics.com

Plan to Attend FREE Exhibitor product demonstrations
Refer to page 108-109 for complete times, schedules, and locations
Ohara Corp. #1047
23141 Arroyo Vista Ste 200, Rancho Santa Margarita, CA, 92688-2613 USA
+1 949 858 5700; fax +1 949 858 5455
sales@oharacorp.com; www.oharacorp.com

Manufacturer of precision optical glasses: strip/slab, cut/plan blanks, high homogeneity blanks, fine gobs, polished ball lenses, near UV transmitting i-Line glass, glass ceramic substrates, CaF2, UV & IR materials, quartz, Fused Silica (standard and excimer grade). Ohara ClearCeram-Z ultralow expansion glass (excellent CTE uniformity; large sizes). NANOCERAM. Supplier of double side polished substrates (excellent flatness/low surface roughness). Contact: Brion Hoffman, President, brionhoffman@oharacorp.com; Chris Ghio, Director of Sales, chrisghio@oharacorp.com

Okamoto Corporation #2445
3060 Scott Blvd, Santa Clara, CA, 95054 USA
+1 408 654 8400; fax +1 408 654 8405
sedinfo@okamotocorp.com; www.okamoto-sed.com

Featured Product: Manufacturer for Backgrinders and Polishers

A leading manufacturer of precision grinding and polishing tools. Grinding tools used in applications of wafer manufacturing of hard materials, SiC, sapphire, AITIC, SOI, MEMS, Si, Ge, GaAs, thin wafers for 50 microns or less, lumped wafers, and more. Polishing tools used with CMP technology, developed for high throughput and high accuracy. Full-auto tools available up to 300mm. Semi-auto grinding tools available up to 400mm. Integration of edge grinder, wafer mounter, and detaiper available. Contact: Bob Pinto, Service Manager, btpinto@okamoto-sed.com; Ken Akiba, Sales Manager, kakiba@okamotocorp.com

Okamoto Optics Works #5441
8-34 Haramachi Isogo-ku, Yokohama, Kanagawa, 235-0008 Japan
+1 860 316 2589
sales@okamoto-optics.com; www.okamoto-optics.com

Olympus #1823
48 Woerd Ave, Waltham, MA, 02453-3824 USA
+1 781 419 3900; fax +1 781 419 3980
info@olympus-ossa.com; www.olympus-ims.com

Olympus provides an industry-leading portfolio of innovative test, measurement, and imaging instruments including: remote visual inspection, industrial microscopy, ultrasound, phased array, eddy current, and optical metrology instruments. Products include ultrasonic flaw detectors and thickness gages, videoscopes, microscopes, advanced NDT systems, X-ray fluorescence (XRF) analyzers, industrial scanners, probes, and accessories. Contact: Robin Assencoa, Tradeshow Manager, robin.assencoa@olympus.com

Om6 #4437
14163 Rte 117 Ste 90, Mirabel, QC, J7J 1M3 Canada
+1 450 979 2275; fax +1 450 979 4110
info@om6.com; www.om6.com

Featured Product: Leading manufacturer of Fiber Optic Cable Assemblies

O-m6 Technologies is a leading manufacturer of Fiber Optic Cable Assemblies. Founded in 1996, we were quickly recognized by Telecom and Photonic companies for our technical expertise and gained rapidly an outstanding reputation for the quality of our products. Our production facility can respond rapidly to medium to large quantities orders for conventional fiber optic products such as: Patchcords, Pigtailed, Multi-fiber cables. Contact: Jean-Yves Couturier, General Manager, jy.couturier@om6.com

Omega Optical, Inc. #5337
21 Omega Dr, Brattleboro, VT, 05301-4444 USA
+1 802 251 7300
sales@omegafilters.com; www.omegafilters.com

Featured Product: Linear Variable Filters - Thermally Stable Narrow Notch Filters

ISO 9001, ITAR Registered and SBA member; Omega designs and produces the most diverse offering of interference filters in the industry. Whether your application is Space, Industrial, Aerospace, Defense or Machine Vision, we have the solution you need. We bring a corporate commitment to understand and refine your filter needs. This support originates with our team of Scientists, Engineers, & Industry experts. Our goal: to assure the most appropriate solution will be provided to our customer. Contact: Tina Hoppock, New Business Development Manager, thoppock@omegafilters.com

Omicron Laserage Laserprodukte GmbH #2041
Raiffeisenstr 5e, Rodgau-Dudenhofen, 63110 Germany
+49 6106 8224 0; fax +49 6106 8224 10
mail@omicron-laser.de; www.omicron-laser.de

Featured Product: LEDHub multi color LED light engine with up to 6 wavelengths

Omicron has been developing, designing and producing innovative laser systems since 1988. Since then its highly-qualified team has specialized in the development of solutions for medicine, research, biotechnology, digital imaging and optical data storage, as well as quality assurance and metrology. Products include high power laser diode and LED systems with high speed modulation capability. Contact: Philip Crowley, CEO, phil@markettechnic.net

ON Semiconductor #4562
5005 E McDowell Rd, Phoenix, AZ, 85008 USA
+1 602 244 6600
imagers@onsemi.com; www.onsemi.com

Featured Product: Interline Transfer EMCCD image sensors for extreme low-light imaging

ON Semiconductor offers a comprehensive portfolio of industrial image sensors for applications ranging from Machine Vision and ITS to Medical and Scientific imaging, Surveillance, and more. Combining a responsive, reliable, world-class supply chain and quality program with a worldwide network of manufacturing facilities, sales offices, and design centers, ON Semiconductor is uniquely positioned to help engineers solve their most demanding imaging challenges. www.onsemi.com

Ondax, Inc. #1348
850 E Duarte Rd, Monrovia, CA, 91016-4275 USA
+1 626 357 9600
sales@ondax.com; www.ondax.com

Featured Product: Ondax’s new THz-Raman® accessory enables transmission Raman measurements on pills, tablets and vials

Ondax, Inc. is the market leader and largest commercial manufacturer of high-performance Volume Holographic Gratings (VHG/VBG), Wavelength-stabilized Laser Sources, and high-performance, THz-Raman® Low-frequency (Low-wavenumber) Raman Spectroscopy Systems for a wide range of industrial, medical, defense, and scientific applications. VHG’s improve laser diode performance by increasing spectral brightness, locking the emission wavelength, and increasing environmental and spectral stability. Contact: Ryan Park, Sales & Key Account Administrator, sales@ondax.com; Karen Lam, Office Manager, klam@ondax.com

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
On-Trak Photonics #4232
14 Goodyear Ste 130, Irvine, CA, 92618 USA
+1 949 587 0769; fax +1 949 587 9524
info@on-trak.com; www.on-trak.com

On-Trak Photonics is a manufacturer and distributor of position sensing detectors and support electronics. North American distributor for Sitek Electro-Optics. www.on-trak.com. Contact: Dave Hunnicutt, Director of Sales, dave@on-trak.com

Onyx Optics, Inc. #1738
6551 Sierra Lane, Dublin, CA, 94568-2798 USA
+1 925 833 1969; fax +1 925 833 1759
sales@onyxoptics.com; www.ONYXoptics.com

Onyx Optics’ product capabilities include Adhesive-Free Bonded (AFB®) crystal and glass laser components such as laser rods, slabs, disks, and waveguiding structures. We work with materials such as doped and undoped YAG, YLF, YVO₄, sapphire, diamond, and spinel, as well as many others. Our patented composite technology enables higher efficiency, more compact, and higher power solid state laser and photonic devices. Contact: Lesley Reo, Sales and Marketing Manager, lreo@onyxoptics.com; David Meissner, Account Executive, dmeissner@ONYXoptics.com

OP Mount Instrument Inc. #1921
Pingzhen Dist, Taoyuan 324, No 118-7, Ln 460, Sec 2 Nan-Shih Zhongfeng Rd, Taoyuan, 32472 Taiwan
+886 3 4399358; fax +886 3 4399356
sales01@opmount.com.tw; www.opmount.com

Sponsor

OPCO Lab., Inc. #648
SPIE Corporate Member
704 River St, Fitchburg, MA, 01420-2913 USA
+1 978 345 2522; fax +1 978 345 5515
sales@opcolab.com; www.opcolab.com

We, at OPCO Laboratory, are an extension of your team. With over 40 years of optical manufacturing experience, we provide total solutions from prototypes through production. Being vertically integrated ensures we have total control over the entire process, from design through fabrication, coating, assembly, and testing, resulting in higher quality, lower cost, reduced lead times. We serve a variety of markets, such as: Analytical, Spectroscopy, Defense, Aerospace, and Semiconductor. Contact: Ryan Pasakinskas, Business Development, rpaz@opcolab.com; Bill Spacciapoli, Business Development, bills@opcolab.com

Ophir, a division of MKS Instruments #507
Ophir Photonics Group, 3050 N 300 W, North Logan, UT, 84341 USA
+1 435 753 3729; fax +1 435 753 5231
sales@us.ophiropt.com; www.ophiropt.com/laser-measurement

Featured Product: BeamWatch® AM: industry’s first non-contact laser beam monitoring system for additive manufacturing

Ophir, now part of MKS Instruments, is a global leader in precision IR lenses and optical elements; laser measurement instrumentation, including beam profilers and power meters; and 3D non-contact measurement equipment. Featured products include BeamWatch®, the industry’s first non-contact, focus spot size and position monitor for lasers in material processing; and Spiricon Ultracal™, the baseline correction algorithm that helped establish the ISO 11146-3 standard for beam measurement accuracy. Contact: Kenneth Ferree, kenneth.ferree@us.ophiropt.com

Opletek Group Oy #4365
Kokoojatie 5, Leppävirta, 79100 Finland
+358 17 3668 866; fax +358 17 3668 860
sales@opletek.com; www.opletek.com

Featured Product: Design and manufacturing of Optical and Fiber Optical components, modules and devices

Opletek has over 30 years of experience in providing Optics and Fiber Optics solutions. Our in-house expertise include: drawing of specialty optical fibers, glass molding of optical components, thin film coating, precision mechanics and assembly of optical devices. Our 100+ customers are for example manufacturers of measurement devices, specialty lighting systems and lasers. We are ISO 9001 and ISO 14001 certified and regularly audited by Fortune 500 companies. Contact: Jyrki Huttunen, CEO, jyrki.huttunen@opletek.com; Juha Kauppinen, Sales Manager, juha.kauppinen@opletek.com

OPOTEC #5162
2233 Faraday Ave Ste E, Carlsbad, CA, 92008-7214 USA
+1 760 929 0770; fax +1 760 929 8782
opo@opotec.com; www.opotec.com

Featured Product: New Phocus Mobile: high energy OPO in compact cart for transportable photoacoustic applications

OPOTEC manufactures compact and widely tunable laser systems based on patented optical parametric oscillator (OPO) technology. Systems are used in fields of photochemistry/biology, photoacoustics, mass spectrometry and environmental monitoring. Products range from stand-alone OPO modules to fully automated, turn-key systems. Continuous tunable ranges cover the UV to IR. OPOTEC offers portable/transportable commercial OPO systems and responds to special requirements for customized solutions. Contact: Mark Little, Sales Manager, mlittle@opotec.com; Renee Jones, Office Administrator, rjones@opotec.com

Opt-E #353
3450 S Broadmont Dr Ste 112, Tucson, AZ, 85713 USA
+1 520 867 8632
info@opt-e.com; www.opt-e.com

Optec S.p.A. #2131
SPIE Corporate Member
Via Andrea Mantegna 34, Parabiago, MI, 20015 Italy
+39 0331 021815; fax +39 0331 495091
info@optec.eu; www.optec.eu

Featured Product: SWIR lenses, multichannel camera systems, diffraction limited lenses for aerospace

Founded in 1985, Optec is the Italian firm reference leader in optical, optoelectronic and optomechanic sector, in Europe and in the world. Our customized development for many of Industry sectors, represents for us the engine of our high standard solutions, and for our Customers the correct answer for each problem who tumble in Optec’s action area. Since its start up in 1985, Optec is more than a manufacturer. It is a service organization with a proven record of successful performance. Contact: Massimiliano Musazzi, Sales Executive for USA Subsidiary, mmusazzi@optec.eu

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+49 511 277 1643; fax +49 511 277 1650
optecnet@optecnet.de; www.optecnet.de
OptTek Systems Inc. #6025
12 Pilgrim Rd, Greenville, SC, 29607 USA
+1 864 272 2640; fax +1 864 272 2630
osi@opteksystems.com; www.opteksystems.com

Featured Product: Laser Cleave
Optical Fiber Processing. From medical devices to military guidance systems, communications systems to industrial turbines, this thin and flexible strand of glass is the building block of the digital age. Most companies use mechanical methods to process fiber, but we use lasers. We're here from development to production. Laser Micro Machining. We use the power of laser light to make extremely precise alterations to just about any material. Contract manufacturing and machine tools. Contact: Andrew Webb, Head of Business Development, osi@opteksystems.com

Optical Engines, Inc. #1814
SPIE Corporate Member
2829 W Colorado Ave, Colorado Springs, CO, 80904-2443 USA
+1 719 279 0600; fax +1 719 301 5922
info@opticalenginesinc.com; opticalenginesinc.com

Optical Filter Source, LLC #5428
SPIE Corporate Member
16920 Joe Barbee Dr, Bldg 2, Round Rock, TX, 78664 USA
+1 512 248 0605; fax +1 512 491 8735
Sales@ofs-online.com; www.ofs-online.com

Featured Product: Patternable Low Reflectance Absorbing Coating
Thin film coatings and optics for a variety of applications. We are a custom coating house with ability to coat from 230nm – 14um. In 2016, Optical Filter Source (OFS) moved into a newly designed building. The facility includes 1170SqFt of ISO Class 5 (Class 100) clean room space. All tooling, cleaning and coating is done inside our cleanroom with an emphasis placed on quality and performance. OFS has been ISO9001:2008 registered since 2012. OFS is an ITAR registered facility. Contact: Frank Calcagni, CEO / CTO, frank@ofs-online.com; Daniel Pamplin, Optical & Thin Film Engineer, daniel@ofs-online.com

Optical Support, Inc. #338
SPIE Corporate Member
1661 S Research Loop, Tucson, AZ, 85710-3998 USA
+1 520 546 0642
sales@opticalsupportinc.com; www.opticalsupportinc.com

Featured Product: Engineering Services and Manufacturing
Optical Support, Inc. is an engineering services company specializing in design and manufacturing of precision optical instruments and equipment. OSI has the CNC machining, clean room assembly, alignment and test capabilities to provide both rapid prototyping and volume manufacturing to ensure faster time-to-market. OSI’s experienced staff can solve complex design problems working with your engineering team through preliminary, conceptual, and detailed design reviews.

Optics Balzers #2038
SPIE Corporate Member
11941 W 48th Ave Ste 100, Wheat Ridge, CO, 80033 USA
+1 303 502 5401; fax +1 720 974 5901
info@opticsbalzers.com; www.opticsbalzers.com

Featured Product:
Optics Balzers is a globally recognized leader in customized optical thin-film coatings and components for the photonics industry. The company possesses a broad and in-depth know-how in optical thin-film coating processes, complemented by sophisticated patterning, glass bonding/sealing, and further processing capabilities necessary for producing optical thin film coated components and optical sub-assemblies. Contact: Steffen Capello, Sales Manager; steffen.capello@opticsbalzers.com; Brian Sjogren, Sales Engineer, brian.sjogren@opticsbalzers.com

Optics Technology Inc #3000
SPIE Corporate Member
3800 Monroe Ave Ste 3, Pittsford, NY, 14534-1330 USA
+1 585 586 0950; fax +1 585 248 2371
sales@opticstechnology.com; www.opticstechnology.com

Featured Product: Micro Optics, Micro Mechanics, Optical/ Mechanical Assembly, Optical/Mechanical Design
Optics Technology, Inc., designs and manufactures micro-optical imaging systems and components. Optical and mechanical components range in size from .75mm-30mm in diameter. We offer a range of services from manufacturing single micro optical and mechanical components to complete design, manufacture, and assembly of entire optical systems. Contact: Ben Piatt, Production Manager, ben@opticstechnology.com; John Warda, President, jwarda@opticstechnology.com

Optics Valley #346
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9070 S Rita Rd Ste 1550, Tucson, AZ, 85747-6111 USA
+1 520 382 3281; fax +1 520 829 3441
www.opticsvalleyaz.org

The mission of Optics Valley is to catalyze, convene and connect optics, photonics, astronomy, and supporting business interests throughout Arizona. We maintain worldwide strategic collaborations and key partnerships. We provide cutting-edge professional development, world-class education, strategic business networking, and broad support for our members to thrive and lead in global markets. Member of the Global Photonics Alliance. Contact: John Dennis, Chair, Chair@OpticsValleyAZ.org; Jack Schumann, Co-Chair, Jack@OpticsValleyAZ.org

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sales@optics.org; www.optics.org

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Optikos Corporation
Bldg 3, 107 Audubon Rd, Wakefield, MA, 01880-1245 USA
+1 617 354 7557; fax +1 617 354 5946
sales@optikos.com; www.optikos.com

Featured Product: Lens and Camera Testing Systems
The Optical Engineering Experts®—Optikos develops and manufactures standard and custom metrology products for measuring lenses, camera systems and ophthalmic components; and offers in-house IQ Lab™ testing and qualification services. Our engineering teams provide expert design and manufacturing for optically-based product development in any industry or application, including medical devices and diagnostics, aerospace and defense, automotive and consumer electronics. Learn more at optikos.com. Contact: George Meyer, Key Account Manager, gmeyer@optikos.com; Yvonne Chao, International Sales & Key Account Manager, ychao@optikos.com

OptiPro Systems
6368 Dean Pkwy, Ontario, NY, 14519-8930 USA
+1 585 265 0160; fax +1 585 265 9416
sales@optipro.com; www.optipro.com

Featured Product: PRO 160P+ CNC high speed spherical polisher with in-process tool truing spindle
OptiPro Systems, located in Rochester, NY, has 35 years of experience designing and manufacturing precision optical fabrication machines and metrology systems. OptiPro develops cutting edge machines for a variety of precision optics, including spheres, aspheres, freeforms, aspheric cylinders, torics, and more. These solutions are designed to yield prototype to high volume production of parts manufactured from a range of materials including optical glasses, ceramics, crystals, and alloys. Contact: Mike Bechtold, President, mike@optipro.com; Ron Colaveccia, Director of Optics Technology, rcolaveccia@optipro.com

Optilab LLC
600 E Camelback Rd, Phoenix, AZ, 85012-1617 USA
+1 602 343 1493; fax +1 602 343 1489
sales@optilab.com; www.oequest.com

Featured Product: Sedona product line: Photonics Multimeter and our new Oak Creek fiber-sensing and software system
We are a technology company specializing in laser and photon solutions. Our products span the realms of Test & Measurement, Fiber Sensing, RF over Fiber, and others. We develop and deliver our innovative, cost-effective solutions to our clients in aerospace, telecom, sensors, laser instruments, and research. Additionally, Optilab owns and operates OEQuest.com, one of the largest web portals in the photonics industry, through which our products can be ordered. Contact: Kenneth Corelli, Sales Engineer, ken.corelli@optilab.com; Wanli Chuang, Business Development Manager, wanli@optilab.com

Optiforms, Inc.
42310 Winchester Rd, Temecula, CA, 92590-4810 USA
+1 951 296 1300; fax +1 951 296 1178
sales@optiforms.com; www.optiforms.com

Featured Product: Lens and Camera Testing Systems
When you partner with us, you’ll discover why ingenuity reflects. Contact: Robert Brunson, VP Sales & Marketing, rbrunson@optiforms.com; Natalie Pastuszka, Optical Engineer, npastuszka@optiforms.com

Optigrate Corp., an IPIG Photonics Company
562 S Econ Cir, Oviedo, FL, 32765-4311 USA
+1 407 542 7704; fax +1 407 542 7804
info@optigrate.com; www.optigrate.com

Featured Product: BragGrate™ products are unmatched in the industry for linewidth, optical density, transmission, etc.
Optigrate is a pioneer of commercial Volume Bragg Gratings and supplies VBGs to more than 500 customers on six continents for laser line narrowing, spectroscopy, laser pulse stretching and compression, etc. Nowadays, Optigrate is a leading manufacturer of VBG-based filters and components. Since 2017, Optigrate is a part of the IPIG Photonics Family. Contact: Igor Ciapurin, Director, Operations, iciapurin@optigrate.com; Alex Ryasnyanskiy, Manager, Lasers, a.ryasnyanskiy@optigrate.com

Optik+ Leflerder Weg 44a, Braunschweig Niedersachsen, 38122 Germany
+49 531 2379497; fax +49 531 2379601
info@optik-plus.de; www.optik-plus.de/

Featured Product: Precision spherical and aspherical lenses, optical prisms, windows, mirrors, filters, laser optics
The company of Optik+ specializes in manufacturing of precision spherical lenses in a range of 2-200mm made from all kind s of optical materials and crystals. We also manufacturing plan flats in a range from 5-300mm with flatness up to Lambda/20. We offer a large area of prisms materials and crystals. We also manufacturing plan flats in a range from spherical lenses in a range of 2-200mm made from all kind s of optical materials and
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<th>Company Name</th>
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<tr>
<td>NewPion Photonics Inc</td>
<td>4661-3</td>
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<td>HEFEI SHENGDA ELECTRONICS TECHNOLOGY INDUSTRY CO.,LTD</td>
<td>4770</td>
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<td>Nanjing Chunhui Science &amp; Technology Industrial Co., Ltd.</td>
<td>4653-5</td>
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<td>Chengdu Dongjun Laser Co., Ltd</td>
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<td>Dongguan Harmony Plastic &amp; Hardware Technology Co.,Ltd</td>
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<td>Shanghai Institute of Optics and Fine Mechanics Chinese</td>
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<td>Academy of Sciences</td>
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<td>Shanghai SGOptics Co.,Ltd</td>
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<td>Dandong Elaser Electronic Technology Co., Ltd</td>
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<td>Beijing JCZ Technology CO. Ltd</td>
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<td>Shanghai Jiaguang –O Store Optics CO.,LTD</td>
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<td>SRC Metals Co.,Ltd</td>
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<td>FUZHOU TOPTEC OPTICS,INC</td>
<td>4772</td>
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<td>Xinxiang Baihe O.E Co., Ltd</td>
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<tr>
<td>Beijing Opto-Electronics Technology Co.Ltd.</td>
<td>4653-4</td>
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<td>FuJian Ultra Photonics CO., LTD</td>
<td>4661-2</td>
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OptiSource, LLC #130
SPIE Corporate Member
102 Mountain Park PI NW, Albuquerque, NM, 87114 USA
+1 505 792 0277; fax +1 505 792 0281
sales@optisourcellc.com; www.optisourcellc.com

Featured Product: Crystal Quartz Compound Zero-Order, Multiple-Order, Ultra-thin, Achromatic Waveplates, and Rotators

2018 begins the third decade of OptiSource, LLC providing superior components and service for both OEM and prototype customers. Our inventory of coated and uncoated waveplates allows for rapid delivery to meet our customer needs. We will provide waveplates from small (1mm) to large (101.4mm) formats. We provide rapid delivery of not only crystal quartz waveplates, but also achromatic waveplates, mica waveplates, lenses, prisms, beamsplitters and mirrors. Contact us at sales@optisourcellc.com Contact: Cindy Romero, Production Manager, sales@optisourcellc.com; Greg Woodhouse, General Manager, woody@optisourcellc.com

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South Industrial Area, 4/B Hazaron St, Netanya, 4250604 Israel
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www.optitask.net

Optitask Ltd has been active in the hi-tech civilian and military market more than 17 years, involved in research, development, design, and manufacturing in the fields of laser physics, optics, electronics and mechanics, with the emphasis placed on Laser Transmitters activities. To date, we have manufactured and sold thousands of high-quality products, all fully confirming to the most demanding specifications.

Optiwave Systems Inc. #2230
SPIE Corporate Member
7 Capella Crt Suite 300, Ottawa, ON, K2E 8A7 Canada
+1 613 224 4700; fax +1 613 224 4706
info@optiwave.com; www.optiwave.com

Featured Product: OptiFDTD (Finite-Difference Time-Domain Simulator)

Optiwave is the emerging leader in the development of innovative software tools for the design, simulation, and optimization of components, links, systems and networks for the dynamically growing fields in photonics nanotechnology, optoelectronics, optical networks and other photonic applications. Since its inception in 1994, Optiwave’s software has been licensed to more than 1000 industry-leading corporations and universities in over 75 countries worldwide. Contact: Bryan Tipper, VP, Sales & Marketing, bryan.tipper@optiwave.com; Bonnie Hewitt, Office Manager, global@optiwave.com

Optix Co. #4615
Zahari Stoyanov Str 65, Panagyurishte, 4500 Bulgaria
+1 359 357 4125; fax +1 359 357 3097
sales@optixco.com; www.optixco.com

Featured Product: Aspherical lenses from IR and Glass materials, Opto-Mechanical Assemblies

OPTIX CO. has quickly built a reputation for design, manufacturing, and testing cutting edge Optical Components and Assemblies, Opto-mechanical and Opto-electronic systems for a wide range of civil and defense applications. A contemporary enterprise with a completely closed production cycle, OPTIX CO. is a 100% Private company with a wide range of expertise to meet the demands of our customers. Contact: Janice Hunter, US Sales Manager, janice.hunter@primoptix.com; Stoyan Novakov, Sales Manager, sales@primoptix.com

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+86 755 2799 5900; fax +86 755 2799 5500
sales@optizonetech.com; www.optizonetech.com

Featured Product: KW Fiber Cables (QBH), Circulators, 100W Isolators, WDMs, Combiners, Couplers, Modules, fiber compon

Optizone is expert manufacturer of fiber optic components, apart from all components mentioned above, Optizone enhances to provide customized solutions for the industries including fiber laser, sensing, medical care equipment, telecommunications. Optizone has been certificated with REACH and ROHS standards, all units from Optizone is tested under telcordia criteria’s and shipped with unique labeling and test data. Please contact sales@optizonetech.com for any questions and inquiry. Contact: Amanda Gong, Marketing Manager, sales@optizonetech.com

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SPIE Corporate Member
1260 Calle Suerte, Camarillo, CA, 93012 USA
+1 805 499 0335; fax +1 805 499 8108
sales@optodiode.com; www.optodiode.com


Supplier of industry-leading standard & custom-designed sensors, photodiodes, IR detectors, photonic modules, assemblies, & high-performance LEDs (covering 265-940 nm) & IR emitters (from 1-10 µm). We offer advanced performance sensors from the extreme ultraviolet (UV) to the mid-infrared (mid-IR), providing unparalleled high-energy particle, electron, X-ray, and UV detection along with superior sensitivity to discriminate trace gases or detect heat, sparks, or flames in the mid-IR spectrum. Contact: Russ Dahl, Business Unit Manager, russdahl@optodiode.com

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Lochhamer Schlag 14, Gräfelfing, 82166 Germany
+49 89 898 055 30; fax +49 89 898 055 18
info@opto.de; www.opto.de

Featured Product: Imaging Module Profile, Imaging Module PAN, Stereo and Assessment Microscope

Opto develops and manufactures customized, optoelectronic modules, optical components and systems for the industrial and biomedical markets. With its own facilities in Germany, France, Swiss, UK and Asia, Opto is a globally recognised solution provider. For more than 30 year, Opto has established itself as a leading International supplier of machine vision solutions. Opto provides special optomechanical solutions that are reduced to the essentials of the application and perfectly cost optimised. Contact: Alexander Schlager, Marketing, marketing@opto.de

Opto-Alignment Technology #5468
SPIE Corporate Member
1034-A Van Buren Ave, Indian Trail, NC, 28079-5541 USA
+1 704 893 0339
sales@optoalignment.com; www.optoalignment.com

Featured Product: The Laser Alignment and Assembly Station™ is the ultimate non-contact measurement and alignment tool

Opto Alignment is a leading manufacturer of ultra-precision alignment, assembly and inspection optical systems. Our flagship product, the Laser Alignment & Assembly Station (LASS), employs latest generation illumination and vision technologies, along with computer automation, to achieve sub-micron centering precision. We offer complete solutions for opto-mechanical design, ultra-precision machining, system manufacturing and assembly services ranging from the visible to the infrared spectrum. Contact: Guy Pearlman, President, guy.pearlman@optoalignment.com; Ron Garden, VP Product/Business Dev’t, ron.garden@optoalignment.com
OPTOCRAFT GmbH
Am Weichselgarten 7, Erlangen, 91058 Germany
+49 9131 69 15 00; fax +49 9131 69 15 11
info@optocraft.de; www.optocraft.de

Featured Product: SHSCam HR2-130-U3: Highest sensitivity Shack-Hartmann wavefront sensor for demanding applications
Since 2001, Optocraft manufactures and develops high-quality optical measurement devices based on Shack-Hartmann wavefront technology. The goal is to prove the quality of your products like e.g. lenses, microscope objectives or laser systems. With its substantial know-how, Optocraft’s team opens up innovative solutions for advances in metrology and for individual customer requests. In this way, it is possible to provide efficient standardized systems as well as perfectly customized solutions. Contact: Christian Brock, Sales Manager, info@optocraft.de

Optoflux GmbH
Andernacher Str 29b, Nürnberg, 90411 Germany
+49 911 98328 0; fax +49 911 98328 119
info@optoflux.com; www.optoflux.com/home/

Featured Product: Custom-build optical components manufactured from plastic and silicone
Optoflux is the specialist in the design and production of optical devices and precision optics manufactured from plastic and silicone. Our products are used with great success in many different fields, such as the automotive, medical technology, lighting, sensor technology and low vision sectors. When it comes to our customers, we are both partner and solution provider in all areas associated with optics, optical fibres and reflectors with the finest tolerances. Contact: Andreas Zenker, Head of Marketing and Sales, andreas.zenker@optoflux.com

Optogama
Mokslininku Str 2A, Vilnius, Vilniaus, 08412 Lithuania
+370 5 219 4884; fax +370 5 219 4883
sales@optogama.com; www.optogama.com

Featured Product: Automated laser beam expanders, reducers and beam delivery systems, Eye-safe lasers, Laser attenuators
Design and manufacturing of custom optical system and laser sources for dedicated application and integrators: Automated laser beam expanders, beam reducers, Laser beam delivery systems, Motorised Laser power attenuators and power stabilizers, Motorised divergence compensators and collimators, Eye-safe 1.54 µm DPSS pulsed lasers, Wavelength stabilized OEM DPSS pulsed lasers, High power green 532 nm lasers, Custom lens systems, collimators, objectives, Laser R&D and integration services. Contact: Aurimas Galinis, CSO, aurimas@optogama.com; Tadas Lipinskas, CEO, tadas@optogama.com

Optogear Oy
Kuormatie 14, Nummela, 03100 Finland
+358 9 2227799; fax +358 9 2227789
optogear@optogear.fi; www.optogear.fi

Featured Product: Optical fiber draw towers, preform manufacturing equipment, fiber coating systems
Optogear offers equipment and technologies for photonics industry. Our products enable superior quality fiber optic products made by the world leading companies of the industry. Our flexible way of working allows us to bring new products to the market using the most advanced technologies. Modern industrial design, close co-operation with our worldwide partner network and attention to customer feedback ensure both excellent usability and exceptional performance of our products. Contact: Alexei Malinin, VP, Marketing & Sales, alexei.malinin@optogear.fi

Opto-Line International, Inc.
265 Ballardvale St, Wilmington, MA, 01887-1036 USA
+1 978 658 7255
psumner@opto-line.com; www.opto-line.com

Featured Product: Custom Precision Optical Patterns
Since 1967, Opto-Line International has built a reputation for excellence, providing companies in the medical, optometry, aerospace, industrial, science and defense sectors with the very best custom precision optical patterns and thin film coatings available. Opto-Line International’s expertise in photolithography, combined with our thin film coating capability, enables us to provide our customers with the finest precision patterned optics...often the most complex and demanding. Contact: Paul Sumner, Chief Operating Officer, psumner@opto-line.com; John Sumner, Principal, jsumper@opto-line.com

OptoMarine Co., Ltd.
#201 Annex Venture Ctr Gwangju Technopark, 333 Cheomdan Gwag-roi Buk-gu, Gwangju, 61008 Korea, Republic of
+86 62 602 7908; fax +86 62 602 7909
sales@optomarine.com; www.optomarine.com

Featured Product: Industrial Optical Module
Opto Marine Co., Ltd. develops and manufactures light source module for industrial network and IoT based on the optical packaging &RF technology and is doing business for optical sensor field for shipbuilding and marine. We have established a Technical research institute to produce more reliable optical module and have been endeavoring to develop excellent technology. Our Product has been certified by ISO, TUV, RoHS and proved its technology and safety internationally. Contact: Yoon Ho Park, CEO, sales@optomarine.com

Optometrics Corporation
521 Great Rd, Ste 1, Littleton, MA, 01460 USA
+1 978 772 1700; fax +1 978 772 0017
sales@optometrics.com; www.dynasil.com

Featured Product: Diffraction Gratings as thin as 0.5mm.
Optometrics is a leader in grating-to-grating repeatability
Opto Marine Co., Ltd. develops and manufactures light source module for industrial network and IoT based on the optical packaging &RF technology and is doing business for optical sensor field for shipbuilding and marine. We have established a Technical research institute to produce more reliable optical module and have been endeavoring to develop excellent technology. Our Product has been certified by ISO, TUV, RoHS and proved its technology and safety internationally. Contact: Yoon Ho Park, CEO, sales@optomarine.com

Optometric LLC
6901 Tpc Dr Ste 500, Orlando, FL, 32822-5128 USA
+1 407 857 4410; fax +1 407 857 4409
sales@optometric.com; www.optometric.com

Featured Product: SHSCam HR2-130-U3: Highest sensitivity Shack-Hartmann wavefront sensor for demanding applications
Since 2001, Optocraft manufactures and develops high-quality optical measurement devices based on Shack-Hartmann wavefront technology. The goal is to prove the quality of your products like e.g. lenses, microscope objectives or laser systems. With its substantial know-how, Optocraft’s team opens up innovative solutions for advances in metrology and for individual customer requests. In this way, it is possible to provide efficient standardized systems as well as perfectly customized solutions. Contact: Christian Brock, Sales Manager, info@optocraft.de

Optoflux GmbH
Andernacher Str 29b, Nürnberg, 90411 Germany
+49 911 98328 0; fax +49 911 98328 119
info@optoflux.com; www.optoflux.com/home/

Featured Product: Custom-build optical components manufactured from plastic and silicone
Optoflux is the specialist in the design and production of optical devices and precision optics manufactured from plastic and silicone. Our products are used with great success in many different fields, such as the automotive, medical technology, lighting, sensor technology and low vision sectors. When it comes to our customers, we are both partner and solution provider in all areas associated with optics, optical fibres and reflectors with the finest tolerances. Contact: Andreas Zenker, Head of Marketing and Sales, andreas.zenker@optoflux.com

Optogama
Mokslininku Str 2A, Vilnius, Vilniaus, 08412 Lithuania
+370 5 219 4884; fax +370 5 219 4883
sales@optogama.com; www.optogama.com

Featured Product: Automated laser beam expanders, reducers and beam delivery systems, Eye-safe lasers, Laser attenuators
Design and manufacturing of custom optical system and laser sources for dedicated application and integrators: Automated laser beam expanders, beam reducers, Laser beam delivery systems, Motorised Laser power attenuators and power stabilizers, Motorised divergence compensators and collimators, Eye-safe 1.54 µm DPSS pulsed lasers, Wavelength stabilized OEM DPSS pulsed lasers, High power green 532 nm lasers, Custom lens systems, collimators, objectives, Laser R&D and integration services. Contact: Aurimas Galinis, CSO, aurimas@optogama.com; Tadas Lipinskas, CEO, tadas@optogama.com

Optogear Oy
Kuormatie 14, Nummela, 03100 Finland
+358 9 2227799; fax +358 9 2227789
optogear@optogear.fi; www.optogear.fi

Featured Product: Optical fiber draw towers, preform manufacturing equipment, fiber coating systems
Optogear offers equipment and technologies for photonics industry. Our products enable superior quality fiber optic products made by the world leading companies of the industry. Our flexible way of working allows us to bring new products to the market using the most advanced technologies. Modern industrial design, close co-operation with our worldwide partner network and attention to customer feedback ensure both excellent usability and exceptional performance of our products. Contact: Alexei Malinin, VP, Marketing & Sales, alexei.malinin@optogear.fi
Photonics West Exhibitor Listing

**Optonics**  
63 Cheomdan Venture so-ro 15 been-gil Buk-gu, Gwangju, 61003 Korea, Republic of  
+82 62 973 1260; fax +82 62 973 1261  
jiho.shin@optonics.com; www.optonics.net  
**Featured Product:** Ultra-Precision Optic  
Optonics is established in 2004 and specialized in Laser or Ultra-Precision Optic components. With the most advanced technical team in South Korea, we apply technologies for realization of ultra-low-loss performance, optical contact bonding performance (no used of glue) and ultra-precision performance. The major applications can be found in the field of high power lasers, precision optic measurements, RLG(Ring Laser Gyro) optics, IR optics or fiber optics.

**OptoSigma Corporation**  
3210 S Croddy Way, Santa Ana, CA, 92704 USA  
+1 949 851 5881; fax +1 949 851 5058  
sales@optosigma.com; www.optosigma.com  
**Featured Product:** Optics, Opto-Mechanics, Optical Coatings, Inspection Systems, Optical Tables, Objectives, Stages  
OptoSigma is a leader in thin film coatings, opto-mechanics, manual and motorized positioning components and optical components for more than 20 years. We're committed to providing unrivalled service and engineering insight for our customers. Our global manufacturing prowess enables us to offer the best selection from stock while handling custom orders of all types and quantities. Discover why thousands of customers worldwide rely on OptoSigma as their first source for optics and hardware. Contact: Dan Denison, Sales Manager, sales@optosigma.com

**OptoTech Optical Machinery Inc.**  
PO Box 7, Palm, PA, 18070 USA  
+1 215 679 2091; fax +1 215 679 2013  
info@optotech.us; www.optotech.us  
OptoTech is a German based company, offering the most comprehensive product range in the field of optics manufacturing equipment. We supply optics processing centers for grinding, polishing and centering/edging, correction polishing machines, measuring technology, as well as alignment and joining technologies. Whether round optics, plano optics, aspheric, cylinders or freeform surfaces from Ø 1 mm to 2000mm. OptoTech offers cutting edge technology, tooling and service. Contact: Heidi H, General Manager, h.hofke@optotech.us; Matthias Pfaff, Division Manager Precision Optics, m.pfaff@optotech.de

**Optronics**  
63 Cheomdan Venture so-ro 15 been-gil Buk-gu, Gwangju, 61003 Korea, Republic of  
+82 62 973 1260; fax +82 62 973 1261  
jiho.shin@optonics.com; www.optonics.net  
**Featured Product:** Ultra-Precision Optic  
Optonics is established in 2004 and specialized in Laser or Ultra-Precision Optic components. With the most advanced technical team in South Korea, we apply technologies for realization of ultra-low-loss performance, optical contact bonding performance (no used of glue) and ultra-precision performance. The major applications can be found in the field of high power lasers, precision optic measurements, RLG(Ring Laser Gyro) optics, IR optics or fiber optics.

**Optowide Technologies Co., Ltd**  
1 Chashan Road Mawei High-Tech Park, Fuzhou City Fujian Province, 350015 China  
+86 591 3817 8233; fax +86 591 3813 5111  
sales@optowide.com; www.optowide.com  
**Featured Product:** Molding Glass Aspheric Lenses, High Precision Optics, Optical Filter, Fiber component  
Optowide is a technology company with innovative team from optical industrial leading companies. Optowide specializes in advanced coating, molded glass aspheric lenses, high precision micro optics processing, and high power fiber coupling. We are a highly vertical integrated manufacturing company which provides the most cost effective products for fiber optics communication, fiber laser and DPSS laser, optical sensing, security surveillance, machine vision and optical instrument applications. Contact: Jerry Ye, Sales & Marketing Director, jerry.ye@optowide.com; Ferry Chen, Sales, ferry.chen@optowide.com

**Optowell Co., Ltd.**  
#212 Techno ville-B Jeonbuk Techno Park, 109 Ballyong-ro Deokjin-gu, Jeonju-si, 54853 Korea, Republic of  
+82 63 214 1186; fax +82 63 214 1137  
sales@optowell.com; www.optowell.com  
**Featured Product:** High Power VCSEL (Vertical Cavity Surface Emitting Laser) Chip  
Optowell has developed core technology regarding crystal growth, element manufacturing and packages based on GaAs and has also developed Epiwafer (VCSEL, GaAs PIN PD, RCLED). On the basis of such innovations the company has mass-produced high-quality products, such as chips, TO packages and OSA and supplied them. Recently, Optowell launched High Power VCSELs (850nm, 940nm up-to 2W) could be applied for many kind of sensor devices such as TOF, Proximity, Motion Sensor and so on. Contact: Gabriel Park, Sales Manager, gabriel@optowell.com

**Optowide Technologies Co., Ltd**  
1 Chashan Road Mawei High-Tech Park, Fuzhou City Fujian Province, 350015 China  
+86 591 3817 8233; fax +86 591 3813 5111  
sales@optowide.com; www.optowide.com  
**Featured Product:** Molding Glass Aspheric Lenses, High Precision Optics, Optical Filter, Fiber component  
Optowide is a technology company with innovative team from optical industrial leading companies. Optowide specializes in advanced coating, molded glass aspheric lenses, high precision micro optics processing, and high power fiber coupling. We are a highly vertical integrated manufacturing company which provides the most cost effective products for fiber optics communication, fiber laser and DPSS laser, optical sensing, security surveillance, machine vision and optical instrument applications. Contact: Jerry Ye, Sales & Marketing Director, jerry.ye@optowide.com; Ferry Chen, Sales, ferry.chen@optowide.com

**Optowell Co., Ltd.**  
#212 Techno ville-B Jeonbuk Techno Park, 109 Ballyong-ro Deokjin-gu, Jeonju-si, 54853 Korea, Republic of  
+82 63 214 1186; fax +82 63 214 1137  
sales@optowell.com; www.optowell.com  
**Featured Product:** High Power VCSEL (Vertical Cavity Surface Emitting Laser) Chip  
Optowell has developed core technology regarding crystal growth, element manufacturing and packages based on GaAs and has also developed Epiwafer (VCSEL, GaAs PIN PD, RCLED). On the basis of such innovations the company has mass-produced high-quality products, such as chips, TO packages and OSA and supplied them. Recently, Optowell launched High Power VCSELs (850nm, 940nm up-to 2W) could be applied for many kind of sensor devices such as TOF, Proximity, Motion Sensor and so on. Contact: Gabriel Park, Sales Manager, gabriel@optowell.com

**Optronics**  
63 Cheomdan Venture so-ro 15 been-gil Buk-gu, Gwangju, 61003 Korea, Republic of  
+82 62 973 1260; fax +82 62 973 1261  
jiho.shin@optonics.com; www.optonics.net  
**Featured Product:** Ultra-Precision Optic  
Optonics is established in 2004 and specialized in Laser or Ultra-Precision Optic components. With the most advanced technical team in South Korea, we apply technologies for realization of ultra-low-loss performance, optical contact bonding performance (no used of glue) and ultra-precision performance. The major applications can be found in the field of high power lasers, precision optic measurements, RLG(Ring Laser Gyro) optics, IR optics or fiber optics.
**ORSA Corporation**

1-17-14-303 Bijogi, Toda City Saitama Pref, 335-0031 Japan
+81 48 485 9030; fax +81 48 485 9034
nishihani@orsajp.com; orsa.co.jp

**Featured Product: Non-coherent Fiber Laser Unit, Super Power Stable LD/PMF Light Source Unit**

ORSA has been supporting Optical Industries, Universities and Institutes with our own Laser to Fiber and fiber to fiber precise Assembling technologies in Japan. We are now going to introduce our own unique technologies to the US market. Contact: Akira Nishihani, President, nishihani@orsajp.com

**OSI – The Optical Society**

2010 Massachusetts Avenue, NW, Washington, DC, 20036-1023 USA
+1 202 416 1907
info@osa.org; www.osa.org

**Founded in 1916, The Optical Society (OSA) is the leading professional association in optics and photonics, home to the world’s most accomplished leaders in science, engineering, and industry. Through world-renowned publications, conferences and meetings, and programs that support the professional aspirations of more than 20,000 members, OSA provides quality information and inspiring interactions that power achievements in the science of light.** Contact: Melissa Russell, Chief Industry Relations Officer, mrusse@osa.org; Beth Harrington, Senior Director, Industry Relations, bharrington@osa.org

**OSI Laserdiode**

4 Olsen Ave, Edison, NJ, 08820-2419 USA
+1 732 549 9001; fax +1 732 906 1559
sales@oslaserdiode.com; www.laserdiode.com

**Featured Product: CVN 63-90ECL, TCW Tribiner fiber-coupled laser, and the CVLL 350-CL90**

OSI LDI manufactures pinfet detectors for fiber-optic data transmission, OTDR lasers, Combiners, Tribiners, DFB and APD devices for test equipment and optical sensing applications. We also offer high power, short pulsed lasers 850, 905 & 1550nm, CW lasers 808nm for military and industrial applications many packaging options available. Contact: Peggy Scarillo, Sales Manager, pscarillo@oslaserdiode.com; Christine Base, Customer Service, cbase@oslaserdiode.com

**Oxxius SA**

4 rue Louis de Broglie, Lannion, 22300 France
+33 2 96 48 70 28; fax +33 2 96 48 21 90
sales@oxxius.com; www.oxxius.com

**Featured Product: LBX, LCX, L4Cc, L6Cc, LUV**

Oxxius manufactures innovative solid-state lasers for life science, spectroscopy and industrial applications. Its LaserBoxx compact laser modules, featuring wavelengths in the UV, visible and NIR, have outstanding performance with market-leading power levels. The LCX DPSS and LBX laser diode share the same platform offering mechanical, optical and connection compatibility for easy integration -The LUV series is Deep UV laser at 266nm & 280 nm- The L6Cc & L4Cc are laser launchers for Microscopy. Contact: sales@oxxius.com

**OWIS GmbH**

Im Gaisgraben 7, Staufen im Breisgau, 79219 Germany
+49 7633 9504 0; fax +49 7633 9504-440
info@owis.eu; www.owis.eu/en

**Featured Product: Optical beam handling systems and positioning systems**

The company OWIS GmbH was founded in 1980 and is headquartered in South-Western Germany. The medium-sized family-owned enterprise offers worldwide optical beam handling systems and positioning systems. With an own development and manufacturing “Made in Germany” OWIS is a global leading manufacturer of these systems. OWIS focuses high-quality standard and customized Rails, Slides, Mounts, Manual/Motorized Positioning Systems (Linear, Elevator, Rotary and XY Stages, Goniometers) and Controls. Contact: Export Department, export@owis.eu

**OXIDE Corporation**

1747-1 Makihara Mukawa, Hokuto, 408-0302 Japan
+81 551 26 0022; fax +81 551 26 0033
sales@opt-oxide.com; www.opt-oxide.com

**Featured Product: Pulsed UV/Green fiber laser with compact convertor head for UV and Green**

Oxide manufacturing capabilities cover all the way from LNCrystal growth, wafering process, device designing and assembling to fabrication of modules, and all in one same place, our Yamanashi Factory. With our integrated production system and wide technology background, Oxide can answer the requirements from the customers in an ever more efficient and cost effective way and at higher level. Contact: Riyo Ozawa, ozawa@opt-oxide.com

**Oxilion GmbH**

Im Gaisgraben 7, Staufen im Breisgau, 79219 Germany
+49 7633 9504 0; fax +49 7633 9504-440
info@owis.eu; www.owis.eu/en

**Featured Product: Optical beam handling systems and positioning systems**

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**Oxxius SA**

4 rue Louis de Broglie, Lannion, 22300 France
+33 2 96 48 70 28; fax +33 2 96 48 21 90
sales@oxxius.com; www.oxxius.com

**Featured Product: LBX, LCX, L4Cc, L6Cc, LUV**

Oxxius manufactures innovative solid-state lasers for life science, spectroscopy and industrial applications. Its LaserBoxx compact laser modules, featuring wavelengths in the UV, visible and NIR, have outstanding performance with market-leading power levels. The LCX DPSS and LBX laser diode share the same platform offering mechanical, optical and connection compatibility for easy integration -The LUV series is Deep UV laser at 266nm & 280 nm- The L6Cc & L4Cc are laser launchers for Microscopy. Contact: sales@oxxius.com

**Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest**
Photonics West Exhibitor Listing

**Sponsor**

OZ Optics Ltd. #4429

SPIE Corporate Member

W Carleton Industrial Park, 219 Westbrook Rd, Ottawa, ON, K0A 1L0 Canada
+1 613 831 0981; fax +1 613 836 5089
sales@ozoptics.com; www.ozoptics.com

Featured Product: Online Catalog

High Power Components/Isolators/Combiners/Patchcords/
Connectors/Intelligent Tunable Laser Diode Sources/Safety Interlocks/
Shutters/Optical Coatings, Laser to Fiber Delivery Components,
Adjustable Collimators/Focusers, PM/SM/MM Fused Fiber Couplers,
PM Patchcords/Connectors/Splitters/Switch, Polarized Sources,
Polarization Rotators/Controllers/Analyzers, Polarizers, PDL Emulators,
Extinction Ratio Meter, Turnkey Laser Diode Sources,
Hermetically Sealable Patchcords, Fiber Optic Sensors OZ-PEN,
Contact: Omur Sezerman, CEO & President, sales@ozoptics.com

Pantec Engineering AG #5360

Industriering 21, Ruggell, 9491 Liechtenstein
+423 377 13 33, fax +423 377 13 34
3um@pantec.com; www.pantec-medicallaser.com

Featured Product: High-power, diode pumped laser modules (2 to 3 µm) High brightness diode lasers (532/876/1064 nm)
As exclusive integration partner of the unique laser technologies - 3mikron and fam - Pantec Medical Laser provides highly customized solutions from single laser units to complete application devices.
Both technologies are characterized through efficiency, reliability, maintenance and compactness and are suitable for medical and industrial applications. Pantec Medical Laser is a business unit of Pantec Engineering AG, located in Ruggell, Liechtenstein. Contact: Manuel Messner, Sales & Application Engineer, manuel.messner@pantec.com

Paradigm Research Optics #2520

595 W 66th St, Loveland, CO, 80538-4670 USA
+1 970 776 8900
rfq@research-optics.com; www.research-optics.com

Parker Hannifin Corp. Electromechanical & Drives Div. #4364

Electromechanical & Drives Division, 9225 Forsyth Park Dr,
Charlotte, NC, 28273 USA
+1 800 358 9070; fax +1 707 584 8015
cmr_customer_service@parker.com; www.parker.com/emn

Featured Product: Precision Multi-Axis Stages for Laser and Microscopy Based Applications
Parker Hannifin is a Fortune 250 global leader in motion and control technologies. For 100 years the company has engineered the success of its customers in a wide range of diversified industrial and aerospace markets. Parker’s engineering expertise and broad range of core technologies uniquely positions the company to help solve the world’s greatest engineering challenges. Contact: Brian Handerhan, Business Development Manager, bhanderhan@parker.com; Patrick Lehr, Product Manager - Precision Mechanics, patrick.lehr@parker.com

Particle Measuring Systems, Inc. #1911

5475 Airport Blvd, Boulder, CO, 80301-2886 USA
+1 303 443 7100; fax +1 303 546 7331
info@pmeasuring.com; www.pmeasuring.com

Particle Measuring Systems Inc. (PMS), a subsidiary of Spectris plc, is a global technology leader in contamination monitoring, the inventor of laser particle counting, and now is the leading provider of solutions for monitoring and controlling many forms of contamination that impact companies that manufacture in ultra-clean environments.

Pavilion Integration Corporation (PIC) #110

2380 Qume Drive, Suite F, San Jose, CA, 95131 USA
+1 408 453 8801; fax +1 408 453 8802
sales@pavilionintegration.com; www.pavilionintegration.com

Featured Product: Lapis® Optical Engine, OEM designed solutions, covering excitation sources, optics, and detectors
Pavilion Integration Corporation (PIC), is a Silicon Valley-based designer and manufacturer of free space and/or fiber-coupled laser modules and laser optical engine subsystems covering the UV, Visible and IR wavelength ranges for demanding biomedical and industrial applications. Contact: info@pavilionintegration.com

Pacific Laser Equipment #5237

SPIE Corporate Member

17602 17th St Ste 102-182, Tustin, CA, 92780-7915 USA
+1 714 809 5588
service@plequipment.com; www.plequipment.com

Palomar Technologies, Inc. #4430

2728 Loker Ave W, Carlsbad, CA, 92010-6603 USA
+1 760 931 3600; fax +1 760 931 5191
marcom@bonders.com; www.palomartech.com

Featured Product: High-precision assembly systems and contract manufacturing: die attach, wire bonding, vacuum reflow
Palomar Technologies is a leading supplier of automated microelectronic assembly machines and contract assembly services with specialization in precision die attach, wire bonding and vacuum reflow processes.
High-precision assembly systems enable customers to increase yield and reduce costs in the manufacturing of optoelectronic, RF and power module packages. Contact: Bradley Benton, Regional Sales Manager, Western Americas, bbenton@bonders.com

Pangolin Laser Systems, Inc. #2446

SPIE Corporate Member

9501 Satellite Blvd Ste 109, Orlando, FL, 32837-8445 USA
+1 407 299 2088; fax +1 407 299 6066
contact@pangolin.com; www.lasorb.com

Featured Product: LASORB - Advanced protection for laser diodes
LASORB (a division of Pangolin Laser Systems Inc.) produces the world’s first, and only semiconductor component, guaranteed to protect your laser diodes from failures caused by electrostatic discharge (ESD) and power surges. There are several standard LASORB formulations - optimized for IR, Red, Blue and BLU-RAY laser diode use, as well as series-connected strings and QCLs. More information on LASORB, as well as videos of the product in action are available from our website (www.lasorb.com). Contact: Justin Perry, COO, contact@lasorb.com

3mikron and fam - Pantec Medical Laser
PCO-TECH Inc. #1425
SPIE Corporate Member
6930 Metroplex Dr, Romulus, MI, 48174 USA
+1 866 678 4566; fax +1 248 276 8825
info@pco-tech.com; www.pco-tech.com

Featured Product: Compact pco.panda: best solution for applications in state-of-the-art sCMOS imaging technology!

PCO is a leading specialist and Pioneer in Cameras and Optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company’s cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world.

Contact: Nimesh Juthani, Regional Manager, nimesh.juthani@pco-tech.com; Altas Ramji, Regional Manager, altas.ramji@pco-tech.com

PerkinElmer, Inc. #4311
SPIE Corporate Member
940 Winter St, Waltham, MA, 02451 USA
+1 800 762 4000
info@perkinelmer.com; www.perkinelmer.com

Featured Product: Lambda 1050 UV/Vis Spectrophotometer

PerkinElmer is a global leader focused on improving the health and safety of people and their environment. PerkinElmer is dedicated to the quality and sustainability of the environment. With our analytical instrumentation, illumination and detection technologies, and leading laboratory services, we focus on improving the integrity and safety of the world we live in.

Perkins Precision Developments, LLC #1807
SPIE Corporate Member
4110 N Valley Dr, Longmont, CO, 80504-9312 USA
+1 970 785 2706; fax +1 970 535 6368
sales@perkinsprecision.com; www.perkinsprecision.com

Featured Product: Custom Laser Optics for high energy, low loss and high precision applications from 266nm to 5um

Perkins Precision Developments (PPD) manufactures custom laser optics, optical assemblies and thin film coatings for R&D, prototype and OEM applications. PPD’s optical fabrication, ion-beam sputtering (IBS) coatings and precision assembly techniques enable us to provide total optics solutions to specific and unique customer requirements.

Typical components that are manufactured in-house include matched wedge pairs, dielectric laser mirrors, precision prisms and polarizing beam splitter cubes. Contact: Emily Kubacki, Director of Sales, emily@perkinsprecision.com; Jay Perkins, President, jay@perkinsprecision.com

PFC Flexible Circuits Ltd. #2432
11 Canadian Rd Unit 7, Scarborough, ON, M1R 5G1 Canada
+1 416 750 8433; fax +1 416 750 0016
sales@pfcflex.com; www.pfcflex.com

Featured Product: High speed designed circuits and assemblies using Teflon and Liquid Crystal Polymer

PFC designs, manufactures and assembles Flexible Printed Circuits and Rigid Flex- all under one roof. Our specialties include high speed and fine line circuits. Many companies use us to provide optical modules. PFC has qualified a library of UL and high speed circuit materials- including Teflon based and LCP. We have 3 surface mount assembly lines in house and supply full turnkey including wire bonded components. We provide fine line trace and space to 37.5 microns.

www.pfcflex.com Contact: Mike Morando, VP Sales and Marketing, mmorando@pfcflex.com; Steve Kelly, President, skelly@pfcflex.com

PCO-TECH Inc. #1425
SPIE Corporate Member
6930 Metroplex Dr, Romulus, MI, 48174 USA
+1 866 678 4566; fax +1 248 276 8825
info@pco-tech.com; www.pco-tech.com

Featured Product: Compact pco.panda: best solution for applications in state-of-the-art sCMOS imaging technology!

PCO is a leading specialist and Pioneer in Cameras and Optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company’s cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world.

Contact: Nimesh Juthani, Regional Manager, nimesh.juthani@pco-tech.com; Altas Ramji, Regional Manager, altas.ramji@pco-tech.com

PHLUXi, Inc. #6009
SPIE Corporate Member
1-8-5-2202 Harumi, Chuoku-tokyo, 104-0053 Japan
+81 3 5534 8867; fax +81 3 6740 8421
sales@phluxi.com; www.phluxi.com/English5.html
Contact: Yoshiharu Urata, Director, yurata@phluxi.com

Phoenix Software #5330
Business Development, Hengeloesstr 705, Enschede, 7521 PA Netherlands
+31 53 4836460; fax +31 53 4337415
niek.nijenhuis@phluxi.com; www.phluxi.com

PFI Flexible Optics, Inc. #4230
SPIE Corporate Member
733 Bienville Blvd., Ocean Springs, MS, 39564-2842 USA
+1 228 875 0165
sales@pfgoptics.com; www.pfgoptics.com

PHASICS Corp. #4667
SPIE Corporate Member
11th Fl, 600 California St, San Francisco, CA, 94109 USA
+1 415 610 9741
contact@phasics.com; www.phasicscorp.com

Philips Lighting #5333
Steenweg op Gierle 417, Turnhout, 2300 Belgium
colorsparkhldled@philips.com; www.philips.com/dpl

Featured Product: Rethink the impossible - The game changer Philips ColorSpark HLD LED is here!

Philips Lighting, Digital Projection Lighting Rethink The Impossible - The Game Changer ColorSpark HLD LED Want to learn more about our exciting worldwide, unique High Lumen Density LED source suitable for various applications and demands please contact us for a meeting opportunity. Contact: Marco Maenner, New Business Development Manager, marco.maenner@philips.com

Phoenix Software #5330
Business Development, Hengeloesstr 705, Enschede, 7521 PA Netherlands
+31 53 4836460; fax +31 53 4337415
niek.nijenhuis@phluxi.com; www.phluxi.com

PFI Flexible Optics, Inc. #4230
SPIE Corporate Member
733 Bienville Blvd., Ocean Springs, MS, 39564-2842 USA
+1 228 875 0165
sales@pfgoptics.com; www.pfgoptics.com

PHASICS Corp. #4667
SPIE Corporate Member
11th Fl, 600 California St, San Francisco, CA, 94109 USA
+1 415 610 9741
contact@phasics.com; www.phasicscorp.com

Philips Lighting #5333
Steenweg op Gierle 417, Turnhout, 2300 Belgium
colorsparkhldled@philips.com; www.philips.com/dpl

Featured Product: Rethink the impossible - The game changer Philips ColorSpark HLD LED is here!

Philips Lighting, Digital Projection Lighting Rethink The Impossible - The Game Changer ColorSpark HLD LED Want to learn more about our exciting worldwide, unique High Lumen Density LED source suitable for various applications and demands please contact us for a meeting opportunity. Contact: Marco Maenner, New Business Development Manager, marco.maenner@philips.com

Photonics West Exhibitor Listing

PCO-TECH Inc. #1425
SPIE Corporate Member
6930 Metroplex Dr, Romulus, MI, 48174 USA
+1 866 678 4566; fax +1 248 276 8825
info@pco-tech.com; www.pco-tech.com

Featured Product: Compact pco.panda: best solution for applications in state-of-the-art sCMOS imaging technology!

PCO is a leading specialist and Pioneer in Cameras and Optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company’s cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world.

Contact: Nimesh Juthani, Regional Manager, nimesh.juthani@pco-tech.com; Altas Ramji, Regional Manager, altas.ramji@pco-tech.com

PerkinElmer, Inc. #4311
SPIE Corporate Member
940 Winter St, Waltham, MA, 02451 USA
+1 800 762 4000
info@perkinelmer.com; www.perkinelmer.com

Featured Product: Lambda 1050 UV/Vis Spectrophotometer

PerkinElmer is a global leader focused on improving the health and safety of people and their environment. PerkinElmer is dedicated to the quality and sustainability of the environment. With our analytical instrumentation, illumination and detection technologies, and leading laboratory services, we focus on improving the integrity and safety of the world we live in.

Perkins Precision Developments, LLC #1807
SPIE Corporate Member
4110 N Valley Dr, Longmont, CO, 80504-9312 USA
+1 970 785 2706; fax +1 970 535 6368
sales@perkinsprecision.com; www.perkinsprecision.com

Featured Product: Custom Laser Optics for high energy, low loss and high precision applications from 266nm to 5um

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PFC Flexible Circuits Ltd. #2432
11 Canadian Rd Unit 7, Scarborough, ON, M1R 5G1 Canada
+1 416 750 8433; fax +1 416 750 0016
sales@pfcflex.com; www.pfcflex.com

Featured Product: High speed designed circuits and assemblies using Teflon and Liquid Crystal Polymer

PFC designs, manufactures and assembles Flexible Printed Circuits and Rigid Flex- all under one roof. Our specialties include high speed and fine line circuits. Many companies use us to provide optical modules. PFC has qualified a library of UL and high speed circuit materials- including Teflon based and LCP. We have 3 surface mount assembly lines in house and supply full turnkey including wire bonded components. We provide fine line trace and space to 37.5 microns.

www.pfcflex.com Contact: Mike Morando, VP Sales and Marketing, mmorando@pfcflex.com; Steve Kelly, President, skelly@pfcflex.com
Photonics West Exhibitor Listing

**SPONSOR**

**Photodigm, Inc.**

1155 E Collins Blvd Ste 200, Richardson, TX, 75081 USA
+1 972 235 7584; fax +1 972 235 1609
sales@photodigm.com; www.photodigm.com

**Featured Product:** DBR Lasers for O₂ Monitoring

Photodigm is the world’s leading specialist manufacturer of single spatial and longitudinal mode laser diodes. Our team designs, produces, and delivers superior laser products by focusing on the needs of our customers, then projecting those requirements onto the semiconductor in our own wafer fabrication facility. Since 2000 we have specialized in Distributed Bragg Reflector (DBR) technology. Our laser fab distinguishes us from our competition because we can control design and production. Contact: Esther Moreno, Inside Sales Assistant, emoreno@photodigm.com; Marty Edwards, Director of Business Development, medwards@photodigm.com

**Photon Design Ltd.**

34 Leopold St, Oxford, OX4 1TW United Kingdom
+44 1865 324990
padmin@photond.com; www.photond.com

**Featured Product:** Innovative new Maxwell simulator: faster than FDTD for tough problems like plasmonics

Photon Design was started in 1992 and now provides a wide range of innovative photonics CAD tools to 35 countries around the world, supplying most of the World’s leading photonics companies, universities and government research labs. CAD products include tools for both passive and active (semiconductor) component and optical circuit modelling. The company has a team of the brightest people in photonics modelling, developing innovative solutions for tomorrow’s photonics design projects. Contact: Dominic Gallagher, CEO, pdadmin@photond.com; Vincent Brulis, Technical Support, pdadmin@photond.com

**Photon Energy**

Bräunleinsberg 10, Ottensoos, 91242 Germany
+41 31 562 4040; fax +41 31 562 6167
info@photon-energy.de; www.photon-energy.de

PHOTON ENERGY GmbH is a 20 years of experience German ISO-9001 & -13485 certified manufacturer of ns & ps DPSS-lasers for precision micro-machining. The lasers are designed for industrial and medical use with ease of integration and superior performance. Applications are scribing, drilling, cutting, marking and structuring. PHOTON ENERGY is exclusively distributed by Allied Laser Solutions in the US. Contact: Alain Bourdon, US Sales, arb@alliedlasersolutions.com

**Photon Control Inc.**

#130-13500 Verdun Pl, Richmond, BC, V6V 1V2 Canada
+1 604 900 3150; fax +1 604 422 8418
info@photon-control.com; www.photon-control.com

**Featured Product:** Optical sensors and instruments to measure temperature, position, and flow

Photon Control designs, manufactures and distributes a wide range of optical sensors and to measure temperature, position, and flow. These products are used by global original equipment manufacturers (“OEM”) and end users in the semiconductor and other industries. Photon Control’s high quality products provide industry leading accuracy and reliability in extreme conditions and are backed by a team of experts providing a variety of on-site and remote services. Contact: Jessica Britton, Marketing, Director, jbritton@photon-control.com

**Photon etc.**

5795 De Gaspé Ave #222, Montreal, QC, H2S 2X3 Canada
+1 514 385 9555; fax +1 514 279 5493
info@photonetc.com; www.photonetc.com

**Featured Product:** Hyperspectral imaging systems, tunable filters and laser and infrared cameras

Photon etc. is an established leader of optical and photonic instrumentation mainly based on a unique hyperspectral imaging patented technology. Its products are divided among four families: hyperspectral microscopic systems, hyperspectral widefield imagers, tunable filters and laser and infrared cameras. The applications go from live cell imaging to solar cells and include nanotechnology development and industrial sorting. Contact: Laura-Isabelle Dion-Bertrand, Sales and Marketing Director, lidion.bertrand@photonetc.com; Sébastien Blais-Ouellette, President and CEO, sbo@photonetc.com

**Photon Force**

34 Melville Street, Edinburgh, Scotland, EH3 7HA United Kingdom
+44 7944885045
enquiries@photon-force.com; https://www.photon-force.com/

**Featured Product:** The PF32 time-resolved SPAD camera

Photon Force is the world-leading supplier of time-resolved cameras with single-photon sensitivity for a wide range of applications: biomedical imaging and FLIM, LiDAR, quantum imaging, and beyond. Our cameras are faster, more compact, and far simpler to use than other solutions – allowing our customers to accelerate progress in their applications or research. Parallelize your photon counting needs with a single-photon avalanche diode (SPAD) array camera from Photon Force. Contact: Richard Walker, CEO, enquiries@photon-force.com
NEW

CRYSTA

CRYSTA high-speed 2D polarization camera analyzes internal stress in transparent materials & fluids.

The high-speed polarization image sensor was developed through combining a photonic-crystal micro polarizer array and conventional high-speed image sensor. Photron is committed to continually expanding the area of high-speed imaging with this new concept of polarization.

FASTCAM

PHOTRON OFFERS A WIDE RANGE OF HIGH-SPEED CAMERAS WITH POWERFUL FEATURES:
Megapixel resolution to 21,000fps
Reduced resolution to 2.1Mfps
Unparalleled light sensitivity
Minimum exposure to 159ns
128GB of internal memory
Fast download to PC or SSD
Extremely rugged design
Standard 2-year warranty

KEY HIGH-SPEED APPLICATIONS
Combustion analysis
Fluid dynamics and PIV
Materials testing and DIC
Ballistics and Impact Testing
Onboard and offboard vehicle safety testing
Photonics West Exhibitor Listing

**Photon Gear, Inc.**
\#246
245 David Pkwy, Ontario, NY, 14519-8955 USA  
+1 585 265 3360; fax +1 585 265 3364  
sales@photongear.com; www.photongear.com

Photon Gear specializes in the design, assembly and characterization of high-precision optical systems. Custom lens assemblies are verified with the interferometric test capabilities from 266 nm to 1600 nm. Supported applications include product inspection and processing, military, metrology, biomedical, laser scanning and polymer optics. We also provide contract optical engineering and optical design as well as systems engineering support for custom software and optical hardware. Contact: Gary Blough, President, sales@photongear.com; John Bowen, Senior Optical Engineer, sales@photongear.com

**Photonics & Imaging Technology**
\#3021
261 5th Ave Ste 1901, New York, NY, 10016-7701 USA  
+1 212 490 3999  
marketing@techbriefs.com; www.techbriefs.com

**Featured Product:** Photonics & Imaging Technology

Photonics & Imaging Technology is the publication for OEM designers and managers who are at the front end of the product development process, when decisions are being made on technologies and vendors. Photonics & Imaging Technology features exclusive reports of innovations in optics, fiber optics, electro-optics, lasers and laser systems, cameras and imaging systems, coatings and materials, test and measurement, sensors, and optical design and analysis software. Contact: Debora Rothwell, Director of Marketing, drothwell@techbriefs.com; Patrick Harvey, Integrated Media Consultant, pharvey@techbriefs.com

**Photons & Imaging Technology**

**Photons & Imaging Technology**

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**Photons & Imaging Technology**

**Photons & Imaging Technology**

**Photons & Imaging Technology**
Photonics & Advanced Sensing, sara.leggatt@adelaide.edu.au

Photonics revenue is ~$200M and related employment of ~800
of successfully commercialising photonic products; current
facilities and high potential projects. SA has a very strong tradition
creating a critical mass of outstanding researchers, research
manufacturing, defence & aerospace sectors. SA is becoming a
Mid IR lasers, OCT, Sapphire Oscillators, Bio NanoPhotonics

South Australia (SA) is a region with a successful track record in
advancement in solar cell technology, scientific cameras for research
systems — to more commercially applicable topics, such as
detection and amplification products for a variety of research and
applications. Many of our photon detection products

Taiwan will predominately comprise of photonics applications and
become a globally renowned photonics exhibition. The 2017 OPTO
Taiwan will predominately comprise of photonics applications and
will have four major application fields, namely biophotonics, 3-D
printing, forward academic and laser. Key materials, elements/
components, testing instruments, production equipment, facilities
and software/hardware will be displayed in each of these four
regions. Contact: Pamela Hisiao, Manager, exhibit@mail.pid.org.tw; Simon Hwang, Promotion, simon@mail.pdia.org.tw

Photonics Online

2009 Mackenzie Way Ste 280, Cranberry Township, PA, 16066 USA
+1724 940 7555
editor@photonicsonline.com; www.photonicsonline.com

Featured Product: Online Resource For Photonics Professionals
At Photonics Online, our goal is to keep our readers apprised of the various innovative applications of light. These applications
range from high-level scientific endeavors — such as the detection of gravitational waves and the newest advancements in quantum
systems — to more commercially applicable topics, such as advancement in solar cell technology, scientific cameras for research and
development, and sensors for integration into automobiles and other platforms. Contact: Ed Biller, Editor, ebiller@vermarkets.com; Nathan Miller, Account Executive, nmiller@vermarkets.com

Photonics South Australia

The Braggs Bldg/North Terrace Campus, Adelaide, SA, 5005 Australia
+61 8 8313 9254
sara.leggatt@adelaide.edu.au; www.adelaide.edu.au/ias

Featured Product: Pressure, temp & methane sensors, DLC, Mid IR lasers, OCT, Sapphire Oscillators, Bio NanoPhotonics

South Australia (SA) is a region with a successful track record in manufacturing, defence & aerospace sectors. SA is becoming a major global player in photonics due to well-focused investments, creating a critical mass of outstanding researchers, research facilities and high potential projects. SA has a very strong tradition of successfully commercialising photonic products; current photonics revenue is ~$200M and related employment of ~800 people. Contact: Piers Lincoln, Business Development Manager, piers.lincoln@adelaide.edu.au; Sara Leggatt, Admin, Institute for Photonics & Advanced Sensing, sara.leggatt@adelaide.edu.au

Photonics Spectra, a Photonics Media Publication

100 West Street, 2nd floor, Pittsfield, MA, 01202-4949 USA
+1 413 499 0514; fax +1 413 442 3180
info@photonics.com; www.photonics.com

Featured Product: Photonics Spectra magazine covers the science and industry of photonics. Free subscriptions!
Since 1967, Photonics Spectra magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products. Meet the Photonics Media Editors! Tuesday, January 30, 2018 at 3:00 PM in our booth. Enjoy informal conversation with our editors and ask how to get a Photonics Media t-shirt. Contact: Michael Wheeler, Managing Editor, michael.wheeler@photonics.com; Ryan Laurin, Vice President, ryan.laurin@ photonics.com

Photonik Inkubator GmbH

Hans-Adolf-Krebs-Weg 1, Göttingen, 37077 Germany
+49 551 30724 135; fax +49 551 30724 137
office@ photonik-inkubator.de; www.photonik-inkubator.de/

Featured Product: New Photonis Cricket optically couples cameras to image intensifiers with focus and alignment
Photonis is a market leader in high-speed, high-resolution photon detection and amplification products for a variety of research and commercial applications. Many of our photon detection products can be optimized for a specific spectral range. Photonis’ expertise in low light imaging now extends into NOCTURN, a family of CMOS-based low light cameras with <4-e- rns and a variety of connectivity and performance options for surveillance, research and security applications. www.photonis.com. Contact: Meghan Brennan, Marketing Coordinator, m.brennan@usa.photonis.com; Margaret Cooley, International Marketing Manager, m.cooley@usa.photonis.com

Photonix Edge LLC

1710 MacArthur Rd Ste 222, Whitehall, PA, 18052 USA
+1 610 462 7499; fax +1 610 822 0131
yves@ photonixedge.com; www.photonixedge.com

Featured Product: OSA, Wavelength meter, Supercontinuum source, EOM
We are a distribution company re-selling the following products: OSA - Ultra-High resolution ~ 5MHz / 40 fm - optical spectrum analyzer from APEX Technologies; Laser Spectrum Analyzer – 630nm – 1,100nm – 4GHz resolution from Resolution Spectra; Supercontinuum sources from LEUKOS; EOM – Fiber pigtailed electro-optic modulators and RF amplifiers (drivers) from iXBlue Photonics. Contact: Yves Deiss, President, yves@ photonixedge.com

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Photonics West Exhibitor Listing

PhotoSound Technologies, Inc. #2548
SPIE Corporate Member
5658 Sylmar Rd, Houston, TX, 77081 USA
+1 409 256 0331
info@pst-inc.com; www.pst-inc.com

Featured Product: Photo Acoustic Fluorescence Tomography system
PhotoSound Technologies Inc. is a research, development, and manufacturing company specializing in biomedical applications of photoacoustic imaging. People at PhotoSound are committed to provide every customer with the highest quality products and services, short development timelines, and competitive pricing. Contact: Peter Brecht, COO, pb@pst-inc.com; Sergey Ermilov, CEO, sae@pst-inc.com

PicoLAS #1931
116 S River Rd, Bldg C, Bedford, NH, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
buettner@laser-components.com; www.laser-components.com

Featured Product: Mini VCSEL driver for LiDAR applications featuring 4 ns pulse width with up to 130 A pulse currents
PicoLAS GmbH is specialized in the development and manufacturing of drivers for diode lasers. The range of drivers include shortpulse and ultra-shortpulse drivers, high speed seed drivers as well as high power drivers for QCW and CW applications. Sales/Support in USA by Laser Components USA, Inc. Contact: Paul Buettner, Sales Account Manager PLD, APD, buettner@laser-components.com; Myriam Gillisjans, Marketing, mgillisjans@laser-components.com

Photon USA #2020
9520 Padgett St Ste 110, San Diego, CA, 92126-4446 USA
+1 858 684 3555; fax +1 858 684 3558
image@photon.com; www.photon.com

Featured Product: Crysta High-Speed Polarization Camera and New Mini CX Automotive Safety Testing Camera
Photon is the global leader in high-speed imaging technology, ultra-high-speed camera systems and slow motion analysis. The company has revolutionized the industry, providing extraordinary light sensitivity in the highest-speed imaging systems available. Markets include military, automotive, broadcast, particle image velocimetry (PIV), digital image correlation (DIC), ballistics testing, and more. Contact: Jennifer Fenlason, Marketing Communications Manager, JFenlason@photon.com; Tim Callenbach, General Manager, tcallenbach@photon.com

Physics Today #5541
One Physics Ellipse, College Park, MD, 20740-3843 USA
+1 301 209 3100
ptpub@aip.org; physicstoday.org

Featured Product: Physics Today Magazine
Physics Today is the most influential and closely followed physics magazine in the world. Join the community of more than 120,000 scientists and engineers engaging with the content every month. A subscription is just $25/year at www.physicstoday.org. Subscribe Contact: Christina Unger Ramos, Marketing & Sales Manager, cunger@aip.org

PI (Physik Instrumente) L.P. #4745
SPIE Corporate Member
Piezo Nano Positioning, 16 Albert St, Auburn, MA, 01501-1304 USA
+1 508 832 3456; fax +1 508 832 0506
info@pi-usa.us; www.pi-usa.us

ISO-9001-Certified, Global Leader in Precision Motion Solutions. Piezo Mechanisms, Air Bearings, Hexapods, Photonics Alignment, Nanopositioning, Micropositioning, Piezo Positioning Systems, Linear Motors & Rotary Stages for OEM & Research. Products: Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Tip/Tilt Mirrors; Piezo Transducers, Piezo Actuators; Piezo Motors, Piezo Drivers & Digital Motion Controllers; Voice Coil Actuators, MicroMotion Robots. Contact: Sales Dept, info@pi-usa.us

PicoQuant Photonics North America, Inc. #306; 4853; 4859
SPIE Corporate Member
9 Trinity Dr, West Springfield, MA, 01089 USA
+1 413 562 6161; fax +1 413 562 6167
info@picoquant-usa.com; www.picoquant-usa.com

Product lines include Pulsed Diode Lasers, Time-Correlated Single Photon Counting (TCSPC) electronics and detectors, fluorescence lifetime spectrometers, time-resolved fluorescence microscopes and upgrade kits for Laser Scanning Microscopes. Applications include Single Molecule Spectroscopy, Fluorescence Lifetime Imaging (FLIM), Fluorescence Resonance Energy Transfer (FRET), Fluorescence Correlation Spectroscopy (FCS), super-resolution microscopy. Contact: Alain Bourdon, Vice President, bourdon@picoquant-usa.com

PIEZOCONCEPT #5071
SPIE Corporate Member
15 rue du Bocage, Lyon, 69008 France
+33 4 78 74 24 56
info@piezoconcept.com; www.piezoconcept.com

Featured Product: Picometric noise floor nanomotionern
PIEZOCONCEPT is the leading provider of nanomotioners dedicated to applications such as Super Resolution and Atomic Force Microscopy. We developed a range of ultra-stable nanomotioners able to meet a wide range of microscopy applications with significant advantages over the currently available nanomotioners. As one of our biggest advantages, the sensor we use outperforms high-end capacitive sensor because of their exceptionally high signal, leading to picometric noise floor. Contact: Samuel CHOBLET, Managing Director, info@piezoconcept.com
piezosystem jena, Inc. #4759
SPIE Corporate Member
2B Rosenfeld Dr, Hopedale, MA, 01747 USA
+1 508 634 6688; fax +1 508 634 6868
usa@piezojena.com; www.piezosystem.com
Featured Product: Digital Piezo Controller: d-Drive Pro 24bit resolution, 3 channel amp with 120 mC constant current
Piezosystem jena for 20+ years has provided high precision nano-positioning solutions in up to 5 axis of travel. X, XY, XYZ, tip/tilt positioning with sub-nm resolution can be achieved, with high resonant frequencies which allow for fast scanning. Using a closed loop feedback we can eliminate any hysteresis and drift. Complete digital systems are also readily available with micro manager and LabVIEW drivers. A leader for Research & OEM solutions.
Contact: Peter Viglas, Sales Manager, pviglas@piezojena.com

PIKE Technologies #143
SPIE Corporate Member
6125 Cottonwood Dr, Madison, WI, 53719 USA
+1 608 274 2721; fax +1 608 274 0103
optics@piketech.com; www.piketech.com
Featured Product: Measure thin films and monolayers with the Veemax III variable angle specular reflection accessory
PIKE Technologies specializes in the development and manufacture of accessories and optical systems that enhance the performance of commercial spectrometers. PIKE Technologies also manufactures customized optics including mirrors and IR microscope objectives. In addition to optical design and prototyping, we offer metrology measurement services and diamond turning. PIKE spectroscopy accessories include ATR, diffuse reflection, specular reflection, transmission, polarizers and much more.

SPONSOR
PIXAPP #4062
PIXAPP Gateway, Lee Maltings Complex, Cork, T12R5CP Ireland
info@pixapp.eu; www.pixapp.eu
Featured Product: Packaging and Assembly of Photonics Integrated Circuits
PIXAPP is the world’s first open-access Photonic Integrated Circuit (PIC) Assembly and Packaging Pilot line. PIXAPP consists of a highly-interdisciplinary team of Europe’s leading industrial & research organisations, and provides users with single-point access to PIC assembly and packaging. The Pilot Line Gateway Office is PIXAPP’s easy-access interface for external users. PIXAPP gives companies an easy-access route to transferring R&D results to the market. www.pixapp.eu Contact: Ana González, Project Leader, ana.gonzalez@epic-assoc.com; Jose Pozo, Director of Technology and Innovation, jose.pozo@epic-assoc.com

Pixelink #125
1900 City Park Dr, Ottawa, ON, K1J 1A3 Canada
+1 800 521 5454; fax +1 613 247 2001
sales@pixelink.com; www.pixelink.com
Featured Product: Pixelink UBS 3.0 industrial cameras with the newest Sony IMX sensors
Pixelink, A Navitar Company, is a leader in the design, manufacture, and support of digital cameras for industrial, microscopy, medical and scientific applications. We help customers select, optimize, and integrate the optimal machine vision or microscopy camera for their imaging applications. Pixelink offers unmatched technical support and service to customers and OEMs worldwide. Contact: Paul Saunders, President, paul.saunders@pixelink.com; Brigitte Vachon, Director, Business Development, brigitte.vachon@pixelink.com

Plant for Optics #2418
Industrial Park Opticoelectron, Panagyuriste, 4500 Bulgaria
+359 357 62156
pfo@opticoel.com; www.pfo-bg.com
Plant for Optics (PFO) is a manufacturer of precise optical components, laser optics, optical coatings, reticles for sights, optical assemblies from optical glass, fused silica, crystals and optical-mechanical assemblies under customer’s specifications in respect of ISO 9001. The production is based on proved and advanced optical technologies, modern equipment and experience since 1971. Our capabilities: Precision Spherical, Flat and IR Optics, Prisms, Coatings, Assemblies. Metrology. Contact: Zvetan Rakov, Dep.Executive Director/Technical, pfo@opticoel.com; Ivaylo Nedyalkov, Marketing Director, pfo@opticoel.com

Plasma Process Group, Inc. #4341
7330 Greenendale Rd, Windsor, CO, 80550 USA
+1 970 663 6988; fax +1 970 669 2312
sales@plasmaprocessgroup.com; www.plasmaprocessgroup.com
Featured Product: 6x22/30cm RF Linear Ion Source offering flexible mounting and interchangeable 6x22cm / 6x30cm grids
Plasma Process Group manufactures Ion Beam Systems and equipment for the Optics, Semiconductor, Energy, and Biomedical industries. Our Grids, Ion Sources, and I-Beam Power Supplies are used world-wide at dozens of leading coating facilities. With products ranging from replacement parts to complete IBS Systems, we make all the top quality hardware for your Ion Beam process. For the best products, customer service, and technical support in the industry, come to us for all your ion beam needs. Contact: Jim Topper, Sales & Technical Support, jtopper@plasmaprocessgroup.com; Dan Bouliez, Sales, dbouillez@plasmaprocessgroup.com

Plasmaterials, Inc. #4142
2268 Research Dr, Livermore, CA, 94550 USA
+1 925 447 4030; fax +1 925 447 4031
info@plasmaterials.com; www.plasmaterials.com
Featured Product: Sputtering Targets, Evaporation Materials, Backing Plates and Bonding
Plasmaterials, Inc. has been supplying the thin film industry with high purity sputtering targets and evaporation materials since 1987 for use in PVD equipment and related applications. In addition, we offer backing plates, e-beam starter sources, crucible liners, bonding and reclamation services. These materials are well suited for industrial applications, laboratory processing, R&D applications, pilot production applications as well as full scale production.
Contact: Pete Norlander, Sales Engineer, pete@plasmaterials.com

Plastics International #4134
7600 Anagam Dr, Eden Prairie, MN, 55344 USA
+1 952 934 2303; fax +1 952 934 2314
www.plasticsintl.com
Featured Product: Machinable engineering plastic sheet, rod, tubular bar and film
Plastics International is a direct stock shape supplier of the engineering machinable plastics in sheet, rod, tubular bar and film. Materials such as Peek, Nylon, Delrin, LHV, Teflon, Ultem and the Phenolics are available from stock. We cut to size these materials with no minimum order on most stock materials. We offer partial-remnant pieces at a savings to our customers. We can supply custom sheet thicknesses with our vacuum operated fly-cutter. Most orders are shipped same day next-day. Contact: Paul Carter, Owner-Sales, paulc@plasticsintl.com; Joe Mulvey, Sales Manager, jom@plasticsintl.com
Photonics West Exhibitor Listing

Pleiger Laseroptik GmbH & Co. KG #4529
Im Hammertal 51, Witten, 58456 Germany
+49 23 2439 8401; fax +49 23 2439 8402
info@pleiger-laseroptik.de; www.pleiger-laseroptik.de

Pleora Technologies #5061
340 Terry Fox Dr Ste 300, Kanata, ON, K2K 3A2 Canada
+1 613 270 0625; fax +1 613 270 1425
info@pleora.com; www.pleora.com

Featured Product: iPORT NTx-NBT25 Embedded Video Interface
Pleora is the world’s leading supplier of video interfaces for system manufacturers and camera companies serving the military, medical, and industrial automation sectors. The company was formed in 2000 and has gained a well-earned reputation for technology leadership and innovative video interface products. Pleora revolutionized the machine vision industry by pioneering the development of frame grabbers and embedded hardware for the delivery of video over Gigabit Ethernet (GigE). Contact: Brad Ostman, Regional Sales Manager, brad.ostman@pleora.com

Plymouth Grating Laboratory #5439
5 Commerce Way, Carver, MA, 02330-1080 USA
+1 508 503 1719
sales@plymouthgrating.com; www.plymouthgrating.com

Poco Graphite #2611
300 Old Greenwood Rd, Decatur, TX, 76708 USA
+1 940 627 2121
webrequests@entegris.com; www.poco.com

Featured Product: SUPERSiC Silicon Carbide Substrates
SUPERSiC® silicon carbide mirrors and optical components for laser, sensor, surveillance & astronomy applications. The flexibility of SUPERSiC allows for the efficient manufacture of lightweight, complex geometries and structures. Components can then be finished with a polishable CVD SiC coating or clad with silicon for diamond turning. Silicon Carbide is the material of choice for advanced optical applications; including Beryllium replacement & high heat flux scenarios. Contact: Hugo Vargas, Optics Specialist, hugo.vargas@entegris.com; Wayne Hambek, Industrial Products Director, wayne.hambek@entegris.com

POG Precision Optics Gera #1715
1090 Delacroz Cir, Nokomis, FL, 34275-4563 USA
+1 941 803 4927; fax +1 941 237 4800
info@pog.eu; www.pog.eu

Featured Product: Optical Engineering & Manufacturing
POG designs, develops and manufactures custom optical and EO-mechanical systems and components from the UV through IR for life sciences, machine vision, semiconductor industry, aerospace and defense. POG is a leading manufacturer of custom and standard microstructures on glass and ceramics – scales, calibration targets, micro-fluidic plates, reticles and test patterns. In-house photolithographic processes result in the highest possible quality for serial production and small batch quantities. Contact: Buzz Nesti, buzz.nesti@pog.eu; Andre Miessler, Sales Manager, andre.miessler@pog.eu

Poland Pavilion #5060
ul Poznanska 129/133, Ozarow Mazowiecki, Mazowieckie, 05-850 Poland
+48 22 733 54 10
info@vigo.com.pl; www.vigo.com.pl

Polaris Motion #4237
Div of Precision MicroDynamics Inc, 3-512 Frances Ave, Victoria, BC, V8Z 1A1 Canada
+1 250 382 7249; fax +1 250 382 1830
sales@pmdi.com; www.pmdi.com

Featured Product: Polaris CAD/CAM Laser Manufacturing Software
Polaris Motion supplies motion control systems for precision laser manufacturing. Our systems include CAD/CAM Software, controllers, servo motor drives, I/O, and Galvoscanner support. With Polaris CAD/CAM our clients can do LAM, PCB processing, engraving, drilling and cutting, 2D and 3D part files may be imported or new ones created. Hatching, recipes, automation, and machine vision are supported. Contact: Tom Erlic, Co-Founder, terlic@pmdi.com; Mile Erlic, Co-Founder, merlic@pmdi.com

Polish Technological Platform on Photonics #5060
ul Jana Nowaka-Jezioranskiego 28, Warszawa, 03-983 Poland
pco@pcosa.com.pl; www.pptf.pl/en

Power Photonic Ltd #5137
St Davids Business Park, 1 St Davids Dr, Dalgety Bay Fife, KY11 9PF United Kingdom
+44 1383 825910; fax +44 1383 82579
info@powerphotonic.co.uk; www.powerphotonic.co.uk

Featured Product: FLASH Wavefront Sensor: Precision, high-power handling laser wavefront measuring instrument
PowerPhotonic is a global leader in the design and manufacture of precision micro-optics. Using our unique wafer scale laser machining process, we manufacture a large range of micro-optics including standard and custom microarrays, beam shapers and freeform surfaces. Manufactured exclusively in UV-fused silica, our optics are particularly suited for demanding high accuracy applications or where high power handling is needed. Contact: Julian Hayes, Sales and Marketing Director, julian.hayes@powerphotonic.com; Matt Currie, Product and Application Engineering Manager, matthew.currie@powerphotonic.com

Power Technology, Inc. #1831
16302 Alexander Rd, Alexander, AR, 72002 USA
+1 501 407 0712; fax +1 501 407 0036
ptimarketing@powertechnology.com; www.powertechnology.com

Featured Product: 2-3 Micron Instrument Quality Laser Diode Modules
Power Technology, Inc., established in 1969, is a leading manufacturer of lasers and laser diode modules for OEM lifesciences, cinema, analytical, biomedical, industrial, semiconductor inspection, defense, security, and machine vision applications. Contact: Walter Burgess, VP Engineering and Sales, sales@powertechnology.com; Kristopher Hesson, Director of Marketing, khesson@powertechnology.com

Plan to Attend FREE Exhibitor product demonstrations
Refer to page 108–109 for complete times, schedules, and locations
Precision Instrumentation for Science and Industry

MICROMANIPULATION
Continuing to build on our extensive line of micromanipulators, we introduce the TRIO, a highly-stable 3-axis manipulator system with synthetic 4th axis that can be set in software as any angle between 0 and 90 degrees for diagonal movement. The compact design of the integrated Rotary Optical Encoder (ROE) controller requires minimal bench space.
Quality. Precision. Reliability.

OPTICAL PRODUCTS
Our latest imaging products include the Lambda 421 Optical Beam Combiner, a newly patented concept for combining separate light sources with different spectra into a single output beam, and BOB, a flexible open architecture upright microscope for slice electrophysiology. Other products include high-powered LED, Xenon and plasma light sources, the MOM® two-photon resonant scanning microscope, wavelength switchers, filter wheels, and the SmartShutter®.

DESIGN AND MANUFACTURING
We’ve combined extensive years of motor control experience and in-house precision CNC machined parts to create a line of versatile optical products to serve the tremendous growth in photonics, optical research, and imaging techniques. Our extensive engineering expertise and 50,000 square foot state-of-the-art manufacturing facility, allow us to rapidly fabricate custom imaging solutions at economical prices, making us a preferred OEM vendor for the life sciences and industry.

MICROPIPETTE FABRICATION
Sutter Instrument, the recognized leader in micropipette fabrication technology, offers leading edge technology in the P-2000 micropipette puller, which allows for fast and repeatable nanospray tip production with complete control of tip morphology. The P-2000 can be pre-programmed to produce tips to your specifications at no extra charge.
Photonics West Exhibitor Listing

**Precision Optical**  #1147

320 Kalmus Dr, Costa Mesa, CA, 92626-6045 USA  
+1 949 631 6800; fax +1 949 642 7501  
sales@precisionoptical.com; www.precisionoptical.com

**Featured Product:** Custom Prisms, Large Optical Window/ Mirrors, Corner Cube Retroreflector, Porro Prism, Alignment Cube

Precision Optical offers a diverse portfolio of capabilities for production of precision optical components. With reliable, efficient strategies for manufacturing many different prism shapes, sizes, materials, thin film coatings and assemblies, prototype to production. The company’s success has been our commitment to expanding capabilities in all areas of optical component fabrication, giving Precision Optical unsurpassed process control and flexibility in responding to our customer requirements. Contact: Jeremy Gordon, Vice President of Sales & Marketing, jgordon@precisionoptical.com; James McClure, Sales Manager, jmclure@precisionoptical.com

**Pranalytica, Inc.**  #4066

1101 Colorado Ave, Santa Monica, CA, 90401-3009 USA  
+1 310 458 4493; fax +1 310 458 0171  
www.pranalytica.com

**Featured Product:** PG&O’s New Optical Monitoring System Enables Greater Accuracy in Optical Thin-Film Coatings

PG&O partners with customers to find unique optical solutions for specific needs, delivering precision glass, optics, and specialized thin-film coatings for astronomy, biomedical, imaging, laser, digital cinema, solar, and military/aerospace markets & more. The company has 3 large coating chambers, an expert, in-house engineering staff, plus an extremely large inventory of glass products & a full optical fabrication shop to provide advanced optical coatings & to manufacture large mirror blanks. Contact: Dan Bukaty, Jr., President, danjr@pgo.com

**Precision Glass & Optics**  #4867

3600 W Moore Ave, Santa Ana, CA, 92704-6835 USA  
+1 714 540 0126; fax +1 714 540 1482  
info@pgo.com; www.pgo.com

**Featured Product:** PG&O’s New Optical Monitoring System Enables Greater Accuracy in Optical Thin-Film Coatings

PG&O partners with customers to find unique optical solutions for specific needs, delivering precision glass, optics, and specialized thin-film coatings for astronomy, biomedical, imaging, laser, digital cinema, solar, and military/aerospace markets & more. The company has 3 large coating chambers, an expert, in-house engineering staff, plus an extremely large inventory of glass products & a full optical fabrication shop to provide advanced optical coatings & to manufacture large mirror blanks. Contact: Dan Bukaty, Jr., President, danjr@pgo.com

**Presco Incorporated**  #2603

8 Lunar Dr, Woodbridge, CT, 06525 USA  
+1 203 298 9811; fax +1 203 389 1129  
rschultz@prescoinc.com; www.prescoinc.com

**Featured Product:** Electronic Design Services

Expert at high-performance electronics for an array of applications, we help clients innovate and bring breakthrough products to market. From front-end innovation to the delivery of products that meet the highest standards of performance, our multi-disciplinary team of electronics engineers, software developers, mechanical and industrial designers provide our clientele complete, seamless solutions to their most challenging projects. Contact: Jeffrey Gates, VP Sales and Marketing, jgates@prescoinc.com; Ruth Schultz, Director of Operations, rschultz@prescoinc.com

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**LiDAR Demonstration**

Monday - Thursday 29 January – 1 February  
Location: North Exhibit Level, outside Hall D

LiDAR is the core component of optical sensing technology powering autonomous vehicles, and high-performance data is required for safe self-driving. Stop by to see Luminar’s breakthrough LiDAR perception capabilities enabling the autonomous future.  

**Industry Keynote Talk:** Room 21 • 11:00 am Thursday
Photonics West Exhibitor Listing

**PRIMES GmbH #4529**
Max-Planck-Str 2, Pfungstadt Hesse, 64319 Germany
+49 6157 9787 0; fax +49 6157 9787 128
info@primes.de; www.primes.de/en/

**Featured Product:** FocusMonitor FM+, Cube, EC-PowerMonitor, PowerMeasuringModule, PowerMeasuringCassette

PRIMES has 25 years of experience in the development of diagnostics solutions for the complete range of laser technology and especially in custom tailored OEM beam analysis devices and absorbers. We offer laser beam diagnostics for quality assurance in industrial manufacturing, monitoring, trouble shooting and R&D applications. Our focus lies on measuring devices for the characterization of CO2-, solid state-, fiber- and diode lasers used for material processing and scientific applications. Contact: Dr. Harald Schwede, Technical and scientific support, h.schwede@primes.de; Nicholas J. Harrop, Sales Engineer, n.harrop@primes.de

**Primoceler, Inc. #4365**
Vesiroineenkatu 3, Tampere, 33720 Finland
+358 40 5057623
info@primoceler.com; www.primoceler.com

**Featured Product:** Glass Micro Bonding - Hermetic packaging

Primoceler is a Micro Processing company from Finland. We offer Hermetic packaging service with our proprietary Glass Micro Bonding. Industries that we work with include Medical (Smart Implants), Aerospace (Optoelectronics) and other High Reliability sectors. The seal is created under room temperature without any adhesives. Glass and high hermetic bond offer a perfect combination. Contact: Ville Hevonkorpi, CEO, ville.hevonkorpi@primoceler.com; Antti Peltonen, VP of Business Development, antti.peltonen@primoceler.com

**Princeton Infrared Technologies, Inc. #2346**
9 Deerpark Dr J-5, Monmouth Junction, NJ, 08852 USA
+1 609 917 3380
sales@princetonirtech.com; www.princetonirtech.com

**Featured Product:** The exceptional LineCam12 camera features an InGaAs linear array detecting light from 400 -1700nm

Specialists in indium gallium arsenide (InGaAs) imaging technology, PIRT designs and manufactures shortwave infrared (SWIR) cameras and one- and two-dimensional imaging arrays. With a wide spectral range of sensitivity, 0.4 to 1.7µm, PIRT InGaAs arrays are widely used in bench-top and portable NIR & Raman spectrometers. Full function cameras available for machine vision apps. See our low-noise MPixel SWIR imagery live. All PIRT imaging products are now available with no ITAR export restrictions. Contact: Bob Struthers, VP Sales & Marketing, bob.struthers@princetonirtech.com

**Princeton Optronics, Inc. #4340**
Sales & Marketing, 1 Electronics Dr, Mercerville, NJ, 08619-2054 USA
+1 609 584 9696; fax +1 609 584 2448
info@princetonoptronics.com; www.princetonoptronics.com

**Prior Scientific Inc. #118**
80 Reservoir Park Dr, Rockland, MA, 02370-1062 USA
+1 781 879 8442; fax +1 781 878 8736
info@prior.com; www.prior.com

Prior Scientific is a manufacturer of components for instrumentation in the automated microscopy equipment market. We provide solutions for every facet of product development and large scale production: primary design, proof of concept, manufacture of prototypes, manufacture specific components and subassemblies, create a complete turnkey instrument, or straight contract manufacturing of your designs. Contact: Dennis Doherty, VP Sales, ddoherty@prior.com

**Prizmatix Ltd. #2348**
POB 244, Givat-Shmuel, 5410102 Israel
+1 248 436 8085; fax +1 248 281 5236
sales.usa@prizmatix.com; www.prizmatix.com

**Featured Product:** Modular LED Light Sources up to 5W per LED, Microscope LEDs, Collimated & Fiber Coupled. UV-IR

Prizmatix Ltd. specializes in Ultra High-Power LED systems for industrial and scientific use. Featuring Ultra High Power and advanced Ultra Low Noise drivers our modular design delivers maximum performance in light delivery and detection. We have a full range of products for applications such as microscopy, high speed imaging, automated inspection, NDT and Optogenetics. Our OEM solutions include collimated and fiber-coupled LEDs that deliver maximum design options with low development cost. Contact: Nathaniel Sperka, North American Sales, sales.usa@prizmatix.com; Ruth Lapidus, European Sales, sales.europe@prizmatix.com

**ProPhotonix #5137**
Pierce Williams Sparrow Ln, Hatfield Broad Oak Hertfordshire, CM22 7BA United Kingdom
+44 1279 717 170; fax +44 1279 717 171
sales@prophotonix.com; www.prophotonix.com

**Featured Product:** A new range of high performance Digital Laser Modules will be on display on booth 5137

ProPhotonix has over 20 years’ experience in the design and manufacture of laser diode modules for a wide range of applications in industrial, medical and security markets. Our global customers benefit from our range of configurable laser module platforms and our ability to design and manufacture laser modules to even the most challenging of specifications. Our in-house team of engineers collaborate directly with customers to ensure that we deliver innovative yet cost-effective solutions. Contact: Jeremy Lane, Managing Director, sales@prophotonix.com

**PROTECT-Laserschutz GmbH #4529**
Mühlhofer Hauptstr 7, Nürnberg, 90453 Germany
+49 911 644 4310; fax +49 911 644 43181
info@protect-laserschutz.de; www.protect-laserschutz.de

**Featured Product:** PROTECT-Laserschutz presents laser safety clothing and new laser safety eyeewear

PROTECT-Laserschutz is a manufacturer of laser protection, work protection and welder protection products. The range includes eyeewear, curtains and large area protection. For PROTECT-Laserschutz the customer is the center of all activities. Competent advice, competitive prices and conditions, fast processing and fair dealings with all business partners have high priority. Contact: Petra Fröbel, General Manager, petra.froebel@protect-laserschutz.de
Protolabs, Inc. #139
5540 Pioneer Creek Dr, Maple Plain, MN, 55359 USA
+1 877 479 3680; fax +1 763 479 2679
customerservice@protolabs.com; www.protolabs.com

Proto Labs is the world’s fastest manufacturer of custom prototype and on-demand production parts. We offer product designers and engineers multiple manufacturing technologies—3D printing, CNC machining, and injection molding—to address their needs at each stage of product development and into production. We achieve our unprecedented speed with online quoting, proprietary software, and automated manufacturing processes that transform a CAD model into a final part within days, sometimes hours.

PT Photonic Tools GmbH #4529
Johann-Hittorf-Str 8, Berlin, 12489 Germany
+49 30639278000; fax +49 30639799
info@photonic-tools.de; www.photonic-tools.de

QD Laser, Inc. #4946
1-1 Minamisatotarishicho Kanagawa-ku, Kawasaki, 210-0855 Japan
+81 44 333 3338; fax +81 44 333 3308
info@qdlaser.com; www.qdlaser.com

QD Laser, Inc. is a leading provider of high-performance semiconductor lasers/wafers and retina imaging laser eye wear based on laser technologies. Semiconductor lasers for industrial and data communication applications are made on GaAs platform with the state-of-the-art epitaxial growth technologies of Quantum dot/well and design technologies. The retina imaging laser eye wear is a new wearable device which directly projects images on human retina using RGB lasers and MEMS mirror. Contact: Yoshi Ouchi, Sales Manager, ochi@qdlaser.com; Keizo Takemasa, General Manager, takemasa@qdlaser.com

QED Optics #227
Optical Engineering Department, 1040 University Ave, Rochester, NY, 14607-1282 USA
+1 585 7580130; fax +1 585 256 3211
QEDOptics@qedmrf.com; www.qedoptics.com

QED Optics helps customers meet tough specifications and lead times on the most demanding, high precision optical components. We’ll work together to understand your needs and produce your optics on time and in spec. QED Optics’ manufacturing services range from polishing and measuring small lenses to large mirrors in a variety of shapes and sizes, to make-to-print services. QED Optics maintains high quality standards on every job while achieving specifications and customer expectations. Contact: Mike DeMarco, Business Manager, demarco@qedmrf.com; Christopher Hall, Sr. Engineer, hall@qedmrf.com

Pyser Optics #5631
Gratricules, Firrcroft Way, Edenbridge Kent, TN8 6HA United Kingdom
+44 1732 864111; fax +44 1732 865544
sales@pyseroptics.com; www.pyseroptics.com

Qioptiq, An Excelitas Technologies Company #1031
c/o Excelitas Technologies Company, 200 West Street, Waltham, CA, 02451 USA
+1 855 382 2677
photons@qioptiq.com; www.qioptiq.com

Qioptiq is a photonics technology leader focused on delivering innovative, market-driven solutions to meet the high-performance lighting, detection and optical technology needs of today’s global markets. We are committed to enabling our customers’ success in applications across the fields of biotechnology, consumer products, defense & aerospace, medicine, scientific discovery, safety & security, automotive and energy & environment. Contact: photonics@qioptiq.com

QPC Lasers Inc. #5467
15632 Roxford St, Sylmar, CA, 91342-1265 USA
+1 818 986 0000; fax +1 818 698 0428
info@qplasers.com; www.qplasers.com

QPC Lasers Inc. is a vertically integrated laser diode manufacturer shipping high brightness lasers globally into several markets including medical, industrial, telecom, and consumer, from its high volume 40,000 sq. ft. laser manufacturing facility located in Sylmar, CA. Contact: Yossi Gewirtz, Director of Sales and Marketing, ygewirtz@qplasers.com

QPhotonics, LLC #2211
3830 Packard Rd Ste 170, Ann Arbor, MI, 48108-2276 USA
+1 734 477 0133; fax +1 734 477 0166
info@qphonotics.com; www.qphonotics.com

QPhotonics is a specialist supplier of semiconductor light emitting devices in wavelength range 255nm-1650nm for research, development, and production. We offer a large variety of laser diodes, superluminescent diodes, semiconductor optical amplifiers and UV LEDs. Individual devices can be selected from stock and purchased online. We also provide controllers, mounts, collimators, and photodiodes for building laser systems. Contact: George Louitts, CEO, glouitts@qphonotics.com; Wei Yang, Sales Engineer, wyang@qphonotics.com
Quality Thin Films, Inc. #2231
141 Burbank Rd, Oldsmar, FL, 34677-4900 USA
+1 813 855 1900; fax +1 813 855 5580
sales@qtf.com; www.qtf.com
Quality Thin Films supplies optics, laser crystals and thin film coatings. We specialize in ultra-high damage threshold coatings on super polished crystals and optics, from the UV to the IR. State of the art equipment for substrate fabrication and leading edge coating chambers enable QTF to continuously improve on quality with emphasis on customer service. ISO 9001:2008 certified. ITAR registered. Contact: Karl M George Jr, Vice President/Director Of Sales, sales@qtf.com; Roxanne Gallup, sales@qtf.com

Quantel Laser #417
SPIE Corporate Member
49 Willow Peak Dr, Bozeman, MT, 59718 USA
+1 406 586 0131; fax +1 406 586 2924
sales@quantelusa.com; www.quantel-laser.com
Quantel, founded in 1970, is a global leader in the design and manufacture of high-power, solid-state lasers. With design centers in Paris and the USA (Bozeman, MT), Quantel lasers are used in applications ranging from spectroscopy to atom cooling; PIV to combustion research. Uniquely, Quantel offers customers very flexible scientific lasers with user configurable wavelengths and performance parameters as well as “designed for purpose” ruggedized lasers for industrial applications.

Quantic #5145
James Watt South Bldg Univ of Glasgow, University Ave, Glasgow, G12 8QK United Kingdom
+44 0141 330 2338
info@quantic.ac.uk; https://quantic.ac.uk
Featured Product: Single pixel technology, CMOS SPADs, Fresnel cones, Single photon timing, Gas imaging
QuantIC is the UK Quantum Technology Hub in Quantum Enhanced Imaging and is pioneering a family of multidimensional cameras operating across a range of wavelengths, time- scales, length-scales to create a new industrial landscape for imaging systems and their applications. The Hub has a £4M Partnership Resource Fund and dedicated Innovation Space in Glasgow for furthering industrial collaboration. Contact: Michael Fletcher, Business Development Manager, michael.fletcher@glasgow.ac.uk; Kevin McIver, Business Development Executive, kevin.mcIver@glasgow.ac.uk

Quantum Composers #4607
212 Discovery Dr, Bozeman, MT, 59718 USA
+1 406 582 0227; fax +1 406 582 0237
sales@quantumcomposers.com; www.quantumcomposers.com
A leading manufacturer of Digital Delay Pulse Generators, DPSS Lasers, and Laser Systems. Contact: Will Bomar, Director of Sales & Marketing, wbomar@quantumcomposers.com; Erin Prieskorn, Sales & Marketing Manager, eprieskorn@quantumcomposers.com

Quantum Light Instruments #1731
Mokslininku 6A, Vilnius, 08412 Lithuania
+370 5 250 3717; fax +370 5 250 3716
sales@qlinstruments.com; www.qlinstruments.com
Featured Product: Q2 laser model delivers 70mJ at 1064nm, 50Hz, <10ns output pulses. Fully air cooled, robust, compact Quantum Light Instruments design and manufacture DPSS Nd:YLF and Nd:YAG lasers delivering high pulse energies up to 100mJ at 100Hz repetition rates. Lasers are fully air cooled and do not require any cooling water. Rugged design, true TEM00 beam, compact size, Ethernet controlled, laptop size power supply set a new standard in Q-switched lasers. It is cost effective solution for wide range applications including LIBS, PLD, MALDI, LIDAR, PIV, LCD, Semiconductor Processing and many others. Contact: Rokas Sulcas, Deputy Director, rokas.s@qlinstruments.com; Andrius Rinkevicius, CEO, andrius.r@qlinstruments.com

Quantum Opus #4859
4521 Helm St, Plymouth, MI, 48170 USA
+1 514 694 0336; fax +1 514 694 8535
www.quantumopus.com
Supplier of Single Photon Counting detectors based on superconducting nanowires. Efficiency >80% at 1550nm, > 85% efficiency at target wavelengths between 700nm and 1300nm. Low dark counts, fast timing resolution and 40Mcps count rates. Complete solutions with a compact closed cycle cryocooler that supports up to 32 detector channels. Contact: Nick Bertone, US Sales, nick.bertone@optoecomp.com

Quarton USA, Inc. #543
3230 Fallow Field Dr, Diamond Bar, CA, 91765 USA
+1 888 532 2221; fax +1 888 955 2221
contact@quarton.com; www.quarton.com

Quartus Engineering Inc. #6035
9689 Town Ctr Dr, San Diego, CA, 92121 USA
+1 858 875 6000; fax +1 858 875 6001
sales@quartus.com; www.quartus.com
Quartus Engineering is a complete engineering solutions provider with core competencies in optical/opto-mechanical design, thermal management solutions, holographic elements and system hardware integration. Quartus can provide complete system design, address specific design/analysis needs, or integrate with a team to provide increased capabilities or bandwidth. Support is available from our industry leading finite element analysis team, including STOP analysis (Structural, Thermal and Optical.)

Quebec Pavilion #4437
Office 316-317, 2750 Einstein Street, Quebec, QC, G1P 4R1 Canada
+1 418 650 2210
info@photonneuquebec.ca; www.photonquebec.org
Featured Product: Optic photonic network in Quebec Optonique is a non-profit organization recognized by the Government of Quebec as the Pole of excellence in optics-photonics due to the willingness of both manufacturers and researchers to unite around the same dynamic in order to position Quebec at the forefront of the productive and innovative strengths of the optics-photonics sector. Its main role is to federate more than 140 industries and academic centers in the sector. Contact: Audrée Meessen-Pinard, Event Manager, audree.mpinaire@photonneuquebec.ca

Onsite News: www.spie.org/PWnews • #SPIEPhotonicsWest
Photonics West Exhibitor Listing

R. Mathews Optical Works, Inc. #3022
26280 Twelve Trees Ln NW, Poulsbo, WA, 98370 USA
+1 360 697 6160; fax +1 360 697 7417
bob@mathewsoptical.com; www.mathewsoptical.com
R. Mathews Optical Works has been manufacturing prototype and production aspheric lenses in the US since 1978. Utilizing all glass types available, we can produce your designs cost-effectively in sizes ranging from 10mm to 265mm in diameter. Whether you require one or thousands of aspheric parts, we can produce them using our proprietary methods with form certification.
Contact: Bob Mathews, President, bob@mathewsoptical.com

Raicol Crystals Ltd. #2016
SPIE Corporate Member
Park Cible New Industrial Area, 22 Ha-Melakha Str, Rosh Ha-Ayn, 4809162 Israel
+972 3 936 7412; fax +972 3 906 8969
info@raicol.com; www.raicol.com

Featured Product: Our company specializes in the manufacture of nonlinear optical crystals and electro-optic devices
Raicol Crystals Ltd. is manufacturing crystals such as LBO, BBO, KTP, HGTTP KTP, SKTP, RT half wave for electro-optics devices. Our products are used in the fields of medicine, euospace, research, industry and military. Based in Israel, Raicol is a privately owned technology company which was founded in 1955. Raicol’s cutting-edge manufacturing facility includes proprietary growth systems, cutting equipment, polishing machines, X-ray measurement systems, clean rooms, optical shop and a coating facility. Contact: Iliana Tamar, Marcom Manager, iliana.tamar@raicol.com; Yehiel Plaut, Marketing Manager, yehiel.plaut@raicol.com

Rainbow Research Optics, Inc. #1906
SPIE Corporate Member
Sales, Engineering, Manufacturing, 6830 S Dawson Cir, Centennial, CO, 80112-4208 USA
+1 303 371 3000; fax +1 303 371 1333
sales@rr-optics.com; www.rr-optics.com

Featured Product: Custom Optics and Coatings
Rainbow Research Optics is a custom optics manufacturer in Denver, Colorado. We manufacture optics and coating from customer supplied designs and drawings. Please contact us for a quote on your desired optics. We are ITAR registered and ISO 9001:2015 Certified. We will quote quantities from 1 through 20,000. Our 30,000 sq. ft. facility and 65 employees are standing by to assist you with every aspect of your optical component and assembly needs. Contact: Eli Bruner, Sales Manager, e.brunner@rr-optics.com; Mark Chan, Sales Engineer, m.chan@rr-optics.com

RAM Photonics, LLC #4165
4901 Morena Blvd Ste 128, San Diego, CA, 92117-3557 USA
+1 858 490 1030
info@ramphotonics.com; www.ramphotonics.com

Featured Product: TeraTone™ low-noise frequency comb provides more than 100 optical carriers over continuous C+L-band
RAM Photonics specializes in high-performance optical sources, like low-noise optical frequency combs: TeraTone for C+L band coverage and TeraTone-DataCenter, providing 1000+ wavelength clusters. Other low-noise sources include Cavities, picosecond sources and SPA single-pulse fiber amplifiers. RAM Photonics has a unique intellectual property portfolio that spans across telecommunication, signal processing, remote and specialty sensing, defense and biomedical and medical instrument markets.
Contact: Andreas O. J. Wiberg, info@ramphotonics.com

Raptor Photonics Ltd. #2308
SPIE Corporate Member
Willowbank Business Park, Larne N Ireland, BT40 2SF United Kingdom
+44 2822 270141; fax +44 2822 275685
sales@raptorphotonics.com; www.raptorphotonics.com

Featured Product: Falcon III - A brand new 1MP EMCCD offering an unsurpassed combination of speed and sensitivity
This is the latest EMCCD from Raptor using new back thinned EMCCD from e2v with QE up to 95%. The Falcon III is cooled to -95C offering less than 0.01e- read noise with gain applied. The sensor is 1024 x 1024 pixels with 10um pixels and will run at 40Hz full resolution. With binning or taking a region of interest it will be capable of reaching several hundred f/p/s. Using Raptor’s proprietary PentaVac vacuum technology and our ‘state of the art’ low noise electronics. Contact: Derek Craig, sales@raptorphotonics.com

RAYLASE GmbH #5157
Argeisrieder Feld 2+4, Wessling, 82234 Germany
+49 178 5536172
info@raylase.de; www.raylase.de

Raytheon ELCAN Optical Technologies #4305
SPIE Corporate Member
450 Leitz Rd, Midland, ON, L4R 588 Canada
+1 705 526 5401; fax +1 705 526 5831
info@ELCAN.com; www.raytheon.com/ELCAN

Featured Product: Have you ever seen a non-reversing mirror?
Raytheon ELCAN Optical Technologies, a thought and technology leader in the global optics industry, specializes in technologically sophisticated and superior-quality optical solutions that meet strict military and commercial specifications. Raytheon ELCAN offers superior design and engineering capabilities, proprietary production technologies and fully integrated manufacturing to provide custom turn-key solutions.
Contact: John Dutchyshyn, Sales Manager, john.dutchyshyn@raytheon.com; John Reddy, Sales Manager, John.J.Reddy@raytheon.com

Redfern Integrated Optics (RIO) #2625
SPIE Corporate Member
A Division of OptaSense, 3350 Scott Blvd Bldg #1, Santa Clara, CA, 95054-3104 USA
+1 408 970 3500; fax +1 408 970 3200
sales@rio-lasers.com; www.rio-lasers.com

Featured Product: RIO Planex & Orion lasers at 1550nm & 1064nm for fiber optic sensing, wind/space LIDAR & metrology
RIO-OptaSense Inc., headquartered in Santa Clara CA, develops & manufactures optical sources & subsystems based on its proprietary planar external cavity laser technology (PLANEX™), which delivers unique price-performance advantages in energy, security, infrastructure & other markets. RIO’s product lines include 1550nm & 1064nm single frequency narrow linewidth lasers and modules with very low noise, unparalleled wavelength stability, low cost, small size & high lifetime reliability. Contact: Martin Reeves, Global Business Development, martin.reeves@optasense.com; Lew Stolpner, Chief Technology Officer, lew.stolpner@optasense.com

Redondo Optics, Inc. #5647
SPIE Corporate Member
811 N Catalina Ave Ste 1112/1114, Redondo Beach, CA, 90277 USA
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*SPIE Corporate Member*

Harwell Innovation Ctr, 173 Curie Ave, Harwell Didcot, OX11 0QG United Kingdom

+44 1235 838 529; fax +44 1235 838 501

info@redwavelabs.com; www.redwavelabs.com

**Réflex Photonics**

*SPIE Corporate Member*

16771 Chemin Ste-Marie, Kirkland, QC, H9H 5H3 Canada

+1 514 842 5179; fax +1 514 842 8142

info@reflexphotonics.com; www.reflexphotonics.com/

**Remtec, Inc.**

*SPIE Corporate Member*

100 Morse St, Norwood, MA, 02062 USA

+1 781 762 9191; fax +1 781 762 9777

sales@remtec.com; www.remtec.com

**Renishaw Inc.**

5505 Airport Blvd, Boulder, CO, 80301-2339 USA

+1 303 938 1960; fax +1 303 447 3279

sales@reoinc.com; www.reoinc.com

**Research Electro-Optics, Inc.**

13 chemin du Vieux Chêne, Meylan, 38240 France

+33 4 58 00 12 49; fax +33 4 58 12 52

sales@resolutionspectra.com; www.resolutionspectra.com

**Resolved Instruments**

1601-9939 109 St NW, Edmonton, AB, T5K 1H6 Canada

info@resolvedinstruments.com; www.resolvedinstruments.com

**Research Electro-Optics, Inc.**

1020 Calle Sombra, San Clemente, CA, 92673-6227 USA

+1 949 366 8866; fax +1 949 498 9528

sales@reynardcorp.com; www.reynardcorp.com

**Research Electro-Optics, Inc.**

1001 Wesemann Dr, West Dundee, IL, 60118 USA

+1 847 286 9953; fax +1 847 286 9974

usa@renishaw.com; www.renishaw.com

**Featured Product: The VIONIC™ series is Renishaw’s ultra-high accuracy, all in-one digital incremental encoder**

Renishaw offers a comprehensive range of advanced encoders used by OEMs around the world for exactly positioning, highest reliability, and superior performance-to-cost value. A variety of different encoder technologies provide machine designers with proven solutions to difficult applications. All are engineered to deliver non-contact, friction-free operation, exceptional ease of installation, space savings, and application flexibility. Contact: Tim Goggin, Regional Sales Manager, tim.goggin@renishaw.com

**Featured Product: Rugged high-speed optical transceiver modules, Parallel embedded optics interconnects**

Founded in 2002, Reflex Photonics is an advanced developer of rugged high-speed optical transceiver modules and parallel embedded optics interconnects for markets such as defense, machine vision, artificial intelligence, telecom, and data centers. The company addresses the growing market demand for short reach high-speed interconnects in high performance applications such as machine vision, high resolution camera (10GigE and 40GigE), LiDAR, active electronically scanned array radars etc. Contact: Guillaume Blanchette, Product Manager, gblanchette@reflexphotonics.com

**Featured Product: Custom Metallized Ceramic Substrates and Packages**

Manufacturer of cost-effective, custom metallized ceramic substrates with PCTF® (Plated Copper on Thick & Thin Film) for thermal management applications. Products include high performance laser and photo diode submounts with Zero Pullback® metallization, optoelectronics circuits and TO-type compatible SMT packages. Alumina, beryllia and Aluminum Nitride ceramics with 25-75 micron copper and SELECTIVE GOLD TIN plating. Metallization exhibits reliable adhesion during die attach, component assembly. Contact: Lynn Magliozzi, Inside Sales Manager, sales@remtec.com; Nahum Rapoport, President, sales@remtec.com

**Featured Product: Custom Metallized Ceramic Substrates and Packages**

Manufacturer of cost-effective, custom metallized ceramic substrates with PCTF® (Plated Copper on Thick & Thin Film) for thermal management applications. Products include high performance laser and photo diode submounts with Zero Pullback® metallization, optoelectronics circuits and TO-type compatible SMT packages. Alumina, beryllia and Aluminum Nitride ceramics with 25-75 micron copper and SELECTIVE GOLD TIN plating. Metallization exhibits reliable adhesion during die attach, component assembly. Contact: Lynn Magliozzi, Inside Sales Manager, sales@remtec.com; Nahum Rapoport, President, sales@remtec.com

**Featured Product: The DPD80 digital photodetector**

Resolved Instruments' DPD80 digital photodetector. It features an integrated, low-noise 14-bit 80 MS/s analog-to-digital converter to enable streaming of the signal in real-time to a PC over USB-3. Included software allows researchers to acquire real-time data in either the time or frequency domain, eliminating the need for separate amplifiers, analog to digital converters, oscilloscopes, and spectrum analyzers. Contact: Pearse Doolin, pearse@resolvedinstruments.com; Callum Doolin, callum@resolvedinstruments.com

**Featured Product: Diamond Point Turning of Infrared and Exotic Materials**

Reynard Corp supplies custom and standard optical components & thin film coatings 0.2µm to 50µm (UV-FAR IR) to demanding specs for military, aerospace, medical & telecommunications applications. Our expertise in these markets enables us to stay on the leading edge of technological advancements through research partnerships, commercial development programs, SBIR programs and internal R&D. Other services include optical & mechanical fabrication, photolithography patterns & environmental testing. Contact: Sales Department, sales@reynardcorp.com
Photonics West Exhibitor Listing

RGB Photonics GmbH #4529

Donaupark 13, Kelheim, 93309 Germany
+49 9441 175033 0; fax +49 9441 175033 92
sales@rgb-photonics.com; www.rgb-photonics.com

**Featured Product: Laser systems, spectrometers and customer solutions for different applications**
RGB Photonics designs and manufactures highly integrated laser and spectroscopy systems for scientific and industrial applications. We specialize in very compact designs while maintaining high-end technical characteristics. We offer miniaturized laser modules with high output powers, a large selection of wavelengths and excellent beam quality and stability. Our compact USB spectrometers feature high resolution, sensitivity and thermal stability and include application software. Contact: Carina Buechle, Head of Sales, carina.buechle@rgb-photonics.com; Christoph Eckert, Application Engineer, christoph.eckert@rgb-photonics.com

Rochester Institute of Technology #545

Eng 17 3110, 74 Lomb Memorial Dr, Rochester, NY, 14623-5604 USA
+1 585 475 4106
admin@cfd.rit.edu; www.rit.edu/fpi/contact

**Featured Product: The Industry Partnership Program (IPP)**
The Future Photon Initiative (FPI) is the face of photonics at the Rochester Institute of Technology, leveraging existing research activities of over 20 professors across five colleges in pursuit of advancing new photonic devices such as detectors, integrated silicon photonics, and solar cells. FPI applies and commercializes the efforts of existing RIT groups who develop technology for the generation, transmission, manipulation, absorption, and detection of photons. Contact: Don Figer, Director, admin@cfd.rit.edu; Robyn Rosechandler, Sr. Staff Assistant, robyn.rosechandler@rit.edu

RICOR USA, Inc. #5542

200 Main St, 1st Fl, Salem, NH, 03079-2809 USA
+1 603 458 6346; fax +1 603 718 8910
www.ricor-usa.com

**Rise Acreo #4545**

FiberLab, Fibervägen 2, Hudiksvall, 824 50 Sweden
+46 10 522 00 30
info@acreo.se; www.acreo.se

**Featured Product: Specialty optical fiber**
Rise Acreo is a purpose built facility for production and R&D on silica based optical fiber and capillaries. We partner with you to develop glass and coating processes and optical fiber designs. Our production resources fulfill your needs from a few hundred meters to hundreds of kilometers per year. Contact: Asa Claesson, VP Fiber Optics, asa.claesson@ri.se

Rising Electro-Optics Ltd. #5056

No 869 PanYu Rd, Fuzhou, Fujian, 350002 China
+86 591 8334 9016; fax +86 591 8330 0646
vincent@rising-eo.com; www.rising-eo.com

**RJCB Consulting #346**

PO Box 18126, Tucson, AZ, 85731-8126 USA
+1 520 940 3912

RMT Ltd. #138

46 Warshavskoe Shosse, Moscow, Moscow, 115230 Russian Federation
+7 499 678 2082; fax +7 499 678 2083
info@rmttld.ru; www.rmtltld.ru

**Featured Product: Thermoelectric coolers & generators**
RMT Ltd is the thermoelectric coolers & generators manufacturer, focused in high-quality miniature thermoelectric modules. RMT provides now the world largest range of miniature thermoelectric coolers for telecom, industrial, medical and aerospace application areas. RMT produce TECs for temperature stabilization of telecom lasers, cooled TOSA, IR and X-Ray detectors, CCD matrices, FPA. All TECs are RoHS compliant and Telcordia GR-468 qualified. RMT Ltd is ISO 9001:2008 certified company. Contact: Ruslan Udolcov, Sales & Marketing, ruslan.udolcov@rmtltld.ru; Pavel Pavlov, Sales & Marketing, pavel.pavlov@rmtltld.ru

Rocky Mountain Instrument Co. #1007

Bldg 1, 106 Laser Dr, Lafayette, CO, 80026-2930 USA
+1 303 664 5000; fax +1 303 664 5001
sales@rmico.com; www.rmico.com

**Featured Product: Zinc Selenide Optics**
Founded in 1957, Rocky Mountain Instrument Company (RMI) continues a rich tradition of American optical manufacturing companies, specializing in precision fabrication, polishing, thin film coatings, optical design & engineering, opto-mechanical assembly, and most recently, advanced IR materials including Zinc Selenide (ZnSe) using the CVD process. High quality precision optics. Our world class optical fabrication techniques can meet even the most challenging custom requirements. Contact: sales@rmico.com

Roditi International Corporation Ltd. #752

156-158 Buckingham Palace Rd, London England, SW1W 9TR United Kingdom
+44 207 819 8080; fax +44 207 730 4131
sales@roditi.com; www.roditi.com

Roditi International is a specialist distributor to the laser, optical and electronics industries. We supply a wide range of laser rods and crystals, including Nd:YAG, CTH:YAG, Yb:YAG, Ruby, Ti:Sapphire, Alexandrite and Vanadate, along with non-linear crystals, optical components, quartz wafers and bars, laser grade lithium niobate and lithium tantalate substrates and boules. We also supply sapphire boules, ingots, wafers and machined parts. Roditi is based in Europe and ships worldwide. Contact: Daniel Jeffery, Sales Manager, daniel@roditi.com; Jürgen Brendel, Managing Director, jwb@roditi.com

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### Rogers Germany GmbH  #4235
**Am Stadtwald 2, Eschenbach, 92676 Germany**
+49 9645 9222 0; fax +49 9645 9222 22
info@curamik.com; www.rogerscorp.com/pez/curamik

Rogers Corporation’s Power Electronics Solutions (PES) specializes in curamik® Direct Bonded Copper (DBC), Actively Metal Brazed (AMB) ceramic substrates for power modules and Micro-Channel Coolers for laser diode systems. In addition, PES offers a portfolio of high quality ROLIX® Laminated Busbar (LLB) Solutions. Rogers PES technologies enable the efficient energy transfer across a broad range of high power applications, including automotive, industrial, medical and telecommunication. Contact: Sherryl Long, Sr. Mktd Communications Manager, sheryl.dehning@rogerscorp.com; Marc Stolpe, Marketing Communications Specialist, marc.stolpe@rogerscorp.com

### Roithner LaserTechnik GmbH  #5362
**Wiedner Hauptstr 76, Vienna, 1040 Austria**
+43 1 586 52 43 0; fax +43 1 586 52 43 44
office@roithner-laser.at; www.roithner-laser.com

**Featured Product: Laser diodes, Lasers, Laser Modules, Laser Systems, LEDs, Detectors, Optical Devices, Accessories**

Roithner Lasertechnik GmbH is a leading supplier in the optoelectronic field, offering a comprehensive arrangement of LEDs, laser diodes, and laser systems in all available wavelengths, covering a range of 245 up to 7µm for LEDs and laser diodes from 375nm – 13.9µm. Our lineup further includes a broad selection of photodiodes, optical components, drivers, and laser accessories. We are specialized in the design of custom made LED arrays and laser modules to meet your special requirements. Contact: Andreas Roithner, office@roithner-laser.com; Werner Mozelt, w.mozelt@roithner-laser.com

### Ross Optical Industries  #2541
**1410 Gail Borden Pl A3, El Paso, TX, 79935-4809 USA**
+1 915 595 5417; fax +1 915 595 5466
sales@rossoptical.com; www.rossoptical.com

**Featured Product: In-stock aspheres, cylinders, micro optics, large diameter lenses, and other hard-to-find optics**

Ross Optical Industries provides custom, precision engineered solutions as well as standard aspheres, cylinders, micro optics, and other hard-to-find optics for OEM applications. Customers in R&D, electronics, semiconductors, biomedical and military markets look to Ross Optical for custom optical and mechanical design, prototyping, manufacturing, coating and assembly. Overseas sourcing and other inventory options are available to reduce supply chain risk. Ross Optical is ISO 9001 certified. Contact: Divaker (Divi) Mangadu, President, divi@rossoptical.com; Charlie Metzger, Technical Sales Engineer, charlie@rossoptical.com

### RPC Photonics Inc  #245
**330 Clay Rd, Rochester, NY, 14623-3227 USA**
+1 585 272 2840; fax +1 585 272 2845
info@rpch photonics.com; www.RPCphotonics.com

**Featured Product: Engineered Diffusers™, Beam Shapers, Microlens Arrays & Diffractive Optical Elements**

RPC Photonics Inc. designs and manufactures micro-optical beam shaping components. RPC has patented technology for ToF, Structured Light and Flood Illumination for applications including Face Recognition, AR/VR, Machine Vision and Gesture Recognition. Products include Engineered Diffusers™, beam shapers, microlens arrays & diffractive optical elements. RPC offers complete solutions from design to mass production in glass, polymer on glass, injection or compression-molded polymers or films. Contact: Steve Chakmakjian, President, schak@RPCphotonics.com

### RPMC Lasers, Inc.  #1730; 1731
**203 Joseph St, O Fallon, MO, 63366-2614 USA**
+1 636 272 7227; fax +1 636 272 3909
info@rpmclasers.com; www.rpmclasers.com

**Featured Product: Diode lasers, modules, solid state / fiber lasers and amplifiers, the best laser at a fair price!**

RPMC Lasers Inc. (Incorporated in 1998) is the leading laser distributor in North America. We offer diode lasers, laser modules, solid state lasers and amplifiers, fiber lasers and amplifiers, and laser power measurement sensors and meters. We also offer custom solid-state lasers and laser diode subsystems. Our goal is to provide high quality technical advice with an in-depth knowledge of the products we offer at an attractive value proposition, the best laser at a fair price. Contact: Dean Micke, President, dean@rpmclasers.com

### RSP Technology  #5335
**Metaalpark 2, Farnsum, Groningen, 9936 BV Netherlands**
+31 596 632300; fax +31 596 632678
info@rsp-technology.com; www.rsp-technology.com

### Rubicon Technology  #4267
**900 E Green St, Bensenville, IL, 60106-2553 USA**
+1 847 595 7000; fax +1 847 595 3264
sales@rubicontechnology.com; www.rubicontechnology.com

**Featured Product: Sapphire Finished Windows and Components, Shaped Blanks, Sapphire Wafers, Cores, Tubes, etc.**

Rubicon Technology Worldwide LLC is a provider of very high quality sapphire for applications in optical, sensor, lasers, semiconductor, military, and medical devices. Rubicon is ISO 9001 certified and ITAR registered. We provide finished components, cores and blanks, tubes, rods and other parts. Rubicon leads the market in providing high quality sapphire in all sizes and dimensions up to 18” rounds, and up to 36L x 18W x2”T window sizes. For more info, visit http://rubicontechnology.com/ Contact: Tom D’Arcy, Optical Sales Manager, tdarcy@rubicontechnology.com; Hap Hewes, Senior Vice President, Optical, hhewes@rubicontechnology.com

### Ruda-Cardinal, Inc.  #352
**3280 E Hemisphere Loop Ste 180, Tucson, AZ, 85706 USA**
+1 520 546 1495; fax +1 520 546 1481
accounting@ruda.com; www.ruda.com

### S & R Optic GmbH  #4529
**Ludwig-Rinn-Str 14, Heuchelheim, 35452 Germany**
+49 641 960 7000; fax +49 641 960 79 43
info@sr-optic.com; www.sr-optic.com

**Featured Product: Mica True Zero Order Waveplates, Quartz Quasi Zero Order / Multiple Order Waveplates, Polarizers.**

S & R Optic GmbH is a global leader in the design and production of advanced, high quality crystal optical components for demanding applications requiring high performance and durability. We support optical innovation by providing industry with very special components that can modify the state of polarization and light. We produce polarizing optical components with the focus on waveplates, and we are unique in making mica waveplates and deliver top performance at reasonable price. Contact: Wolfgang Schneider Dr., Owner, info@sr-optic.com
Photonics West Exhibitor Listing

S.E. Technologies Limited #5043
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+81 3 6450 1357
cat-ma130@set-japan.com; set-limited.com/en/

S.I. Howard Glass Co., Inc. #4669
375 SW Cutoff, Worcester, MA, 01604 USA
+1 508 753 8146; fax +1 508 797 4740
www.howardglass.com
We are a leading provider of quality flat glass wafers, filters, windows and other substrates to the optics industry. We have been working with the optics industry for over 50 years, and providing flat glass instruments and parts to a broad variety of industries for over 100 years. We distinguish ourselves not only by the wide variety of in house services we provide, but also our 20,000 square foot inventory of Schott, Hoya, Corning, Pilkington, Glaverbel, Guardian, St. Gobain & Euroglas. Contact: Jason Perch, President, jason@howardglass.com; Elizabeth Keefe, Director of Operations, elizabeth@howardglass.com

Sacher Lasertechnik GmbH #4622
Rudolf Breitscheid Str 1-5, Marburg, 35037 Germany
+49 6421 305 290; fax +49 6421 305 299
contact@sacher-laser.com; www.sacher-laser.com
Featured Product: MIR 1600nm to 2450nm Tunable External Cavity for Molecular Spectroscopy
Established in 1992, Sacher Lasertechnik offers single mode, narrow linewidth tunable external cavity diode laser systems from 375nm to 2450nm. More than 3W laser power is available via Tapered Amplifier solutions for selected wavelength. Resonant Cavity SHG and FHG extend the wavelength range into the deep UV. Intelligent accessories to measure, characterize stabilize and analyze light ensures an efficient application within delicate measurement tasks. Contact: Immanuel Ilapogu, Sales Manager, contact@sacher-laser.com; Ann-Kathrin Schindler, Sales Assistant, contact@sacher-laser.com

Saint-Gobain Crystals #4662
33 Powers St, Milford, NH, 03055 USA
+1 603 673 5831; fax +1 603 673 1256
sapphire@saint-gobain.com; www.crystals.saint-gobain.com
Featured Product: Sapphire sheets, tubes, rods, lift pins, Garnets, X-Ray Monochromators, Radiation Detectors
Saint-Gobain Crystals offers sapphire, X-ray monochromators, Garnets and Scintillation detectors. Sapphire is the material of choice for extreme conditions such as high-temperature, high-pressure or harsh chemical and physical environments. Scintillation detectors convert ionizing radiation into usable information for measurement, evaluation or imaging. Garnets used as substrates for liquid epitaxy to grow semiconductor crystal layers. Monochromators are needed to perform X-ray Fluorescence Analysis. Contact: Russell Wooddell, Market / Strategic Accounts Manager, Russell.Wooddell@saint-gobain.com; Dave Weeden, Lead Engineer, Global Systems & Technology Team, Dave.J.Weeden@saint-gobain.com

SAIS Co., Ltd. #1521-D
HB Optical, No 242 Beihai St Dadong District, Shenyang, 110043 China
+86 24 88710538; fax +86 24 88722312
info@hb-optical.com; www.hb-optical.com
Featured Product: Interference filters, bandpass filters, optical filters, fluorescence filters, ND filters
HB Optical, SAIS Co., Ltd. is an experienced interference filters manufacture in China. We have more than 40 years of history in R&D optical coatings. We have developed interference filters, bandpass filters, sharp edge filters and neutral density filters etc. and widely applied in fluorescence detectors and fluorescence imaging systems. The typical application such as fluorescence microscopy, PCR detectors, Flow cell cytometers etc. Special customer products can be manufactured. Contact: Jing Ma, Products Manager, majing@hb-optical.com; Linlin Gao, Marketing, info@hb-optical.com

Salem Advanced Materials #4658
5901 Gun Club Rd, Winston Salem, NC, 27103-9732 USA
+1 336 766 1104; fax +1 336 766 1119
sales@salemdist.com; www.salemdist.com
Featured Product: Salem STM Performance Coolants and Cerium Oxides
Salem Advanced Materials supplies critical abrasives and polishing materials for many demanding applications. These applications include optical glass, polymers, ceramics and many other exotic materials. Salem Advanced Materials has warehouses in North Carolina, California and Toronto, Canada to quickly serve the customers throughout North America. Contact: Steve Albright, Business Development, salbright@salemdist.com; Steve Brown, Business Development, sbrown@salemdist.com

SAMTEC USA #4241
520 Park East Blvd, New Albany, IN, 47150 USA
+1 812 944 6733; fax +1 812 948 5047
info@samtec.com; www.samtec.com
Samtec, Inc. is recognized as the connector industry service leader. Besides featuring our Active Optical Cables including the new FireFly™ Micro Flyover System, Board Mount and IC co-packaged Miniature Optical Engines, custom Optical Interconnects and PCle® over FiberSystems, Samtec offers a wide range of High Speed Mezzanine Strips, 28, 40 and 56Gb Backplane Solutions, High Speed Coax and Twin-ax Cable Assemblies as well as Rugged, Power, RF, Board-to-Board Interconnect Systems. Contact: Glenn Dixon, glenn.dixon@samtec.com

Santec U.S.A. Corporation #2617
433 Hackensack Ave, Hackensack, NJ, 07601 USA
+1 201 488 5505; fax +1 201 488 7702
info@santec.com; www.samtec.com
Santec, Inc. is recognized as the connector industry service leader. Besides featuring our Active Optical Cables including the new FireFly™ Micro Flyover System, Board Mount and IC co-packaged Miniature Optical Engines, custom Optical Interconnects and PCle® over FiberSystems, Samtec offers a wide range of High Speed Mezzanine Strips, 28, 40 and 56Gb Backplane Solutions, High Speed Coax and Twin-ax Cable Assemblies as well as Rugged, Power, RF, Board-to-Board Interconnect Systems. Contact: Glenn Dixon, glenn.dixon@samtec.com

Salem Advanced Materials #4658
5901 Gun Club Rd, Winston Salem, NC, 27103-9732 USA
+1 336 766 1104; fax +1 336 766 1119
sales@salemdist.com; www.salemdist.com
Featured Product: Salem STM Performance Coolants and Cerium Oxides
Salem Advanced Materials supplies critical abrasives and polishing materials for many demanding applications. These applications include optical glass, polymers, ceramics and many other exotic materials. Salem Advanced Materials has warehouses in North Carolina, California and Toronto, Canada to quickly serve the customers throughout North America. Contact: Steve Albright, Business Development, salbright@salemdist.com; Steve Brown, Business Development, sbrown@salemdist.com

SAMTEC USA #4241
520 Park East Blvd, New Albany, IN, 47150 USA
+1 812 944 6733; fax +1 812 948 5047
info@samtec.com; www.samtec.com
Samtec, Inc. is recognized as the connector industry service leader. Besides featuring our Active Optical Cables including the new FireFly™ Micro Flyover System, Board Mount and IC co-packaged Miniature Optical Engines, custom Optical Interconnects and PCle® over FiberSystems, Samtec offers a wide range of High Speed Mezzanine Strips, 28, 40 and 56Gb Backplane Solutions, High Speed Coax and Twin-ax Cable Assemblies as well as Rugged, Power, RF, Board-to-Board Interconnect Systems. Contact: Glenn Dixon, glenn.dixon@samtec.com

Santec U.S.A. Corporation #2617
433 Hackensack Ave, Hackensack, NJ, 07601 USA
+1 201 488 5505; fax +1 201 488 7702
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Santec, Inc. is recognized as the connector industry service leader. Besides featuring our Active Optical Cables including the new FireFly™ Micro Flyover System, Board Mount and IC co-packaged Miniature Optical Engines, custom Optical Interconnects and PCle® over FiberSystems, Samtec offers a wide range of High Speed Mezzanine Strips, 28, 40 and 56Gb Backplane Solutions, High Speed Coax and Twin-ax Cable Assemblies as well as Rugged, Power, RF, Board-to-Board Interconnect Systems. Contact: Glenn Dixon, glenn.dixon@samtec.com
Satisloh North America Inc. #106
SPOIN
Satisloh North America Inc.
N106 W 13131 Bradley Way Ste 200, Germantown, WI, 53022-2484 USA
+1 262 255 6001; fax +1 262 255 6002
precision@satislohusa.com; www.satisloh.com
Featured Product: Satisloh’s SPM/SPS-200 have spherical, aspheric, and free form capabilities
The Satisloh line includes generators, polishers, laser centering, and coating machines (spattering) for all applications. A supplier of diamond wheels and pellets, spherometer rings, and spare parts, we offer a complete range of consumable products – including distribution of Mueller Diamonds, polishing pads, and Borer Chemical ultrasonic cleaning products. Contact: Tom Godin, Sales Manager, tom.godin@satisloh.com; Barry Tyler, Sales, barry.tyler@satisloh.com

Savimex #431
BP 85262 - Parc Industriel des Bois de Grasse, 1 avenue Louison Bobet, Grasse, 06131 France
+33 4 93 70 41 31; fax +33 4 93 70 77 21
info@savimex.fr; www.savimex.fr
Featured Product: Design and manufacture optical components in polymer materials as well as opto-mechanical sub-system
Savimex is an expert in the design and manufacturing of optical components in polymer materials as well as opto-mechanical sub-systems. Specialist of visors for the face protection, we develop new visors to equip aeronautical pilot helmets as well as fire brigades helmets. We engaged several years ago in Head Up Display for the automobile market and “LED” lighting systems. Contact: Coyon Laurent, CEO, info@savimex.fr

SPONSOR
SCANLAB America, Inc. #2025
SPOIN
SCANLAB America, Inc.
100 Illinois St Ste 200, Saint Charles, IL, 60174-1867 USA
+1 630 797 2044; fax +1 630 797 2001
info@scanlab-america.com; www.scanlab-america.com
Featured Product: 2D scan systems intelliSCANse 20 and 30 with digital encoder technology for large processing volumes
OEM manufacturer of high-performance galvanometer scanners and galvanometer-based scanning systems for deflection and positioning of laser beams in up to three dimensions. Serves industrial and medical applications. Product range includes standard and high-end scan heads (more than 1200 cps), scan systems for kW-range lasers, automated machine vision, customized systems, control electronics, laser processing software and accessories. Contact: Dale Sabo, VP Sales & Marketing, d.sabo@scanlab-america.com

ScannerMAX #140
SPOIN
ScannerMAX
9501 Satellite Blvd Ste 109, Orlando, FL, 32837 USA
+1 407 299 2088; fax +1 407 299 6066
contact@scannermax.com; www.scannermax.com
Featured Product: Compact-506 galvos, Saturn Optical Scanning Systems, and VRAD rotary actuators
ScannerMAX is a division of Pangolin Laser Systems, Inc. – Founded in 1986, Pangolin has become a world leader in the field of laser control software and hardware, laser diode protection, galvanometer based optical scanners, rotary actuators, low-torque motors and rotary solenoids for the industrial, aerospace and entertainment sectors. Contact: Justin Perry, COO, justin@scannermax.com; Ryan Smith, Engineer, ryan@scannermax.com

SCHOTT North America, Inc. #1207
SPOIN
SCHOTT North America, Inc.
400 York Ave, Duryea, PA, 18642-2036 USA
+1 570 457 7485; fax +1 570 457 7330
info.optics@us.schott.com; www.us.schott.com
Featured Product: Ceramic Laser Phosphor Converters
SCHOTT is a leading international technology group in the areas of specialty glass and glass ceramics. The company has more than 130 years of outstanding development, materials, and technology expertise, and they offer a broad portfolio of high-quality products. SCHOTT is an innovative enabler for many industries, including the home appliance, pharmaceutical, electronics, optics, automotive, and aviation industries. Visit us at: www.us.schott.com Contact: info@us.schott.com

Schneider Optical Machines Inc. #1253
SPOIN
Schneider Optical Machines Inc.
6644 all Stars Ave Ste 100, Frisco, TX, 75033 USA
+1 972 247 4000; fax +1 972 247 4060
info-us@schneider-om.com; www.schneider-om.com
Featured Product: ALP 120 Aspheric Polisher utilizing APS 3D technology for true deterministic polishing
The Schneider portfolio comprises grinding, polishing, and centering machines and measurement systems for various precision spherical and aspherical optics applications. The diamond turning lineup enables Ultra-Precision manufacturing of freeform optics and off-axis mirrors. The solutions cover a wide spectrum of optics sizes ranging from 5 to 1500 mm in diameter. Schneider’s machines are utilized in numerous industries including aerospace, medical, lithography and projection optics. Contact: Daniel Gauch, Manager Precision Optics, d.gauch@schneider-om.com; Christian Veit, Area Sales Manager, c.veit@schneider-om.com

Schneider Optics, Inc. #318
SPOIN
Schneider Optics, Inc.
Industrial Optics Div, 285 Oser Ave, Hauppauge, NY, 11788-3609 USA
+1 631 761 5000; fax +1 631 761 5090
industrial@schneideroptics.com; www.schneideroptics.com
Featured Product: New Ultra High Performance C-Mount Lenses for large image circles (formats)
Schneider Optics designs, develops, and manufactures high performance lenses for machine vision, robotics, document scanning, industrial inspection, medical and metrology, gauging, military, surveillance, & other image processing applications. Standard products include Compact C-Mount lenses, Industrial F-Mount lenses, Bilateral Telecentric lenses, a modular Macro system, large format lenses (area & 12K/16K line scan), and Industrial Optical Filters. Contact: Stuart Singer, Sr. VP & CTO, ssinger@schneideroptics.com; Eric Traba, Technical Sales - Industrial Optics, etraba@schneideroptics.com

Schäfter+Kirchhoff GmbH #4962
SPOIN
Schäfter+Kirchhoff GmbH
Kieler Str 212, Hamburg, 22525 Germany
+49 40 853997 0; fax +49 40 853997 79
info@sukhamburg.de; www.sukhamburg.de
Schäfter+Kirchhoff specializes in three product lines: polarization-maintaining fiber optics, laser line and focus generators, and line scan cameras. The large bandwidth of products offered facilitates the realization of high quality customer-specific and custom-made developments. With all of our products, we strive for the highest quality and reliability.
Photonics West Exhibitor Listing

Schulz Electronics GmbH #4612
Dr-Rudolf-Eberle-Str 2, Baden, Baden, 76534 Germany
+49 7223 96 3630; fax +49 7223 96 3690
vertrieb@schulz-electronic.de; www.schulz-electronic.de

SCOPTIQUE #437
Bordeaux Productic, 3 chemin de Marticoc, Cestas, 33610 France
+33 9 72 37 93 94
contact@scoptique.com; www.scoptique.com
Featured Product: Optical Engineering; Recruitment in Optics
SCOPTIQUE offers a unique service in Optical Engineering and Optical Recruitment internationally. We have been designing innovative Optics for the industry for more than 20 years. Our team of experienced Optical Engineers offers tailored solutions in Optical Design and R & D. While our team of specialist recruiters find Optical specialists from all over the world for your full-time or contractor positions in a record time!
Contact: Oksana Ibisova-Bate, Business Development Manager, oksan.a.ibisova@scoptique.com; David Batte, CEO, david.batte@scoptique.com

SDC Technologies #4212
45 Parker Ste 100, Irvine, CA, 92618-1658 USA
+1 714 939 8300
customercare@sdctech.com; www.sdctech.com
Featured Product: MP-1175UV hard coating has excellent adhesion to acrylic and polycarbonate as well as Mitsui’s APEL
SDC Technologies, Inc., a subsidiary of Mitsui Chemicals, provides optically clear anti-scratch and anti-fog coatings for the ophthalmic, automotive, aerospace, industrial and other industries worldwide. SDC’s portfolio of products contains thermal cure and UV cure coatings and includes primer-free options. SDC products have good adhesion to glass, plastic, and metal, and are compatible with most anti-reflective coatings. SDC coatings also have good chemical, impact, and corrosion resistance. Contact: Woody Muire, Business Development Manager, WMuire@sdctech.com

Science and Technology Facilities Council / Central Laser Facility #5570
STFC, Harwell Campus, Rutherford Appleton Laboratory, Didcot, OX11 0QX United Kingdom
www.stfc.ac.uk
Featured Product: DiPOLE100: A high energy (100 J), high repetition rate (10 Hz) nanosecond pulsed laser system
The CLF at the STFC Rutherford Appleton Laboratory is a world leading laser facility providing UK and international scientists with an unparalleled range of state-of-the-art laser technology. From advanced, compact, tunable lasers which can pinpoint individual particles to high power laser installations that recreate the conditions inside stars, a vigorous development programme ensures that our facilities maintain their international competitiveness. Contact: Thomas Butcher, CALTA Project Leader, thomas.butcher@stfc.ac.uk; Ric Allott, CLF Business Development Manager, ric.allott@stfc.ac.uk

Seattle Photonics Associates LLC #4428
16120 Woodinville Redmond Rd NE Suite 10, Woodinville, WA, 98072 USA
+1 425 949 8052
info@seattlephotonics.com; www.seattlephotonics.com
Featured Product: Optical Engineering and Production
Offering optical engineering consulting since 1999 in design, analysis and prototyping of imaging optical and illumination systems. Experienced in display device systems and performing stray light analysis on complex hardware. We support large and small companies addressing needs as diverse as low cost injection molded lens designs and lightpipes to support working space based optical platforms. We offer internal fabrication capabilities with in-house machining and plastic optical polishing. Contact: Pete Zeidler, Director Business Development, petez@seattlephotonics.com

Scientech, Inc. #2419
5649 Arapahoe Ave, Boulder, CO, 80303-1332 USA
+1 303 444 1361; fax +1 303 444 9229
inst@scientech-inc.com; www.scientech-inc.com
Featured Product: Radiation Pressure Power Meter (RPPM)
Scientech Inc. has 50 years of experience in the development and manufacture of laser calorimeters, pyroelectric detectors, photodiode detectors and their associated power meters, detector bases, adapters, carrying cases and stands. Scientech is launching our latest patented laser power measurement product – Radiation Pressure Power Meter (RPPM). Designed to measure power levels above 1kW with 100% beam availability, this new approach to measuring laser power has no wavelength limitation. Contact: Robert Guidetti, President, inst@scientech-inc.com; Robert Lee, Engineering Manager, inst@scientech-inc.com

Seiwa Optical America Inc. #4425
3042 Scott Blvd, Santa Clara, CA, 95054 USA
+1 408 844 8008; fax +1 408 844 8944
info@seiwaamerica.com; www.seiwaamerica.com
Featured Product: Seiwa MS-200-TCD-33 with M Plan APO HR objective
Seiwa Optical has been a provider of customizable optical solutions for machine vision, inspection, and industrial processing for over 50 years. We have offices established worldwide and are also a distributor for industrial vision products. Contact: Inquiries and Support, info@seiwaamerica.com

Scientific Materials Corp. #4514
31948 Frontage Rd, Bozeman, MT, 59715-8642 USA
+1 406 585 3772; fax +1 406 585 8606
sales@scientificmaterials.com; www.scientificmaterials.com
SemeaTech Co. #4858
Jiading, Shanghai, 1355 Cheng Bei Rd, Bldg #1/801, Shanghai, 201807 China
+1 510 953 8227
Info_us@semeatech.com; www.semeatech.com

Featured Product: Gas and Radiation Sensors
SemeaTech is a worldwide leader in sensing technology focusing on gas and radiation detection in Internet of Things (IoT), work safety and environmental protection. The sensors that SemeaTech has been shipping include CO, H2S, NH3, O3, H2, HF, HCN, HCL, CH2O, CH3SH, SO2, NO, NO2, PH3, Cl2, CLO2, VCM, ETO and gamma in 3, 4 and 7 series. SemeaTech also provides the service of sensor and sensor module customization or ODM for others based on its proprietary technology and manufacturing capability. Contact: Fei Shen, President, fshen@semeatech.com; Zakery Cui, Marketing Director, zcui@semeatech.com

Semiconductor Laser Development Ltd. #5661
HRSZ 66/14, Baládszög, H 6035 Hungary
+36 76 506 050; fax +36 76 506 051
info@sldindustrialasers.com; sldindustrialasers.com

SemiNex Corp. #5270
100 Corporate Pl Ste 302, Peabody, MA, 01960-3809 USA
+1 978 326 7700
info@semnex.com; www.semnex.com

Featured Product: Passive Devices, Connectors, Cleaning and Inspection
SemiNex offers a variety of package options including die, bars, sub-mounted lasers, TO packaged CW and pulsed lasers, and a variety of fiber coupled devices. Both multimode and single-mode devices are available at most wavelengths. SemiNex’s MCM with output powers up to 60W CW is ideal for medical and defense applications. Contact: David Bean, President and CEO, dbean@semnex.com; Patrick Dinneen, Application Engineer, pdinneen@semnex.com

SENKO Advanced Components, Inc. #4408
450 Donald Lynch Blvd Ste D, Marlborough, MA, 01752-4703 USA
+1 508 481 9999; fax +1 508 481 7676
Sales-Americas@senko.com; www.senko.com

Featured Product: Passive Devices, Connectors, Cleaning and Inspection
SENKO Advanced Components develops, manufactures, markets and distributes over 1000 fiber optic products for the telecom & datacom industries worldwide. An ISO-9001 approved company, SENKO is able to provide multinational corporations with the technical expertise to liaise with engineers, and the manufacturing flexibility to develop custom products for the ever growing high tech industry. Contact: Customer Service, sales-americas@senko.com

Senop Oy #4365
Tutkijantie 5K, Oulu, 90590 Finland
+358 20 7343 500
Optronics@senop.fi; senop.fi/en/index

Featured Product: Hyperspectral camera for UAVs, laboratories and handheld use. Aspherical and freeform optics
Senop offers lightweight snapshot Rikola hyperspectral camera for UAVs and handheld/lab use with embedded Linux. The camera provides only true image pixels (1024 x 1024) and 200 fps, there is no interpolation used in image formation. Camera doesn’t need IMU for its operations making the system low cost and low weight. Senop offers also OEM multichannel and LED-modules as well as miniature spectrometers and high precision optics including design/manufacturing from prototypes to large volumes. Contact: Jussi Soukkamaki, Sales Director, Jussi.Soukkamaki@senop.fi; Timo Vuorenpaav, Technology Director, Timo.Vuorenpaav@senop.fi

Senseair AB #4545
Stationsgatan 12, Delso, 820 60 Sweden
+46 653 71 77 70
info@senseair.com; www.senseair.com

Senseair is a leading global provider of air and gas sensing technology. Our purpose is to make sense of air by providing the best possible measurement solutions, service and intelligence. You will find our sensors and solutions in the field of indoor and outdoor air quality, alcohol screening, gas alarms, life science and transportation.

SensIR Inc. #4504
17 Davie Cir, Chapel Hill, NC, 27514-5902 USA
+1 919 308 7731
info@sensir.com; sensir.com

SensIR delivers hyperspectral imaging solutions serving airborne to industrial and medical customers. The SensIR team is a recognized leader in optical system design and manufacturing of robust and innovative spectroscopic imaging solutions producing OEM modules for VNIR, SWIR and MWIR applications, Raman spectral imagers, and full turnkey solutions for mineral analysis. Contact: Mike Sullivan, President, mike.sullivan@sensir.com; Neil Goodey, Director, neil.goodey@sensir.com

SensL Technologies Ltd. #4523
Bldg 6800 Airport Business Park, Ave 6000, Cork, T12 CDF7 United Kingdom
+353 21 240 7110; fax +353 21 240 7119
sales@sensl.com; www.sensl.com

Featured Product: MicroRA Red-Enhanced Silicon Photomultipliers
The MicroRA sensors are a new range of Silicon Photomultipliers (SiPM) providing increased sensitivity into the red and NIR region of the electromagnetic spectrum. MicroRA sensors are the first release from the R-Series family of red-enhanced SiPM sensors that feature high responsivity, fast signal response and a low temperature coefficient of operating voltage, all achieved at a low bias voltage. Responsivity: >100 kA/W @ 905nm; High gain: ~1x106; Compact MLP package - reflow solder compatible. Contact: Wade Appleman, VP of Sales and Marketing, wade@sensl.com; Eva Boileloucka, Account Executive, eva@sensl.com

SensirMetrology #4034
Parc Audiovisual de Catalunya, Crta BV1274 Km 1, Terrassa, Barcelona, 08225 Spain
+34 93 700 14 92
info@sensfar.com; www.sensfar.com

Featured Product: S neox, non-contact 3D optical profiler that combines confocal, interferometry & focus variation
Sensfar Metrology is a leading-edge technology company that has the highest quality standards within the field of surface metrology. Sensfar Metrology provides high-accuracy non-contact 3D surface metrology systems based on confocal, interferometry and focus variation techniques. The product portfolio includes standard setups for R & D and quality inspection laboratories and compact in-line non-contact metrology solutions for production processes.
We Empower OEMs with Partnered Innovation to Solve Complex Illumination, Imaging, and Optofluidic Challenges

Our experts save you crucial problem-solving time with advanced illumination, imaging, and optofluidic subsystems and components for Diagnostics, Biotechnology, and Laboratory markets. As your trusted partner in life science instrumentation, we get you to market faster, so we can improve the world together.

Explore Filters, Light Engines, Lenses, Integrated Optical Imaging Technologies, and OEM Solutions

South Hall Booth 631
www.idex-hs.com

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Photonics West Exhibitor Listing

Sensor Photonics, LLC #4622
215 Orange Avenue, Cranford, NJ, 07016-2359 USA
+1 908 301 6801
sales@sensorphotonics.com; www.sensorphotonics.com

Featured Product: Digital DBL Lasers for the mid infrared spectral regime 1600nm - 3400nm
Sensor Photonics designs and manufactures innovative Digital Distributed Feedback (DBF) Diode Lasers emitting in the mid infrared spectral regime. Industrially important gas absorption lines like CH3, CO2, H2O, CO, O2 and many more are covered by our products which are available in fiber coupled 14 PIN butterfly packages, or as free space emitters housed in TO39 packages.
Contact: James O’Gorman, President, sales@sensorphotonics.com

Servometer #2621
501 Little Falls Rd, Cedar Grove, NJ, 07009-1291 USA
+1 973 785 4630; fax +1 973 785 0756
info@servometer.com; www.servometer.com

Shanghai Gem Optoelectronic Technology Co., LTD #1507-N
2nd Fl/Bldg 10/Saite Industrial Park, 1300 Jungong Rd, Shanghai, 200433 China
+81 21 55093416 815; fax +81 21 55093418
dpzhou2011@163.com; www.gem-oe.com/

Featured Product: Sapphire, quartz, k9; ball lens, TO cap with optical window component, ceramic film components
Shanghai Gem Optoelectronic Technology Co., Ltd. With its superb R & D strength, the accumulation of new technological achievements and experience in aerospace engineering, focusing on semiconductor metallization, metal packaging, glass packaging, optical films and other core technology as a breakthrough, to provide users with needs from research to production photoelectric package design, technology, manufacturing overall solution.
Contact: Zhou Ying, Manager, 316013262@qq.com

Shanghai Institute of Optics and Fine MechanicsCAS #4767
NO.390 Qinghe Road, Jiading District, Shanghai, 201800 China
+86 21 69910952; fax +86 21 69913608
sales@meta-photonics.com; www.siom.cas.cn

Featured Product: Single Laser Crystal TISA (Ti: Sapphire) and Passive Q-switch Single Crystal Co:Spinel
Established in May 1964. Earliest and largest institute in China specialized in laser science and technology. Contact: Jackie Dong, Technician Manager, sales@meta-photonics.com

Shanghai Jiaguang - O Store Optics Co., Ltd. #4661
NO.854 ZhenNan Road, Shanghai, 200331 China
+86 21 6250 7952; fax +86 21 6250 5697
gym.ct@jcop.com.cn; www.JCOP.com.cn

Featured Product: Roof prism; Lehmann Prism; wedge-shaped prism; lens; cylindrical lens; large-size optical flat
Shanghai Jiaguang Optics Group was founded in 1989, has more than 1800 employee, registering capital RMB 120 Million. We produces all sorts and specifications of fine optical components, instruments and assemblage according to the coming drawings, which are widely used in the military affairs, R&D, medical treatment, optical telecommunication and so on. More than 90% of products are exported to foreign countries such as Europe, Japan, U.S.A etc. The sales are more than USD 40 million per year.
Contact: Yaming Gao, Sales, gym.ct@jcop.com.cn; Tony Liu, Sales, Business2@jcop.com.cn

Shanghai Jiaguang Optics Group was founded in 1989, has more than 1800 employee, registering capital RMB 120 Million. We produces all sorts and specifications of fine optical components, instruments and assemblage according to the coming drawings, which are widely used in the military affairs, R&D, medical treatment, optical telecommunication and so on. More than 90% of products are exported to foreign countries such as Europe, Japan, U.S.A etc. The sales are more than USD 40 million per year. Contact: Yaming Gao, Sales, gym.ct@jcop.com.cn; Tony Liu, Sales, Business2@jcop.com.cn
Shen Zhen Trace Optical Co., Ltd. #4608
2nd Floor, KEBIXIN Industrial Park, No.47 Fuyuan 1st Road, Heping Community, Fuyong Town, Baao, Guangdong, Shenzhen, 51826 China
+86 0755 23143359; fax +86 0755 85261239
madeagle520@163.com; www.traceoptical.cn

Featured Product: Car DVR and car rearview camera lens, panoramic lens and sports DV lens, intelligent home system lens

Trace Optical Co., Ltd is a professional manufacturer of optical lenses. The main products are wide-angle lens, megapixel lens, fisheye lens, board Lens etc. which can be widely applied to optical field, such as car DVR, car rearview camera, panorama 360, sports DV, intelligent home system, unmanned aerial vehicle camera, scanners and laser scan. We have an experienced R&D team, we can provide our customers with higher quality products and better service by Technical Support and Technical Sales Service. Contact: Zhi Li, Sales Manager, madeagle520@163.com

Shenzhen Han’s Scanner S&T Co., Ltd. #1507-I
4F Bldg 4 Han’s Laser Industry Park, 128 Chongqing St, Fuyong Bao’An District Shenzhen, 518103 China
+86 755 23040102
zhuyloyw0307@hanslaserc.com; www.hansscanner.com

Featured Product: Scan Systems, Advanced Scanning Solutions, Software & Calibration, Voice Motor, Scan head

Han’s Scanner is a high-tech enterprise owned professional R & D Team for machinery, software, optics, electronics, process testing, etc. Have a series product of Photoelectric digital galvo system, Grating digital galvo system, voice motor, HASHU Intelligent Scanner system and laser range finder; annual output of galvo scanning system can reach 30,000 sets. Scanhead and system solution has been successfully applied in the mobile 3C industry, food packaging, tobacco industry, etc. Contact: Bing Ding, Director, dingb400253@hanslaserc.com; Zhao Yang Zhu, Manager, zhuyloyw0307@hanslaserc.com

Shenzhen JPT Opto-Electronics Co., Ltd. #1521-BC
Hi-tech Industrial Area, 3/F Tellhow Industrial Park Guanlan Town, Shenzhen, 518110 China
+86 755 29528181; fax +86 755 29528185
sales@jptoe.com; www.jptoe.com

Featured Product: Laser, Fiber Optics...

Registered in 2006, JPT Opto-Electronics is a ‘National High-tech Enterprise’ with around 500 employees. The company now focuses on the R&D, production, sales and technology service of fiber optics and fiber lasers. The products are widely used in optical communication, optical sensing, laser machining, medical laser care, etc. Contact: Baron Yu, Marketing, baron@jptoe.com

Shenzhen Oande Optical & Electronic Technology Co., Ltd. #4337
Room 416, Block A, Huafeng Internet + Creative Park, 107 Republic Industry Road, Xixiang Street, Shenzhen, Guangdong, 518101 China
+86 755 86195536; fax +86 755 86195596
sales@oande.cn; www.oande.cn

Featured Product: Optical lens, phone lens, OANDE 360 degree panoramic vr camera, CCTV lens, module, projection optics

Founded in 2007, Shenzhen Oande Technology Co., Ltd has devoted itself to the development of the optical and electronic products. We are now a team of more than 300 including more than 40 engineers and technicians. Our marketing office is located in Baq’ian, Shenzhen, while R&D and manufacture center is located in Hennan National Optoelectronic Industry Park Base. We mainly manufacture electronic components, photocell, optical components, optical modules, optical lens, and coated products etc. Contact: Susan Yan, Sales Engineer, susan@oande.cn; Emily Huang, Sales Engineer, sales@oande.cn
Photonics West Exhibitor Listing

Shenzhen Solar Valley SciTech Development Co., Ltd. #4507
Bldg A/Baolong Industrial Zone, No 491 Dalang Rd South Longhua Town, Shenzhen, Guangdong, 518000 China +86 755 82924037; fax +86 755 29534818 sales@solarvalley.com.cn; www.lens66.com

Featured Product: Aspheric Lenses, V-groove, Capillary, Quartz/Glass tube, Quartz/Ceramic substrates, Pigtail, Collimator

Founded in 2000. National High-Tech Enterprise of China. 17 years of experience in high-precision machining. Specializing in Glass, Ceramic & Metal materials processing & molding. All production equipment are in top level of the world. (CNC 5 Axis Machining Center, Taylor Hobson1240 FAU Measuring Equipment) Product used widely in areas of Aviation, Communication, Medical & Measurement. Customers from North American, Europe & East South Asia. Contact: Emily Zheng, Sales Manager, emily@solarvalley.com.cn; Daniel Huang, CEO, daniel@sierraoptics.com.cn

Sierra-Olympic Technologies, Inc. #5258

Sierra-Olympic Technologies, experts in thermal imaging technology, provides cameras, components, and systems solutions for infrared camera users and integrators. Sierra-Olympic partners with industry-leading manufacturers to offer complete solutions for SWIR, MWIR, and LWIR imaging applications. Products include LWIR OEM imaging cores, cooled cameras for science/industry, cooled cameras for OEM customers, SWIR cameras & thermography systems for temperature-measurement applications.

Contact: Chris Johnston, President, chris@sierraolympic.com

Shimadzu Corporation #4945
Device Department, 1-3 Kanda Nishiki-cho, Chiyoda-ku, 101-8448 Japan
+81 3 3219 5797; fax +81 3 3219 5567
sensor@group.shimadzu.co.jp; www.shimadzu.com

Featured Product: Fiber-coupled Blue Direct Diode Laser, Fiber-coupled RGB Laser Module, and Diffraction Gratings

For 142 years, Shimadzu Corporation has been providing society with high technology products used for analytical instruments, medical systems, and aircraft equipment under the corporate philosophy of “Contributing to Society through Science and Technology”. Its optical device division manufactures various types of Lasers (Fiber-coupled Blue Direct Diode Laser, Fiber-coupled RGB Laser Module etc.), Diffraction Gratings, Laser Mirrors, Spectro Sensor, Monochromator, for many applications. Contact: Masamura Kawada, Assistant Manager, mkkawada@shimadzu.co.jp

Shin-Etsu MicroSi, Inc. #349

10028 S 51st St, Phoenix, AZ, 85044-5203 USA
+1 480 893 8898; fax +1 480 893 8637
info@microsi.com; www.microsi.com

Featured Product: Shin-Etsu Chemical’s optical isolators boast excellent wavelength characteristics

Shin-Etsu Chemical has implemented vertical integration of its entire production system for optical isolators, covering every process from the processing of the raw material, the garnet crystals used to form the substrate for the Faraday rotators, to the device-finishig process. Contact: Edwin Nichols, Marketing Manager, enichols@microsi.com

Sigmadyne, Inc. #238
803 West Ave Ste 311, Rochester, NY, 14611-2447 USA +1 585 235 6892
michels@sigmadyne.com; www.sigmadyne.com

Featured Product: Optomechanical analysis services and software

Sigmadyne is an engineering consulting firm specializing in optomechanical analysis services and software. Our specialty is integrating mechanical predictions with optical predictions for photonic applications in a wide array of industries. Our consulting services offer optomechanical analysis effective in the design development and testing of precision optical systems. SigFit is a software product enabling engineers to link mechanical analysis with optical analysis. Contact: Gregory Michels, Vice President, michels@sigmadyne.com

SPONSOR

Silicon Valley Optics Tech, Inc. #4467
44141 S Grimmer Blvd, Fremont, CA, 94538 USA +1 510 623 1161
info@svotek.com; www.svotek.com

Featured Product: Thin Film Coating, optical filters, customized optical components and assembly

SVOTek is committed to provide high quality coatings with IBS, APS, IAD, and magnetron sputtering vacuum coating technologies to make dielectric, metal and ITO films. We also manufacture high-end optical components used in UV, Visible and IR application as well as precise mechanical components and assembly. We service bio medical, semiconductor, laser, astronomy, solar, defense and computer industry. wavelength covered: 193 nm to 12 micron. Contact: Mehgans Shan, mehghans@svotek.com

Sillos Technologies #431
ZI Peynier-Rousset, rue Gaston Imbert prolongee, Peynier, 13790 France
+33 4 42 53 89 60; fax +33 4 42 53 89 59
contact@silios.fr; www.silios.com

Featured Product: VIS/NIR Multispectral Filters & Cameras, Micro & Diffraction optics

Sillos Technologies is a French high-tech company, specialized in micro-optical technologies. Design and manufacture of VIS/NIR multispectral cameras and custom pixelated multispectral filters for CMOS sensors from any manufacturer. The applications’ fields are: Laser beam shaping, Space & Astronomy, agriculture, agro-food, cosmetics, dermatology, surgery, Homeland Security & Defense. Contact: Thierry Berthou, Sales Director, thierry.berthou@silios.fr; Stephane Tisserand, General Manager, stephane.tisserand@silios.fr

Sierra Precision Optics

12830 Earhart Ave, Auburn, CA, 95602-9027 USA
+1 530 885 6979; fax +1 530 885 1037
sales@sierraoptics.com; www.sierraoptics.com

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Silicon Valley Optics Tech, Inc.
Si-Ware Systems #4461
3 Khaled Ibn Al-Waleed St Sheraton Heliopolis, Cairo, 11361 Egypt
+1 818 790 1151
info@si-ware.com; www.si-ware.com
Featured Product: NeoSpectra Micro
NeoSpectra sensors, from Si-Ware Systems, are low cost, miniaturized, Fourier Transform InfraRed (FT-IR) spectral sensors that are based on Micro Electro Mechanical Systems (MEMS) technology. The sensors operate in the NIR with a wide spectral range from 1,100nm and 2,500nm. The sensors are easily integrated into value added systems in a diverse range of industries including agriculture, food, pharmaceuticals, oil and gas, polymers, and biotechnology. Contact: Scott Smyser, VP W/W Marketing & Business Development, scott.smyser@si-ware.com; Ahmed Korayem, Product Marketing, ahmed.korayem@si-ware.com

Skyline Metalworks Group, Ltd. #2413
28 Ln 80 Ganzhu Rd, Hemei Changhua, 50847 Taiwan
+886 4 7573688; fax +886 4 7575068
skyline@metalworks.com.tw; www.opticmetalworks.com
Featured Product: Fabry-Perot Air-Spaced Etalons. UV Coatings. OEM Laser Optics. YAG Laser Coatings
SLS Optics is a leading manufacturer and supplier of precision laser optics. We specialise in Fabry-Perot etalons, high laser damage threshold optics and thin film coatings for the UV, visible and NIR spectral ranges. Contact: Ronald Cowell, Director, ron@sloptics.com; Lionel Skillcorn, Director, lionel@sloptics.com

SmarAct #5138
2140 Shattuck Avenue Ste 1103, Berkeley, CA, 94704 USA
+1 415 766 9006
info@smaract.com; www.smaract.com
Featured Product: PICOSCALE interferometric displacement sensor with picometer resolution
SmarAct is a fast-growing and innovative company, specialized in the development and production of customizable micro- and nano-positioning systems. The broad portfolio, from single stages to miniaturized robots and easy-to-use control systems, is completed by sophisticated metrology based on our powerful laser interferometer. With our in-house production, we can ensure an outstanding level of product quality and flexibility. We are ready to help you find the best solution for your projects. Contact: Jorge Miguel, CEO/Technical Sales, miguel@smaract.com; Marco Nordmann, Technical Sales, nordmann@smaract.com

Siskiyou Corporation #1246
110 SW Booth St, Grants Pass, OR, 97526-2410 USA
+1 541 479 8697; fax +1 541 479 3314
reception@siskiyou.com; www.siskiyou.com
Siskiyou Corporation manufactures motion control devices with manual and computer interfaced controllers, translation stages, mirror mounts, lens positioners, adjustment screws, construction hardware, fiber grippers and other opto-mechanical components for use in research and manufacturing. Siskiyou Corporation will also custom tailor devices to fit your needs. Contact: Theeya Howell, Trade Show Event Coordinator, reception@siskiyou.com

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28 Ln 80 Ganzhu Rd, Hemei Changhua, 50847 Taiwan
+886 4 7573688; fax +886 4 7575068
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28 Ln 80 Ganzhu Rd, Hemei Changhua, 50847 Taiwan
+886 4 7573688; fax +886 4 7575068
skyline@metalworks.com.tw; www.opticmetalworks.com
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SmarAct #5138
2140 Shattuck Avenue Ste 1103, Berkeley, CA, 94704 USA
+1 415 766 9006
info@smaract.com; www.smaract.com
Featured Product: PICOSCALE interferometric displacement sensor with picometer resolution
SmarAct is a fast-growing and innovative company, specialized in the development and production of customizable micro- and nano-positioning systems. The broad portfolio, from single stages to miniaturized robots and easy-to-use control systems, is completed by sophisticated metrology based on our powerful laser interferometer. With our in-house production, we can ensure an outstanding level of product quality and flexibility. We are ready to help you find the best solution for your projects. Contact: Jorge Miguel, CEO/Technical Sales, miguel@smaract.com; Marco Nordmann, Technical Sales, nordmann@smaract.com
Photonics West Exhibitor Listing

**SMART Photonics** #5329

Horsten 1, Eindhoven, 5612AX Netherlands
+31 40 247 5453
info@smartphotronics; www.smartphotronics.nl

**Featured Product:** Commercial Multi-Project Wafer (MPW) services on InP. InP research, development and production

SMART Photonics is a pure play foundry offering production services for InP based photonic components. We use our extensive knowledge of both discrete as well as integrated photonics and our many years experience to produce, with our dedicated toolset, the photonic components designed by our customers. We offer the full production process from Epitaxial growth, re-growth and processing up to the thinning and dicing of the wafers. Contact: Jeroen Duis, Business Development Manager, jeroen.duis@smartphotronics.nl; Richard Visser, CEO, richard.visser@smartphotronics.nl

**smartGAS Mikrosensorik GmbH** #4858

Huenderstr 1, Heilbronn, 74080 Germany
+49 7131 7975530; fax +49 7131 797553 10
sales@smartgas.eu; www.smartgas.eu

**Featured Product:** New EVO line NDIR gas sensors for CEM, analysing, food storage, biogas and room air monitoring

smartGAS Mikrosensorik GmbH develops and produces reliable, precise and cost-effective Infrared Absorption Sensors (NDIR) for gas detection in a wide range of applications. The product range includes sensors for gas analysis, process control, room air monitoring and gas detection units both as standard products or as customised solutions. Typical gases are CO₂, CO, SF₆, SO₂, C₄H₁₀, CH₄, SO₂F₂, CH₃Br, and refrigerants like R134a, R22, R123-4yl, R410a, R1234ze, R125, R123, R22, R407a or R407c. Contact: Volker Huelleskopf, Technical Manager, volker.huelleskopf@smartgas.eu; Andriko Zavadell, Sales Manager, andrikoz@eoc-inc.com

**SMC Corp. of America** #4136

10100 SMC Blvd, Noblesville, IN, 46060 USA
+1 317 899 4440; fax +1 317 899 3102
sales@smcus.com; www.smcusa.com/

SMC offers technology in pneumatic components such as actuators; cylinders; directional control valves; airline preparation equipment; chillers and dryers; vacuum components; static elimination products; fittings and tubing; electric actuators; grippers; pressure switches high purity chemical valves and fittings as well as process gas equipment. SMC's global presence with manufacturing, sales and technical support in over 81 countries.

**SN&N Electronics, Inc.** #2546

1846 Stone Ave, San Jose, CA, 95125-1306 USA
+1 408 638 7461
info@snnelectronics.com; www.snnelectronics.com

**Featured Product:** The eMRO is a single frequency, externally pumped, ultrastable solid-state laser at 1064 and 1319 nm

SN&N Electronics laser development team has over 30 years experience in designing cutting-edge laser systems, frequency stabilization modules, optical cavity design, precision thermal controller for optical cavities, analog and digital electronics for precision control. Our team has collaborated with Stanford University in developing advanced laser frequency stabilization systems using molecular gasses like iodine and carbon monoxide and ultra-low expansion glass cavities. Contact: Chin Yang Lui, Laser Engineer, chinyang@snnelectronics.com

**Sofradir** #1746

CS20018, Avenue de la Vauve, Palaiseau, 91127 France
+33 1 60 92 18 30; fax +33 1 60 92 18 40
sales@sofradir.com; www.sofradir.com

**Featured Product:** Snake SW Teless

Sofradir is the leading developer and manufacturer of infrared sensors for military, space, commercial and industrial applications. Its vast IR product portfolio covers the entire spectrum from visible to very far infrared. Sofradir pioneers developments in high performance IR detectors based on sophisticated technologies: Mercury Cadmium Telluride (MCT), Indium Antimonide (InSb), Quantum Well Infrared Photodetectors (QWIP), and Indium Gallium Arsenide (InGaAs). Contact: Sébastien Frasse-Sombet, Product Line Manager, sebastien.frasse-sombet@sofradir.com; Claire Valentin, VP Marketing, claire.valentin@sofradir.com

**Solid State Cooling Systems** #1953

167 Myers Corners Rd, Wappingers Falls, NY, 12590-3869 USA
+1 845 296 1300; fax +1 845 296 1303
info1@sscooling.com; www.sscooling.com

**Featured Product:** Our new TCube edge product line offers precise control in cooling capacities from 230 to 460 Watts

Solid State Cooling Systems is a globally recognized leader in providing thermoelectric-based recirculating chillers for precise temperature control of lasers, analytical equipment, imaging systems, medical equipment, semiconductor processing and other precision equipment. We offer a broad product line with cooling capacities from 160 Watts to over 12,000 Watts. Our products are known for their high reliability, compact size, quiet operation and energy efficiency. Contact: Mark Logan, VP Business Development, mlogan@sscooling.com; Kirk Osumi, Director Western Region Sales, kosumi@sscooling.com

**son-x GmbH** #4529

Steinbachstr 17, Aachen, 52074 Germany
+49 241 8904 122; fax +49 241 8904 6122
info@son-x.com; www.son-x.com/en/home

**Featured Product:** Mirrors and optical mould inserts, Plastic prototypes, Ultrasonic tooling system UTS2

son-x is a leading edge technology and component supplier in the field of ultra precision machining. The technology developed and commercialized by son-x enables direct machining of stainless steel with single crystal diamond tools. A consistent surface quality of Ra=3nm and a form accuracy of 150 nm can be achieved. son-x offers: Optical mould inserts, mirrors, plastic lens prototypes manufacturing; Ultrasonic Tooling Systems for diamond machining of steel. Contact: Benjamin Bulla, Managing Director, benjamin.bulla@son-x.com; Karl Schottka, Project Manager Manufacturing, karl.schottka@son-x.com

**SoraaLaser** #1931

116 S River Rd, bldg C, Bedford, NH, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
hvlu@laser-components.com; www.laser-components.com

**Featured Product:** LaserLight Fiber: Highest Luminance and Intensity Concentration of any White Light Source

SoraaLaser is commercializing a new generation of laser light sources for display, automotive, and specialty applications. As an independent spin-off from Soraa Inc. (LED lighting), SoraaLaser was founded by several leading global pioneers in solid state lighting, including Dr. Shuji Nakamura, 2014 Nobel Laureate in Physics. Our technology incorporates an innovative semi-polar GaN laser technology, creating industry-leading performance and reliability. Contact: Huyen Vu, Sales Director Laser Optics, Diodes, and Modules, hvlu@laser-components.com; Kelly Child, Sales Account Manager Laser Diodes and Modules, kchild@laser-components.com
Holland Avenue

North Hall #5328 - #5335

Dutch companies at other locations:

- PHILIPS
- Photon Delta
- RSP
- Netherlands Enterprise Agency
- Admesy
- Avantes
- OKO Optical

The road to:

- Knowledge
- Design
- Manufacturing
- Application
Spark Lasers

Institut d’optique, rue François Mitterrand, Talence, 33400 France
+33 6 29 31 78 58
info@spark-lasers.com; www.spark-lasers.com/

Featured Product: Compact high-power femtosecond and picosecond lasers for industrial and biophotonics applications

Spark Lasers offers a complete range of high quality ultrafast lasers dedicated to industrial micromachining and biophotonics. In addition to innovative compact and robust packages conceived with the most reliable & proven fiber technologies, this new generation of maintenance free lasers offers incomparable ease of use providing easy access to the most advanced programmable and "on the fly" pulse controls (pulse on demand, burst, fast energy modulation, pulse duration tunability. Contact: Pascal Dupriez, CEO & Founder, pascal.dupriez@spark-lasers.com; Guillaume Bouquet, VP of Business Dev., Sales & Marketing (Associate), guillaume.bouquet@spark-lasers.com

SPARK LASERS S.A.S.

IOGS, batiment IOA, Talence, 33400 France
+33 6 48 43 44 71
info@spectraloptics.com; www.spectraloptics.com

Special Optics

3 Stewart Ct, Denville, NJ, 07834 USA
+1 973 366 7298; fax +1 973 366 7407
info@spectraloptics.com; www.spectraloptics.com

Featured Product: Laser optic solutions, high N.A. custom microscope objectives and precision optical systems for OEMS

Special Optics, A Navitar Company, designs, develops and manufactures precision optical components from a state-of-the-art manufacturing facility located in Denville, New Jersey. Since our beginning in 1965 we have developed and refined a wide range of optical fabrication and opto-mechanical assembly capabilities. As a result, we have evolved into a unique company, offering standard catalog optics along with custom designs, while continuing to focus on responding to customer needs. Contact: Craig Fitzgerald, VP of Business Development, craig.fitzgerald@navitar.com

Specialised Imaging, Inc.

40935 County Center Dr Ste. D, Temecula, CA, 92591 USA
+1 951 296 6406; fax +1 951 296 6212
info@specialised-imaging.com; www.specialised-imaging.com

Featured Product: Kirana Ultra High Speed Video camera with frame rates up to 5 million fps180 frames@924x758 res

Specialised Imaging is a full line manufacturer and supplier of Ultra High Speed Gated Intensified CCD cameras with framing speeds up 1 Billion FPS at mega pixel resolution, Video Cameras up to 5 Million Fps @ 924 X 768 resolution. We also offer Optronis Streak Cameras with time resolution down to 2 picoseconds. Specialised Imaging also manufactures Intensifiers and Trajectory Trackers. We are the North American distributor for Image Systems Motion analysis software. Contact: Frank Kosel, President, frank@specialised-imaging.com; Al Febraro, Service Manager, a@specialised-imaging.com

Specim Spectral Imaging Ltd.

Elektroniikkatie 13, Oulu, 90590 Finland
+358 10 4244 400; fax +358 10 4244 401
info@specim.fi; www.specim.fi

Featured Product: Specim IQ, World’s first mobile hyperspectral camera

Specim Spectral Imaging Ltd. is the world leading manufacturer of hyperspectral imaging instruments and systems. In addition to AISA airborne remote sensing systems, Specim provides ImSpector Imaging Spectrographs, Spectral Cameras and Hyperspectral Imaging Solutions to an increasing range of demanding industrial and science applications like color measurement, recycling, geological core logging, process analytical technology (PAT), life sciences, chemical imaging, and forensics. Contact: Mikko Kannelsuo, Sales & Marketing Director, mikko.kannelsuo@specim.fi

Spectral Engines Oy

Kutomotie 16, Helsinki, 00380 Finland
+358 50 529 8876
info@spectralengines.com; www.spectralengines.com

Spectral Instruments, Inc.

420 N Bonita Ave, Tucson, AZ, 85745-2747 USA
+1 520 884 8821; fax +1 520 884 8803
info@spectralinst.com; www.spectralinst.com

A CMOS camera for ultra-high performance scientific applications is introduced by Spectral Instruments. Our expertise in CCD camera development has led to the creation of the finest in a cooled, state of the art CMOS camera platform using large area, front and back illuminated, high Q.E. sensors. We can detect visible, UV, X-ray radiation, and electrons. Configurations include standard windows, fiber optic tapers or faceplates. Custom camera and sensor designs for OEM applications are available. Contact: Charles Slaughter, cslaughter@spectralinst.com
Spectral Systems, LLC #2540
35 Corporate Park Dr, Hopewell Junction, NY, 12533-6558 USA
+1 845 896 2200; fax +1 845 896 2203
info@spectral-systems.com; www.spectral-systems.com

Featured Product: Precise Infrared component, Infrared Windows, Liquid Cell, ATR Elements, Beamsplitter, Coatings
The leading manufacturer of infrared optical components, coatings, system integration and services from original concept through final production. With over 30 years of experience we can ensure your optics are made to your specifications. Our facility is equipped with state of the art polishing, coating and inspection equipment to ensure your optics are fabricated consistently and efficiently. We have the most comprehensive capabilities to provide infrared optical solutions from UV to the far IR. Contact: Customer Service, info@spectral-systems.com

Spectrogon US, Inc. #2114

Spectrogon US, Inc. is a leader in the design and manufacture of Holographic Diffraction Gratings,谱计薄片光学滤波器和光学元件。我们是世界上少数几个能够制造高精度复制光学元件的公司之一，包括球面，凸面，凹面，共面，和非球面，以及光纤激光器。我们为客户提供全面的光学解决方案，覆盖从紫外到中红外的范围。我们的产品包括精密的红外元件，红外反射镜，具有卓越的紫外性能。我们也是世界上为数不多的大规模生产光学元件的公司之一。我们的使命是提供最优质的产品和服务。Contact: Keith McCurdy, keith.mccurdy@spectra-physics.com

Spectra-Physics, a division of MKS Instruments #507
3635 Peterson Way, Santa Clara, CA, 95054-2809 USA
+1 408 980 4300; fax +1 408 980 5537
sales@spectra-physics.com; www.newport.com/spectra-physics
Spectra-Physics®, now part of MKS Instruments, is an industry-leading global supplier of advanced laser solutions to the microelectronics, solar, semiconductor, industrial manufacturing, scientific research, and life and health sciences markets. Our product portfolio includes a wide range of ultrafast, Q-switched DPSS, CW and Quasi-CW, high-energy pulsed, tunable, gas, and fiber-based lasers. Contact: Keith McCurdy, keith.mccurdy@spectra-physics.com

Spica Technologies, Inc. #2349
18 Clinton Dr #3, Hollis, NH, 03049 USA
+1 603 882 8233
sales@spicatech.com; www.spicatech.com

Featured Product: Laser Testing Service Provider
Spica Technologies provides a broad range of optical test and measurement services for manufacturers and end users of optical components. Founded in 1989, Spica has evolved as the premier source for laser damage testing, optical density measurements, environmental exposure, telecomm testing, and general optical component metrology. Relying on numerous laser sources, a host of specialized optical instruments, and years of experience, Spica can support a broad range of optical test and measurement services. Contact: Ken Dzurko, US General Manager, ken.dzurko@spilasers.com
Photonics West Exhibitor Listing

SPIE Career Center #1206
1000 20th St, Bellingham, WA, 98225-6705 USA
+1 360 685 5551; fax +1 360 647 1445
sales@spicareercenter.org; www.spicareercenter.org
Featured Product: Online Job Board; Recruitment Advertising; Job Fairs
The SPIE Career Center is the leading recruitment resource for companies and professionals in the optics and photonics community. Whether you’re looking for a new job or searching for top candidates, our resources will help you find the perfect match for your needs. Job seekers can post their resumes, search our online job board and access additional resources for career advancement. Employers can advertise jobs online, access the SPIE searchable resume database and exhibit in SPIE Job Fairs. Contact: Lacey Barnett, Career Center Sales, laceyb@spie.org

SRICO Inc. #4957
2724 Sawbury Blvd, Columbus, OH, 43235-4579 USA
+1 614 799 0664; fax +1 614 799 2166
sri@srico.com; www.srico.com
Featured Product: High Speed TFLN™ on Quartz Electro-Optic Modulator
SRICO makes photonic devices for high frequency signal transmission, sensing & measurement. Products are LiNbO3 and LiTaO3 modulators, frequency shifters, wavelength converters; PPLN & PPLT waveguide devices; e-field & voltage sensor systems; fiber-optic links; THz detection devices. Core technologies include domain-engineered photonic devices & engineered ferroelectric thin-film (TFLN™ and TFTL™) materials. Contact: Sri Sriram, President & CEO, sri@srico.com; Judith Sriram, VP/Business Development, judith@srico.com

Stable Laser Systems, Inc. #1914
4946 N 63rd St Ste B, Boulder, CO, 80301 USA
+1 303 542 0427; fax +1 303 542 0428
azolot@stablelasers.com; www.stablelasers.com
Featured Product: Hz-level rack mounted frequency stabilized laser system: portable and field-tested
Stable Laser Systems is the premier supplier of components and systems for frequency stabilized lasers at any wavelength. We design robust breadboards, fully integrated, and transportable rack-mount systems with low frequency drift at sub-Hz to Hz linewidths. From fiber-coupled cavities, portable vacuum systems, PDH detectors and noise-cancelation electronics to Hz-level Ti:Sapphire systems with auto-locking servos, we have the expertise to engineer your ideal system in a fraction of the time. Contact: Mark Notcutt, President, mark@stablelasers.com; Nate Phillips, Physicist, nphillips@stablelasers.com

Standa #639
Svitrigailos 4-39, Vilnius, 03222 Lithuania
+370 5 265 1474; fax +370 5 265 1483
sales@standa.LT; www.standa.LT
Standa is a manufacturer of motion control systems including high vacuum compatible (10-6torr) motorized positioners, together with high quality precision mechanics and opto-mechanics which is widely used to enable leading-edge research and products. Picosecond micro lasers produced by Standa deliver peak powers of 1 MW at repetition rates up to 120 kHz. Low timing jitter and SLM are key features making Standa lasers an attractive tool to use in spectroscopy or seeding high-energy MOPA systems. Contact: Lucian Hand, President, Altos Photonics, sales@altosphotonics.com; Laurie Dewar, Customer Support, Altos Photonics, laurie@altosphotonics.com

SRC Metals Co., Ltd. #4653
Rm1002, 1688 Kong. Jiang Rd, Shanghai, 200092 China
+86 216 5145153; fax +86 216 2080004
sales@srmetals.com; www.srmetals.com/
Featured Product: High Quality PVD Sputtering targets, Evaporation Materials, Crucibles, Boats, Heaters, Filaments
SRC is a leading manufacturer of high quality PVD sputtering targets and evaporation materials for precision optics, flat panel display, semiconductor, opto-electronics, large area coating, lasers, decorating coating and photovoltaic. Specialty items include Ta, Nb, W, Mo, ITO, Ti, Si, HfO2, Ta2O5 etc. SRC Serves 100+ customers in the thin films industry since 1998. Contact: Morris Lu, Sales Director, sales@srcmetals.com; Maya Tang, Sales Manager, MayaTang@srcmetals.com

Spit Computer Optics, Inc. #3019
780 Cragmont Ave, Berkeley, CA, 94708-1345 USA
+1 510 527 3516; fax +1 510 558 9582
info@stanfordcomputeroptics.com; www.stanfordcomputeroptics.com

Stable Laser Systems, Inc. #1914
Photonics West Exhibitor Listing

**Star Tech Instruments, Inc** #6005
1 Brush Hill Road, New Fairfield, CT, 06812 USA
+1 203 312 0767; fax +1 203 312 0768
sales@startechinstruments.com; www.startechinstruments.com

**Featured Product:** Manufacturer of EUV, UV to 400 nm, beam profiling, linearity, power and energy instrumentation
Star Tech Instruments Inc. is a manufacturer and supplier of NIST traceable instrumentation for the x-ray (1.24 keV), extreme ultra-violet 10 nm (124 eV), and wavelengths to 400 nm with a wide field of view and excellent linearity (<1% slope uncertainty) and no degradation in performance after over a billion pulses. Measure Beam Profile, power, energy, and linearity with a wide, Flat Field-Of-View (± 70 degrees). Contact: John Wilson, Sales, jwilson@startechinstruments.com; Bill Fricke, President, tatzen@att.net

**Starlight Xpress Ltd** #5145
3 Brooklands Farm Business Park, Binfield Berkshire, RG42 5QX United Kingdom
+44 118 402 6898
info@starlight-xpress.co.uk; www.sxccd.com

**Starrett Tru-Stone Technologies, Inc.** #5533
1101 Prosper Dr, Waite Park, MN, 56378 USA
+1 320 251 7171; fax +1 320 259 5073
sales@tru-stone.com; www.tru-stone.com

**Featured Product:** Precision Machine Bases, Precision assembly, Contract Assembly, Metrology
Starrett Tri-Stone Technologies specializes in precision granite machine bases & assemblies. We partner with you to add expertise in design collaboration, high-quality on-time manufacturing and complex assembly for your precision base. In addition to granite bases, Tru-Stone techs install precision rails, air mounts, brackets, pneumatic systems and cabling. Custom stands are also provided. Materials beyond granite include ceramic, carbon fiber materials. Contact: Joe Erkens, Business Development Manager, joeerkens@tru-stone.com; Chris Groth, Sales, chrisg@tru-stone.com

**Stellar Industries Corp.** #5133
50 Howe Ave, Millbury, MA, 01527-3264 USA
+1 508 865 1668; fax +1 508 865 5076
adrift@stellarind.com; www.stellarind.com

Stellar Industries is a preferred supplier to the Telecom, Biomedical, Microwave, and Defense Industries for custom metallicized ceramic components and services. Stellar supplies thin film, thick film, and Direct Bond Copper substrates. Contact: Ronald Visser, President, adrift@stellarind.com; Jason Greenspan, Sales Manager, jason@stellarind.com

**StellarNet, Inc.** #1647
14390 Carlson Cir, Tampa, FL, 33626-3003 USA
+1 813 855 8687; fax +1 813 855 0394
contactus@stellarnet.us; www.stellarnet.us

StellarNet, Inc. provides high performance compact spectrometer systems and software for product analysis, research, education, and OEM. StellarNet instrumentation is rugged for any environment - lab, process, or field. Spectrometer accessories include light sources, sampling fixtures, optical fibers, and probes. Applications include absorbance & transmission (190-2300nm), fluorimetry, optical metrology, thin film, reflectance & colorimetry, LED/Laser/Solar spectral analysis, LIBS, OES, & Raman.

**STIL** #431
595 rue Pierre Berthier Domaine Saint Hilaire, Aix-en-Provence, 13080 France
+33 04 42 39 66 51
info@stil-sensors.com; www.stil-sensors.com

**Featured Product:** Optical sensors for distance and thickness measurements, Point and line sensors, Vision and inspection
For 25 years, STIL, creator and manufacturer of high-resolution optical sensors, meet the needs of the most demanding metrological applications. Easy to use and to integrate, STIL non-contact sensors measure on any type of material without prior preparation and are adapted for industrial environments as well as research laboratories. STIL innovates through vision technology for fast inspection with “Depth of field” of “PERFECT FOCUS” and develops “à la carte” products for customers worldwide. Contact: Antoine Kasprzak, Regional Sales Manager, a.kasprzak@stil-sensors.com

**StingRay Optics** #4563
17A Bradco Street, Keene, NH, 03431-4118 USA
+1 603 358 5577; fax +1 603 358 5579
info@stingrayoptics.com; www.stingrayoptics.com

**Featured Product:** GhostSight VisSWIR 0.45-1.7µm achromatically corrected 100mm F/1.6 HD InGaAs compatible lens
StingRay offers the broadest range of COTS infrared and broadband optical assemblies in the industry while also boasting 14+ years of custom design expertise. Our team is the preeminent source for proof of concept and application specific optical hardware and consistently standardizes around those technologies that drive the IR market forward. Whether your application requires a built to specification solution or the convenience of a commercially available product, StingRay has you covered. Contact: JJ Conboy, Sales Engineer, iconboy@stingrayoptics.com; info@stingrayoptics.com

**Stratium Ltd.** #5137
15th Flr Brunel House, 2 Fitzalan Rd, Cardiff, CF24 0EB United Kingdom
+44 2920 329111
hello@stratium.co.uk; stratium.co.uk/

**Featured Product:** Bruar™ (Pulsed) and Eira™ (Continuous-Wave) Quantum Cascade Lasers; λ from 3µm to 12µm
Stratium® designs and manufactures quantum cascade lasers for mid-infrared gas analysis and direct applications. If you are working on a project that requires a mid-infrared semiconductor laser, we would like to meet you at the exhibition. Please visit us at the UK pavilion, Booth # 5137. Contact: Phillip Cornish, Commercial Director, philip.cornish@stratium.co.uk; Kenneth Kennedy, Technical Director, kenneth.kennedy@stratium.co.uk

**Stuttgart Instruments GmbH** #4529
Hauptstr. 52, Mannheim, 67297 Germany
+49 6221 7 18 02 53
sales@s-instruments.de; www.s-instruments.de

**Featured Product:** The Alpha-HP, a revolutionary optical parametric system generating high power NIR an MIR radiation
Stuttgart Instruments manufactures lasers with ultrabroad tuning range, from the VIS to the MIR spectral range, with subpicosecond pulses and repetition rates of tens of MHz. Above frequencies of 300 kHz, shot-noise limited performance is available. Rapid and automated tuning and hands-off operation is included. Additionally, supercontinuum generators for ultrabroadband NIR and MIR spectral regions are available. More complex systems including frequency converter are also available. Contact: Heiko Linnenbank, COO, linnenbank@s-instruments.de; Harald Giessen, CEO, giessen@s-instruments.de

Onsite News: www.spie.org/PWnews  •  #SPIEPhotonicsWest  275
Photonics West Exhibitor Listing

Sumita Optical Glass, Inc. #4465
4-7-25 Harigaya Urawa-ku, Saitama City, Saitama pre., 330-8565 Japan
+81 48 832 3165; fax +81 48 824 0734
w-info@sumita-opt.co.jp; www.sumita-opt.co.jp

Featured Product: Ultraviolet rays Sensor UV-300 is the sensor that constantly enables to monitor UV light quantity
Sumita Optical Glass is a manufacturer of glass materials, optical fibers, aspheric lenses, lens units. Our products are used in wide variety industries such as medical devices, telecommunications, semiconductor. Feature of the production is vertical integration. We have developed glass composition to finished products, even molding machine in house. Most of our products are customized products that meet what customers required. Contact: Motoharu Nozaki, Chef, motoharu.nozaki@sumita-opt.co.jp

Sumitomo Electric Industries, Ltd. #4845
New Business Marketing & Promotion Div., 1-3-13 Moto-akasaka, Minato-ku, Tokyo, 107-8468 Japan
+81 3 6406 2648; fax +81 3 6406 4010
ir-opt@info.sei.co.jp; global-sei.com

The year 2017 marks the 120th anniversary of the founding of Sumitomo Electric. From an electric wire and cable manufacturer in Osaka 120 years ago, we have grown into a global leading company in automotive, info-communications, electronics, energy and industrial materials industry. Contact: Chris Wiggins, chris@sei-innovation.com; Yoshi Shikata, yo-shikata@sei.co.jp

Sunex Inc. #26
3160 Lionshead Ave, Carlsbad, CA, 92010 USA
+1 760 597 2966
info@sunex.com; www.sunex.com

Sunny Technology #2430
SPIE Corporate Member
No 18 Xiaotangshan Industrial Park, ChangPing, Beijing, 102211 China
+86 10 8293 7456; fax +86 10 8293 0969
info@sunny-technology.com; www.sunny-technology.com

Superior Silica LLC #2425
7536 E Angus Dr, Scottsdale, AZ, 85251-6410 USA
+1 480 968 6637; fax +1 480 423 8762
info@superiorsilica.com; superiorsilica.com

Superlum #5353
Unit B3 Fota Point Enterprise Park, Carrigtwohill, Cork, T45FC93 Ireland
+353 21 4533666; fax +353 21 4533026
sales@superlum.ie; www.superlumdiodes.com

Featured Product: High power superluminescent diodes at 670 nm. Optical power up to 15 mW
Superlum offers Top-of-the-Range Superluminescent Light Emitting Diodes (SLDs) in the range of 660-1620 nm; Semiconductor Optical Amplifiers (SOA) and Gain Modules at 780-1060 nm; and complete Broadband Light Sources as well as Swept wavelength Tunable Laser in benchtop and OEM solutions and customized products for use in Medical OCT and imaging for Life Sciences, Industrial OCT and high precision industrial sensors, Navigation and Aerospace, Metrology and Atomic Microscopy. Contact: Natalie Tuchapsky, Sales and Marketing Director, sales@superlum.ie

SUS MicroOptics SA #2311
Rouges-Terres 61, Hauterive NE, 2068 Switzerland
+41 325664444
sales.smo@suss.com; www.suss-microoptics.com

SPONSOR
Sutter Instrument Corp. #1311
One Digital Dr, Novato, CA, 94949-5703 USA
+1 415 883 0128
www.sutter.com

Featured Product: Sutter Lambda 421 and Lambda OBC Optical Beam Combiners
U.S. manufacturer of precision devices for scientific research and industrial OEM. Come see the Lambda 421 and Lambda OBC Optical Beam Combiners using a newly patented concept for combining separate light sources with different spectra into a single output beam, and BOB, a flexible open architecture upright microscope. We also make high-output LED, plasma and xenon light sources, optical filterwheels, the SmartShutter, X-Y translators, manipulators, and P-2000 laser-based NSOM fiber tip puller. Contact:Customer Service, Sales, info@sutter.com;Alexandra Cooper, Director, Sales & Marketing, alex@sutter.com

Suzhou Bellin Laser Co., Ltd. #1507-C
No 77 Middle Shuhong Rd, Suzhou, 215021 China
+86 512 8717 9103; fax +86 512 8718 9097
contact@bellinlaser.com; www.bellinlaser.com

Featured Product: Nanosecond Laser, Picosecond Laser
Suzhou Bellin Laser Co., Ltd founded in 2007, is dedicated to the developing, manufacturing and marketing of industrial diode pumped solid state lasers, including variety of picosecond lasers, UV lasers and Green lasers, which are reliable and have been accepted worldwide by customers in Europe, Japan and Taiwan, etc. Contact: Ling Yuan, VP, Sale, natalie.yuan@bellinlaser.com

Suzhou Xin Heng Hi-Tech Optoelectronics Technology Co., Ltd. #4064
Build 68, No 280 Shengrong Rd Shipu Community, Qianqiang Town, Kunshan, 215343 China
+86 512 57992595; fax +86 512 57992590
silent1211@163.com; www.xinhengoptical.com/en

Featured Product: Inspection equipment includes interferometers and spectrophotometers
Suzhou XinHeng Hi-Tech Photoelectricity., Ltd is a leading manufacturer of custom optical components including optical coating, windows, prisms, filters, mirrors, lens and beam splitters in high and low volume. XinHeng Optical Specializes in very flat surfaces and custom optical thin-film coatings, dielectrics and metallics. With computerized inspection equipment includes interferometers and spectrophotometers, XinHeng Optical can always guarantee its products’ quality just as customer required. Contact: Yan Ma, Sales Manager, silent1211@163.com; Qunsheng Zhang, Sales Manager, zhangquansheng4@sina.com

SPONSOR
SVS-VISTEK GmbH #2528
Mühlbachstr 20, Seefeld, 82229 Germany
+49 8152 99 85 0
info@svs-vistek.com; www.svs-vistek.com
Swamp Optics, LLC  
**#3025**

6300 Powers Ferry Rd Ste 600-345, Atlanta, GA, 30325 USA  
+1 404 547 9267; fax +1 866 855 4518  
info@swampoptics.com; www.swampoptics.com

Swamp Optics offers compact, convenient FROG devices for measuring ultrashort laser pulses in real time and which yield the most complete measurements ever and include the beam spatial profile and spatio-temporal distortions. Awards include an R&D100 award and a Circle of Excellence award. Swamp Optics also offers custom devices for nearly every pulse-measurement problem, and we recently introduced a compact pulse compressor automatically free of distortions and very inexpensive. Contact: Linda Trebino, Member & Co-Owner, Linda.Trebino@SwampOptics.com

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**SyncOpto**  
**#1**

1001 Technology Dr, Mountain View, CA, 94043 USA  
+1 650 259 6290; fax +1 650 259 6299  
sales@syncopto.com; www.syncopto.com

SyncOpto is a leading provider of high speed optical coherence tomography (OCT) technology. Products are available from 150kHz to 250MHz and can be used in a variety of applications including material analysis, thin film metrology, and 3D imaging. Contact: Ernie Chen, Business Development Director, ernie.chen@syncopto.com; www.syncopto.com

---

**SwissOptic AG**  
**#1141**

Heinrich-Wild-Strasse, Heerbrugg, 9435 Switzerland  
+41 71 727 3074; fax +41 71 727 4686  
swissoptic@swissoptic.com; www.swissoptic.com

**Featured Product: OEM Optical Solutions - From Concept to Volume Production**

SwissOptic AG, a Berliner Glas Group company, is one of the world’s leading providers of optical key components, assemblies and systems. SwissOptic develops, produces and integrates optics, mechanics and electronics into innovative system solutions for its customers. As OEM partners from concept to volume production, SwissOptic serves innovative customers in various market segments – semiconductor industry, laser and space technology, medical technology and the display industry. Contact: Kevin Liddane, Dir of Business Development - North America, kliddane@berlinerglasus.com

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**Swift Glass, Inc.**  
**#248**

131 22nd St, Elmira, NY, 14903-1329 USA  
+1 607 733 7166; fax +1 607 732 5829  
quality@swiftglass.com; www.swiftglass.com

**Featured Product: Vast capabilities to fabricate flat glass components of quantities of 1 up to 5000pcs**

Swift Glass Company specializes in double side lapping and polishing down to .3mm. Other capabilities include Chem Strengthening up to 30” x 40”, heat tempering, CNC machining, OD grinding, edge polishing, single side lapping and polishing, water-jet cutting, and silk screening. Material include Borofloat, Corning 7980 Fused Silica, Heraeus TSC-3 Quartz, Gorilla Glass, Corning Eagle XG, Schott Color Filters, Hoya Color Filters and Kopp Color Filters, Schott D263, B-270, and Soda Lime Glass. Contact: Charlie Burke, VP, cburke@swiftglass.com; Kevin Wheeler, Special Prod. Manager, k wheeler@swiftglass.com

---

**SWIR Vision Systems**  
**#28**

3021 E Cornwallis Rd, Durham, NC, 27709 USA  
eklem@rti.org; www.rti.org/

**Featured Product: A family of high resolution SWIR cameras for Machine Vision and Security Imaging**

SWIR Vision Systems is a developer and manufacturer of low cost, high resolution SWIR cameras for the Machine Vision and Security Imaging markets. Its first-generation family of SWIR cameras, available in VGA, 1MP, and HD resolutions, are available for pre-order, with anticipated product launch in Spring 2018. SWIR Vision Systems cameras feature its own CQD Quantum Dot sensor technology. Visit SWIR Vision Systems at Booth 28 to meet the team, learn more, and to discuss sales inquiries. Contact: Ethan Klem, CTO, eklem@rti.org; Jonas Hall, jonashall@rti.org

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**Swiss Jewel Co.**  
**#4955**

325 Chestnut St Ste 509, Philadelphia, PA, 19106 USA  
+1 215 925 2867; fax +1 215 925 5829  
sales@swissjewel.com; www.swissjewel.com

**Featured Product: AR Coated Ball Lens and Hemispheres**

Supplier of Sapphire, Ruby, Fused Silica and Glass components since 1920 Sapphire Windows in stock from Dia. 0.95mm up to 75mm. Ball Lenses and Hemisphere Lenses in stock from 0.20mm for fiber coupling, spacing, drilled for CMM application. Contact: Adam Steel, President, adam@swissjewel.com

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**Symetrie**  
**#331**

10 allée Charles Babbage, Nimes, 30035 France  
+33 4 66 29 43 88; fax +33 4 66 29 54 47  
info@symetrie.fr; www.symetrie.fr

**Featured Product: Hexapods, 6DOF motion platforms, parallel robots**

Specialized in hexapods, 6-axis precision positioning systems. Symetrie designs and manufactures high accuracy positioning and measurement opto-mechanical systems for optics, space, defense, universities, synchrotron, medical, The kinematics of hexapods enable an extremely precise motion with the best guarantees of resolution and stiffness. Symetrie has more than 15-year experience in providing complete ready-to-use systems with an ergonomic control software. Contact: Anne Duget, Marketing and Sales Manager, anne.duget@symetrie.fr

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**Sydor Optics, Inc.**  
**#220**

31 Jetview Dr, Rochester, NY, 14624 USA  
+1 585 271 7300; fax +1 585 271 7309  
sales@sydor.com; www.sydor.com

**Featured Product: Sydor Optics specializing in the manufacture of precision flat-surfaced parallel and wedged optics**

Sydor Optics is a custom manufacturer of precision flat-surfaced, parallel and wedged glass optics specializing in high-volume double-side grinding and polishing. Products include wafers, windows, filters, mirrors, optical flats, debris shields and witness samples. Additional capabilities and services include ultrasonic cleaning with cleanroom packaging, processing of Crystal and IR materials, laser machining and assemblies. Sydor Optics is ITAR Registered and ISO 9001:2008 Certified. Contact: Michael Naselaris, Director of Corporate and Business Development, sales@sydor.com; Michael Vergo, Account Manager, sales@sydor.com

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**Swamp Optics, LLC**  
**SPONSOR**

690 E Middlefield Rd, Mountain View, CA, 94043-4010 USA  
+1 626 795 9101  
info@swampoptics.com; www.swampoptics.com

**Featured Product:**  
Custom devices for nearly every pulse-measurement problem, and we recently introduced a compact pulse compressor automatically free of distortions and very inexpensive. Contact: Linda Trebino, Member & Co-Owner, Linda.Trebino@SwampOptics.com
**Synrad**
4600 Campus Pl, Mukilteo, WA, 98275-5305 USA  
+1 425 349 3500; fax +1 425 349 3667  
synrad@synrad.com; www.synrad.com

**Featured Product:** High performance CO₂ lasers  
Engineered for incorporation into a wide range of equipment, Synrad sealed CO₂ lasers are used in a wide variety of industrial applications, including marking, coding, engraving, cutting, and converting on a wide range of target materials. Reliability, ruggedness, and near maintenance free operation are the hallmark of our lasers. Whether your job calls for accurate cutting of high-tech materials, high-speed marking or coding of packaged goods, or precision-based removal of target materials. Contact: Rick Elento, Lead Generation Manager, rick.elento@synrad.com; Lauren Knollmeyer, Market Analyst, lauren.knollmeyer@synrad.com

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**Taidian Fiberoptics Co., Ltd.**
31F O-Biz Twr Ste 3108, 126 Beommal-ro Dongan-gu, Gyeonggi-do  
Anyang city, 14072 Korea, Republic of  
+82 31 450 3963  
tfo@taidian.com; www.tfo.co.kr

**Featured Product:** Rare-earth doped Fiber, Laser Delivery Fiber, PM Fiber, Specialty Preform & Fiber, Medical Probe  
TFO began research and manufacturing of fiber optics in 1977, and has ceaselessly continued to push the envelope as pioneers of industry. Optical cables and fiber optics produced at TFO is manufactured with various methods such as VAD, MCVD and OVD, allowing high production efficiency and excellent quality. Besides, we provide product portfolio optimized for a specialty fiber optics and provide service based on profession technical prowess. Contact: Jeong Ho Park, General Manager, jhpk33@taidian.com; June Yeon Youk, Manager, jyyouk@taidian.com

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**Syntec Optics**
515 Lee Rd, Rochester, NY, 14606-4236 USA  
+1 585 768 2513; fax +1 585 464 8043  
sales@syntecoptics.com; www.syntecoptics.com

**Featured Product:** Diamond turned & injection molded polymer optics, precision machined metal components & assemblies  
Syntec Optics is North America’s largest private manufacturer of custom plastic optics serving the medical, defense and biometric industries by producing “precision plastic optics for tomorrow’s technologies” from our location in Rochester, NY. We specialize in design for manufacturability, precision plastic optics, diamond turning, coating, electro-optical assembly, opto-mechanical assembly, and metrology. Contact: Sara Hart, Business Development Manager, shart@syntecoptics.com; Steven Polvinen, President, spolvinen@syntecoptics.com

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**Taiyo Optics Ltd.**
No 2 Xiang Long Rd Xin Cheng District, Dongguan, 523236 China  
+82 31 450 3963  
sales@taiyooptics.com; www.taiyooptics.com

**Featured Product:** Optical prisms, cylindrical lenses, and other planar optical components  
Taiyo Optics is a professional supplier of prisms. We have been focusing on processing and manufacturing optical prism for more than 20 years. Our featured products including but not limited to the optical prisms, cylindrical lenses, and other planar optical components. With advanced testing instruments and strict quality control system, Taiyo Optics is dedicated to providing best quality and service to meet our customers’ needs. Contact: Olivia Li, Sales/ Marketing Assistant, olivia@taiyooptics.com

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**Tailored Photons**
Albanova Universitetscentrum, Stockholm, 10691 Sweden  
+46 702 49 40 12  
info@tailoredphotons.com; www.tailoredphotons.com

**Featured Product:** Periodically poled nonlinear crystals, Periodically poled KTP crystals, PPKTP  
We manufacture tailored made Periodically poled KTP crystals for nonlinear frequency conversion processes. We offer both large-aperture crystals for high-energy applications and short-periodicity gratings for deep blue generation and quantum optics applications. All our crystals have excellent conversion efficiency, and can be tailored to perfectly fit your frequency conversion process. We sell both single pieces and large-quantities ready to be incorporated in your production process. Contact: Carlota Canalias, CEO, carlota@tailoredphotons.com; Andrius Zukauskas, CTO, andrius@tailoredphotons.com

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**Taylor Hobson - A Unit of AMETEK**
1725 Western Dr, West Chicago, IL, 60185 USA  
+1 630 621 3099; fax +1 630 231 1739  
taylor-hobson.usa@ametek.com; www.taylor-hobson.com

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**TDK-Lambda Americas Inc.**
405 Essex Rd, Neptune, NJ, 07753 USA  
+1 732 922 3930; fax +1 732 922 1441  
sales@us.tdk-lambda.com; www.us.tdk-lambda.com/hp

**Featured Product:** High Density Power Supplies  
TDK-Lambda Americas High Power Division is a manufacturer of Programmable, High Density Power Supplies located in Neptune, N.J. and has been in business for more than 50 years. We employ approximately 200 employees. TDK-Lambda Genesys™ Series of Programmable Power Supplies has the highest density, making the Genesys™ Series the most complete set of platforms with identical user interfaces. Platforms include 750W, 1500W, 2400W, 3.3/5kW and 10/15kW Output. Outputs available range up to 1,500V. Contact: Bonnie West, Inside Sales Manager, bonnie.west@us.tdk-lambda.com
The largest conference of OPTICS and PHOTONICS in Japan and one of the largest and most prestigious events in the field worldwide.

OPTICS & PHOTONICS International Congress

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23-27 April 2018
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Plenary Speakers

Josef Pankert
General Manager Philips Photonics
Philips Group Innovation
“VCSELs in every car, every home and every mobile device”

Lihong V. Wang
Professor
California Institute of Technology
“Photoacoustic Tomography: Deep Tissue Imaging by Ultrasonically Beating Optical Diffusion”

Mutsuko Hatano
Professor
Tokyo Institute of Technology
“Diamond Electronics and Photonics: Application to Quantum Sensors”

Wim Leemans
Director, Accelerator Technology and Applied Physics Division
Director, BELLA Center Lawrence Berkeley National Laboratory
“Experiments on laser plasma accelerators with the BELLA laser and exploring the path towards future applications.”

Conferences

ALPS .......... The 7th Advanced Lasers and Photon Sources
BISC .......... The 4th Biomedical Imaging and Sensing Conference
HEDS .......... International Conference on High Energy Density Science 2018
ICNN .......... International Conference on Nanophotonics and Nanoelectronics 2018
IoT-SNAP ... IoT Enabling Sensing/Network/AI and Photonics Conference 2018
LDC .......... Laser Display and Lighting Conference 2018
LEDA .......... The 6th International Conference on Light-Emitting Devices and Their Industrial Applications
LIC .......... The 6th Laser Ignition Conference 2018
LSC .......... Conference on Laser and Synchrotron Radiation Combination Experiment 2018
LSSE .......... Laser Solution for Space and the Earth 2018
OMC .......... The 5th Optical Manipulation Conference
PLD .......... Pacific Rim Laser Damage 2018
SLPC .......... The 3rd Smart Laser Processing Conference 2018
XOPT .......... International Conference on X-ray Optics and Applications 2018

https://opicon.jp/
E-mail contact@opicon.jp
<table>
<thead>
<tr>
<th>Company Name</th>
<th>#</th>
<th>Address</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>TEC Microsystems GmbH</td>
<td>#4529</td>
<td>Schwarzchildstr 8, Berlin, 12489 Germany</td>
<td>+49 30 6789 3314; fax +49 30 6789 3315 <a href="mailto:info@tec-microsystems.com">info@tec-microsystems.com</a>; <a href="http://www.tec-microsystems.com">www.tec-microsystems.com</a></td>
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<tr>
<td><strong>Featured Product:</strong> Miniature Thermoelectric Modules, TECs, Peltier Devices, Z-Meters, TEC Controllers</td>
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<tr>
<td>Tecnohands Co., Ltd.</td>
<td>#5035</td>
<td>6-29-34-103 Okurayama Kohoku-ku, Yokohama-shi Kanagawa-ken, 222-0037 Japan</td>
<td>+81 45 547 6971; fax +81 45 547 6976 <a href="mailto:info@technohands.co.jp">info@technohands.co.jp</a>; <a href="http://www.technohands.co.jp">www.technohands.co.jp</a></td>
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<tr>
<td><strong>Featured Product:</strong> Ultrasonic motor, Hollow shaft motor, VCM motor, encoder, Scanner motor, Spindle motor</td>
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<td><strong>The Company Name “Technohands” Means “Joining our Hands” - the Advanced Technics from Various Countries of the World Join Together, with our Great Effort to Offer our Customers with Better Solutions. Our Products and the Technics from the Most Advanced Enterprises of the World. We'll Meet our Customers’ Needs to Design, to Manufacture Even Only One Set. We Are Waiting for Customers’ Inquiry. Contact: Wen Wang, Sales, <a href="mailto:wang@technohands.co.jp">wang@technohands.co.jp</a>; Minoru Harada, President, <a href="mailto:harada@technohands.co.jp">harada@technohands.co.jp</a></strong></td>
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<tr>
<td>Tech-X Corporation</td>
<td>#1810</td>
<td>5621 Arapahoe Ave Ste A, Boulder, CO, 80303-1379 USA</td>
<td>+1 303 448 0727; fax +1 303 448 7756 <a href="mailto:sales@txcorp.com">sales@txcorp.com</a>; txcorp.com</td>
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<td><strong>Featured Product:</strong> VSim simulates computational large photonics devices through High-Performance Computation</td>
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<td>Tech-X creates high-performance computational software for simulation and design technology used in research and engineering. Tech-X excels in physics, engineering, applied mathematics, computer science, and software engineering. We engineer superior solvers to attack unique and difficult problems in the interaction of electromagnetics with complex materials. Contact: John Cary, CEO, <a href="mailto:sales@txcorp.com">sales@txcorp.com</a>; Sveta Shasharina, Vice President, <a href="mailto:sveta@txcorp.com">sveta@txcorp.com</a></td>
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<tr>
<td>TECNISCO, LTD.</td>
<td>#4841</td>
<td>2-2-15 Minami Shinagawa, Shinagawa-ku Tokyo, Tokyo, 140-0004 Japan</td>
<td>+81 3 3458 4561; fax +81 3 3458 2780 <a href="mailto:o-sales@tecnicos.co.jp">o-sales@tecnicos.co.jp</a>; <a href="http://www.tecnisco.co.jp/en">www.tecnisco.co.jp/en</a></td>
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<td><strong>Featured Product:</strong> Heatsinks, Submounts, Carrier, Micro Channel Cooler, Structured Glass, TGV, Microfluidics. TECNISCO is doing processing services and able to supply customized parts that are manufactured with metal, ceramic, glass and silicon by its advanced high-precision processes and composite technologies. TECNISCO's expertise includes: Dicing, Sandblasting, Milling (CNC machining), Assembling (AuSn, AuGe, AgCuln, AgCu), Polishing, Bonding, Metallization (Plating, Sputtering, Vapor deposition) for producing such as CuW, CuAINCu, Cu heatsinks (for High power laser diode) and Structured glass. Contact: Naohiro Asada, Account Manager, <a href="mailto:n-asada@tecniso.co.jp">n-asada@tecniso.co.jp</a></td>
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<tr>
<td>Tecnitcus Consonni SRL</td>
<td>#2131</td>
<td>Via Indipendenza 9, Calco, LC, 23885 Italy</td>
<td>+39 039 508 446; fax +39 039 507 392 <a href="mailto:info@tecnitcu.com">info@tecnitcu.com</a>; <a href="http://www.tecnitcu.com">www.tecnitcu.com</a></td>
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<td><strong>Featured Product:</strong> Lenses, achromats, prisms, optical flats, mirrors, light guides, optical assemblies Tecnitcu Consonni is an optical manufacturing company established in 1957 with headquarters in Calco - Italy. We are specialized in the manufacturing of optical components in glass (lenses, achromats, prisms, flats, filters, mirrors, light guides), injection molding of optical plastics and in the engineering, manufacturing and opto-mechanical assembling of complete optical systems for imaging and illumination devices. Tecnitcu Consonni is the leading company of the Italian optical market. Contact: Angelo Fasoli, Technical Manager, <a href="mailto:angelo.fasoli@tecnitcu.com">angelo.fasoli@tecnitcu.com</a>; Ester Consonni, General Manager, <a href="mailto:ester.consonni@tecnitcu.com">ester.consonni@tecnitcu.com</a></td>
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Photonics West Exhibitor Listing

Tempotec Optics Co., Ltd.  
**#5146**

Bldg 32 W Juyuanzou Industrial Park, 618 JinShan St, Fuzhou, Fujian, 350002 China  
+86 591 2837 9336; fax +86 591 2837 9339  
sales@tempotec.com; www.tempotec.com

**Featured Product:** Waveplates, Laser Mirrors, Laser Windows, Filters, Mirrors, Beamsplitters, Prisms, Lenses  
Tempotec provides Experienced Optical Engineers to support our customer’s specific product design and application requirements. Our Mission: “Through Continuous Improvement, Technology Advancement, and Employee Development, to provide the Highest Quality Products and Service, and to create Maximum Value for Our Customers.” Contact: Li Chloe, Sales Engineer, chloe@tempotec.com

TeraXion Inc.  
**#3079**

2716 Einstein St, Quebec, QC, G1P 4S8 Canada  
+1 418 658 9500; fax +1 418 658 9595  
info@teraxion.com; www.teraxion.com

**Featured Product:** Ultrafast and High-Power Laser Components  
TeraXion designs and manufactures innovative photonic components for power, speed and precision. Contact: Philippe Laberge, Sales Manager, plaberge@teraxion.com; René Dionne, Product Line Manager, rdionne@teraxion.com

Termotek GmbH  
**#4033**

Im Rolffeld 6, Baden-Baden, 76532 Germany  
+49 7221 9711 0; fax +49 7221 9711 111  
info@termotek-ag.com; www.termotek-ag.com/en/

Termotek is the manufacturer of laser cooling systems. Our customers appreciate our employees’ high level of expertise and also value working with us as a technology partner. We work together with our customers to produce tailor-made solutions. Termotek is a brand name in the laser market. In the diode laser sector, Termotek AG is the market leader with a share of 75%. Some 50,000 Termotek coolers are currently in operation worldwide. Contact: Justin Riebock, Technical Sales Engineer, justin.riebock@technotrans.com; Larisa Vereshchagina, Technical Sales Engineer, Larisa.Vereshchagina@technotrans.com

THATSHIGH Photoelectric Technology Co., Ltd.  
**#549**

Northeast hall, building No.2, 677 Tian-chen Rd., National High-tech Development Zone, Jinan 250100 China  
+86 531 88687737; fax +86 531 88907971  
sales@thatshigh.com; www.thatshigh.com

**Featured Product:** DKDP Q-Switch, KTP Crystals, Nd:YAG Rods  
THATSHIGH Photoelectric Technology Co., Ltd. sticks to its original orientation of being a professional producer of optical devices of functional material and modulation module, and server of related technology. To meet the most requirement of solid-state laser and optical communication system, we never ceased to optimize our integrative competence of R & D, manufacture and service, to improve our internal management system, and thus to build its innovational power and market leadership challenge. Contact: Peter Zhao, Sales Director, sales@thatshigh.com; Alan Liu, Sales Manager, alan@thatshigh.com

The Australian National University  
**#4052**

Acton Act 2601 Australia, Canberra, ACT, 2601 Australia  
+61 2 6125 5111  
inovation@anu.edu.au; www.anu.edu.au

**Featured Product:** MIROPA (Mid-infrared Optical Parametric Amplifier)  
The Australian National University is a research-intensive university, with world-class academics at the forefront of their fields and specialist research infrastructure. Our researchers are continually developing new innovations to address the challenges facing the world today, many of which are available for collaboration and licensing by industry to achieve further impact. Please visit http://www.anu.edu.au/research/innovation for more information. Contact: Lindsay Hogan, Business Development Manager, lindsay.hogan@anu.edu.au

The China and South Optical Crystal Co.  
**#2410**

No 18 Da Ye Miao Xingqi Cun Dantu District, Zhenjiang, 212142 China  
+86 511 8890 8288; fax +86 511 8890 8788  
sapphires@126.com; www.sapphires.com.cn

**Featured Product:** Sapphire products: optical windows, lenses, prisms for IR and UV optical applications  
The China and South Optical Crystal Co. is a manufacturer of precision sapphire optical components which are used in a wide variety of Infra-Red and Ultra-Violet applications including defense, optical devices, medical, laser and industrial markets for 10 years. The products we produce including sapphire optical windows, lenses, prisms, aspheric lenses and so on. For more information about CHINA & SOUTH, please visit our website http://www.sapphires.com.cn. Contact: Martin Ding, Vice President, sapphires@126.com

The Optronics Co., Ltd.  
**#4944**

International Department, 5-5 Shin Ogawamachi, Shinjuku-ku Tokyo, 162-0814 Japan  
+81 3 3269 3550; fax +81 3 5229 7253  
intl@optronics.co.jp; www.optronicsjp.com

**Featured Product:** OPTICS & PHOTONICS International Exhibition  
OPIE is held annually in Japan with OPIC and focuses on optics and laser technologies involving both science and industry. Co-locating the Congress and the Exhibition bring together innovators from around the world to find future applications for the most advanced optics and lasers. Join us at this premier event—visit our booth #4944 for more information. Contact: Yoshiharu Tsukamoto, yoshi@optronics.co.jp

**Sponsor**

**Thales Optronique S.A.S.**  
**#1741; 4223**

2 ave Gay-Lussac, Elancourt, 78995 France  
+33 1 30 96 70 00  
thales-laser@fr.thalesgroup.com; www.thales-laser.com

**Featured Product:** ETNA XP Thales latest industrial product family of state-of-the-art diode-pumped solid-state laser  
For more than 30 years, Thales has been a world leader in design, development and manufacturing of high energy nanosecond lasers and high intensity, ultra-short Ti:Sapphire femtosecond lasers. Thales provides the most reliable and easy-to-use system. A unique combination of technological expertise and robustness for implementation into industrial applications that require 24/7 operations. Contact: Blandine De Lacoste De Laval, Sales Manager, blandine.de-laval@fr.thalesgroup.com

**The Optronics Co., Ltd.**  
**#4944**

International Department, 5-5 Shin Ogawamachi, Shinjuku-ku Tokyo, 162-0814 Japan  
+81 3 3269 3550; fax +81 3 5229 7253  
intl@optronics.co.jp; www.optronicsjp.com

**Featured Product:** OPTICS & PHOTONICS International Exhibition  
OPIE is held annually in Japan with OPIC and focuses on optics and laser technologies involving both science and industry. Co-locating the Congress and the Exhibition bring together innovators from around the world to find future applications for the most advanced optics and lasers. Join us at this premier event—visit our booth #4944 for more information. Contact: Yoshiharu Tsukamoto, yoshi@optronics.co.jp
## Thermo Fisher Scientific Inc. #1737

**CIDTEC Cameras & Imagers**, 101 Commerce Blvd, Liverpool, NY, 13088-4507 USA  
+1 315 451 9410; fax +1 315 451 9421  
sales.cidtec@thermo.com; www.thermofisher.com/cidtec  
**Featured Product**: 2K x 2K Random access camera with eXtreme Dynamic Range (XDR); Radiation hard digital color cameras  
Thermo Scientific - CIDTEC manufactures high performance UV-NIR sensitive cameras for demanding scientific imaging applications, radiation environments, and unique machine vision inspection applications. Cameras include eXtremely wide Dynamic Range (XDR) for the SpectraCAM line of scientific cameras with unparalleled linear dynamic range, as well as KiloRAD PTZ, MegaRAD and ColorRAD cameras for operation in radiation environments. Deep UV coating services are also available. Contact: Tony Chapman, Sales & Marketing, tony.chapman@thermofisher.com; Suraj Bhaskaran, Engineering Manager, suraj.bhaskaran@thermofisher.com

## Tian Cheng Optics Co., Ltd. #47

No 1188, RuiPeng Road, 130012, Changchun, China, Changchun, 130052 China  
+86 0431 8985 1801; fax +86 431 8985 1701  
tracy@tc-optics.com; www.tc-optics.com  
**Featured Product**: Optical lens, prism, filter and mirrors  
Tian Cheng Optics is Manufacture of optical components. Our main product is lens, window, mirror, filter, prism. Our company found in 2007. We can design the lens and assemble it for the customer. Contact: Hui Guan, Sales Manger, tracy@tc-optics.com

## Thermogym Ltd. #5645

6 Odem St PO Box 7791, Petach Tikva, 4951789 Israel  
+972 3 7521188; fax +972 3 7526030  
office@thermogym ltd.com; www.thermogym ltd.com  
**Featured Product**: Heat Exchangers  
Thermogym Ltd was founded in 2007. We specialize in the design and manufacture of top quality heat exchangers based on 316L stainless steel tubes and copper, aluminum or stainless steel fins. We offer a range of products and services, including the planning, design and production of standard and customized heat exchangers and other related products. Contact: Mr. Yariv Rosental, VP Marketing, yariv@thermogym ltd.com; Mrs. Merav Moskuna, Logistic Manager, office@thermogym ltd.com

## ThermoTek, Inc. #5352

Bldg 2, 1200 Lakeside Pkwy Ste 200, Flower Mound, TX, 75028 USA  
+1 972 874 4949; fax +1 972 874 4945  
info@thermotekusa.com; www.thermotekusa.com  
**Featured Product**: New T257P-20 thermoelectric chiller, 210 watts cooling & 21.75 psi variable drive centrifugal pump  
ThermoTek manufactures the highest in performance and reliability thermoelectric chillers in the smallest packages. Our new T257P and 19” series Rack-Mount chillers offer cooling from 210W to up to 700 watts and are used throughout the semiconductor, laser, industrial and medical industries. Our 19” rack chillers are only 3U tall (5.25”), provide 0.1°C temp stability & are quiet and vibration free. The T257P chiller is smaller & lighter than the T255P and has higher pump performance & features. Contact: David Grey, Director of Sales, dgrey@thermotekusa.com

## Thin Film Devices, Inc. #5069

1180 N Tustin Ave, Anaheim, CA, 92807-1732 USA  
+1 714 630 7127; fax +1 714 630 7119  
sales@tfdfinc.com; www.tfdfinc.com  
**Featured Product**: TFD mfgs superior Thin Film Coatings for Flat Panel Displays, Touch Panels & Photonics  
Such as OLED, TFT, LCoS, MEMs, OPV & Photopic Sensors. Including ITO, IZO, AZO, IMITO™ (Index Matched ITO), LITITO™ (Low Temp ITO), Anti Reflection, Black Chrome (Niobium) & Patterning, TCO’s, Metals & Dielectrics. Metalization: (Cr, Ti, Ni, Pd, Au, Pt, Al, Mo, etc.) for Hot/Cold Mirrors, Filters, EMI Shields, Transparent Heaters, Anti Reflection & Touch Screens. The smoothest ITO in the world w/ surface roughness = 7 Å rms at 1450Å & the highest work function = 4.8eV > 5.0eV. Contact: Saleem Shaikh, President, sales@tfdfinc.com

## Thorlabs #707; 807

56 Sparta Ave, Newton, NJ, 07860-2402 USA  
+1 973 300 3000; fax +1 973 300 3600  
sales@thorlabs.com; www.thorlabs.com  
**Featured Product**: Quantalux™ Monochrome and Color sCMOS Cameras  
Since 1989, Thorlabs has proudly served the Photonics community through our growing catalog of over 20,000 products. Our catalog includes components and system-level solutions in optomechanics, optics, fiber, optoelectronics, semiconductors, lasers, and imaging. As a US-based company with end-to-end design, manufacturing, and distribution facilities located worldwide, Thorlabs is uniquely positioned to serve as a partner for OEM product integration. Contact: Anjul Loiacono, Business Development, aloiacrono@thorlabs.com; Jamie LaCouture, Trade Show Supervisor, jlacouture@thorlabs.com

## Timbercon, Inc. #4213

20245 SW 95th Ave, Tualatin, OR, 97062-7541 USA  
+1 503 827 8141; fax +1 503 228 6747  
sales@timbercon.com; www.timbercon.com  
**Featured Product**: NEW! Fused and Shaped Fiber Technology: End caps, ball lenses, axicon lenses, tapered fiber and more  
Timbercon designs and manufactures fiber optic cable assemblies and modules for the military, aerospace, data communications, medical and industrial markets. We are proud of our reputation for high quality products, engineering excellence, custom design solutions and customer service. AS9100 certified, ISO9001 certified, ITAR registered. Contact: Kip Nix, VP Sales and Marekting, info@timbercon.com

## TLC International World Headquarters #5070

9849 N 21st Ave, Phoenix, AZ, 85021-1825 USA  
+1 602 866 8208; fax +1 602 866 8280  
clinden@tlcinternational.com; www.tlcinternational.com  
**Featured Product**: Gen-3 TLC Phoenix-600 (24”/600mm stage) and Gen-5 TLC Summit (46” x 58”/1160mm x 1460mm stage)  
TLC International is an American manufacturer of high-precision technical glass cutting/scribing equipment. The machines are suitable for R&D, start-up, production and clean room facilities. Processing is clean, fast, dry and accurate. The Gen-3 TLC Phoenix-600 (24”/600mm stage) and Gen-5 TLC Summit (46” x 58”/1160mm x 1460mm stage) are ideal for X-Y, circular, free-form fabrication of flat, thin (0.008”-0.2”/0.2mm-5.0mm) glass/substrates. 24/7 technical support and glass cutting service. Contact: Like Coco Linden, Sales & Marketing, clinden@tlcinternational.com; George Chapman, Technical Support - Engineer, gchapman@tlcinternational.com
**Photonics West Exhibitor Listing**

**TMC**

15 Centennial Dr, Peabody, MA, 01960-7993 USA  
+1 978 532 6330; fax +1 978 531 8682  
sales@techmfg.com; www.techmfg.com

**Featured Product: Vibration Isolation Systems**

TMC manufactures a complete line of Optical Tops and Precision Vibration Isolation Systems. New products include the patented Everstille® Bench-top Active Vibration Cancellation Platform and CleanBench® Vibration Isolation Tables with Gibral Piston™ Isolators. Other products include CleanTop® II Spill-proof Optical Tops, Non-Magnetic Tops, Vacuum compatible Tops, Lightweight Breadboards, and STACIS® III piezoactive electric vibration cancellation systems. Contact: Kyle Erlandsen, Applications Manager, Micro-g, kyle.erlandsen@ametek.com; John Allegrezza, Sr. Applications Engineer, john.allegrezza@ametek.com

**Top Gan Lasers**

Sokolowska 29/37, Warsaw, 01-142 Poland  
48 22 876 0310; fax 48 22 876 0314  
info@topgan.fr.pl; topganlasers.com

**Featured Product: Photomasks, quartz gratings, calibration targets, nanoimprint stamps, nickel molds**

Toppan Photomasks offer technology solutions for a variety of imaging and imprint applications including: semiconductor and MEMS fabrication, gratings, microlens and other optical components, as well as stamps and molds for nanoimprinting. Toppan provides manufacturing and support at various sites in the US, Europe and Asia. We also provide litho engineering services that help our customers bring innovative printing solutions to market faster and more cost effective. Contact: Kelly Atkinson, Sales Manager, kelly.atkinson@photomask.com; Paul Walker, Sales Manager, paul.walker@photomask.com

**TOPTICA Photonics Inc.**

1286 Blossom Dr, Victor, NY, 14564-1402 USA  
+1585 657 6663; fax +1 877 277 9897  
office@toptica-usa.com; www.toptica.com

TOPTICA is a privately held technology driven company, which develops, produces and sells diode and ultrafast fiber lasers for scientific and industrial applications. The company sets its own challenge to regularly present exciting product innovations and world firsts. Contact: Alexis Sipfl, Marketing, alexis.sipfl@toptica-usa.com

**Tosoh Quartz Co., Ltd**

4F-2, No 27 Pu-Ding Rd, Hsinchu, 300 Taiwan  
+886 3 577 1234; fax +886 3 578 2456  
info@tqgt.com.tw; www.tqgt.com.tw

**Featured Product: Quartz component**

Tosoh Quartz Co., Ltd, Taiwan was established in 1999 as a subsidiary of Tosoh Quartz Corporation, which was the first silica glass manufacturer in Japan. We have been manufacturing and distributing silica glass products ever since while supplying key quartz components to major semiconductor makers in Taiwan. Tosoh Quartz Group operates businesses in Japan, Taiwan, the U.S. and U.K., and Tosoh Quartz Taiwan plays an important role for the group.

**Tosoh Quartz Corporation**

3-1435 Tachiyagawa, Yamagata City, Yamagata, 990-2251 Japan  
+81 23 686 2751; fax +81 23 685 3072

**Featured Product: High quality quartz components**

Tosoh Quartz Japan has been fabricating silica glass products for more than 80 years (since 1936). Tosoh Quartz Group carries a wide variety of synthetic silica glass materials for standard optical and high-power laser applications. Recent achievements include the development of large size one ton ES grade silica glass ingots. We offer precision products made by combining cutting edge polishing, mechanical/laser machining, thermal fusion and lithography technologies. Contact: Tetsuya Morimoto, Manager/Business Planning Div., t.morimoto@tqgt.co.jp

**Tower Optical Corporation**

3600 S. Congress Ave., Unit J, Boynton Beach, FL, 33426-8488 USA  
+1 561 740 2525; fax +1 561 740 2518  
sales@toweroptical.com; www.toweroptical.com

**Featured Product: Large 4", zero order waveplates, air spaced, with a clear aperture of 96 mm mounted in a 4.5” ring.**

Tower Optical is a premier manufacturer and producer of high quality precision optics and assemblies. Its stock and ‘build to spec’ custom products are used in leading-edge photonics technology, electro-optics, lasers, telecommunications, medical instruments, optical imaging, and optical computing devices. Products include, but are not limited to, crystal quartz waveplates and achromatic waveplates (retarders), lenses, filters, polarizers, prisms, beamsplitters, windows, and mirrors. Contact: Marty Jennings, Director, Strategic Alliances, mjennings@toweroptical.com; Vince Capozzi, Director, Business Development, vcapozzi@toweroptical.com

**Toyotec Co., Ltd**

2-35 Nishiyutaka-machi, Toyokawa, 442-0024 Japan  
+81 533 85 6033 toyotecsales@toyo-circle.co.jp; www.toyotec.com

Toyotec is a comprehensive manufacturer of Opto-Electronic parts which commercializes the needs of our customers from design & development stage, to Mass Production and Assembly. We keep challenging the future through continuous development of Optical parts and in trend with the latest market demand on new technology. Optically precise lenses as Plastic, Hybrid and Glass plus Precision Engineering parts including fabrication of Optical Testers is our main strength in the Optical market. Contact: Katsuyuki Kobayashi, Senior Director, kobayashi_k@toyo-circle.co.jp; Ryuta Mizuno, Manager, mizuno_r@toyo-circle.co.jp

**Trilite Technologies GmbH**

Gusshausstrasse 21/25, Vienna, 1040 Austria  
+43 664 4638584 info@trilite-tech.com; www.trilite-tech.com

**TMC #1321**

**Tosoh Quartz Co., Ltd #5168**

**Top Gan Lasers #5060**

**Toppan Photomasks, Inc. #2411**

**Tower Optical Corporation #1706**

**Toyotec Co., Ltd #5655**

**Trilite Technologies GmbH #5365**

**Toshiba America Information Systems #4144**

**Tosoh Quartz Co., Ltd #5168**

**Tosoh Quartz Corporation #5168**

**Tower Optical Corporation #1706**

**Toyotec Co., Ltd #5655**

**Trilite Technologies GmbH #5365**
We have the largest spectrum of optical measurement technology and supply test systems for R&D and Production for every manufacturing step in optics: From a system for refractive index measurement, via various lens test systems with an autocollimator as measurement head, up to MTF test systems and camera module testers, we can supply the appropriate optical measurement system for every process step. Contact: Daniel Winters, Managing Director, daniel.winters@trioptics-usa.com

TruTag Technologies

TruTag Technologies Inc. is a leading technology company in the hyperspectral imaging space. TruTag developed the world’s first high-resolution, handheld autonomous hyperspectral camera which was awarded the SPIE Best Camera and Imager Prism Award in 2017. TruTag’s hyperspectral cameras provide spectrally-tunable multi-megapixel hyperspectral data from 400 nm – 1000 nm with embedded object identification for the medical imaging, machine vision and quality inspection industries. Contact: Kevin Lynch, Sales Director, Hyperspectral Products, klynch@trutags.com; Sally Lee, Marketing Manager, sally@trutags.com

Tucsen Photonics Co., Ltd.

As a result of extensive investment in technology, quality and manufacturing, Tucsen Photonics is now the premier manufacturer of scientific cameras in China. Focusing only on the development and manufacturing of scientific cameras has allowed Tucsen to lead in advanced hardware & software solutions. Contact: Jessica Wu, Sales Director, support@tucsen.com; Mike Blake, OEM/ODM Support, mblake@tucsen.com
TwinStar Optics, Coatings & Crystals, Inc.  #117

6741 Commerce Ave, Port Richey, FL, 34668-6815 USA
+1 727 847 2300; fax +1 727 847 2304
sales@twinstaroptics.com; www.twinstaroptics.com

Featured Product: TwinStar is a global leader in precision optics and coatings
TwinStar is a global leader in the fabrication and coating of precision optics and coatings. TwinStar’s coating lab produces high damage coatings from the UV thru the far IR including solderable edge metallization. TwinStar fabrics waveplates, etalons, lens ducts, laser stabs/rods, prisms, mirrors, and provides bonding and optical assembly services and also works with linear/non-linear laser crystals including YAG, KTP and LBO. Contact: Peter Thomas, Director of Sales & Marketing, petert@twinstaroptics.com; Mark Gruttadauria, General Manager, markg@twinstaroptics.com

Tydex, LLC  #2612

Domostroitelnaya str 16, St. Petersburg, 194292 Russian Federation
+7 812 331 8702; fax +7 812 309 2958
optics@tydex.ru; www.tydex.com

Featured Product: Golay Detector Calibration Set, THz Objective Lenses, THz Cuvettes, THz Fabry-Perot Etalon
Tydex specializes in custom manufacturing of optical components and instruments for research and the industry, including spectroscopy, pyrometry and thermography, THz photonics, sensors and detectors, metrology, lasers, and more. Application wavelengths range from DUV to VIS, NIR, MIR, and MM waves (THz), depending on the materials used, component shapes, coatings, and instruments. Our R&D department develops THz components, devices and instruments which are then produced in-house. Contact: Kopchatov Vladimir, Project Manager, kop@tydex.ru; Kropotov Grigory, General Manager, optics@tydex.ru

UC Components, Inc.  #5156

18700 Adams Ct, Morgan Hill, CA, 95037-2804 USA
+1 408 782 1929; fax +1 408 782 7995
sales@uccomponents.com; www.uccomponents.com

Featured Product: Fasteners for Extreme Environments
For High and Ultra High Vacuum environments, UC Components “RediVac®” vented screws provide a path for trapped air to be pumped away from the bottoms, sides and shoulders of blind-tapped holes resulting in faster and cleaner pump-down of vacuum systems. Venting eliminates virtual leaks caused by trapped air, combined with UC’s proprietary cleaning procedure removes potential contaminates from voids resulting in higher throughput and yields. Contact: Christopher Malocsay, Sales, chris@uccomponents.com

ULTRA TEC Mfg., Inc.  #4623

1025 E Chestnut Ave, Santa Ana, CA, 92701-6425 USA
+1 714 542 0608; fax +1 714 542 0627
info@ultratecusa.com; www.ultratecusa.com

Featured Product: FiberLab fiber lensing tool with real time video monitor and magnified examination w/o fiber removal
Ultra Tec Mfg., Inc. manufactures fiber lensing, fiber polishing and connector polishing gear for research and pilot production applications. Custom fixturing is available for unique applications where flat end or precise angled polishing is needed. For fiber shaping, bevets, angles, multi-sided shapes are all possible. Ultra Tec also manufactures Diamond cut off saws for cross sections or precision slicing. Benchtop or portable units are available, all designed and manufactured in the USA. Contact: Steve Collins, Sales Engineer, steevc@ultratecusa.com; Robert Rubin, Sales Engineer, rob@ultratecusa.com

ultralumina GmbH  #4529

Staudtstr. 2, Erlangen, 91058 Germany
+49 9131 7133 263
sales@ultralumina.com; www.ultralumina.com

Featured Product: Deep UV to IR supercontinuum source
ultralumina is a spin-off from the Max Planck Institute for the Science of Light in Erlangen (Germany) and commercializes Photonic Crystal Fibre (PCF) and non-linear optics technology. ultralumina currently offers broadband deep ultraviolet light sources, a 20-30 fs near IR source with MHz repetition rates as well as a range of hollow-core PCF fibres targeted at non-linear optics, UV- and short-pulse beam delivery applications (e.g. semiconductor metrology, life sciences and micro-machining). Contact: Sofia Trapper, Office Manager, strapper@ultralumina.com

Umicore Thin Film Products  #2232

2976 S 614 Rd, Quapaw, OK, 74363 USA
+1 401 456 0800; fax +1 401 421 2419
sales.materials.na@umicore.com; www.thinfilmproducts.umicore.com

Featured Product: World leader in the manufacturing and recycling of thin film materials for PVD applications
Umicore Thin Film Products is one of the leading producers of materials for PVD applications with more than 50 years experience in this field. The product portfolio of Umicore Thin Film Products covers a wide range of highly effective evaporation materials, sputtering targets, and accessories for Optics and Accessories, Wear and Decorative Coatings, Microelectronics and Semiconductors, and Large Area Coatings. Umicore is committed to quality and is ISO 9001 and 14001 certified. Contact: Eileen Armstrong, N.A. Sales Manager, eileen.armstrong@am.umicore.com; Matthew Isel, Eastern Territory Sales Manager, matthew.isel@am.umicore.com

UNI Optics Co., Ltd.  #5357

Bldg 62 Pushiang Industrial Zone A Hongjiang Road No.1, Fuzhou, 350008 China
+86 591 86395085; fax +86 591 86395831
sales@uni-optics.com; www.uni-optics.com

Featured Product: All kinds of Lens, Prisms, Windows, Mirrors, Filters, and Lens design & assembly etc.
UNI Optics Co., Ltd specializes in optical components and optical assemblies, located in Fuzhou, of China. UNI Optics now has more than 150 skilled employees, which include 15 dedicated engineers and over 6000 square meter of manufacturing facilities. We carry out ISO9001:2008 quality management system. We have strong capability to produce various custom-made optical components and assembly, like lenses, prisms, windows and filters etc., moreover, various coating designs are available to us. Contact: Vincent Wen, Marketing Manager, vincent@uni-optics.com; Resa Lin, Sales Manager, sales@uni-optics.com

Unice E-O Services Inc.  #5239

No 5 Andong Rd Chungli District, Taoyuan City, 32063 Taiwan
+886 3 462 6569; fax +886 3 462 5586
unicehq@unice.com.tw; www.unice-eo.com.tw

Featured Product: OptoMechanics & System Integration
Unice E-O Services Inc. is a technology-based company founded in 1986 by a group of experienced and professional engineers who have been working in Mechanic, Automation Control, Light Measurement, System Integration for a long time. Unice’s core technology to the customer and solve their problem is the reason why we keep expanding in the market. The new world needs new concept, we are opening our mind and ready to serve you! Contact: Johnny Chang, CEO, unicehq@unice.com.tw
Uniforce Sales and Engineering #4319
39899 Balentine Dr Ste 335, Newark, CA, 94560 USA
+1 510 657 4000
info@uniforcesales.com; www.uniforcesales.com
Uniforce Sales and Engineering is an integrator and distributor for high performance imaging. Uniforce specializes in image acquisition and processing, machine vision, video recording, professional broadcasting cameras, custom modifications, system integration, custom software development, instrumentation, and vision hardware equipment. For over 30 years, Uniforce has provided cost effective, highly reliable imaging systems & solutions. Uniforce is a Service-Disabled Veteran-Owned Small Business. Contact: Ben Castricone, Ph.D., President & CEO, info@uniforcesales.com; David Darg, Sales Engineer, info@uniforcesales.com

Uniklasers Ltd #317
Units 4 & 5, Bavelaw Business Centre, 46A Bavelaw Road, Edinburgh, EH14 7AE United Kingdom
+44 131 2812778; fax +44 74037 22220
sales@uniklasers.com; www.uniklasers.com
Featured Product: CW Single Frequency DPSS Lasers
UniKLasers manufacture CW Single Frequency DPSS lasers at any wavelength from NIR to UV using a single engineering platform based on patented BRaMMS technology. UniKLasers products, all ultra-compact & air cooled: Quartetto-266, Duetto-532, 515, 442, 360, 355, 349, 320 & Solo-1064, 720, 698, 640, 607, 523 offer exceptional performance, high conversion efficiency, 100m+ coherence length, low noise, various power levels, lowest power consumption & smallest footprint for given output up to 3W. Contact: Roger Brueggemann, Sales Manager, roger.brueggemann@uniklasers.com; Andy Wells, New Business Development Manager, andy.wells@uniklasers.com

Union Optic, Inc. #4566
Building 19, Bio Accelerator, No. 388, 2nd Hi-Tech road, East Lake Hi-Tech Zone, Wuhan, 430075 China
+86 27 87531505; fax +86 27 87531525
sales@u-optic.com; www.u-optic.com
Featured Product: Waveplate, Polarizer, Depolarizer, Quartz Polarization Rotator, Optical Isolator, Polarization Assem
Union Optic Inc., founded in 2004, is a high-tech company located in Optics Valley of China, specializing in research and development, production and sales of precision optical components. Union Optic has a more than 4,500 square meters facility incorporating clean room, manufacturing lines and R&D facilities. Now we have more than 160 employees, consists of a very skilled team of sales and marketing, management, engineering and production, most of them have a background in physics and optics. Contact: Casper Zhang, Sales Director, casper@u-optic.com; Rita Shi, Sles Manager, rita@u-optic.com

Unioriental Co., Ltd. #6047
No 3336 Xiyou Ave, Hefei, 230088 China
+86 551 68778683; fax +86 551 3498763
ricky@unioriental.com; www.unioriental.com
Featured Product: Laser crystals YLF, YAG, YVO4, LiSAF, LiCAF, nonlinear crystals, optics
Unioriental specializes in manufacturing and developing laser and optical materials, including crystals (YLF, YAG, YVO4, LiSAF, LiCAF, etc), nonlinear crystals (LBO, KTP, BBO, KDP, etc.), and high precision optics (lens, mirrors, prisms, windows, beamspitters, etc.). Unioriental was founded in Beijing in 2003 and moved to Hefei in 2011 and has 300 staffs at present. We have comprehensive production inspection system, including Zygo interferometer, Leybold coating machine and ISO9001 certificate. Contact: Jack Han, Sales Supervisor, jackhan@unioriental.com

United Kingdom Pavilion #5137, 5145
275 London Rd North End, Portsmouth Hants, PO2 9HE United Kingdom
+44 23 9266 5133; fax +44 23 9262 9149
rob@sics-expo.co.uk; www.scs-expo.co.uk

United Kingdom Pavilion

United Lens Company #1145
259 Worcester St, Southbridge, MA, 01550-1376 USA
+1 508 765 5421; fax +1 508 765 0500
info@unitedlens.com; www.unitedlens.com
Featured Product: ULC provides a broad range of optical coating services, ranging from 250nm to 25 microns
A vertically integrated manufacturer of custom optical components specializing in thin-film coatings, precision machined and polished optical elements. ULC is ISO 9001:2008 certified and ITAR registered and features state-of-the-art metrology. Our commitment to quality provides you a one-stop solution to all of your optical component requirements. Visit our website at www.UnitedLens.com or contact us at info@UnitedLens.com for additional information. Contact: Tara King, Director of Sales & Marketing, tking@unitedlens.com; Samantha Briggs, Senior Sales & Marketing Representative, sb briggs@unitedlens.com

UniTemp GmbH #4529
Luitpoldstr. 6, Pfaffenhofen, 85276 Germany
+49 8441 787663; fax +49 8441 787664
info@unitemp.de; www.unitemp.de
Featured Product: Reflow Solder Ovens, Rapid Thermal Annealing Ovens, High precision hot plates
The company UniTemp GmbH was founded in August 2000. The corporate objective is the development, manufacturing, sales and marketing of equipment for the microelectronics. Our key products are single wafer ovens and reflow solder systems. Our key market are research and development companies (for process evaluation), small companies for small series production or universities. Beside this we also have sold several units to production facilities worldwide. Contact: Astrid Birkner, CEO, astrid.birkner@unitemp.de; Christopher Curran, Sales Manager, curran@unitemp.de

Univ. of Colorado Boulder/Dept of ECEE #1813
ECEE, 1111 Engineering Dr, Boulder, CO, 80309-0429 USA
+1 303 492 9465
www.colorado.edu/ecee/

Universal Laser Systems, Inc. #5462
7845 E Paradise Ln, Scottsdale, AZ, 85260-1797 USA
+1 480 483 1214; fax +1 480 483 5620
moreinfo@ulsinc.com; www.ulsinc.com
Featured Product: 250W and 500W Integrated air-cooled OEM lasers; XLS10 MultiWave Hybrid Laser System
Since 1988 Universal Laser Systems has been a leading global provider of CO2 and fiber laser systems, and OEM integrated air and integrated water lasers. Recognized as experts in laser-materials interactions and advanced material processing, ULS laser systems are used to cut, engrave and mark thousands of materials. Learn more about the XLS10 MultiWave Hybrid, the world’s first laser system combining multiple wavelengths into a single coaxial beam, and OEM lasers up to 500W of air-cooled power. Contact: Christopher Campbell, Sales Engineering Manager, ccampbell@ulsinc.com; Shari Varahramyan, OEM Laser Sales Manager, svarahramyan@ulsinc.com
Universal Photonics Inc. #1723
85 Jetson Ln, Central Islip, NY, 11722 USA
+1 516 935 4000; fax +1 516 935 4039
info@universalphotonics.com; www.universalphotonics.com

**Featured Product: Somos High-Speed, Double-Sided Lapping & Polishing Machines**

Universal Photonics is a world-leader in critical surfacing preparation materials. Our dedication to the advancement of surface technology in all phases of fabrication spans nearly a century, and is supported with state-of-art laboratory, manufacturing and distribution facilities throughout the United States, Europe, and the Far East. Contact: Angelika Criscione, Senior Director of Marketing, angelika@universalphotonics.com; Jen Laico, Senior Director of Sales, jenl@universalphotonics.com

University of Arizona, College of Optical Sciences #340
94 Meinel Bldg/College of Optical Sciences, 1630 E University Blvd, Tucson, AZ, 85721-0095 USA
+1 512 621 6997
info@optics.arizona.edu; www.optics.arizona.edu

**Featured Product: Educational and research institution**

The University of Arizona College of Optical Sciences educates students in all aspects of the study and application of light, performing internationally recognized research in optical engineering, quantum optics, applied optics and photonics, and image science. The College of Optical Sciences is the world’s premier optical institute, with award-winning faculty members, a diverse student body, challenging courses, pioneering research programs and close relationships with the optics industry. Contact: John Koshel, Associate Dean for Academic Programs, jkoshel@optics.arizona.edu; Kaye Rowan, Senior Director of Development, rowan@optics.arizona.edu

Uptek Solutions Corp. #4239
130 Knickerbocker Ave, Bohemia, NY, 11716 USA
+1 631 256 5565; fax +1 631 292 5010
sales@uptekolutions.com; www.uptekolutions.com

**Featured Product: Ultrafast Ti:Sapphire oscillator and laser, high power Nd:YLF DPSS laser**

Uptek Solutions Corp. is a laser manufacturer specialized in producing femto-second ultrafast oscillators and Ti:Sa amplifiers, Q-switched DPSS Nd:YAG, Nd:YLF lasers, and femtosecond laser micromachining systems which are designed for scientific and industrial applications. Our laser and engineering R&D teams are working closely with customers to provide the best solutions for system integration and laser applications. Contact: Jeffrey Tian, jlian@uptekolutions.com

US Fiberoptec Technology, Inc. #308
175 Bernal Rd Ste 15, San Jose, CA, 95119 USA
+1 408 834 7410; fax +1 408 834 7430
info@usfiberoptec.com; www.usfiberoptec.com

**Featured Product: Non-circular Optical Fibers & Assemblies**

100% vertically integrated world leader in silica and glass optical fibers, assemblies, bundles and hybrid photonics solutions. Producing silica (Quartz), silica/silica and hard polymer clad/silica (HPCS), glass and MIR (Mid Infrared) optical fibers and value added assemblies for a wide variety of industries and applications. We offer fibers from 40 microns to 2,000 microns in core sizes with N.A. range of 0.12 to 0.53 and wavelengths range from 193nm to 16 microns. Contact: Kevin Bakhshpour, VP Sales & Marketing, sales@usfiberoptec.com; Ilya Rotenstein, Sales & Marketing, ilya@usfiberoptec.com

UTC Aerospace Systems - Sensors Unlimited #1535
330 Carter Rd Ste 100, Princeton, NJ, 08540-7438 USA
+1 609 333 8000
sui_info@utas.utc.com; www.sensorsinc.com

**Featured Product: Non-ITAR, Low-Cost Sensors Unlimited 640CSX and 320CSX MicroSWIR™ Cameras**

Sensors Unlimited, Inc., a UTC Aerospace Systems company, develops innovative shortwave infrared (SWIR) sensing/imaging solutions based on indium gallium arsenide imaging technology. Products include InGaAs-SWIR cameras and systems, 1- and 2-D focal plane arrays & extended wavelength response InGaAs image sensors. Imaging applications include security/surveillance, near-infrared spectroscopy, line-scan inspection, process control, laser beam profiling, microscopy, OCT, art inspection & astronomy. Contact: Scott Cogan, Sales Manager, scott.cogan@utas.utc.com; Paul Messina, Sales Manager, paul.messina@utas.utc.com

UVphotonics NT GmbH #4529
Gustav-Kirchhoff-Straße 4, Berlin, 12489 Germany
+49 30 6392 2682; fax +49 30 6392 2685
info@uvphotonics.de; uvphotonics.de/

**Featured Product: Customizable UV-B (280 nm - 320 nm) and UV-C (<280 nm) ultraviolet light emitting diodes**

UVphotonics NT GmbH offers highly efficient, reliable and customizable ultraviolet light emitting diodes in the form of single chips and fully packaged devices for the B2B market. Contact: Neshya Lobo Ploch, CEO, Neshya.Lobo-Ploch@uvphotonics.de; Jens Rass, CEO, jens.rass@uvphotonics.de

Vacuum Engineering & Materials #2210
390 Reed St, Santa Clara, CA, 95050 USA
+1 408 871 9900; fax +1 408 871 2900
info@vem-co.com; www.vem-co.com

**Featured Product: High-Quality PVD Sputtering Targets, Evaporation Materials, Mat’l Reclaim & Shield Cleaning Services**

VEM is a leading manufacturer of high-quality, thin film deposition materials used in compound semiconductors, opto-electronics, precision optics, lasers, AR coatings, MEMS, emerging display technologies and many other applications. Specialty items include: Au and Pt sputtering and evaporation materials, Ultra-Pure Au (non-spitting) evaporation pellets, Ta, Nb, Si, ITO and a variety of powder metalurgy products. Headquartered in Silicon Valley with 30 years experience, VEM serves 350+ customers. Contact: Melvin Hirata, VP of Sales/Marketing & Technology, mhirata@vem-co.com

Valley Design Corp. #1949
Bldg E-001, Two Shaker Rd, Shirley, MA, 01464 USA
+1 978 425 3030; fax +1 978 425 3031
info@valleydesign.com; www.valleydesign.com

**Featured Product: Precision shims and spacers from fused silica, glass and ceramics sized within micron tolerances**

ISO 9001:2015 Certified, ITAR Registered manufacturer of substrates, windows, wafers, flat optics, precision shims and spacers. Services: Precision lapping, polishing, dicing, CNC machining, backgrinding, hole drilling, edge/angle polishing. Materials: Fused Silica, Quartz, Glass, 96% Alumina, 99.6% Alumina, Aluminum Nitride, Sapphire, Silicon, Silicon Carbide, Molybdenum, Germanium, Aluminum, Stainless Steel, many from stock. Ultra-thin (10-20um), ultra-flat, superpolishing, tight tolerances. Contact: Christina Hantzis, Customer Service Lead, info@valleydesign.com; Mandi Indars, Vice President, mandi@valleydesign.com
Photonic West Exhibitor Listing

Valtech Corp. #5629
SPIE Corporate Member
2113 Sanatoga Station Rd, Pottstown, PA, 19464 USA
+1 610 705 5900; fax +1 610 705 0300
info@valtechcorp.com; www.valtechcorp.com

Vanguard Photonics GmbH #4229
Seboldstr 22, Karlsruhe, Baden-Wuerttemberg, 76227 Germany
+49 151 2146 2873
info@vanguard-photonics.com; www.vanguard-photonics.com

Veeco Instruments Inc. #241
1 Terminal Dr, Plainview, NY, 11803 USA
+1 516 677 0200
info@veeco.com; www.veeco.com

Vermont Photonics Technologies Corp. #2306
SPIE Corporate Member
22 Browne Ct Unit 110, Brattleboro, VT, 05301 USA
+1 802 275 5210; fax +1 802 275 5215
mail@vermontphotonics.com; www.vermontphotonics.com
Featured Product: GONIOMAT Series Goniometers for precision prism measurement etc.
Vermont Photonics is the exclusive U.S. distributor of high quality optical test equipment and components by German manufacturer Möller Wedel Optical GmbH. With over 25 years of experience supplying truly top-of-the-line equipment and service to the machine tool, aerospace, semiconductor manufacturing, and optical industries, as well as science, education, and standards laboratories, Vermont Photonics is in a unique position to solve measurement problems efficiently. Contact: Misha Mross, Engineering Physics, mbmross@vermontphotonics.com

SPONSOR
Vertilite Inc. #2508
SPIE Corporate Member
1231 Bordeaux Dr, Sunnyvale, CA, 94089 USA
+1 408 462 0916
info@vertilite.com; www.vertilite.com
Featured Product: High Power and High Speed VCSEL chips and TOF/Structure Light Projections module
Located in Sunnyvale, California, the heart of Silicon Valley, Vertilite Inc. is a globally operating and innovative company that provides high power and high speed VCSEL (vertical-cavity surface-emitting laser) solutions. We design and manufacture VCSELs (650nm to 1000nm) for a wide range of applications from high-speed optical communication to optical sensing in biomedical, industrial, automotive and consumer products. Contact: Monica Zou, monica.zou@vertilite.com; Li Zhao, COO, lizhao@vertilite.com

VIALUX GmbH #642
Am Erlenwald 10, Chemnitz, Saxony, 09128 Germany
+49 371 3342 47 0; fax +49 371 3342 47 10
info@vialux.de; www.vialux.de
Featured Product: New VIALUX V-9501 DLP® module with extra slim DMD board design enabling gapless DMD arrays
VIALUX GmbH is a fully privately held company. It was established in 2000 in Chemnitz/Germany. The VIALUX team has long-term experience in optics, image processing, and optoelectronics. As a Design House Partner for the Texas Instruments DLP® line of products, VIALUX has been supporting new emerging DLP applications since more than 12 years. Our DLP subsystems enable customers to get full-scale access to the outstanding DLP performance and to step easily into the digital micro mirror technology. Contact: Roland Höfling, CEO, dlp@vialux.de

VIAVI Solutions #1123
SPIE Corporate Member
1402 Mariner Way, Santa Rosa, CA, 95407 USA
+1 707 525 9200; fax +1 707 525 7028
ospcustomerservice@viavisolutions.com; www.viavisolutions.com/osp
Featured Product: Custom Optical Coatings
VIAVI Optical Security and Performance Products group (formerly JDSU/OCLI) develops and delivers high value optical thin film filter, components and coating services that enhance the performance, safety, and security of our customers’ products. Our solutions support the consumer electronics, government, healthcare, industrial, automotive and anti-counterfeiting markets. Learn more at osp.viavisolutions.com. Contact: Maria Light, Director of Sales, maria.light@viavisolutions.com; Connie Heine, Marketing Manager, connie.heine@viavisolutions.com

Videology Imaging Solutions, Inc. #2626
37M Lark Industrial Pkwy, Greenville, RI, 02828 USA
+1 401 949 5332; fax +1 401 949 5276
sales@videologyinc.com; www.videologyinc.com
Videology is a global leader in the design and manufacturing of high performance cameras for applications such as: Transportation, ATM/Kiosk, Photo ID, Medical Instruments, IRIS & Facial Recognition & more. Our portfolio of products include Analog, USB 2.0 & 3.0, HD-SDI & EX-SDI, Mipi & Digital cameras. Videology cameras are sold all over the world with emphasis on Quality, Reliability & Product Life Cycle Management of 5-7 years. Stop by and discuss your requirements with our sales staff. Contact: Paul Marien, Inside Sales, pmarien@videologyinc.com; Paul Watkins, Director of Sales, pmarien@videologyinc.com

SPONSOR
Vieworks Co., Ltd. #2513
41-3 Burim-ro 170beon-gil Dongan-gu Anyang-si, Gyeonggi-do, 14055 Korea, Republic of
+82 70 4910 9821; fax +82 31 386 8631
sales@vieworks.com; www.vieworks.com
Featured Product: Machine vision cameras, especially ultra high resolution area scan cameras and TDI line scan cameras
Founded in 1999, Vieworks has been a leading designer of advanced digital medical imaging systems and machine vision cameras. Vieworks technological competence in areas such as optics, mechanics, electronics, and software-enabled Vieworks to become one of the top manufacturers of imaging systems. Contact: Ryan Kyung, Sales Manager, ryan@vieworks.com; Wojciech Majewski, Sales Director, wmajewski@vieworks.com

VIGO System S.A. #322; 5060
129/133 Poznanska St., Ozarow, Mazowiecki, 05-850 Poland
+48 22 733 54 10
info@vigo.com.pl; www.vigo.com.pl

SPONSOR
Vincent Associates #218
129/133 Poznanska St., Ozarow, Mazowiecki, 05-850 Poland
+48 22 733 54 10
info@vigo.com.pl; www.vigo.com.pl

Wojciech Majewski, Sales Director, wmajewski@vieworks.com

Vincent Associates #218
803 Linden Ave, Rochester, NY, 14625-2709 USA
+1 585 385 5930; fax +1 585 385 6004
info@uniblitz.com; www.uniblitz.com
Featured Product: AI25 Auto Iris -motorized iris diaphragm: 1.5 – 25.0mm
Since 1969 Vincent Associates has been designing and producing precision shutter systems for use in laser safety, microscopy, biomedical research, camera systems, industrial, astronomy and defense applications. Our UNIBLITZ products are known for there reliability and long lifetimes. Contact us today to see how we can help you with your next project. Contact: Dave Viglione, Engineer, dviglione@uniblitz.com; Adam Lamb, Chief Technology Officer, alamb@uniblitz.com

Vigo System S.A. #322; 5060
129/133 Poznanska St., Ozarow, Mazowiecki, 05-850 Poland
+48 22 733 54 10
info@vigo.com.pl; www.vigo.com.pl

Vincent Associates #218
803 Linden Ave, Rochester, NY, 14625-2709 USA
+1 585 385 5930; fax +1 585 385 6004
info@uniblitz.com; www.uniblitz.com
Featured Product: AI25 Auto Iris -motorized iris diaphragm: 1.5 – 25.0mm
Since 1969 Vincent Associates has been designing and producing precision shutter systems for use in laser safety, microscopy, biomedical research, camera systems, industrial, astronomy and defense applications. Our UNIBLITZ products are known for there reliability and long lifetimes. Contact us today to see how we can help you with your next project. Contact: Dave Viglione, Engineer, dviglione@uniblitz.com; Adam Lamb, Chief Technology Officer, alamb@uniblitz.com

Wojciech Majewski, Sales Director, wmajewski@vieworks.com

Vincent Associates #218
803 Linden Ave, Rochester, NY, 14625-2709 USA
+1 585 385 5930; fax +1 585 385 6004
info@uniblitz.com; www.uniblitz.com
Featured Product: AI25 Auto Iris -motorized iris diaphragm: 1.5 – 25.0mm
Since 1969 Vincent Associates has been designing and producing precision shutter systems for use in laser safety, microscopy, biomedical research, camera systems, industrial, astronomy and defense applications. Our UNIBLITZ products are known for there reliability and long lifetimes. Contact us today to see how we can help you with your next project. Contact: Dave Viglione, Engineer, dviglione@uniblitz.com; Adam Lamb, Chief Technology Officer, alamb@uniblitz.com
Virtual Industries, Inc. #1809
2130 Victor Place, Colorado Springs, CO, 80918 USA
+1 719 572 5566; fax +1 719 572 5504
info@virtual-ii.com; www.virtual-ii.com

Virtual Industries is a manufacturer of vacuum tweezers and accessories. Products include the PEN-VAC® family of self-contained vacuum tweezers, the TWEEN-ZER-VAC® line of bench-top AC powered systems that can handle parts as small as .005” (1.27mm) to well over 12” (305mm). All products are manufactured in the USA. Contact: Daren Palmer, dpalmer@virtual-ii.com; Tom Mealey, tmealey@virtual-ii.com

VisiMax Technologies, Inc. #4453
9177 Dutton Dr, Twinsburg, OH, 44087-1981 USA
+1 330 405 8330; fax +1 330 405 8332
info@visimaxtechnologies.com; www.visimaxtechnologies.com

VisiMax partners with instrumentation, optical systems, display, and lighting designers and manufacturers to design and apply durable optical coatings that meet spectral performance specifications from SWIR to UVC using PVD technology. From the development of prototypes to the manufacture of coatings at commercial volumes, the VisiMax team works closely with its customers to understand their performance requirements every step of the way. ISO 9001:2008 certified & ITAR registered and compliant. Contact: Paul Van Wagenen, Sales Manager, jpv@visimaxtechnologies.com

Vital Materials Co., Ltd. #2412
Suite 145, 280 Shuman Blvd, Naperville, IL, 60563 USA
+1 630 778 0330; fax +1 630 778 0348
sales@vitalchem.com; www.vitalchem.com/en/

Featured Product: Infrared materials including ZnSe, Ge, ZnS, and Si
Vital Materials, a rare metals oriented materials technology group, is the largest producer of Selenium and Tellurium materials, as well as the key producer of Gallium, Indium, Germanium, Bismuth, and Cadmium products. Vital Materials is dedicated to providing high quality infrared materials to infrared and laser industries. Our products include ZnSe, Ge, ZnS and Si, etc. Contact: Glenn Breeze, Director of Sales, glenn.breeze@vitalchem.com

Vitron GmbH #1715
Am Nasstal 5, Jena-Maua Thüringen, 07751 Germany
+49 3641 288130; fax +49 3641 288155
kontakt@vitron.de; www.vitron.de

Featured Product: IR Chalcogenide Glass
Vitron manufactures specialized glass and crystal materials for IR imaging and medical applications. We develop and produce a variety of IR-transmitting glass types including the popular & original IG2, IG4, IG5 & IG6 chalcogenide materials for precision lens molding. GVD zinc sulfide (ZnS) is grown and processed within our facility into shaped blanks and domes. Vitron collaborates with customer and research institutions to develop custom glass and ceramic solutions. Contact: Buzz Nesti, buzz@nakedoptics.com; Klaus Woehner, Managing Director, woehner@vitron.de

Vixar Inc. #5430
2950 Xenium Ln Ste 104, Plymouth, MN, 55441 USA
+1 763 746 8045; fax +1 763 746 8048
info@vixarinc.com; www.vixarinc.com

Featured Product: Vertical Cavity Surface Emitting Lasers (VCSELs) in wavelengths from 670nm to 950nm
Vixar designs and manufactures VCSELs in wavelengths from 670nm to 950nm. Standard wavelengths include 680nm, 775nm, 795nm, 850nm, 895nm and 940nm. Standard single aperture designs with low output power to multiple apertures designs producing 100mW, 500mW, 1W, 2W and 4Ws. Bare die and package solutions available. Custom projects upon request. Applications include proximity sensing, ToF, structured light, 3D scanning, industrial sensing, medical, low light therapy and virtual reality. Contact: Todd Schieffert, EVP Business Development, tschieffert@vixarinc.com

VLC Photonics #5266
Ed 9B D2 UPV Camino de Vera s/n, Valencia, 46022 Spain
+34 96 133 78 84; fax +34 963 879 583
info@vlcphotonics.com; www.vlcphtoicns.com

Featured Product: Photonic Foundries and Packagers Industry Reports
VLC Photonics is a fabless photonic design house, specialized in the development of custom PICs for many end applications. After a decade working in the field, VLC is now releasing a compilation of photonic foundries and packagers, gathering all the main global players and their capabilities into two separate industry reports. Contact: Eduardo Selma, Business Developer, eduardo.selma@vlcphotonics.com

VM-TIM GmbH #4240
Hans-Knöll-Str 6, Jena, 07745 Germany
+49 3641 384859; fax +49 3641 384860
marketing@vm-tim.de; www.vm-tim.de

Featured Product: Phase retardation plates; beam splitting cubes; laser mirrors; spherical, cylindrical, axicon lenses
VM-TIM GmbH is the manufacturer of the precision optics in the wavelength range from 120nm up to 12µm. VM-TIM GmbH works in cooperation with EssentOptics GmbH, the manufacturer of the spectrophotometers (185-5200nm), and with OEM-TECH GmbH, the manufacturer of laser- and Pockels-cell- drivers as well as charger capacitors. All three partner manufacturers are located in Jena, Germany.
Photonics West Exhibitor Listing

Vortex Optical Coatings Ltd. #317
Unit 10 Greenfields Business Park, Wheatfield Way, Hinckley Leicestershire, LE10 1BB United Kingdom
+44 1455 613029
enquiries@vortexpool.co.uk; www.vortexpool.co.uk

Featured Product: IR Filters & IR Linear Variable Filters

Based in Hinckley (UK) Vortex manufacture Infra Red Filters and Infra Red Linear Variable Filters into the world market, with a number of US based customers. With a vast experience in coating design and state of the art deposition technology, Vortex are able to supply solutions when the specification is at its most challenging and the environment the most aggressive. Come and talk to Technology Director Ian Reilly on Stand 317 South Hall about your needs. Contact: Ian Reilly, Technology Director, ian@vortexpool.co.uk

VORTRAN Laser Technology, Inc. #3049

SPIE Corporate Member

21 Goldenland Ct Ste 200, Sacramento, CA, 95834-2426 USA
+1 916 283 8208; fax +1 916 648 9751
sales@vortranlaser.com; www.vortranlaser.com

Featured Product: Low Cost Multiple Wavelength Laser and Fiber Switching

Vortran Laser Technology specializes in high performance Stradus® and VersaLase™ multi-color laser systems at wavelengths from 375nm, 405nm, 445nm, 473nm, 488nm, 505nm, 514nm, 532nm, 561nm, 594nm, 635nm, 637nm, 642nm, 690nm, 705nm, 730nm and 780nm. GUI software is provided to control Vortran laser systems allowing power adjustment, enabling digital or analog modulation, and to monitor operations. Perfect for demanding medical, biomedical and industrial applications where performance matters. Contact: Steve Throne, VP Sales, sales@vortranlaser.com

VPIphotonics Inc. #4529

Suite 108, 1 Edgewater Drive, Norwood, MA, 02062 USA
+1 781 762 3901; fax +1 781 881 2066
info_pw@vpi photonics.com; www.vpi photonics.com

Featured Product: Photonic Design Automation for Components, Systems & Networks

VPIphotonics sets the industry standards for end-to-end photonic design automation comprising design, analysis and optimization of components, systems and networks. We provide professional simulation software supporting requirements of active/passive integrated photonics and fiber optics applications, optical transmission system and network applications, and cost-optimized equipment configuration. Furthermore, our team of experts performs consulting services addressing customer-specific design. Contact: Judith Meester, Director Sales North America, judith.meester@VPIphotonics.com; Vera Hilt, Marketing and Regional Account Manager, vera.hilt@vpi photonics.com

VST America, Inc. #5659

85 W Algonquin Rd Ste 215, Arlington Heights, IL, 60005-4422 USA
+1 847 952 3800; fax +1 847 952 3839
info@vstamerica.com; www.vstamerica.com

Wacom Corporation #49

SPIE Corporate Member

146 Red Schoolhouse Rd, Spring Valley, NY, 10977 USA
+1 845 735 1303; fax +1 845 735 3940

Featured Product: Canon Optron Optical Coating Material

Wacom Corporation is a leading import / export distributor with its headquarters in Tokyo. Our U.S. offices represent Japanese manufacturers for the optics and semiconductor market. Contact: Konrad Soong, Sales Manager, kwacom@aol.com; Al Ruggiero, Manager, aruggiero@a-link.net

Wasatch Photonics, Inc. #3003

SPIE Corporate Member

1305 N 1000 W Ste 120, Logan, UT, 84321-6802 USA
+1 435 752 4301; fax +1 435 752 4306
info@wasatchphotonics.com; wasatchphotonics.com

Featured Product: Pulse Compression Gratings | Raman: 405/532/638/785/830/1064nm, NIR:900-2200nm | OCT: high speed OCT

Wasatch Photonics provides high-performance gratings, spectrometers, and systems that make the difference, throughout, and speed for research and OEM applications. Our proprietary volume phase holographic (VPH) gratings lead the market in pulse compression and Optical Coherence Tomography (OCT), and are at the heart of our own ultra-sensitive optical spectrometers for Raman, VIS, and NIR spectroscopy – from 380-2200 nm. In OCT, our spectrometers and systems offer the highest clarity and speed. Contact: Michael Matthews, VP of Business Development – Spectroscopy, info@wasatchphotonics.com; Nishant Mohan, VP of OCT Products, info@wasatchphotonics.com

Wavelength Electronics, Inc. #1623

SPIE Corporate Member

51 Evergreen Dr, Bozeman, MT, 59715-2421 USA
+1 406 587 4910; fax +1 406 587 4911
sales@teamwavelength.com; www.teamwavelength.com

Featured Product: LDMOUNT for pump and communication diode lasers in 14-pin butterfly packages that require up to 5A

Wavelength Electronics teams with researchers and OEMs that use laser diodes, quantum cascade lasers, or thermoelectrics in high performance applications. Stability, repeatability, low-noise operation, and safety are core. Our products range in scale from components that can fit on the tip of your finger to benchtop instruments with touchscreen control. We guarantee our products will operate at the specifications that we advertise. Team with Wavelength – your competitive edge. Contact: Joe McDonald, Applications Engineer, jmcdonald@teamwavelength.com; Dirk Restvedt, Applications Engineer, dirk@teamwavelength.com

Wavelength Opto-Electronic (S) Pte. Ltd. #111

SPIE Corporate Member

Skytech Bldg, Blk 2 Bukit Batok St 24 #06-09, Singapore, 659480 Singapore
+65 6564 9624; fax +65 6564 3862
info@wavelength-oe.com; www.wavelength-oe.com

Featured Product: Laser Optics & Infrared Optics

Wavelength Opto-Electronic (S) Pte Ltd was established in 2002. Our main business was design and manufacturing Laser Optics and industrial laser machine process heads for global market. We conduct Research & Development, scale assembly and test. We also distribute wide range of Laser Photonics and related products from leading manufacturers. Contact: James Huang, Marketing, huang_james@wavelength-tech.com; Jessie Yao, Marketing, jessie@wavelength-tech.com

VTT Technical Research Centre of Finland is one of the leading R&D&I organisations in Europe. We enhance growth and renewal through applied research and serve both private and public sectors with the aid of broad international collaboration and networking. We develop new smart technologies, profitable solutions and innovative services. We work in a challenge-driven way, and the impact of our work shows as industrial renewal, increased business opportunities and enhanced wellbeing in the society. Contact: Himadri Majumdar, Key Account Manager, himadri.majumdar@vtt.fi; Anne Irmola, Marketing Manager, anne.irmola@vtt.fi
Laser Focus World is the global resource for engineers, researchers, scientists, and technical professionals providing comprehensive coverage of optoelectronic technologies, applications, and markets. Laser Focus World reports on and analyzes the latest developments and trends in both the technology and business of photonics worldwide.

www.lfw-subscribe.com
Photonics West Exhibitor Listing

Wavelength References, Inc.  #4666
1800 SW 3rd St #140, Corvallis, OR, 97333-1724 USA
+1 541 738 0528; fax +1 541 738 0998
sales@wavelengthreferences.com; www.wavelengthreferences.com
Wavelength References designs and manufactures products that use precise molecular energy levels to enable performance unavailable by any other means. A key product family is sealed gas cells; used for wavelength calibration in labs and manufacturing and other optical instruments, as local references in sensing systems, and in many research and metrology applications. Another product line is lasers that use gas cells to provide unparalleled wavelength stability and linewidth reduction. Contact: Jeremy Colson, Engineering Manager, jeremy.colson@wavelengthreferences.com; Sandra Balzer, Office Manager, sandra.balzer@wavelengthreferences.com

Wavetek Microelectronics Corporation  #4063
No 10 Innovation 1st Rd, Hsinchu Science Park, Hsinchu, Taiwan
+886 3 5781259; fax +886 3 6668798
sales@wtkmicro.com; www.wtkmicro.com
Featured Product: 6” wafer foundry for consumer VCSELs with demonstrated in-house tools and engineering capability Located in Taiwan Hsinchu Science Park, Wavetek Microelectronics Corp. is a member of UMC’s Group and was established as a 6-inch CS(GaAs, GaN, InP) foundry company. We owns the most highly advanced III-V manufacturing process and facility that leverages expansive scale to deliver competitive, value-added products and services for customers. We provide high-performance GaAs MMICs & RFICs, as well as GaAs/InP-based Opto-Devices(PD Arrays, VCSELs, OEICs) for multi-applications. Contact: Fred Lin, Senior Account Manager, fred_lin@wtkmicro.com; Domingo Huang, Manager, domingo_huang@wtkmicro.com

WDI Wise Device Inc.  #2631
135 West Beaver Creek Rd unit 2, Richmond Hill, ON, L4B 1L2 Canada
+1 905 415 2734
info@wdidevice.com; www.wdidevice.com
Featured Product: Modular Microscope with Hybrid Stepper/ Piezo Z Axis Actuator WDI designs, engineers and manufactures innovative microscopy automation solutions. Solutions include OEM components as well as complete optomechanical and optoelectronic sub-systems. Our products range from compact autofocus sensors and automated microscopy modules to end user IR imaging systems. WDI’s technology helps individuals and companies in a wide variety of industries including Life Science, Biomedical Imaging, Machine Vision and Electronics/Semiconductor Manufacturing. Contact: Teddi Kelenen, VP of Sales and Marketing, teddi@wdidevice.com

Westboro Photonics  #4444
1505 Carling Ave Ste 301, Ottawa, ON, K1Z 7L9 Canada
+1 613 726 0614
info@wphotonics.com; www.wphotonics.com
Featured Product: WP6ES Series Westboro Photonics designs, engineers and manufactures instrumentation products to measure and characterize light emission, reflection and transmission. Our high performance Imaging Colorimeters and Imaging Photometers, along with our feature-rich, measurement and analysis software, Photometrica® are used by leading companies around the world for R&D and production test. Key applications include testing of flat panel displays, illuminated graphic, near eye displays, heads up displays, and lighting. Contact: Michael McLeod, Technical Sales Engineer, michael.mcleod@wphotonics.com; Tim Moggridge, President, tim.moggridge@wphotonics.com

WL Photonics Inc.  #4048
58 Maricopa Way, Ottawa, ON, K2T 1H2 Canada
+1 613 801 1825
sales@wlphotonics.com; www.wlphotonics.com
Featured Product: Tunable Optical Filters, Bandwidth-Adjustable Tunable Filters, Tunable Fiber Laser, Fiber Etalon WL Photonics Inc. is committed to design, develop, manufacture and market innovative photonic products of wavelength tuning and conditioning solutions such as fiber optic tunable optical filters, bandwidth-adjustable tunable optical filters, tunable fiber lasers, turn-key fiber-pigtalled broadband source/optical amplifiers, and portable optical spectrum analyzers. All manufacture and R&D facilities are located in Ottawa, Ontario, Canada and all products are manufactured 100% in-house. Contact: Frank Zhao, Sales Manager, sales@wlphotonics.com; Jack Zhao, Marketing Manager, jzhao@wlphotonics.com

Wordingham Technologies  #207
515 Lee Rd, Rochester, NY, 14606 USA
+1 585 924 2294; fax +1 585 464 8043
sales@wordingham.com; www.wordingham.com
Featured Product: Precision Optical Barrels, Housings, Mounts, and Retainers

World Star Tech  #5429
185 Konrad Crescent, Markham, ON, L3R 8T9 Canada
+1 905 415 2737; fax +1 905 415 2738
info@worldstartech.com; www.worldstartech.com
Featured Product: RGB Laser Diode Assemblies FC/PC/ SMA connector, 488nm, Touch Screen & USB Lasers, Portable Marker World Star Tech specializes in Manufacturing ultra compact energy efficient lasers that deliver high stability and low noise. Our goal is to introduce highly compact and efficient lasers which will enable new measurement and sensor applications previously considered unachievable. Along with our new products, RGB Laser Diode Assemblies with FC/PC/SMA connector, 488nm, Touch Screen & USB Lasers, and Portable Laser Marker. Contact: David Stephen, Sales Manager, dstephen@worldstartech.com; Emily Hodgkinson, Customer Support, emily@worldstartech.com

WTS Photonics Co., Ltd.  #4265
Floor 3, Building 2#, NO.36 Houyuan Road, Mabao industry Zone Shangjiejie, Fuzhou, 350108 China
+86 591 83626970; fax +86 591 83623921
sales@wts-photonics.com; www.wts-photonics.com
Featured Product: Optics lenses, windows, prisms, mirrors, beamsplitters, waveplate, filters and laser crystal WTS provide our customers with the superior quality optics products and precision Laser Optics products, WTS Photonics key products include Optical Lenses, Windows, Mirrors, Filters, precision Prisms, Customer Optics and Sapphire, Quartz, MgF2, CaF2, Ge, Silicon etc. WTS Photonics owns strong production capability in our modern workshops, At present, we employ 150 staff, among whom one third are professionals taking the responsibility of R & D and directing the production practice. Contact: Mark Zhu, Sales Manager, sale@wts-photonics.com
Xactra Technologies

105 McLaughlin Rd Ste F, Rochester, NY, 14615 USA
+1 585 283 6400
sales@xactra.com; www.xactra.com

Featured Product: Custom precision machined mechanical components

Xactra Technologies, produces custom precision machined components exclusively for the photonics marketplace. Our meticulous attention to detail and high quality standards are well known to many major OEM optical companies. We provide precision components for all optical devices: Lenses, laser instrumentation, military/defense, machine vision, positioning systems, and medical devices. Xactra is ITAR registered. Xactra Technologies: Quality obsessed, Schedule driven and Competitively focused. Contact: Michael Grady, President, sales@xactra.com; Kevin Yackel, Sales, sales@xactra.com

Xenics

116 S River Rd, Bldg C, Bedford, MA, 03110 USA
+1 603 821 7040; fax +1 603 821 7041
wells@laser-components.com; www.laser-components.com

Featured Product: Xlin-FC InGaAs line arrays: advances in low-noise and high-speed performance up to 400 kHz

Xenics is a pioneer of infrared technology with a proven track record of more than fifteen years. With a dedicated in-house InGaAs (Indium Gallium Arsenide) SWIR sensor production facility, Xenics has built a strong position in the field of SWIR image sensors. For spectroscopy, typically rectangular pixels are preferred as they enhance the sensitivity. Laser Components offers Xenics’ product range of SWIR line-scan detectors with rectangular pixels called Xlin-R. Contact: Jim Dell, Sales Engineer, dell@laser-components.com; Myriam Gillisjans, Marketing, mgillisjans@laser-components.com

Xenics NV

Ambachtenlaan 44, Heverlee, Vlaams-Brabant, 3001 Belgium
+32 16 38 99 00
sales@xenics.com; www.xenics.com

Xenics is a pioneer of path-breaking infrared technology with a proven track record of sixteen years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation, machine vision, process control and high-end security applications. The company offers a complete portfolio of line-scan and 2-D area-scan products for the Vis/NIR, SWIR, MWIR and LWIR ranges. Contact: Hervé Copin, CEO Xenics USA Inc., sales@xenics-usa.com

Xenon Corporation

37 Upton Dr, Wilmington, MA, 01887-1018 USA
+1 978 661 9033; fax +1 978 661 9055
info@xenoncorp.com; www.xenoncorp.com

Xenon Corporation is the global leader in Pulsed Light technology, with more than 50 years of experience and over 3,000 systems deployed on industrial production lines worldwide. Founded in 1964, the company focuses exclusively on Pulsed Light and its applications, from the research laboratory to the production line. Our technology plays a key role in applications as diverse as curing of optical discs, semiconductors, displays, sterilization, printed electronics sintering and food enhancement.
## Photonics West Exhibitor Listing

<table>
<thead>
<tr>
<th>Company Name</th>
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</thead>
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<tr>
<td>Xiamen Freeform Optical Technology Co. Ltd.</td>
<td>#5540</td>
</tr>
</tbody>
</table>
| Haicang Xinyang Industry District, No 26 Xinmei Rd, Xiamen, 361022 China  
+86 592 3136 307; fax +86 592 6800 697  
eagle.wang@xfmfreeform.com; www.xmfreeform.com | |
| Xiamen Leading Optics Co., Ltd.                   | #4234 |
| No 26 Xinmei Rd Haicang District, Fujian, 361022 China  
+86 592 313 6316; fax +86 592 313 7588  
www.etervat.com | |
| XIXME Corp.                                       | #4570 |
| SPIE Corporate Member                             |     |
| 8725 W 14th Ave Ste 110, Lakewood, CO, 80215-4849 USA  
+1 303 389 9838; fax +1 303 202 6350  
info@ximea.com; www.ximea.com | |
| Featured Product: X-platform for PCI express cameras |     |
| XIMEA is a world-wide leader in the field of digital cameras for industrial and scientific applications. We design and manufacture some of the smallest, lightest and fastest cameras available today. Virtual reality, industrial, scientific, and embedded applications all benefit from our innovative cameras and software tools. Come see us at booth 4570 and we’ll show you our dedication to innovation and service. Contact: Kevin Toerne, Sales Engineer, kevin.toerne@ximea.com; Mike Bode, CEO, miche.bode@ximea.com | |
| Xinxiang Baihe O.E Co., Ltd.                      | #4661 |
| XinXiang Economic Zone, Xinxiang, 453731 China  
+86 373 558 8101; fax +86 373 558 8251  
admin@baiheoe.cn; www.baiheoe.com | |
| Featured Product: UV-LED collimated light source, Solar simulator, Space testing equipment, optical testing systems  
BHOE is the innovative and high-tech enterprise which is engaged in optical design and manufacturing. We can deliver customized product and do optical design according to users' requirement or specification such as solar simulator system, pilot simulator, and UV-LED collimated light source, testing equipment. Contact: Bo Zhang, General Manager, admin@baiheoe.cn; Juan Sun, Sales, juansun@baiheoe.cn | |
| Xiton Photonics GmbH                              | #2041 |
| Kohlenhofstr 10, Kaiserslautern, 67663 Germany  
+49 631 414 9944 0; fax +49 631 414 9944 9  
sales@xiton-photonics.com; www.xiton-photonics.com | |
| Featured Product: Ixion 193nm DPSS laser  
Xiton Photonics GmbH produces pulsed DPSS laser systems for applications in industry and science. Our product portfolio consists of a variety of Q-switched, diode-laser-pumped solid-state laser systems with single transverse mode beam profile at high power densities. The standard laser systems are based on the wavelengths 1342 nm or 1064 nm. Non-linear frequency conversion options can be used to extend the wavelength range to 671 nm, 532 nm, 447 nm, 355 nm, 266 nm, 224 nm, 213 nm and 193 nm. Contact: Philip Crowley, CEO, phil@markettechinc.net | |
| XSoptix, LLC                                      | #1925 |
| 800 Village Walk Ste 316, Guilford, CT, 06437 USA  
+1 203 401 8093; fax +1 800 878 7282  
sales@xsoptix.com; www.xsoptix.com | |
| XUV Lasers                                        | #2622 |
| PO Box 273251, Fort Collins, CO, 80257-3251 USA  
+1 970 430 5165  
contact@xuvlasers.com; www.xuvlasers.com/Welcoming.html | |
| XYZTEC, Inc.                                      | #4147 |
| 55 Sterling St, Clinton, MA, 01510-1930 USA  
+1 978 880 2598  
salesusa@xylec.com; www.xylec.com | |
| Featured Product: Condor Sigma Bond Tester  
XYZTEC, Inc. manufactures state of the art bond testers. Bond Testers are used to determine wire strength, adhesive strength, solder strength, and a number of other applications. Typical uses are wire pull strength, shear strength, peel testing, bend testing etc. XYZTEC has designed innovations like a rotating measurement unit which eliminates load cell cartridge changeovers as well as fully automated systems utilizing pattern recognition. Forces are measured from below 1 gram to 500Kg. Contact: Thomas Haley, Sales, tom.haley@xytec.com; Rick Bailey, Sales Rep, rick.bailey@xylec.com | |
| Y&M Technologies, Inc.                            | #2605 |
| 1 Innovation Way Ste 304A, Newark, DE, 19711-5490 USA  
+1 302 894 1151; fax +1 302 894 9021  
sales@ymtonline.com; www.ymtonline.com | |
| Yelo Limited                                      | #5137 |
| Trooperslane Industrial Estate, 20 Meadowbank Road, Carrickfergus, BT38 8YF United Kingdom  
+44 28 9335 7300  
dylan.burke@yelo.co.uk; www.yelo.co.uk | |
| Featured Product: Burn-in and life test equipment  
Yelo design and manufacture automated burn-in and life test equipment for; laser diodes, chip on carrier, TO can, VCSEL. Contact: Richard Furey, CTO, richard.furey@yelo.co.uk; Christine Davison, christine.davison@yelo.co.uk | |
Canadian Photonics Industry at your service
CANADA Cluster - Aisle 4400

Visit the Canada Cluster and meet great Canadian companies and organizations.

Together, they offer world class products, services and leading technologies.

Companies in the Canada Cluster at Photonics West 2018:

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Ajile Light Industries Inc 4446
Beamtech Optronics Co. Ltd 4436
Canadian Photonic Industry Consortium 4445
CMC Microsystems 4445
Crosslight Software 4447
Fibertech Optica Inc 4449
INO 4443
ITF Technologies Inc 4452
Norpix Inc 4442
Nüvü Caméras 4448
Photon ETC 4438
Quebec Photonic Network 4509
Westboro Photonics 4444

PHOTONS CANADA
Yenista Optics Inc. #3040
2393 Teller Road, Unit 102, Newbury Park, CA, 91320-6089 USA
+1 805 367 4075
sales-am@yenista.com; www.yenista.com

Yokogawa Corporation of America #2503
2 Dart Rd, Newnan, GA, 30265 USA
+1 800 888 6400
michael.kwok@us.yokogawa.com; www.tmi.yokogawa.com/us
Yokogawa has been developing measurement solutions for nearly 100 years, with the belief that precise and effective measurement lies at the heart of successful innovation. We possess over 30 years of precision optical test experience with the acquisition of Ando and have continued to be a dominate leader in spectral testing technology. The introduction of 11 new OSA models within 11 years far exceeds any of our competitors and is testament to our dedication to advancement. Contact: Michael Kwok, Product Marketing Manager, michael.kwok@us.yokogawa.com; Katherine Shealy, Application Engineer, katherine.shealy@us.yokogawa.com

YSL Photonics #1915
80# Fifth Hi-tech Ave East Lake Hi-Tech Development Zone, Wuhan Hubei Province, Hubei, 430073 China
+86 27 87 204039; fax +86 27 87 179217
sales@yslphotonics.com; www.yslphotonics.com/en/
Featured Product: Supercontinuum source; picosecond pulsed and femtosecond fiber laser
Advances in photonics technology enable progress in health, mobility and sustainability. YSL Photonics explores, develops and manufactures next-generation of supercontinuum source (supercontinuum laser, white light source, white light laser), picosecond pulsed and femtosecond fiber laser that bring new capabilities, higher reliability and lower ownership to a diverse range of industrial and R & D applications.

Yunnan North OLiGHTEK Opto-Electronic Technology Co., Ltd. #1507-G
No 31 E Jiaochang Rd, Kunming Yunnan, 650223 China
+86 871 65105538; fax +86 871 65105027
sales@oleid.com; www.oliightek.com
Featured Product: Microdisplay, OLED, AMOLED, Active Matrix-Organic Light Emitting Diode, OLiGHTEK, Yunnan Olightek
Founded in 2008, Yunnan OLiGHTEK Opto-Electronic Technology Co., Ltd. dedicated itself to developing high definition Active Matrix-Organic Light Emitting Diode (AMOLED) technology and microdisplays. OLiGHTEK is the first company in China to design and manufacture the full digital AMOLED microdisplays and entered the market in 2009. So far, we have developed varies AMOLED products series. OLiGHTEK insists on R & D and struggle to provide customers with best-quality productions and services. Contact: Daniel Xu, International Sales Manager, daniel-xu@oliightek.com; Sales team, sales@oliightek.com

Z & Z Optoelectronics Tech. Co., Ltd. #2110
High Tech Zone, No 3 Keyuan South Rd, Chengdu Sichuan, 610041 China
+86 28 8513 9768; fax +86 28 85135780
sales@zzoptic.com; www.zzoptic.com
Featured Product: High precision infrared and laser optics including coating, super polishing optics, reticle
Z & Z is the first brand of Super Polishing from China. As a professional manufacturer of high precision IR and laser optics, Z & Z supports many reputed US and European customers over 19 years. Our super polishing optics meet roughness of 2 Angstrom and S/D 10-5. Custom optics with IR and UV materials are available (Ge, Si, fused silica, BK7, ZnSe, ZnS, Sapphire, CaF2, MgF2, GaAs, BaF2, etc.). S/D is up to 5-1 and flatness up to 1/20 Lambda. The largest windows up to 350 mm. www.zzoptic.com Contact: Cynthia Qi, Supervisor, sales@zzoptic.com

Zaber Technologies Inc. #2141
#2-605 W Kent Ave N, Vancouver, BC, V6P 6T7 Canada
+1 604 569 3780; fax +1 604 648 8033
contact@zaber.com; www.zaber.com
At Zaber, we design and manufacture precision positioning devices such as linear actuators, linear stages, and multi-axis systems, that are affordable, integrated, and easy to use. Our devices are used in many different applications and markets, such as photonics and optics, life sciences, and industrial automation. Since introducing our first series, our product offering has grown to include over 100 motion control products, which are distributed worldwide. Contact: Sofia Moreno, contact@zaber.com

Zarbeco, LLC #2618
52 Main Street, Office #1, Succasunna, NJ, 07876 USA
+1 973 933 2043; fax +1 973 933 2336
sales@zarbeco.com; www.zarbeco.com

Zemax, LLC #1247
Plaza Yarrow Bay, 10230 NE Points Dr Ste 540, Kirkland, WA, 98033-7869 USA
+1 425 305 2800
sales@zemax.com; www.zemax.com
Featured Product: OpticStudio & LensMechanix
Zemax, LLC is a software and services company that has been developing and supporting optical and illumination design software for nearly 25 years. We help scientists, engineers, researchers and students turn their optical and illumination systems ideas into reality. The cornerstones of our success are rock solid physics architecture, a culture of excellence and innovation, and the insistence on listening to our customers. Contact: Brandy Clark, Accounting Supervisor, brandy.clark@zemax.com; Dan Hamann, Chief Revenue Officer
Zeon Specialty Materials Inc  #2337
1731 Technology Drive, Suite # 595, San Jose, CA, 95110 USA
+1 408 641 7889; fax +1 408 516 9382
zeonx@zeonsmi.com; www.zeonex.com

Featured Product: ZEONEX® Cyclo Olefin Polymer (COP) is an engineered optical plastic resin for precision lens
Zeon Corporation is a world leader in the production of specialty elastomers, polymers and specialty chemicals; operating a global network of plants in Asia, North America and Europe. With consolidated sales of over U.S. $2.5 billion, Zeon Corporation utilizes its expertise in C4 and C5 chemistry to offer a wide range of products. The company employs over 3,300 people worldwide, with global headquarters in Tokyo and regional headquarters in the United States, Singapore and Germany. Contact: Weiwei Jin, Market Development Manager, weiwei.jin@zeonsmi.com; Toshiro Katayama, Product Manager, toshiro.katayama@zeonsmi.com

Zeta Instruments, Inc.  a KLA-Tencor company  #2333
SPIE Corporate Member
2528 Qume Dr Ste 12, San Jose, CA, 95131 USA
+1 408 573 7638; fax +1 408 573 7627
marketing@zeta-inst.com; www.zeta-inst.com

Zeon Specialty Materials Inc  #2337
1731 Technology Drive, Suite # 595, San Jose, CA, 95110 USA
+1 408 641 7889; fax +1 408 516 9382
zeonx@zeonsmi.com; www.zeonex.com

Featured Product: ZEONEX® Cyclo Olefin Polymer (COP) is an engineered optical plastic resin for precision lens
Zeon Corporation is a world leader in the production of specialty elastomers, polymers and specialty chemicals; operating a global network of plants in Asia, North America and Europe. With consolidated sales of over U.S. $2.5 billion, Zeon Corporation utilizes its expertise in C4 and C5 chemistry to offer a wide range of products. The company employs over 3,300 people worldwide, with global headquarters in Tokyo and regional headquarters in the United States, Singapore and Germany. Contact: Weiwei Jin, Market Development Manager, weiwei.jin@zeonsmi.com; Toshiro Katayama, Product Manager, toshiro.katayama@zeonsmi.com

Zeta Instruments, Inc.  a KLA-Tencor company  #2333
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2528 Qume Dr Ste 12, San Jose, CA, 95131 USA
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+1 408 573 7638; fax +1 408 573 7627
marketing@zeta-inst.com; www.zeta-inst.com

Zhongshan Meisu Technology Co., Ltd.  #6015
No. 97 East-town Rd, Torch Development, Dong Zhongshan, Guangdong, 528437 China
+86 760 8833 8926
sales@meisuoptics.com; www.meisuoptics.com

Zhejiang Yunfeng New Material Technology Co., Ltd.  #1507-E
No.357.Chenfeng RD?zhangjiagang EDZ, Zhangjiagang, 201203 China
+86 21 50720011; fax +86 21 50720055
sales@yunfengopto.com; www.yunfengopto.com.cn/

Featured Product: Sapphire ingot, Sapphire wafer, optical product
Zhejiang YunFeng is a professional sapphire material supplier. Our products involve in multiple fields such as LED, optical products, medical treatment, etc. Our core advantage is sapphire growing technology. All the sapphire furnaces we used in our factory is produced by ourselves. 200kg boules are succeeded in mass production, we can provide 200 boules per month till now. Contact: Gisele Zhu, Sales Director, tingting.zhu@yunfengopto.com; Rex Zhang, Sales Manager, rui.zhang@yunfengopto.com

ZK Laser (Beijing) Co., Ltd  #4552-A
26 South Road Haidian District, Beijing, 100193 China
+86 10 62964766; fax +86 10 62974734
sales@zk laser.com; www.zklaser.com/

Featured Product: High energy ns ps, High power ns ps, High power 532/527nm, SLM, OPO Tunable and PIV laser
ZK Laser (Beijing) Co., Ltd is a sophisticated industry entity which is focused on the high power, high beam quality infrared, red, green, blue and ultraviolet solid state lasers. Since its founding, ZK Laser researches and developments its products unceasingly. Its products have been sold to the United States, Canada, Germany, Japan, Korea, and many other countries and regions. Contact: Haibo Peng, General Manager, david@zk laser.com

Z-LASER-America Inc.  #2627
15-101 Boul Don Quichotte Ste 355, Ile Perrot, QC, J7V 7X4 Canada
+1 800 958 1572
info@z-laser-america.com; www.z-laser-america.com

Z-LASER-America Inc.  #2627
15-101 Boul Don Quichotte Ste 355, Ile Perrot, QC, J7V 7X4 Canada
+1 800 958 1572
info@z-laser-america.com; www.z-laser-america.com

Zhejiang Lante Optics Co., Ltd.  #5158
No 1108 Hongfu Rd, Jiaxing, 314023 China
+86 573 83347400; fax +86 573 83349898
alleyyn.yao@lante.com.cn; www.lante.com.cn

Featured Product: High precision glass molding aspheric lens; High precision glass wafer; Micro-prisms; Camera assembling
Zhejiang Lante Optics Co., Ltd. founded in 1995, It is located in Jiaxing City which is between Shanghai and Hangzhou. With a land area of 30000 square meters and building area of 40000 square meters, Lante has over 900 employees. Lante has obtained the ISO9001 quality system authentication and TS16949 authentication in the automobile industry as well as imported the 6S quality assurance system. For many years, Lante has been awarded as the Zhejiang High-tech Company. Contact: Allen Yao, VP, alleyyn.yao@lante.com.cn
Zolix Instruments Co., Ltd. #6031
No 68B, LDUV, Tongzhou District, Beijing, 101102 China
+86 10 5637 0168; fax +86 10 5637 0118
sally-liu@zolix.com.cn; www.zolix.com.cn

Featured Product: Tunable Light Sources, Spectrograph, Spectrometer, Portable Raman System, Handheld Raman System

Zolix was established since 1999 and has been a leading global supplier of opto-mechanics and spectroscopy in China. Have strong R & D, Production, Sales, and after service team with many years experience of industry knowledge and expertise across a broad range of technologies. Our products has been exported to worldwide: Europe, USA, India, Southeast and more than 50 countries. Contact: Sally Liu, Sales Manager, sally-liu@zolix.com.cn

Zuend Precision Optics Ltd #2342
Prismastr 5, Diepoldsau, 9444 Switzerland
+41 71 737 74 00; fax +41 71 737 74 10
info@zuendoptics.com; www.zuendoptics.com

Featured Product: Micro planar optical single components and planar optical kitting systems

Production and distribution of uncoated or coated planar optical single components and planar optical assemblies in dimensions of 0.2mm up to 50.0mm. Our supporting role begins with the design, development of prototypes and extends to the execution of production from 50 to 20,000 units and more. Contact: Oscar Turienzo, Head of Sales & Marketing, o.turienzo@zuendoptics.com; Dario Fusinato, Managing Director / CEO, d.fusinato@zuendoptics.com

Zurich Instruments AG #1930
Technoparkstrasse 1, Zurich, 8005 Switzerland
+41 44 515 0410; fax +41 44 515 0419
info@zhinst.com; www.zhinst.com

Featured Product: Lock-in amplifier, impedance analyzer, arbitrary waveform generator, PLL, digitizer

Zurich Instruments is a test and measurement company based in Zurich, Switzerland, developing and selling measurement instruments and delivering customer support in key markets around the world, either directly or with carefully selected partners. We are a growing, independent and founder-led company. Zurich Instruments makes cutting-edge instrumentation for scientists and technologists in advanced labs who are passionate about phenomena that are often notoriously difficult to measure.

Zygo Corporation #1223
21 Laurel Brook Rd, Middlefield, CT, 06455-1291 USA
+1 860 347 8506; fax +1 860 347 8372
inquire@zygo.com; www.zygo.com

Zygo Corporation designs and manufactures superior noncontact measuring instruments and systems, providing productivity and yield improvement worldwide. Zygo provides a wide range of inspection, surface analysis, and precision displacement measurement solutions, as well as precision optics, optical design, and opto-mechanical assembly. Our precision noncontact measuring instruments and systems enable manufacturers to increase their operating efficiencies and product yields. Contact: David Melton, Director Sales & Support, dmelton@zygo.com; Michael Albrecht, Product Manager, malbrecht@zygo.com
When it comes to optics, photonics and imaging, the Greater Rochester, NY region has the top-tier talent, leading-edge research and development resources, and most sophisticated, highly integrated supply chain in the nation to support your business. Add to that a proven pro-business attitude and a vibrant entrepreneurial spirit and you have a bright plan for success.

TOP-TIER TALENT
We’re home to the NY Photonics cluster of 120+ optics, photonics and imaging companies that tap into the region’s expertise in biophotonics, digital imaging, vision science, semiconductors, precision optics, lasers, and aerospace and defense applications. We have the infrastructure—from polishing and grinding to rapid prototyping. And we have the talent. The University of Rochester confers roughly 60% of all optics degrees, making us #1 in the nation. Add to that the 17,000 locally employed in this industry and you can see we have the talent to support an annual economic output of $3.5 billion.

GAME-CHANGING INNOVATION
We’re a research and manufacturing hub supported by the University of Rochester’s Institute of Optics, the Laboratory for Laser Energetics, and Rochester Institute of Technology’s Chester F. Carlson Center for Imaging Science and Lobozzo Photonics & Optical Characterization Lab. No wonder the region generates so many patents in optics, photonics and imaging technologies.

GROWING HUB
We have the space you need to launch or expand your business, from commercial sites and buildings to wide-open spaces, all at rates far below the national average. Luminate, the world’s largest business accelerator for startup firms in the optics, photonics and imaging industries, is based in downtown Rochester. This $10 million program is administered by the University of Rochester and High Tech Rochester, a business incubator serving early-stage through growth startups and manufacturing businesses.

The Greater Rochester, NY region has it all.
We’ll connect you with the people and resources that will enable you to take your business to the next level.

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VTT

brighterwave

SENOP

EMBERION

SpecIM
SPECTRAL IMAGING

SPECTRAL ENGINES

KimmyPhotonics

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North Hall, booth #4365
Photonics West Product Index

Iridian Spectral Technologies Ltd.
Iris AO, Inc.
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ISDI
ISP System
ISS, Inc.
Isuzu Glass, Inc.
JENOPTIK | Healthcare & Industry
JENOPTIK Optics and Life Science
Keysight Technologies
Kimmy Photonics Ab Oy
KLabs
Knight Optical (UK) Ltd.
Kyosemi Opto America Corp.
Lambda Research Corp.
Lasence Inc.

Laser Components Detector Group, Inc.
Laser Components GmbH
Laser Components Pyro Group, Inc.
Laser Focus World
Laser Quantum Inc.
Lasertec, Inc.
laserview USA
LASOS Lasertechnik GmbH
LC-Tec Displays AB
LECC Technology Co., Ltd.
LEONI Fiber Optics
LETI, CEA Grenoble
LEUKOS
LIGENTEC SA
LightComm Technology Co., Ltd.
LSTECH
Lucid Vision Labs, Inc.
Lumatec
Lumencor, Inc.
Lumetrum
Lumetrics, Inc.
Lumics GmbH
Lumics GmbH
Luxottica
Mad City Labs., Inc.
Marina Photonics, Inc.
Market Tech, Inc.
Marktech Optoelectronics
Matieron Precision Optics
Meadowlark Optics, Inc.
MH GoPower Company Limited
Micro Laser Systems, Inc.
micro resist technology GmbH
Mightex Systems
MIKROP AG
Minus K Technology Inc.
MIRPHAB
Mirrormite Technologies, Inc.
mirSense
Mitsubishi Cable Industries, Ltd.
Mitutoyo America Corporation
ML Optic Corp.
Modulight
Molex - Polymicro
Monocrom
MOTXEK, Inc.
MPA Crystal Corp.
MPB Communications Inc.
MY Polymers Ltd.
NaluX Co., Ltd.
Nanjing Chunhui Science & Technology Industrial Co., Ltd.
Nanjing Jason Optoelectronic Technology Co., Ltd.
Nanomotion Inc.
Nanoscribe GmbH
National Scientific Optics, Inc.
Natsume Optical Corp.
neaspec GmbH
New Scale Technologies
New Source Technology, LLC
Nihon America Corporation
Nikon Instruments Inc.
NIL Technology ApS
NM Laser Products, Inc.
Narland Products Inc.
Northrop Grumman SYNOPTICS
NOVAE
NRD, LLC
Nuvi Cameras Inc.
NYFORS
Ocean Optics, Inc.
OFS
Olympus
Omicon Laserage Laserprodukte GmbH
ON Semiconductor
Opletek Group Oy
OPOTEK
Optical Filter Source, LLC
Optics Technology Inc.
Optiforms, Inc.
Optik+
Optikon GmbH
Optimax Systems, Inc.
Opto Diode Corp.
Opto GmbH
Opto-Line International, Inc.
OptoSigma Corporation
Optotune Switzerland AG
Optowide Technologies Co., Ltd
Optronscience, Inc.
ORSAS Corporation
OSI Laserdiode
OSI Optoelectronics
OWIS GmbH
OZ Optics Ltd.
Pantec Engineering AG
Parker Hannifin Corp.
Electromechanical & Drives Div.
PCO America
Perkins Precision Developments, LLC
PFC Flexible Circuits Ltd.
PFG Precision Optics, Inc.
PHASICS Corp.
PHTLUX, Inc.
Photodigm, Inc.
Photometrics
Photon etc.
Photon Gear, Inc.
Photonics Industries International, Inc.
Photonics South Australia
Photonics Spectra, a Photonics Media Publication
PHOTONIS USA
PhotoSound Technologies, Inc.
Photron USA
PicolAS
PIEZOCONCEPT
piezosystem jena, Inc.
PIXAPP
Pixeink
Pleora Technologies
Poco Graphite
POG Precision Optics Gera
Power Technology, Inc.
Precision Glass & Optics
Precision Laser Scanning
Primoceler, Inc.
Princeton Instruments
Prior Scientific Inc.
Prizmatix Ltd.
ProPhotonix
PROTECT-Laserschutz GmbH
Qioptiq, An Excelitas Technologies Company
QPC Lasers Inc.
Quantic
Research Electro-Optics, Inc.
Rocky Mountain Instrument Co.
Rohit International Corporation Ltd.
Rohtner LaserTechnik GmbH
Ross Optical Industries
RPC Photonics Inc
S.I. Howard Glass Co., Inc.
SAIS Co., Ltd.
ScannerMAX
Schafer + Kirchhoff GmbH
SCHOTT North America, Inc.
sica Systems GmbH
SCOPTIQUE
Seiwa Optical America Inc.
SemiNex Corp.
Senop Oy
SensL Technologies Ltd.
Sensofar Metrology
Sensor Photonics, LLC
Shanghai Jaguang - O Store Optics Co., Ltd.
Shanghai SIGOptics Co., Ltd.
Shenhua Han's Scanner S&T Co., Ltd.
Sierra-Olympic Technologies, Inc.
SiOS Messtechnik GmbH
Si-Ware Systems
Solid State Cooling Systems
Soralaser
Spark Lasers
Special Optics
Spectral Devices
Spectrum Scientific, Inc.
Spectrum Thin Films
Star Tech Instruments, Inc.
StellarNet, Inc.
Stratum Ltd.
Stuttgart Instruments GmbH
Sumitomo Electric Industries, Ltd.
Suzhou Xin Heng Hi-Tech Optoelectronics Technology Co., Ltd.
Sydor Optics, Inc.
Symetrie
Syntech Optics
TECNISCO, LTD.
Teem Photonics
Teledyne e2v
TeraXion Inc.
The Australian National University
Thermo Fisher Scientific Inc.
ThermoTek, Inc.
Timbercon, Inc.

TLC International World Headquarters
TOPTICA Photonics Inc.
Toshiba America Information Systems
Tower Optical Corporation
TruTag Technologies
Tuscan Photonics Co., Ltd.
ultralumina GmbH
Unice E-O Services Inc.
United Lens Company
Universal Photonics Inc.
UpTek Solutions Corp.
US Fiberoptec Technology, Inc.
UVphotonics NT GmbH
Valley Design Corp.
VIAVI Solutions
Videology Imaging Solutions, Inc.
Vincent Associates
Vision Components GmbH
Vixar Inc.
Vortex Optical Coatings Ltd.
Wavelength Electronics, Inc.
WDI Wave Device Inc.
Wordingham Technologies
World Star Tech
WTS Photonics Co., Ltd.
Wuhan National Lab. for Optoelectronics
WZW-Optic AG
XACT Wire EDM Corp.
Xcitra Technologies
Xenics
Xenics NV
XIMEA Corp.
Yokogawa Corporation of America
Zaber Technologies Inc.
Zeon Specialty Materials Inc

CAMERAS AND IMAGING SYSTEMS

4D Technology Corp.
Acker Ltd.
AdTech Ceramics Co.
AEMtec GmbH
AET Technologies
AGM Container Controls, Inc.
AIM Micro Systems GmbH
Ajile Light Industries Inc.
Akrabis System Incorporated
Allied Vision Technologies Inc.
AMS AG
Andor Technology Ltd.
Archer OpTx, Inc.
Argyle International, Inc.
asphericon, Inc.
AZURE Photonics Co., Ltd.
Basler
Beijing Bodian Optical Technology Co., Ltd.
Beijing Golden Way Scientific Co., Ltd.
Beijing TRANS Manufacture and Trade Co., Ltd
Berliner Glas KGaA Herbert Kubat GmbH & Co
Best Integration Technology Co., Ltd
Bodkin Design & Engineering, LLC
Boston Electronics
Brimrose Corporation of America
Broili Semiconductors UAB
BTMT is a high tech enterprise founded in 1998, focuses on developing and manufacturing high precision optical components from prototypes through volume-production quantities.

BTMT has excellent optical design abilities, can provide customized services, a whole solution for your application, include optical design, mechanical structure design, optical comments, assembly parts and etc.

BTMT has advanced foreign processing and manufacturing equipment, perfect inspecting instruments, professional technicians and skilled workers, plus efficient and scientific ERP Management Platform, to ensure offer reliable and consistent qualified products. BTMT’s optical comments are widely used in Semiconductor, Medical, Military, Measurement & Metrology, Communication Engineering, High-tech Research & Development and etc.

No.2 GuangyuanDongjie, Tongzhou District
Beijing, China 101113
Tel: +86-10-69574218
Fax: +86-10-69574216
Email: info@transoptics.com.cn
Website: www.transoptics.com.cn

CaF₂ Lenses
3xØ 0.863 for 2”diameter

Standard Spherical Lenses
PV: Lambda/40@633nm(80% of CA)

Polarizing Beamsplitters
Extinction Ratio: >1000:1
Tp>95%, Rp>99.5%

Surface Quality: 10-5
Roof angle: 90deg+/-0.5 arc sec
Surface flatness: Lambda/20@633nm
Roof edge: no visible chips under 10x and 40x magnification

Roof Prisms
Porro Prisms
Photonics West Product Index

Canon U.S.A., Inc. / Industrial
CEDRAT TECHNOLOGIES
Changzhou Optical Technical Co., Ltd.
China International Optoelectronic
Exposition (CIOE)
Chroma Technology Corp.
CMOS Sensor Inc.
Corning Incorporated
Critical Link, LLC
Cryslaser Inc.
CST Global Ltd.
Daco Instrument Company
Daheng Optical Thin Film Center
DIAS Infrared Corp.
Dino-Lite Digital Microscope
Disc Inspection Technology Co., Ltd.
Dongguan Harmony Technology Co., Ltd.
Duma Optronics Ltd.
eagleyard Photonics GmbH
Electro Optical Industries, Inc.
Emberion Oy
EPIX, Inc.
Exalos AG
Excellitas Technologies Corp.
First Light Imaging
First Sensor, Inc.
FISBA AG
FLIR Systems, Inc.
FluxData, Inc.
FOCtek Photonics, Inc.
Foreal Spectrum, Inc.
FRAMOS Technologies Inc.
Fraunhofer Institute for Microelectronic
Circuits and Systems
Fraunhofer UK Research UK
Fuzhou Toptec Optics, Inc.
Gentec Electro Optics
Gpixel Changchun Optotech, Inc.
Greenlight Optics, LLC
GuangDong KingDing Optical
Technology Co., Ltd.
Hamamatsu Corp.
Hangzhou Multi IR Technology Co., Ltd.
HEIDSTAR Co., Ltd.
Hermetic Solutions Group
Hindsight Imaging, Inc.
HORIZA Instruments
HOYA Corp. USA
I2S
id Quantique SA
Imagine Optic
Imaging Solutions Group
IMEC
Incom, Inc.
Inlight Precision Optics Co Ltd
ISDI
ISP Optics Corporation
JENOPTIK Healthcare & Industry
JENOPTIK Optics and Life Science
Laserline Inc.
LC-Tec Displays AB
LETI, CEA Grenoble
LightPath Technologies, Inc.
Lucid Vision Labs, Inc.
LuxFlux GmbH
Market Tech, Inc.
Mightex Systems
MIKROP AG
Minus K Technology Inc.
Mitutoyo America Corporation
ML Optic Corp.
MOXTEK, Inc.
Naked Optics Corp.
Nanjing Chunchi Science & Technology
Industri Co., Ltd.
Nanjing Jason Optoelectronic
Technology Co., Ltd.
Nanomotion Inc.
Nanyang Kaixin Optic & Electronic
Co., Ltd.
New Infrared Technologies (NIT)
New Scale Technologies
Nikon Instruments Inc.
Nikon Metrology, Inc.
Noprix Inc.
North American Coating Labs.
Nuva Cameras Inc.
Ocean Optics, Inc.
Ophir, a division of MKS Instruments
Optec S.P.A.
Optics Technology Inc
Optikon GmbH
OPTIX Co.
Opto GmbH
Orientir Inc.
OSI Optoelectronics
OXIDE Corporation
PCO America
PHASICS Corp.
Photodigm, Inc.
Photometrics
Photon etc.
Photon Gear, Inc.
Photonfocus AG
Photonics Industry & Technology
Development Association
Photonics Spectra, a Photonics Media
Publication
PHOTONIS USA
Photron USA
Pixelink
Pleora Technologies
POG Precision Optics Gera
PRIMES GmbH
Princeton Infrared Technologies, Inc.
Princeton Instruments
Qioptiq, An Excellitas Technologies
Company
Quantic
Rochester Institute of Technology
SCANLAB America, Inc.
Schaffer + Kirchhoff GmbH
SCOPTIQUE
Seiwa Optical America Inc.
Senop Oy
SensIR Inc.
Shanghai Bo Shi Photoelectric
Technology Co., Ltd.
Shanghai Jiaguang - O Store Optics
Co., Ltd
Shanghai SGOptics Co., Ltd.
Shen Zhen Trace Optic Co., Ltd.
Sierra-Olympic Technologies, Inc.
Silos Technologies
Sill Optics GmbH & Co. KG
Sinclair Manufacturing Co.
SiDS Messtechnik GmbH
SoFradir
Specialised Imaging, Inc.
Spectral Devices
Star Tech Instruments, Inc.
Starrett Tru-Stone Technologies, Inc.
STIL
StingRay Optics
SVS-VISTEK GmbH
SWIR Vision Systems
Syntec Optics
Teledyne e2v
Tempotec Optics Co., Ltd.
Thermo Fisher Scientific Inc.
Toshiba America Information Systems
TriLume Technologies GmbH
TruTag Technologies
Tuscan Photonics Co., Ltd.
Uniforce Sales and Engineering
Vertilite Inc.
VideoLogic Imaging Solutions, Inc.
Vieworks Co., Ltd.
Vincent Associates
Vision Components GmbH
Vital Materials Co., Ltd.
Viton GmbH
Vixar Inc.
VTT
WaveTek Microelectronics Corporation
Westboro Photonics
WTS Photonics Co., Ltd.
Xacra Technologies
Xenics NV
XIMEA Corp.
Yunnan North OLIGHTEK Opto-
Electronics Technology Co., Ltd.

CHEMICAL AND BIOLOGICAL ANALYSIS

Access Laser Co.
Advanced UV for Life
Alpes Lasers SA
American Photonics
AMETEK Precitech, Inc.
Andor Technology Ltd.
Andover Corporation
Applied Surface Technologies
Arroyo Instruments, LLC
art photonics GmbH
Avo Photonics, Inc.
Axetris
B&W Tek
Basler
Beijing RealLight Technology Co., Ltd.
Beijing Scintec Technology Corp., Ltd.
Bentham Instruments Ltd
Berlin Adlershof - WISTA-
MANAGEMENT GMBH
Bodkin Design & Engineering, LLC
Brimrose Corporation of America
cibite AG
Clark-MXR Inc.
Cobolt AB
CODIXX
Critical Link, LLC
Crystax Ltd.
Cymatix, Inc.
Daheng Optical Thin Film Center
Delta Optical Thin Film A/S
DIAS Infrared Corp.
Dino-Lite Digital Microscope
Energetiq Technology, Inc.
FASTLITE
FiberTech Optica Inc.
Fibotec Fiberoptics GmbH
First Light Imaging
Giga Concept
GLOphotons
Gooch & Housego
Gpixel Changchun Optotech, Inc.
GuangDong KingDing Optical
Technology Co., Ltd.
Hamamatsu Corp.
HEIDSTAR Co., Ltd.
Hella USA, Inc.
HG Optronics Inc.
Hind High Vacuum Co. Pvt. Ltd.
Hindsight Imaging, Inc.
HORIBA Instruments
II-VI
Imagine Optic
IMEC
IMM Photonics GmbH
InfraTec Infrared LLC
InnoSpec GmbH
Innovative Photon Solutions
INSION GmbH
Integrated Optics, UAB
International Light Technologies
Intivac Thin Film
IRflex Corporation
Iridian Spectral Technologies Ltd.
ISS, Inc.
KETEK GmbH
Kyosemi Opto America Corp.
Laser Components Detector Group Inc
Laser Components Pyro Group, Inc
Laser Components USA, Inc.
LASOS Lasertechnik GmbH
LEUKOS
Lucid Vision Labs, Inc.
Lumics GmbH
LuxFlux GmbH
Marktek Optoelectronics
Menlo Systems GmbH
Mightex Systems
MIRPHAB
mirSense
Molex - Polymicro
nanoplus America, Inc.
National Scientific Optics, Inc.
Navitar Inc.
neaspec GmbH
New Scale Technologies
Nikon Instruments Inc.
NM Laser Products, Inc.
Norland Products Inc.
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OEwaves, Inc.
Omicron Laserag Laserprodukte
GmbH
OPOTEK
Parker Hannifin Corp.
Electromechanical & Drives Div.
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Photon etc.
Photonics South Australia
PHOTONIS USA
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Photon USA
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piezosystem jena, Inc.
PIKE Technologies
Presco Incorporated
Primoceles, Inc.
Princeton Instruments
Prizmatix Ltd.
Quantel Laser
RGB Photonics GmbH
Roditi International Corporation Ltd.
Sacher Lasertechnik GmbH
SAIS Co., Ltd.
Seiwa Optical America Inc.
SemeaTech Co.
SemiNex Corp.
Send Oy
SenSIR Inc.
Sensor Photonics, LLC
Sinclair Manufacturing Co.
Si-Ware Systems
smartGAS Mikrosensorik GmbH
Sofradir
Solid State Cooling Systems
Spectral Devices
Spectrum Scientific, Inc.
StellarNet, Inc.
Stratum Ltd.
Stuttgart Instruments GmbH
Teledyne Judson Technologies
Thermo Fisher Scientific Inc.
TruTag Technologies
Tuscan Photonics Co., Ltd.
Unice E-O Services Inc.
Uniforce Sales and Engineering
Uniklasers Ltd
UpTek Solutions Corp.
UVphotonics NT GmbH
Vixar Inc.
Vortex Optical Coatings Ltd.
Wavelength Electronics, Inc.
Wavelength References, Inc.
Xenics NV
Zeon Specialty Materials Inc
Zolix Instruments Co., Ltd.

COMMUNICATIONS & NETWORKING
Accumold
Adamanco, Ltd.
Advanced Microptic Systems GmbH
AEMtec GmbH
Applied NanoTools Inc.
Arden Photonics Ltd.
Ascentta, Inc.
ATL Lasertechnik US
Avo Photonics, Inc.
BKT Photonics
Bristol Instruments, Inc.
CASTECH Inc.
CEDRAT TECHNOLOGIES
Changzhou Run Chang Optoelectronics Technology Co., Ltd.
China International Optoelectronic Exposition (CIOE)
Connet Laser Technology Co., Ltd
Cosit, Inc.
DenseLight Semiconductors
DFM A/S
Diamond USA Inc.
Dynamis Fused Silica
Epolin Technology Inc., Ltd
Exalos AG
Fiber optic Ctr., Inc.
Fiber Optic Valley (RISE Acero AB)
FOCtek Photonics, Inc.
Fraunhofer Institute for Photonic Microsystems IPMS
Fraunhofer-Institute for Reliability and Microintegration IZM
Freedom Photonics, LLC
Fuzhou Solid Photon Inc.
Fuzhou Toptec Optics, Inc.
GD Optical Competence GmbH
General Photonics Corp.
Gooch & Houghto
Gould Fiber Optics
GPD Optoelectronics Corp.
Hefei Shengda Electronics Technology Industry Co., Ltd.
Hermetic Solutions Group
id Quantique SA
IIL-VI
Imagine Optic ENGInEERIC GmbH
InPhenix, Inc.
Indian Spectral Technologies Ltd.
ixblue
J. Hauser GmbH & Co. KG
JENOPTIK Optics and Life Science
Kelvin Nanotechnology Ltd
Kyosemi Opto America Corp.
LETI, CEA Grenoble
Lightel Technologies, Inc.
LightPath Technologies, Inc.
LSI
Lowtech Photonics
LuxBake GmbH
Micro Laser Systems, Inc.
Micro resist technology GmbH
NorPix Inc.
Optiwave Systems Inc.
PFC Flexible Circuits Ltd.
Photon Design Ltd.
Presco Incorporated
Primoceles, Inc.
Rochester Institute of Technology
SMART Photonics
Tech-X Corporation
Uniforce Sales and Engineering
Uniklasers Ltd
Vision Components GmbH

COMPUTING, DATA PROCESSING
Alazar Technologies, Inc.
Basler
China International Optoelectronic Exposition (CIOE)
cibite AG
Critical Link, LLC
EDT | Engineering Design Team, Inc.
EPX, Inc.
Gould Fiber Optics
HEIDSTAR CO., LTD.
Imaging Solutions Group
Liquid Instruments
NorPix Inc.
PCO America
Photonfocus AG
Photonsources Technologies, Inc.
Pleora Technologies
Polaris Motion
Seiwa Optical America Inc.
Uniforce Sales and Engineering
Vision Components GmbH

CONSULTING SERVICES
AEMTec Optical Systems GmbH
AGM Container Controls, Inc.
Airy Optics, Inc.
AKELA Laser Corp.
AMETEK Precitech, Inc.
Archer OpTx, Inc.
ATL Lasertechnik US
Avo Photonics, Inc.
Basler
Benchmark Technologies
Berlin Adlerhof - WISTA-MANAGEMENT GmbH
Bernhard Halle Nachf. GmbH
Chiopt Optotech Co., Ltd.
Critical Link, LLC
CSEM SA
DenseLight Semiconductors
DFM A/S
Diffractive Optics Ltd.
Diode Laser Concepts, Inc
DiOptic GmbH
Fiber optic Valley (RISE Acero AB)
Fibercore
FIBSA AG
Flexible Optical B.V.
FRAMOS Technologies Inc.
Fraunhofer Institute for Photonic Microsystems IPMS
Fraunhofer-Institut für Lasertechnik ILT
Fraunhofer-Institute for Reliability and Microintegration IZM
Fuzhou Intpho Technology Co., Ltd.
Germany Trade & Invest
Gitterwerk GmbH
Gpixel Changchun Optotech, Inc.
GS Plastic Optics
Han’s TianCheng Semiconductor Co., Ltd.
HEIDSTAR CO., LTD.
HELIOWORKS, INC.
Imagine Optic
Imaging Solutions Group
Interfiber Analysis LLC
Lambda Research Corp.
laservision USA
LEUKOS
LIGHT TEC
LightPath Technologies, Inc.
LightTrans International UG (haftungsbeschr.)
LTI Optics, LLC
Lumetrics, Inc.
Meadowlark Optics, Inc.
ML Optic Corp.
NIL Technology ApS
North American Coating Labs.
NYFORS
Optical Support, Inc.
Optikos Corporation
Opto-Alignment Technology
OXIDE Corporation
PHLUX Inc.

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<td>Photon Gear, Inc.</td>
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<td>PhotoSound Technologies, Inc.</td>
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<td>Pleora Technologies</td>
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<td>POG Precision Optics Gera</td>
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<td>Presco Incorporated</td>
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<td>PRIMES GmbH</td>
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<td>Prior Scientific Inc.</td>
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<td>QED Optics</td>
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<td>Quantum Light Instruments</td>
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<td>Rocky Mountain Instrument Co.</td>
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<tr>
<td>Ross Optical Industries</td>
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<tr>
<td>SCOPTIQUE</td>
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<tr>
<td>Seattle Photonics Associates LLC</td>
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<tr>
<td>Shanghai Bo Shi Photonic</td>
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<td>Technology Co., Ltd.</td>
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<tr>
<td>Sheumann Laser, Inc.</td>
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<tr>
<td>Shen Zhen Trace Optical Co., Ltd.</td>
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<tr>
<td>Shenzhen Han’s Scanner S&amp;T Co., Ltd.</td>
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<tr>
<td>Sigmadyme, Inc.</td>
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<tr>
<td>Spectral Systems, LLC</td>
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<td>SPIE Career Center</td>
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<td>SRICO Inc.</td>
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<td>StingRay Optics</td>
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<td>Synopsys, Inc.</td>
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<td>Tech-X Corporation</td>
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<td>Tecnnotica Consolini SRL</td>
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<tr>
<td>TEM Messtechnik GmbH</td>
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<tr>
<td>TLC International World Headquarters</td>
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<td>ultralumina GmbH</td>
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<td>UVphotronics NT GmbH</td>
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<td>VPPhotronics Inc.</td>
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<td>VTT</td>
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<td>Westboro Photonics</td>
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<td>Yunnan North OLIGTEK Opto-Electronic Technology Co., Ltd.</td>
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</tbody>
</table>

**CONSUMER ELECTRONICS**

| Abrisa Technologies        |
| Accumold                   |
| AIXEMTEC GmbH              |
| AMETEK Precitech, Inc.     |
| ATL Lasertechnik US        |
| Brightwave Inc.            |
| BWT Beijing Ltd.           |
| Changzhou C-PE Photo-Electricity Scientific and Technical Co., Ltd.|
| Changzhou Optical Technical Co., Ltd. Chroma ATE, Inc. |
| Coherent, Inc.             |
| CRYSTALUX                   |
| DTA Technologies            |
| Electra Technologies       |
| EnOptics Silicon Technologies|
| Entropy Photonics          |
| FASONET Technology         |
| Focal Laser                |
| Fujitsu Optical Communications|
| Gentec Electro Optics      |
| General Photonics          |
| Global Optics              |
| Global Photonics           |
| Gooch & Housegoose         |
| Gould Fiber optics         |
| Gurley Precision Instruments, Inc. |
| Hamamatsu Photonics        |
| Harman International       |
| Harman International       |
| Harris Photonics           |
| Hidalgo Instruments        |
| HgFiberop Technologies      |
| Hitachi Optronics          |
| Hitec Optoelectronics Co., Ltd.|
| IGI / Photonics            |
| IMT Precision on Glass      |
| Inelco                      |
| Infinia Corporation        |
| Infinity Instruments       |
| Integrals                   |
| Integrated Optics          |
| IntraLight                  |
| Ishikawa                   |
| Iris AO, Inc.              |
| ISSO Corporation            |
| JDSU Optics                |
| Jena Optics                 |
| Jilin University Instruments|
| JPL                        |
| JPL Photonics               |
| JPT Photonics               |
| JST                        |
| JST Photonics               |
| JST Photonics               |
| JST Photonics               |
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| JST Photonics               |
| JST Photonics               |

**DEFENSE, SECURITY, LAW ENFORCEMENT**

| Abrisa Technologies        |
| Access Optics              |
| AdTech Ceramics Co.        |
| AdTech Optics, Inc.        |
| AGM Container Controls, Inc.|
| AKELA Laser Corp.          |
| Alazar Technologies, Inc.  |
| Alpes Lasers SA            |
| ALPHANOV                   |
| Altechina UAB              |
| American Photonics         |
| Analog Modules, Inc.       |
| Andon Electronics Corporation|
| Andover Corporation        |
| Applied Image, Inc.        |
| Applied Optics Ctr., a Div. of Optex Systems, Inc. |
| Archer OptX, Inc.          |
| Arden Photonics Ltd.       |
| Arizona Optical Systems aspheric, Inc. |
| A-Star Photonics, Inc.     |
| Avo Photonics, Inc.        |
| Ayase America Inc.         |
| AZURE Photonics Co., Ltd.  |
| B&W Tek                   |
| BEAM Engineering For Advanced Measurements Co. |
| Bodkin Design & Engineering, LLC |
| Boston Micromachines Corp. |
| BoXin Photoelectric Co., Ltd. |
| Bridger Photonics, Inc.    |
| Brimrose Corporation of America |
| Brokman Technology, Inc.   |
| BWT Beijing Ltd.           |
| CEDRAT TECHNOLOGIES        |
| Changzhou C-PE Photo-Electricity Scientific and Technical Co., Ltd. |
| Changzhou Optical Technical Co., Ltd. Chengdu Dongjun Laser, Ltd. |
| Chroma ATE, Inc.           |
| cibite AG                  |
| CMOS Sensor Inc.           |
| Coastal Connections        |
| Coherent, Inc.             |
| Connet Laser Technology Co., Ltd. Covesion Ltd. |
| Cristal Laser S.A.         |
| Crylasier Inc.             |
| CRYSTALUX Inc.             |
| Crystlan Ltd.              |
| Daco Instrument Company    |
| Daheng Optical Thin Film Center |
| Dandong Elaser Electronic Technology Co., Ltd. |
| Deposition Sciences, Inc.  |
| Diamond Coatings, Inc.     |
| Diamond USA Inc.           |
| Diode Laser Concepts, Inc. |
| Diverse Optics Inc.        |
| Doctor Optics, Inc.        |
| egley Photonics GmbH       |
| EDF | Engineering Design Team, Inc. |
| Electro Optical Industries, Inc. Emberion Oy |
| EMF Corp.                  |
| Enerteqit Technology, Inc. |
| EPIX, Inc.                 |
| Exalos AG                  |
| Fairfield Crystal Tech      |
| Fibercore                  |
| Fibotec Fiberoptics GmbH   |
| ficonTEC Corporation       |
| First Sensor, Inc.         |
| FISBA AG                   |
| Flexible Optical B.V.      |
| FLIR Systems, Inc.         |
| FluxData, Inc.             |
| FOCTek Photonics, Inc.     |
| FRAMOS Technologies Inc.   |
| Fraunhofer IPT             |
| Fraunhofer UK Research UK  |
| Freedom Photonics, LLC     |
| Gavish, Inc.               |
| Gentec Electro Optics      |
| GiGa Concept               |
| Gitterwerk GmbH            |
| Glenair, Inc.              |
| Gooch & Housegoose         |
| Gould Fiber optics         |
| Gurley Precision Instruments, Inc. |
| Han’s TianCheng Semiconductor Co., Ltd. |
| HELIOWORKS, INC.           |
| Hermetic Solutions Group   |
| Hind High Vacuum Co. Pvt. Ltd. |
| Hindsight Imaging, Inc.    |
| HORIBA Instruments        |
| HUBNER Group GmbH          |
| IGI / Photonics            |
| Imaging Solutions Group    |
| Incom, Inc.                |
| Innolume GmbH              |
| Innovative Photon Solutions|
| INPhenix, Inc.             |
| Integrated Optics, UAB     |
| IPG Photonics Corp.        |
| IRflex Corporation         |
| Iris AO, Inc.              |
| ISP Optics Corporation     |
| Isuzu Glass, Inc.          |
| Keposys Group              |
| Kigre, Inc.                |
| Kurt J. Lesker Company     |
| Lasence Inc.               |
| Laser Components Canada, Inc. |
| Laser Components GmbH      |
| Laser Components Pyro Group, Inc. |
| Laser Components USA, Inc. |
| Lasertec, Inc.             |
| LEONI Fiber Optics         |
| Lightel Technologies, Inc. |
| LightPath Technologies, Inc.|
| LSTECH Lumics GmbH         |
| Luminit LLC                |
| Masimo Semiconductor       |
| Materion Precision Optics  |
| Meadowlark Optics, Inc.    |
| MegaWatt Lasers, Inc.      |
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| MH GoPower Company Limited |
| miSense                   |
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| Monocrrom                 |
| Moore Nanotechnology Systems, LLC |
| MOXTEK, Inc.               |
| MPA Crystal Corp.          |
| MW Technologies, Lda       |
| Naked Optics Corp.         |
| Nanjing Jason OptoElectronic Technology Co., Ltd. |
| Nanomotion Inc.            |
| nanoplus America, Inc.     |
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| Navitar Inc.               |
| New Infrared Technologies (NIT) |
| NewPion Photonics Inc.     |
| NorPix Inc.                |
| North American Coating Labs.  |
| Northrop Gruman Cutting Edge Optronics |
| Northrop Gruman SYNOPTICS  |
| Nuvi Camera Inc.           |
| OEWaves, Inc.              |
| OFS                        |
| ON Semiconductor           |
| Optec S.p.A.               |
| Optical Filter Source, LLC |
| Optics Technology Inc      |
| Optiforms, Inc.            |
| OptikoS Corporation        |
| Optimax Systems, Inc.      |
| Optisource, LLC            |
| OptixWave Systems Inc.     |
| Oto Diope Corp.            |
| Optogama                   |
| Oto-Line International, Inc.|
| Optometrics Corporation   |
| Orientir Inc               |

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Technica Optical Components, LLC  
TECNISCO, LTD.  
Teledyne e2v  
Teledyne Judson Technologies  
Thermo Fisher Scientific Inc.  
Timbercon, Inc.  
Toshiba America Information Systems  
TruTag Technologies  
Tucson Photonics Co., Ltd.  
Txdex, LLC  
UVphotonics NT GmbH  
VIAlVI Solutions  
Videology Imaging Solutions, Inc.  
Vieworks Co., Ltd.  
Vixar Inc.  
Vortex Optical Coatings Ltd.  
Wavelength References, Inc.  
Wavetek Microelectronics Corporation  
Xenics  
XenicsNV  
XIMEA Corp.  
Yangtze Optical Fibre and Cable Joint  
Stock Limited Company  
Zolix Instruments Co., Ltd.  

DISPLAYS

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Ainy Optics, Inc.  
Ajie Light Industries Inc.  
BEAM Engineering For Advanced  
Measurements Co.  
Brightnesswave Inc.  
CCR Technology GmbH  
cibte AG  
Daheng Optical Thin Film Center  
Diamond Coatings, Inc.  
Diverse Optics Inc.  
dopa diamond tools  
EMF Corp.  
Fraunhofer Institute for Photonic  
Microsystems IPMS  
Greenlight Optics, LLC  
HC Photonics Corp.  
HOLOEYE Photonics AG  
Holographix LLC  
HOYA Corp. USA  
IGI / Photronics  
IKO International, Inc.  
Isomet Corporation  
JENOPTIK  
Kurt J. Lesker Company  
LC-Tec Displays AB  
LITEC  
LightTrans International UG  
Meyer Burger (Germany) GmbH  
Mirrorcle Technologies, Inc.  
MOXTEK, Inc.  
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Norland Products Inc.  
North American Coating Labs.  
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PicolAS  
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Ross Optical Industries  
Seattle Photonics Associates LLC  
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Sydor Optics, Inc.  
Syntec Optics  
TLC International World Headquarters  
TriLite Technologies GmbH  
Videology Imaging Solutions, Inc.  
Yunnan North OLIghtECK Opto-  
Electronic Technology Co., Ltd.  
Zeon Specialty Materials Inc  

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ENTERTAINMENT

Abris Technologies  
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ALIO Industries Corp.  
Argyle International, Inc.  
BEAM Engineering For Advanced  
Measurements Co.  
Brightnesswave Inc.  
Chroma ATE, Inc.  
Circle and Square Co., Ltd.  
Cree Inc.  
Diffractive Optics Ltd.  
Diverse Optics Inc.  
EMF Corp.  
EVERIX Optical Filters  
Gamma Scientific  
GiGa Concept  
Glairn, Inc.  
Greenlight Optics, LLC  
Hind High Vacuum Co. Pvt. Ltd.  
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Holographix LLC  
HOYA Corp. USA  
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Isomet Corporation  
JENOPTIK Healthcare & Industry  
Kurt J. Lesker Company  
LC-Tec Displays AB  
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LightTrans International UG  
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Syntec Optics  
TLC International World Headquarters  
TriLite Technologies GmbH  
Videology Imaging Solutions, Inc.  
Yunnan North OLIghtECK Opto-  
Electronic Technology Co., Ltd.  
Zeon Specialty Materials Inc  

DISTRIBUTOR,  
RESELLER, INTEGRATOR

Akribis System Incorporated  
Altos Photonics, Inc.  
Avo Photonics, Inc.  
Ayase America Inc.  
Cybel LLC  
Cymatrix, Inc.  
Eliot Scientific Ltd.  
Fiber Optic Clr., Inc.  
Fibotec Fiberoptics GmbH  
FRAMOS Technologies Inc.  
Frankfurt Laser Company  
GTM Global Inc.  
Innovative Photonic Solutions  
Market Tech, Inc.  
Pantec Engineering AG  
PHLUXI, Inc.  
ProPhotonix  
Quantum Light Instruments  
Roditi International Corporation Ltd.  
S.I. Howard Glass Co., Inc.  
Seiwa Optical America Inc.  
Uniforce Sales and Engineering  
Universal Photonics Inc.  
Westboro Photonics  

EARTH SCIENCES,  
ENVIRONMENTAL, CLIMATE

AA SA  
ADIT Electron Tubes  
AdTech Ceramics Co.  
Andon Electronics Corporation  
ATL Lasertechnik US  
Axetris  
Ayase America Inc.  
Beijing Golden Way Scientific Co., Ltd.  
Berliner Glas KGAA Herbert Kubatz  
Bodkin Design & Engineering, LLC  
Boston Electronics  
Cobalt AB  
Critical Link, LLC  
CrystaTL Inc.  
Delta Optical Thin Film A/S  
eagleyard Photonics GmbH  
Electro-Optics Technology, Inc.  
Ferdinand-Braun-Institut, Leibniz-  
Institut für Hochstfrequenceotechnik  
Fibercore  
FluxData, Inc.  
Fraunhofer UK Research UK  
GPD Optoelectronics Corp.  
Hamamatsu Corp.  
HELIOWORKS, INC.  
Hindsight Imaging, Inc.  
InfraTec Infrared LLC  
Irish Spectral Technologies Ltd.  
Keepys Group  
Laser Components Detector Group, Inc  
Laser Components Pyro Group, Inc  
LEUKOS  
Lumics GmbH  
Marina Photonics, Inc.  
MERSEN OptoSiC  
MIRPHAB  
Nanjing Co-Energy Optical Crystal Co.,  
Ltd.  
nanoplus America, Inc.  
New Scale Technologies  
Northrop Grumman Cutting Edge  
Optronics  
Nuvu Cameras Inc.  
OVI Laserdiode  
OZ Optics Ltd.  
Photonfocus AG  
Photonics South Australia  
Pike Technologies  
PLX Inc.  
Pure Photonics  
Quantic  
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Schafer + Kirchhoff GmbH  
SemiaTech Co.  
SensIR Inc.  
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Si-Ware Systems  
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smartGAS Mikrosensorik GmbH  
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Sumitomo Electric Industries, Ltd.  
SWIR Vision Systems  
Teem Photonics  
TruTag Technologies  
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Vortex Optical Coatings Ltd.  
Wavelength Electronics, Inc.  
Wavelength References, Inc.  
Xenics  

EDUCATION AND  
TRAINING

Chinese Laser Press  
CoolLED Ltd.  
Florida Photonics Cluster  
Germany Trade & Invest  
Hellima USA, Inc.  
International OptoIndex  
Laser Focus World  
LIGHT TEC  
Liquid Instruments  
mirSense  
MIRTHE+ Photonics Sensing Center  
Moore Nanotechnology Systems, LLC  
Ocean Optics, Inc.  
Optronscience, Inc.  
OS A - The Optical Society  
OWIS GmbH  
Photon Engineering LLC  
PIXAPP  
Quantum Light Instruments  
Rochester Institute of Technology  
Shenzhen Solar Valley SciTech  
Development Co., Ltd.  
SPIE Career Center  
SPIE Digital Library  
University of Arizona, College of Optical  
Sciences  
VIALUX GmbH  
VPhotonics Inc.  
Yunnan North OLIghtECK Opto-  
Electronic Technology Co., Ltd.  

ELECTRICAL/SIGNAL  
ANALYSIS EQUIPMENT

ADIT Electron Tubes  
Alazar Technologies, Inc.  
Amtron GmbH  
Becker & Hickl GmbH  
Bentham Instruments Ltd.
Yunnan North OLIgTEK Opto-Electronic Technology Co., Ltd.

**ELECTRONIC, DIGITAL IMAGING**

AEMtec GmbH
AG Optics Co., Ltd.
AGM Container Controls, Inc.
AiJie Light Industries Inc.
AMS AG
Andon Electronics Corporation
Basler
Becker & Hickl GmbH
Brookman Technology, Inc.
Chiopt Optotech Co., Ltd.
cibite AG
Collimated Holes, Inc.
Diamond Coatings, Inc.
Diverse Optics Inc.
EDT | Engineering Design Team, Inc.
Emberion Oy
EPiX, Inc.
Esco Optics, Inc.
FLIR Systems, Inc.
FRAMOS Technologies Inc.
Gpixel Changchun Optotech, Inc.
Han’s TianCheng Semiconductor Co., Ltd.
HEIDSTAR Co., LTD.
HOLEOEYE Photonics AG
I2S
Imaging Solutions Group
Incom, Inc.
ISDI
JENOPTIK | Healthcare & Industry
LC-Tec Displays AB
Minus K Technology Inc.
Nikon Metrology, Inc.
NorPix inc.
ON Semiconductor
Opto Diode Corp.
Orientir Inc
OSI Optoelectronics
PCO America
Photonfocus AG
PHOTONIS USA
piesyszem jena, Inc.
Precision Laser Scanning
Prizmatix Ltd.
Seattle Photonics Associates LLC
Shenzhen Han’s Scanner S&T Co., Ltd.
Siskiyous Corporation
Softradir
Teledyne e2v
Uniforce Sales and Engineering
VIALUX GmbH
Videology Imaging Solutions, Inc.
Vision Components GmbH
Vixar Inc.
WDI Wise Device Inc.
Westboro Photonics
XIMEA Corp.
Zolix Instruments Co., Ltd.

**EMERGING PHOTONICS TECHNOLOGIES**

AET Technologies
Applied NanoTools Inc.

ASMPacific Technology
BEAM Engineering For Advanced Measurements Co.
CIS Forschungsinstitut für Mikrosensorik
CMC Microsystems
CSEM SA
CST Global Ltd.
Finetech
Fotofab, LLC
Freedom Photonics, LLC
IMEC
IRD Glass
Iris AO, Inc.
Kelvin Nanotechnology Ltd
KETEK GmbH
LETI, CEA Grenoble
LIGENTEC SA
Luminit LLC
MH GoPower Company Limited
NIL Technology ApS
Photon Design Ltd.
 Photonics Ireland
Photonics Spectra, a Photonics Media Publication
Spectrum Thin Films
Teern Photonics
Timberon, Inc.
VLC Photonics
VTT

**FIBER OPTICS AND ACCESSORIES**

2b-special GmbH
3SAE Technologies, Inc.
Adamanet Co., Ltd.
AdOptica Optical Systems GmbH
AdValue Photonics, Inc.
Advanced UV for Life
Aerotech, Inc.
ALIO Industries Corp.
ALPHANOV
Analog Modules, Inc.
Applied NanoTools Inc.
Applied Surface Technologies
Arrow Thin Films, Inc.
art photonics GmbH
Ascenta, Inc.
Axteris
Beijing Bodian Optical Technology Co., Ltd.
Beijing JCZ Technology Co. Ltd.
Beijing Scition Technology Corp., Ltd.
Berlin Adlershof - WISTA-
MANAGEMENT GMBH
Bodkin Design & Engineering, LLC
Brimo Technology, Inc.
Brimrose Corporation of America
Bristol Instruments, Inc.
Calmar Laser
Canare Electric Co., Ltd.
Circle and Square Co., Ltd.
Coastal Connections
Coherent, Inc.
Collimated Holes, Inc.
Corning Incorporated
Craft Center SAWAKI Inc.
Cybel LLC
Daco Instrument Company

DenseLight Semiconductors
Diamond USA Inc.
Diode Laser Concepts, Inc.
Diverse Optics Inc.
Dongguan Harmony Technology Co., Ltd.
East Tender Optoelectronics Corp.
EDT | Engineering Design Team, Inc.
Elliott Scientific Ltd.
Excelsitas Technologies Corp.
FBGS Technologies GmbH
FemtoFiberTec GmbH
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Fiber Optic Ctr., Inc.
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ficonTEC Corporation
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Frankfurt Laser Company
Fraunhofer Institute for Applied Optics and Precision Engineering IOF
Fraunhofer-Institut für Lasertechnik ILT
GD Optical Competence GmbH
General Photonics Corp.
GIaGa Concept
Gitterwerk GmbH
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GLOphotonics
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Haas Laser Technologies, Inc.
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J. Hauser GmbH & Co. KG
KrellTech
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Laser Mechanisms, Inc.
Laserline Inc.
LASOS Lasertechnik GmbH
LEJ | Lighting & Electronics Jena
Leysop Ltd.
Liquid Instruments
Lumics GmbH
Luoyang Silicon Electronics Co., Ltd.
Monocrom
New England Photoconductor Corp.
OptoMarine Co., Ltd.
OXIDE Corporation
Pangolin Laser Systems, Inc.
PFC Flexible Circuits Ltd.
PicoLas GmbH
Plasma Process Group, Inc.
Quantum Composers
Rothiner LaserTechnik GmbH
Shanghai Gem Optoelectronic Technology Co., LTD
Shenzhen Han’s Scanner S&T Co., Ltd.
Siskiyous Corporation
TEC Microsystems GmbH
ThermoTek, Inc.
VIALUX GmbH
VPPhotonics Inc.
Wavelength Electronics, Inc.
Wavetek Microelectronics Corporation

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SIDOS Mestechnik GmbH
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Spectrum Scientific, Inc.
Star Tech Instruments, Inc.
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THATSHIGH Photoelectric Technology Co., Ltd.
The Australian National University
Thermogym Ltd.
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Tower Optical Corporation
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US Fiberoptec Technology, Inc.
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Wavelength Electronics, Inc.
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WL Photonics Inc.
WTS Photonics Co., Ltd.
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2b-special GmbH
3SAE Technologies, Inc.
AA SA
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Aspen Systems, Inc.
asphericon, Inc.
Auer Lighting GmbH
B&W Tek
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Beijing Jienu Trend Technology Co., Ltd.
Beijing Opto-Electronics Technology Co., Ltd.
Beijing Sciliation Technology Corp., Ltd.
Berlin Adlershof - WISTA - MANAGEMENT GMBH
Berliner Glas KGaA Herbert Kubatz GmbH & Co.
Bernhard Halle Nachfl. GmbH
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Bridger Photonics, Inc.
Brimo Technology, Inc
CALabs
Cambridge Technology, A Novanta Company
Canare Electric Co., Ltd.
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Chengdu Yagcrystal Technology Co., Ltd.
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Dandong Elaser Electronic Technology Co., Ltd.
Dayoptics, Inc.
Deposition Sciences, Inc.
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Disc Inspection Technology Co., Ltd.
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Ealing Catalog
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EKSPLA
El. En. S.p.A.
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HG Optonics Inc.
Hind High Vacuum Co. Pvt. Ltd.
Hi-Tech Optoelectronics Co., Ltd.
HOLO/OR Ltd.
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ISP Optics Corporation
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JENOPTIK Optics and Life Science
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KMLabs
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Laser Focus World
Laser Institute of America
Laser Materials Corporation
Laser Mechanisms, Inc.
Laser Point
Laser Quantum Inc
Laser-Femto, Inc
Laserline Inc.
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Laserserv USA
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Lattice Electro Optics, Inc.
LAVERTEC GmbH
LIGENTEC SA
Light Conversion
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Lightel Technologies, Inc.
LightTrans International UG (haftungsbeschr.)
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Luminit LLC
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Masimo Semiconductor
mechatronics ag
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Menlo Systems GmbH
MH GoPower Company Limited
MICRONIX USA, LLC
Mitsubishi Cable Industries, Ltd.
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MONTFORT Laser GmbH
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MPS Micro Precision Systems AG
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Nanjing Chunhui Science & Technology Industrial Co., Ltd.
Nanjing Co-Energy Optical Crystal Co., Ltd.
Nanjing Jason Optoelectronic Technology Co., Ltd.
National Energetics
New Infrared Technologies (NIT)
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Next Scan Technology bvba
Nikon Corp.
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Novus Light Technologies Today
NUBURU, Inc.
Nuttfield Technology
NYFFORS
Oplatek Group Oy
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OptiGrate Corp., an IPG Photonics Company
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Optogama
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Optroscience, Inc.
Orientir Inc
ORSA Corporation
OWIS GmbH
Pangolin Laser Systems, Inc.
Pancete Engineering AG
PFG Precision Optics, Inc.
PHASICS Corp.
PFLUUX, Inc.
Photon Design Ltd.
Photon etc.
Photonfocus AG
Photon etc.
Photon Design Ltd.
Photonics Cleaning Technologies
Photonics Industries International, Inc.
Photonic Spectra, a Photonics Media publication
Picolas GmbH
Pleiger Laseroptik GmbH & Co. KG
PLX Inc.
Plymouth Grating Laboratory
Polaris Motion
Power Photonic Ltd
Power Technology, Inc.
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PRIMES GmbH
Princeton Instruments
ProPhotonix
PROTECT-Laserschutz GmbH
Pure Photons
Quality Thin Films, Inc.
Quantum Composers
Raicol Crystals Ltd.
Redfern Integrated Optics (RIO)
Remtec, Inc.
Research Electro-Optics, Inc.
Rocky Mountain Instrument Co.
Roditi International Corporation Ltd.
Roithner LaserTechnik GmbH
Ross Optical Industries
SAIS Co., Ltd.
Satisloh North America Inc.
SCANLAB America, Inc.
ScannerMAX
SCHOTT North America, Inc.
Scientec, Inc.
Seiwa Optical America Inc.
Sensofar Metrology
Shandong Free Optical Technology Co., Ltd.
Shanghai Institute of Optics and Fine Mechanics Co.
Shanghai SGOptics Co., Ltd.
Shanghai Solidaaric Opto-Optics Co., Ltd.
Shenzhen Solar Valley SciTech Development Co., Ltd.
Shin-Etsu MicroSi, Inc.
Sigmadyne, Inc.
Silkos Technologies
SINO-GALVO (BEIJING) TECHNOLOGY CO., LTD.
SLOS Messtechnik GmbH
Solid State Cooling Systems
Spark Lasers
Spectrum Scientific, Inc.
Spectrum Thin Films
SRC Metals Co., Ltd.
Standa
Star Tech Instruments, Inc
Stratum Ltd.
Sumita Optical Glass, Inc.
Sumitomo Electric Industries, Ltd.
Suzhou Bellin Laser Co., Ltd.
Syndar
Tae Young Optics
Tailored Photons
TEC Microsystems GmbH
TECNISCO, LTD.
TeraXion Inc.
Thales Optronique S.A.S.
THATSHIGH Photoelectric Technology Co., Ltd.
The Australian National University
Thermogym Ltd.
ThermoTek, Inc.
TMC
Unice E-O Services Inc.
Universal Laser Systems, Inc.
Vincent Associates
Vital Materials Co., Ltd.
Vixar Inc.
Wavelength Electronics, Inc.
WL Photronics Inc.
World Star Tech
W2W-Optic AG
XACT Wire EDM Corp.
Xiton Photonics GmbH
Yangtze Optical Fibre and Cable Joint Stock Limited Company
Yelo Limited
Zaber Technologies Inc.

**LASERS AND SYSTEMS**

Access Laser Co.
AdOptica Optical Systems GmbH
AdaTech Optics, Inc.
AdValue Photonics, Inc.
AEI Technologies
Aistana Inc.
A KELA Laser Corp.
Alpes Lasers SA
ALPHANOV
Altos Photonics, Inc.
Apex Photonics
Applied Laser Engineering Ltd
ATL Lasertechnik US
Ayase America Inc.
Becker & Hickl GmbH
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<td>Advance Reproductions Corp.</td>
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<td>neaspec GmbH</td>
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**MICROSCOPES**

AdIOptica Optical Systems GmbH
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Axetris
Berlin Adlerhof - WISTA-
MANAGEMENT GMBH
Boston Micromachines Corp.
Bullen Ultrasonics
CiS Forschungsinstitut für Mikrosensorik
CNC Microsystems
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Dongguan Harmony Technology Co., Ltd.
FEMTOprint SA
Finetech
First Sensor, Inc.
Fraunhofer Institute for Photonic Microsystems IPMS
Fraunhofer IPF
Germany Trade & Invest
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IMOS Gubela GmbH
IMT Precision on Glass
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Lumint LLC
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Meyer Burger (Germany) GmbH
micro resist technology GmbH
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MPS Micro Precision Systems AG
MSI Systems
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nanosystec GmbH
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Primoceler, Inc
Quantic
Rochester Institute of Technology
Silios Technologies
Si-Sphere Systems
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UniTemp GmbH
Vacuum Engineering & Materials
VIALUX GmbH
VTT

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Aerotech, Inc.
Akribis System Incorporated
American Photonics
Applied Surface Technologies
ASM Pacific Technology
Blackstone-NEY Ultrasonics, Inc.
Empire West, Inc.
FiconTEC Corporation
Fraunhofer-Institut für Lasertechnik ILT
laservision USA
LUCEO CO., LTD.
MRSI Systems
NRD, LLC
Opto-Alignment Technology
Parker Hannfin Corp.
Electromechanical & Drives Div.
PR Hoffman Machine Products, Inc.
Primoceler, Inc.
Satistol North America Inc.
smartGAS Mikrosensorik GmbH
Standa
Tempo Clean Room Foam

TLC International World Headquarters
UmiCore Thin Film Products
Virtual Industries, Inc.
XYZTEC, Inc.

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Acketr Ltd.
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IKO International, Inc.
LightPath Technologies, Inc.
Minus K Technology Inc.
Navitar Inc.
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OptoSigma Corporation
OWIS GmbH
TECNISCO, LTD.
TMC
Wavelength Electronics, Inc.
XACT Wire EDM Corp.
Xactra Technologies
Zaber Technologies Inc.
Zolix Instruments Co., Ltd.

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PRODUCTS

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Benchmark Technologies
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IMEC
IMOS Gubela GmbH
IMT Precision on Glass
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JCMwave GmbH
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meechOnics ag
micro resist technology GmbH
mirSense
MOXTEK, Inc.
Nanoscribe GmbH
NIL Technology ApS
PIEZOCONCEPT
Rochester Institute of Technology
SMART Photonics
Srico Inc.
Vacuum Engineering & Materials
Valley Design Corp.
VTT
XACT Wire EDM Corp.

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THIN FILMS

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AccuCoat Inc.
Acketr Ltd.
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Advance Reproductions Corp.
AG Optics Co., Ltd.
Aioy Optics, Inc.
Alpine Research Optics
Altechna UAB

American Photonics
Andover Corporation
Applied Laser Engineering Ltd
Applied Optics Ctr., a Div. of Optex Systems, Inc.
Angyle International, Inc.
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Asphera, Inc.
asphericon, Inc.
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ATL Lasertechnik US
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Beijing Golden Way Scientific Co., Ltd.
Beijing Opto-Telecommunications Co., Ltd.
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CASTON Inc.
CCR Technology GmbH
Chroma Technology Corp.
Crystalline Mirror Solutions
Daheng Optical Thin Film Center
Dayoptics, Inc.
Delta Optical Thin Film A/S
Deposition Sciences, Inc.
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Diffractive Optics Ltd.
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EMD Performance Materials
EMF Corp.
Empire Precision Plastics
Esco Optics, Inc.
Evatec NA Inc.
EVERIX Optical Filters
Fiber Optic Ctr., Inc.
FOCtek Photonics, Inc.
Foreal Spectrum, Inc.
Fraunhofer Institute for Applied Optics and Precision Engineering IOF
Frontier Optics, Inc.
Fujian Ultra Photonics Co., Ltd.
Fuzhou Hundreds Optics Inc.
Fuzhou Solid Photon Inc.
Fuzhou Toptec Optics, Inc.
Gavish, Inc.
Giai Photonics Co., Ltd.
GS Plastic Optics
GuangDong KingDing Optical Technology Co., Ltd.
Guernsey Coating Labs., Inc.
Gurley Precision Instruments, Inc.
Hangzhou Multi IR Technology Co., Ltd.
Hardin Optical Co.
HC Photonics Corp.
HG Optonics Inc.
Hind High Vacuum Co. Pvt. Ltd.
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Instrument Technology Research Center, NAR Labs
Intlivac Thin Film
Iridian Spectral Technologies Ltd.
ISP Optics Corporation
Isuzu Glass, Inc.
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Kao-Yu International Co., Ltd.
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Laser Components USA, Inc.
Laser Materials Corporation
Lasertec, Inc.
Lattice Electro Optics, Inc.
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Luvantix SSCP
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Meyer Burger (Germany) GmbH
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Nikon Corp.
North American Coating Labs.
Northrop Grumman SYNOPSIS
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OPCO Lab., Inc.
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Optics Balzers
Optiforms, Inc.
Optikon GmbH
Optimax Systems, Inc.
OptiSource, LLC
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Optofluxe GmbH
Optogama
Opto-Line International, Inc.
Optometrics Corporation
OptoSigma Corporation
OptoTech Optical Machinery Inc.
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Perkins Precision Developments, LLC
PFG Precision Optics, Inc.
PIKE Technologies
Plant for Optics
Plasmaterials, Inc.
Pleiger Laseroptik GmbH & Co. KG
Plymouth Grating Laboratory
Poco Graphite

Onsite News: www.spie.org/PWnews  •  #SPIEPhotonicsWest
Photonics West Product Index

POG Precision Optics Gera
Precision Glass & Optics
PROTECT-Laserschutz GmbH
Quality Thin Films, Inc.
Rainbow Research Optics, Inc.
Research Electro-Optics, Inc.
Reynard Corp.
Rocky Mountain Instrument Co.
Ross Optical Industries
Sacher Lasertechnik GmbH
SAIS Co., Ltd.
Satisloh North America Inc.
SCHOTT North America, Inc.
SENTECH Instruments GmbH
Shanghai Bo Shi Photoelectric Technology Co., Ltd.
Shanghai Gem Optoelectronic Technology Co., LTD
Shanghai Jiaogang - O Store Optics Co., Ltd
Shanghai SGOptics Co., Ltd.
Silicon Valley Optics Tech, Inc.
Spectral Systems, LLC
Spectrum Thin Films
SRC Metals Co., Ltd.
Suzhou Xieng Hieg-Tech Optoelectronics Technology Co., Ltd.
Tae Young Optics
Technocon Consonni SRL
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Thin Film Devices, Inc.
Tower Optical Corporation
Toyotec Co., Ltd.
TwinStar Optics, Coatings & Crystals, Inc.
Teydex, LLC
Unicore Thin Film Products
Union Optic, Inc.
United Lens Company
Vacuum Engineering & Materials
VIAVI Solutions
Vortex Optical Coatings Ltd.
Wacom Corporation
Wavelength Opto-Electronic (S) Pte. Ltd.
WTS Photonics Co., Ltd.
WZW-Optic AG
Xinxianh Biaye O.E Co., Ltd.
Zeon Specialty Materials Inc
Zeus Industrial Products, Inc.
Zuend Precision Optics Ltd
Zygo Corporation

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Abris Optics
Access Optics
Acket Ltd.
Acton Optics & Coatings
Adament Co., Ltd.
Advalue Photonics, Inc.
Advanced Microptic Systems GmbH
AG Optics Co., Ltd.
ALPCO S.A.S.
Alpine Research Optics
Altechna UAB
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Beijing Opto-Electronics Technology Co., Ltd.
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Bernhard Halle Nachftl. GmbH
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Chengdu Yagcrystal Technology Co., Ltd.
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Dioptic GmbH
Diverse Optics Inc.
Doctor Optics, Inc.
Dynamic Structures - Optics
Ealing Catalog
EGIDE
EKSM Optics
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EVERIX Optical Filters
Fairfield Crystal Tech
FBGS Technologies GmbH
Fibercore
Finisar Corporation
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Poco Graphite
Pog Precision Optics Gera
Precision Glass & Optics
Precision Laser Scanning
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Shanghai Institute of Optics and Fine MechanicsCAS
Shanghai Jiujon Optics Co., Ltd.
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Shenzhen Solar Valley Scitech
Development Co., Ltd.
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Sinclair Manufacturing Co.
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Zhejiang Yunfeng New Material Technology Co., Ltd.
Zuend Precision Optics Ltd

OPTICAL COMPONENTS - LENSES

3SAE Technologies, Inc.
Abris Technologies
Access Optics
Accumold
Advanced Microoptic Systems GmbH AG Optics Co., Ltd.
AIM Micro Systems GmbH
Aitechna UAB
American Photonics
Anson Optical Products Co., Ltd.
Applied Image, Inc.
Applied Optics Ctr., a Div. of Optex Systems, Inc.
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Argyle International, Inc.
Arizona Optical Systems
Arrow Thin Films, Inc.
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aspheric, Inc.
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Changzhou Run Chang Optoelectronics Technology Co., Ltd.
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Dioptic GmbH
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Grintech GmbH
GS Plastic Optics
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Har din Optical Co.
Hellima USA, Inc.
Hind High Vacuum Co. Pvt. Ltd.
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HOYA Corp. USA
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IMOS Gubela GmbH
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Infinite Optics Inc.
INGENERIC GmbH
Instrument Technology Research Center, NARLabs
IRD Glass
IRflex Corporation
J. Hauser GmbH & Co. KG
JENOPTIK Optics and Life Science
Jiangxi Lianchuang Electronic Co., Ltd.
Kao-Yu International Co., Ltd.
Knight Optical (UK) Ltd.
LaCroix Precision Optics
Laserline Inc.
Lasertec, Inc.
Lattice Electro Optics, Inc.
LightTrans International UG (haftungsbeschr.)
Luoyang Silicon Photonics Corporation
Micro Laser Systems, Inc.
micro resist technology GmbH
MIKROP AG
Millennium Optical System Co., Ltd.
Mitutoyo America Corporation
ML Corp. Optic Corp.
Molex - Polymicro
Moore Nanotechnology Systems, LLC
Moulded Optics GmbH
MPS Corporation
MPSNICS Co. Ltd.
Naked Optics Corp.
Nalux Co., Ltd.
Nanjing Chunhui Science & Technology Industrial Co., Ltd.
Nanjing Co-Energy Optical Crystal Co., Ltd.
Nanjing Jason Optoelectronic Technology Co., Ltd.
Nanyang Best Optical & Electronic Co., Ltd.
Nanyang Kaixin Optical & Electronic Co., Ltd.
Natlbrace Optics, Inc.
National Scientific Optics, Inc.
Natsume Optical Corp.
Navitar Inc.
Nikon Corp.
Nikon Instruments Inc.
Nordland Products Inc.
North American Coating Labs.
NTKJ Co., Ltd. (Nihon Tokushu Kogaku Jushi)
Ohara Corp.
Photonics West Booth Index

Shenzhen Oande Optical & Electronic Technology Co., Ltd.
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Sill Optics GmbH & Co. KG
Special Optics
Spectral Systems, LLC
Spectrum Thin Films
SRCO Inc.
STIL
StingRay Optics
Sumita Optical Glass, Inc.
Synopsys, Inc.
Syntec Optics
Tae Young Optics
Tailored Photons
Technica Optical Components, LLC
Tecnottica Consonni SRL
Tian Cheng Optics Co., Ltd.
Uniforce Sales and Engineering
Union Optic, Inc.
United Lens Company
ViALUX GmbH
Vincent Associates
VPliphotonics Inc.
VTT
W.L. Photonics Inc.
WZW-Optic AG
Xinxiang Baihe O.E Co., Ltd.
Yelo Limited
Yokogawa Corporation of America
Zemax, LLC
Zygo Corporation

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Abrisa Technologies
Access Optics
AccuCoat Inc.
Accumold
Achter Ltd.
Advanced Microptic Systems GmbH
AEEMtec GmbH
Aerotech, Inc.
AG Optics Co., Ltd.
Agilent Technologies, Inc.
AIM Micro Systems GmbH
AIXEMTEC GmbH
Akrizis System Incorporated
ALIO Industries Corp.
Alpine Research Optics
Altechna UAB
American Photonics
AMETEK Precitec, Inc.
Anson Optical Products Co., Ltd.
Applied Image, Inc.
Applied Optics Ctr., a Div. of Optex Systems, Inc.
Archer Optx, Inc.
Argyle International, Inc.
Arizona Optical Systems
Arrow Thin Films, Inc.
Ascentia, Inc.
Asia Optical Co., Inc.
Asphera, Inc.
asphericon, Inc.
A-Star Photonics, Inc.
Auer Lighting GmbH
AZURE Photonics Co., Ltd.
Baikowski International Corp.
BEAM Engineering For Advanced Measurements Co.
Beijing Bodian Optical Technology Co., Ltd.
BEIJING FUXINGKAI PHOTO-ELECTRIC TECHNOLOGY CO., LTD
Beijing Golden Way Scientific Co., Ltd.
Beijing Jiepu Trend Technology Co., Ltd.
Beijing Opto-Electronics Technology Co., Ltd.
Beijing Scition Technology Corp., Ltd.
Beijing TRANS Manufacture and Trade Co., Ltd.
Bentham Instruments Ltd
BMV Optical Technologies Inc.
Boston Micromachines Corp.
BoXin Photoelectric Co., Ltd.
Cambridge Technology, A Novanta Company
CCR Technology GmbH
Chengdu Yagcrystal Technology Co., Ltd.
China International Optoelectronic Exposition (CIOE)
Chiopt Optotech Co., Ltd.
Cimcoop
Circle and Square Co., Ltd.
Collimated Holes, Inc.
Contour Metrological & Manufacturing, Inc.
Crystal GmbH
CRYSTECH Inc.
Cymatix, Inc.
Daheng Optical Thin Film Center
Dayoptics, Inc.
Diamond Coatings, Inc.
Diffactive Optics Ltd.
Diverse Optics Inc.
Dr. Optics, Inc.
Dongguan Harmony Technology Co., Ltd.
Dynavac
EGIDE
EKOSMA Optics
Element Six (UK) Limited
EMD Performance Materials
EMF Corp.
Empire Precision Plastics
Esco Optics, Inc.
Evatec NA Inc.
Fairfield Crystal Tech
FEMToprint SA
Fiberguide Industries, Inc.
ficonTEC Corporation
Finetech
FISBA AG
FOCtek Photonics, Inc.
Foreal Spectrum, Inc.
Fraunhofer Heinrich-Hertz-Institut (HHI)
Fraunhofer Institute for Applied Optics and Precision Engineering IOF
Fraunhofer Institute for Photonic Microsystems IPMS
Fraunhofer IPT
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Frontier Optics, Inc.
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GS Plastic Optics
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HOYA Corp. USA
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Nanjing Jason Optoelectronic Technology Co., Ltd.
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<td>Optics Technology Inc</td>
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### Photonics Integration

#### Andover Corporation

- Applied NanoTools Inc.
- Avo Photonics, Inc.
- AZUR SPACE Solar Power GmbH
- CIS Forschungsinstitut für Mikrosensorik
- Clark-MXR Inc.
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Akribis System Incorporated
AZUR SPACE Solar Power GmbH

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EVERIX Optical Filters
First Sensor, Inc.
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9–12 September 2019
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