FLIR’s Tau 640

The Route to the Future

Introducing the new FLIR Tau 640 - the world's first commercially available 640 x 480 resolution, 17-micron thermal imager. Smaller than many lower resolution cameras, the Tau 640 is the high-resolution thermal imaging camera core of the future that you can have today.

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For more information, call 877.773.3547 or visit www.flir.com.

SEE TAU 640 AT BOOTH #703 (YOU MIGHT HAVE TO SQUINT... IT'S PRETTY SMALL).
General Information

SPIE Defense, Security + Sensing

Headquarters Hotel
Orlando World Center Marriott
8701 World Center Drive, Orlando, FL 32821
Phone: +1 407 239 4200 · Fax: +1 407 238 8777

Registration Hours
Orlando World Center Marriott Resort & Convention Center
Arrival Concourse next to Canary Ballroom
Sunday 4 April ........................................ 5:00 to 8:00 pm
Monday 5 April ................................. 7:00 am to 5:00 pm
Tuesday 6 April .............................. 7:30 am to 5:00 pm
Wednesday 7 April ............................. 7:30 am to 5:00 pm
Thursday 8 April ............................ 7:30 am to 4:00 pm
Friday 9 April .................................7:45 to 11:00 am

Exhibition Hours
Orlando World Center Marriott Resort & Convention Center
Cypress and Palms Ballrooms
Tuesday 6 April ........................................ 9:30 am to 5:00 pm
Wednesday 7 April ............................. 10:00 am to 5:00 pm
Thursday 8 April ............................ 10:00 am to 2:00 pm

Course Materials Desk
Crystal Registration Desk
Open during registration hours
If you have registered to attend a course, stop by the Course Materials Desk after you pick up your badge, to obtain your course notes and course location. Pick up a copy of the latest Education Services catalog to see SPIE Courses at symposia, on video and CD-ROM, and to discover the opportunities of customized In-Company courses.

SPIE Receipts, Badge Corrections, Cashier
Receipts - Preregistered attendees who did not receive a receipt prior to the meeting may obtain a new copy of their registration receipt onsite at the Badge Corrections and Receipts counter in the registration area.
Badge Corrections - Attendees who need a correction to their badge information onsite may do so at the Badge Corrections and Receipts counter in the registration area.
Cashier Station - If you are paying by cash or check as part of your onsite registration, wish to add a short course, workshop, or special event requiring payment, or have questions regarding your registration, please see the onsite cashier at the Cashier station in the registration area.

Food and Beverage Services

Coffee Breaks
Coffee will be served at the following times and locations. Please review your program to see when your conference is scheduled to break for coffee.
Monday ... 10:00 to 11:00 am; 3:00 to 4:00 pm ......... Grand Foyer
Tuesday ... 9:30 to 10:30 am; 3:00 to 4:00 pm ....... Cypress Exhibition Hall
Wednesday 10:00 to 11:00 am; 3:00 to 4:00 pm .... Cypress Exhibition Hall
Thursday ... 10:00 to 11:00 am; 3:00 to 4:00 pm .... Cypress Exhibition Hall
Friday ... 10:00 to 11:00 am; 3:00 to 4:00 pm ......... Grand Foyer

Lunch Locations
Canary Ballroom
The Marriott will provide concessions with a variety of hot and cold items. There are also various choices in the Marriott Food Court. High Velocity and the Poolside Grill will also be open.

Desserts
Palms and Cypress Exhibition Halls Tuesday and Wednesday
Sponsored by BAE SYSTEMS
Dessert snacks will be served from 3:00 to 3:30 pm. Complimentary tickets for the dessert snacks will be included in attendee registration packets.

Free Popcorn
Sponsored by Booth #502
Palms and Cypress Exhibition Halls
Popcorn carts will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.
China Germanium Co., Ltd.
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General Information

SPIE Onsite Services

**SPIE Marketplace**
Grand Atrium
Open during registration hours, Monday–Friday
The SPIE Marketplace is your source for the latest SPIE Press books, Proceedings, and Educational and Professional Development materials. Become a member of SPIE, explore the Digital Library, and take home a souvenir.

**SPIE Job Fair – Special 2-Day Event!**
Cypress 1 Foyer · Admission is free; Registration is required.
Tuesday 6 April 9:30 am to 5:00 pm
Wednesday 7 April 10:00 am to 5:00 pm
Top employers are coming together to interview and hire. Whether you’re looking for a better job, re-entering the workforce or just starting your career, plan to visit the Job Fair at SPIE Defense, Security, and Sensing – come prepared to discuss your skills and talents with our industries leaders.
- Discuss career options with employers
- Build your network
- Gain visibility with hiring companies
- Post your resume today. Visit the Career Center on spie.org/careercenter

**Guest Hospitality Suite**
Suite 22876
Guests of attendees are invited to meet, relax, and enjoy a cup of coffee and breakfast breads in the SPIE Guest Hospitality Suite. The Suite will be open Monday 10:00 to 11:30 am and Tuesday through Thursday from 8:30 to 10:00 am. This event is for guests of SPIE Defense, Security, and Sensing attendees only.

**Internet Pavilion**
Crystal Foyer
Sponsored by [BAE SYSTEMS](https://www.baesystems.com)
SPIE will have a complimentary Internet Pavilion open during registration hours. Attendees can use provided workstations or hook up their laptop to an Ethernet connection to access the Internet.

**Complimentary Internet Wireless Access**
Canary Ballroom & Atrium and Cypress Foyer
Sponsored by [OFS](https://www.ofsworld.com) and [Elbit Systems of America](https://www.elbit-systems.com)
SPIE is pleased to provide complimentary wireless access to the Internet for all conference attendees bringing 802.11b wireless-enabled laptops or PDAs.

**On-site Parking**
There is ample hotel parking for Marriott guests. Event attendees who are not hotel guests are strongly encouraged to utilize the overflow parking lot.

**COMPLIMENTARY SHUTTLE SERVICE:** Due to the popularity of this conference, the Orlando World Center Marriott does not have parking space for all of the event’s attendees. SPIE will provide shuttle service to attendees and exhibitors. Defense, Security, and Sensing attendees, exhibitors, and visitors not staying at the Orlando World Center Marriott should plan to use the complimentary shuttle service.

The complimentary shuttle service is available Monday through Thursday, 5-8 April, and will start at 7:00 am. The shuttle schedule will be available onsite.

**Press & Media Center**
Cypress 1 Foyer
The Press & Media Center provides press conference facilities, refreshments, and press releases from exhibitors. Credentialed media are invited to communicate news via the provided telephone and high-speed internet connections. Registration and exhibition fees are waived for working journalists and editors. Preregister by e-mailing name, organization, title, address, e-mail, and phone number to media@spie.org.

**Business Services**

**Attraction Tickets or Activities**
The Marriott Group Concierge will have a fully staffed VIP Concierge Desk near SPIE registration to assist SPIE Defense, Security, and Sensing attendees with discounted attraction tickets, dining reservations, golf tee times, and local information on shopping, local parks, and activities.

All attendees who ordered tickets online can pickup their tickets at the Concierge Desk at the Orlando World Center Marriott upon arrival at no cost.

**SPIE Copy Center**
Across from Crystal Salon K
San Diego Copy will provide a copy service during the week for symposium attendees. The rates are 5 cents per copy and $1 per transparency ($2.50 for color).

**SPIE Message Center**
SPIE has an urgent message line available during registration hours Sunday through Friday (407-309-7873).

**Child Care**
All About Kids Professional Child Care, toll free 1-800-728-6506, Phone (407) 812-9300, www.All-About-Kids.com, or email AAboutKids@aol.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.
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- free space communications
- driver vision enhancement/pilot vision enhancement
- border/homeland security
- fusion with thermal imagers

See us at DSS Booth #825

right attitude/right approach/right alongside
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General Information

Policies

Audio, Video, Digital Recording Policy
In the Meeting Rooms and Poster Sessions: For copyright reasons, recordings of any kind are strictly prohibited without prior written consent of the presenter in any conference session, course or of posters presented. Each presenter being taped must file a signed written consent form. Individuals not complying with this policy will be asked to leave a given session and asked to surrender their film or recording media. Consent forms are available at the SPIE Audiovisual Desk.

In the Exhibition Hall: For security and courtesy reasons, photographing or videotaping individual booths and displays in the exhibit hall is allowed ONLY with explicit permission from on-site company representatives. Individuals not complying with this policy will be asked to surrender their film and to leave the exhibit hall.

Underage Persons on Exhibition Floor
For safety and insurance reasons, no persons under the age of 16 will be allowed in the exhibition area during move-in and move-out. During open exhibition hours, only children over the age of 12 accompanied by an adult will be allowed in the exhibition area.

Unauthorized Solicitation
Any manufacturer or supplier who is not an exhibitor and is observed to be soliciting business in the aisles, or in another company’s booth, will be asked to leave immediately. Unauthorized solicitation in the Exhibition Hall is prohibited.

Unsecured Items
Personal belongings such as briefcases, backpacks, coats, book bags, etc. should not be left unattended in meeting rooms or public areas. These items will be subject to removal by security upon discovery.

Promotional Partners

- Advanced Imaging Magazine
- Defense Tech Briefs
- Electro Optics Magazine
- Federal Laboratory Consortium for Technology Transfer (FLC)
- Laser Focus World
- Military & Aerospace Electronics
- OpticalFiberSensors.org
- The Optronics Co., Ltd.
- Photonics Media
- Photonics Online
- Physics Today
- Pollution Equipment News
- SourceSecurity.com
- The Shephard Group - Digital Battlespace
- Spectroscopy Magazine

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Lay out your schedule for the week.

Search
Quickly search the entire conference program.

What?
Find anything happening at the conference.

When?
Find anything happening at the conference.

Who?
Find anyone at the conference.

Who’s exhibiting?
Find your key vendors on the exhibit floor.

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## Exhibitor Product Demonstrations

**Location:** Cypress 2 Foyer

### Tuesday 6 April

<table>
<thead>
<tr>
<th>Time</th>
<th>Demonstration</th>
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| 10:30 am | **Next Generation Video Tracking**  
Jamie Farmer, GE Intelligent Platforms MD  
The ADEPT5000 is the 'next generation' video tracker that provides advanced image processing and video tracking for both standard and HD sensors in a size, weight and power optimized package. |
| 11:30 am | **Micro Miniature HIGH Frequency Split Stirling Cryogenic Cooler**  
Dr. A. Veprik, RICOR - Cryogenic & Vacuum Systems  
Live demonstration of K527 - miniature split Stirling linear cryogenic cooler, in terms of size, weight, cooling performances, reliability, flexibility in system design, noise and vibration export. |
| 12:30 pm | **HD Visible Imaging Solution for Slip-ring Systems**  
Jochem Herrmann, Adimec  
Live demonstration: an HD color video camera solution with auto functions using the new high-speed digital CoaXPress interface which uses flexible coaxial cables through a slip-ring unit. |
| 1:30 pm  | **Bird 320 17 μm**  
Niels Jacksen, SCD  
New uncooled VOx microbolometer 320 x 240, 17 micron engine. |

### Wednesday 7 April

<table>
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<tr>
<th>Time</th>
<th>Demonstration</th>
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| 10:30 am | **Dry Gas Purging for Electro-Optical Equipment**  
Jim McCorry, AGM Container Controls, Inc.  
State-of-the-art automated dry gas purge system with imbedded dew point sensor for the removal of moisture from cameras, imaging systems and other electro-optical equipment. |
| 11:30 am | **Discover the First 1000Hz High Speed IR Scientific Camera!**  
Vincent Farley, Telops Inc.  
Discover the fastest available IR camera for the infrared expert. This state-of-the-art FAST IR camera blends 1000Hz of speed with unique AUTOMATIC CALIBRATION and real raw data access. |
| 12:30 pm | **Stray Light Management**  
Dina Katsir, Acktar Ltd.  
Live demonstration of variety of commercial black coatings and their influence on image quality will be presented. State of the art measurement equipment connected to monitor will be used. |
| 1:30 pm  | **Seeing Is More Than Believing**  
Carlos Jorquera, Boulder Imaging Inc.  
See our Quazar systems deliver terabytes of precision correlated data for immediate use. Open your mind to the possibilities of using recording, analysis, and visualization for scientific data. |

### Thursday 8 April

<table>
<thead>
<tr>
<th>Time</th>
<th>Demonstration</th>
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</table>
| 10:30 am | **High Reliability Micro Cooler**  
Avishai Filis, RICOR - Cryogenic & Vacuum Systems  
The new microcooler K508N developed by RICOR with design goal of more than 20,000 hours. K508N is ideal for system life cycle cost improvement especially for applications operating 24Hr/7Days. |
| 11:30 am | **Pleora’s Solutions for Video Distribution over Ethernet**  
Vincent Rowley, Pleora Technologies  
Pleora will demonstrate how its solutions for video distribution over Ethernet meet growing demand for advanced video networks. See how Pleora’s solutions can be tailored to meet your requirements. |
| 12:30 pm | **Imaging Based Measurement Techniques for Microscopy**  
Jose Sierra, Excel Technologies  
Excel Technologies presents non-contact solutions for measurement and analysis combining microscopy and imaging products. |

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Precision Optics Gera Corp. · Booth #117
Rainbow Research Optics · Booth #435
Rice Camera Technologies · Booth #3112
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Booth #308 · www.specialtyphotronics.com

Elbit Systems of America
Booth #3319 · www.elbitsystems-us.com
Symposium-Wide Plenary Presentation
Tuesday 6 April · 8:30 to 9:30 am · Crystal H Ballroom

Transforming U.S. Defense R&D to Meet 21st Century Challenges

The Honorable Zachary J. Lemnios
Director, Defense Research and Engineering
Chief Technology Officer, Department of Defense

The Honorable Zachary J. Lemnios was sworn in as Director, Defense Research and Engineering on July 2, 2009. In this capacity, Mr. Lemnios serves as the Chief Technology Officer for the Department of Defense.

Before assuming this position, Mr. Lemnios was the MIT Lincoln Laboratory Chief Technology Officer (CTO) responsible for coordinating technology strategy across the Laboratory and for establishing and growing strategic relationships outside of the Laboratory to support current and future Laboratory missions. He also served as Assistant Division Head of the MIT Lincoln Laboratory Solid State Division, as a member of the Laboratory’s Senior Management Council and as the Co-Chair of the Laboratory’s New Technology Initiative (NTI) Board.

Mr. Lemnios was the Director of the Defense Advanced Research Projects Agency (DARPA) Microsystems Technology Office (MTO), as well as the Deputy Director of the Information Processing Technology Office (IPTO). In these positions, he oversaw the development of future research thrusts, analyzed and evaluated program proposals and engagements with commercial, academic organizations and represented DARPA on various national committees. Mr. Lemnios has also served on numerous Department of Defense, Industry, and Academic Committees including the Defense Science Board.

Mr. Lemnios also served as a Senior Staff Member in the Solid State Division of MIT Lincoln Laboratory, and as an Assistant Director and Program Manager at DARPA. Additionally, he held various positions within industry at Hughes Aircraft Company, Westinghouse Electric Corporation and Ford Microelectronics, Inc., that led to the development and demonstration of advanced microelectronic components.

All Symposium Welcome Reception
Monday 5 April · 6:00 to 7:00 pm · Grand 7 Ballroom
Open to All Conference Attendees and Exhibitors

Enjoy an evening filled with laser light, refreshments, and conversation in observance of 50 years of the laser.
Please wear your conference registration badges. Dress is casual.

50 YEARS AGO, on 16 May 1960, the first laser was fired by Theodore Maiman. Since that time the laser has enabled some of the greatest innovations of our time. Join SPIE in paying tribute to the laser.

All Symposium Welcome Reception
Monday 5 April · Time: 6:00 to 7:00 pm
Enjoy an evening filled with laser light, refreshments, and conversation, in observance of 50 years of the laser.
Please wear your conference registration badges. Dress is casual.

Laser Luminary Display
The display features historic images and video of key players in the development of the laser. Located next to attendee registration.

The Laser: A 50-Year Visual Retrospective
SPIE’s Advancing the Laser booth and timeline provide a museum-quality look at the major events and people that have brought the laser to where it is today - a technology central to defense, security, sensing, medicine, commerce, and more. Both the booth and timeline are located across from exhibitor registration.

For more information visit: spie.org/advancingthelaser
Professional Development

Workshops
Registration required for the workshops below.

Complying with the ITAR: A Case Study
WS933
Course level: Introductory
CEU .35 Members $325 / Non-members $375 USD
Wednesday 1:30 to 5:30 pm

In the world of international trade, it’s what you don’t know that can hurt you. With the U.S. government’s focus on homeland security and its increasing reliance on photonics for the development and production of defense-related products and services, your activities may well be subject to the ITAR.

This workshop will begin with a brief contextual overview of U.S. export controls, including the Export Administration Regulations, the ITAR, and special sanction programs administered by the Treasury Department’s Office of Foreign Assets Control. We will then transition into a case study focused on the ITAR. Real world situations and lessons learned will be shared. Various aspects of the case study will likely be familiar to you in the context of your own experiences, allowing you to learn effectively how to spot ITAR issues before they negatively impact your business. You will also learn about current enforcement trends and best practices for avoiding violations.

INSTRUCTORS
Kerry Scarlott is a partner at Posternak Blankstein & Lund LLP, where he focuses his practice on business law and international trade. He is expert in advising technology-based companies on how to effectively and efficiently navigate U.S. export control laws and regulations.

Ian Moss concentrates his practice on international trade regulation with emphasis on export controls and economic sanctions. He counsels existing and start-up business ventures on foreign trade matters arising under the jurisdiction of various U.S. governmental agencies, including the Departments of Commerce, State, Treasury, and Defense.

Leading Successful Product Innovation
WS951
Course level: Intermediate
CEU .35 Members $325 / Non-members $375 USD
Thursday 6:30 am to 12:30 pm

The fundamental goal of this course is to answer the question: “How do I take an idea off the white-board and turn it into a windfall product?” We will explore and apply the principles of good leadership to create a culture of excellence within your organization—the most basic ingredient for success. A special emphasis will be placed on learning how to develop and construct an effective new project pitch using the instructor’s “Disciplined Creativity” concept and framework. We will then describe the “Spiral Development Process” for rapid, effective, and successful prototype development, followed by an in-depth examination of the life-cycle approach to product development. This course will also enable you to conduct a “red teaming” exercise to identify competitive threats, identify weaknesses in your company, and most importantly, develop solution strategies. We will also place an emphasis on how to properly vet an idea and how to ask tough-minded questions designed to ferret out shortcomings.

INSTRUCTOR
John Carrano is President of Carrano Consulting. Previously, he was the Vice President, Research & Development, Corporate Executive Officer, and Chairman of the Scientific Advisory Board for Luminex Corporation, where he led the successful development of several major new products from early conception to market release and FDA clearance. Before joining Luminex, Dr. Carrano was as a Program Manager at DARPA, where he created and led several major programs related to bio/chem sensing, hyperspectral imaging and laser systems. He retired from the military as a Lieutenant Colonel in June 2005 after over 24 years’ service; his decorations include the “Defense Superior Service Medal” from the Secretary of Defense. Dr. Carrano is a West Point graduate with a doctorate in Electrical Engineering from the University of Texas at Austin. He has co-authored over 50 scholarly publications and has 3 patents pending. He is the former DSS Symposium Chairman (2006-2007) and is an SPIE Fellow.

Essential Skills for Engineering Project Leaders
WS846
Course level: Introductory
CEU .35 Members $325 / Non-members $375 USD
Tuesday 1:30 to 5:30 pm

This workshop teaches skills needed to lead technical projects, drive innovation, and influence others. Attendees learn the difference between leadership and management, and how to develop specific leadership skills that are important to technical professionals who lead projects or need assistance from others to get things done. Participants engage in exercises that assess their individual leadership abilities and provide guidance for further skill development.

INSTRUCTOR
Gary Hinkle is President and founder of Auxilium, Inc. His experience includes a broad variety of management and staff assignments with small, medium, and large companies involved in the development and manufacturing of high-tech products. Gary led several high-profile projects including the development of a U.S. Army vehicle maintenance system, and he directed the development of 9-1-1 systems used in the majority of Public Safety Answering Points in the U.S. He also served as engineering manager for the world’s best selling oscilloscope product line at Tektronix. His design and management experience spans the electronics, mechanical and software engineering disciplines.

Spend some time focusing on your career development while you’re at SPIE Defense, Security, and Sensing. Workshops and presentations will help you be more successful.
Innovating New Technologies To Defeat Insurgency Networks

General Atomics Aeronautical Systems, Inc. (GA-ASI) is the industry leader in providing persistent intelligence, surveillance, and reconnaissance (ISR) on both manned and unmanned aircraft. Our Predator family of unmanned aircraft systems (UAS) has flown over one million flight hours on five continents, and our Lynx Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) provides essential situational awareness to field commanders and border patrol agencies.

We're also developing emerging technologies in solid-state lasers, electro-optic sensors, and covert data links to bring unprecedented new capabilities to the counter-insurgency fight. Cued by the all-weather Lynx SAR/GMTI, our Standoff Precision Identification in 3D (SPI-3D) Ladar Imaging system is designed to provide crystal-clear visual identification and precise geolocation of insurgency threats.

Please visit our displays in Booths 3500 and 3713
SPIE Courses

BUILD YOUR EXPERTISE with courses and workshops taught by leaders in the field—bring yourself up to date on the hottest technologies or learn the fundamentals to expand your skills and value to your organization.

SPIE has hand-picked some of the top minds from academia and industry to lead a variety of courses at SPIE Events.

Register for a course:
- Take advantage of the industry’s best instructors
- Further your career through ongoing education
- Earn CEUs for your continuing education

**Defense, Homeland Security, and Law Enforcement**

**Mon SC993**  
Soil Physics For Non-Soil Engineers: Moisture, Thermal, And Dielectric Soil Properties Affecting IED Detection (Hendrickx) 8:30 am to 5:30 pm, $530 Members / $620 Non-members

**Tues SC952**  
Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, $530 Members / $620 Non-members

**Weds SC998**  
Computer and Multimedia Forensics (Creutzburg) 8:30 am to 12:30 pm, $325 Members / $375 Non-members

**Thurs SC995**  
Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi) 8:30 am to 5:30 pm, $530 Members / $620 Non-members

**Imaging and Sensing**

**Mon SC713**  
Engineering Approach to Imaging System Design (Holst) 8:30 am to 5:30 pm, $580 Members / $670 Non-members

**Mon SC194**  
Multispectral and Hyperspectral Image Sensors (Lomheim) 1:30 to 5:30 pm, $335 Members / $375 Non-members

**Tues SC952**  
Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, $530 Members / $620 Non-members

**Displays**

**Weds SC159**  
Head-Mounted Displays: Design and Applications (Melzer, Browne) 8:30 am to 5:30 pm, $50 Members / $620 Non-members

Continuing Education Units

SPIE has been approved as an authorized provider of CEUs by IACET, The International Association for Continuing Education and Training (Provider #1102091). In obtaining this approval, SPIE has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice.

Money-back Guarantee

We are confident that once you experience an SPIE course for yourself you will look to SPIE for your future education needs. However, if for any reason you are dissatisfied, SPIE 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 courses due to insufficient pre-registration.
<table>
<thead>
<tr>
<th>Day</th>
<th>SC</th>
<th>Course Title</th>
<th>Instructor</th>
<th>Time</th>
<th>Cost</th>
<th>Members / Non-members</th>
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</thead>
<tbody>
<tr>
<td>Fri</td>
<td>SC789</td>
<td>Introduction to Optical and Infrared Sensor Systems</td>
<td>Shaw</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
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<tr>
<td>Tues</td>
<td>SC952</td>
<td>Applications of Detection Theory</td>
<td>Carrano</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
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<tr>
<td>Tues</td>
<td>SC994</td>
<td>Multisensor Data Fusion for Object Detection, Classification and Identification</td>
<td>Klein</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
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<td>Weds</td>
<td>SC998</td>
<td>Computer and Multimedia Forensics</td>
<td>Creutzburg</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
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<tr>
<td>Weds</td>
<td>SC901</td>
<td>Sensor Array Signal Processing</td>
<td>Rao</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
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<tr>
<td>Mon</td>
<td>SC713</td>
<td>Engineering Approach to Imaging System Design</td>
<td>Holst</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Mon</td>
<td>SC278</td>
<td>Infrared Detectors</td>
<td>Dereniak</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Mon</td>
<td>SC835</td>
<td>Infrared Systems - Technology &amp; Design</td>
<td>Daniels</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Mon</td>
<td>SC993</td>
<td>Soil Physics For Non-Soil Engineers: Moisture, Thermal, and Dielectric Soil Properties</td>
<td>Hendricky</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC178</td>
<td>Introduction to Radiometry and Photometry</td>
<td>Grant</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC134</td>
<td>Optical Design Fundamentals for Infrared Systems</td>
<td>Kampe</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC152</td>
<td>Infrared Focal Plane Arrays</td>
<td>Hubbs</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC840</td>
<td>IR Detector Cryocoolers</td>
<td>Rühlich</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC944</td>
<td>The Radiometry Case Files</td>
<td>Grant</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC950</td>
<td>Advanced Infrared Radiometry</td>
<td>Richards</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC892</td>
<td>Infrared Search and Track Systems</td>
<td>Schwering</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC900</td>
<td>Uncooled Thermal Imaging Detectors and Systems</td>
<td>Hanson</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC720</td>
<td>Cost-Conscious Tolerancing of Optical and IR Systems</td>
<td>Youngworth</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC1000</td>
<td>Introduction to Infrared and Ultraviolet Imaging Technology</td>
<td>Richards</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC181</td>
<td>Predicting Target Acquisition Performance of Electro-Optical Imagers</td>
<td>Vollmerhausen</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC067</td>
<td>Testing and Evaluation of E-O Imaging Systems</td>
<td>Phillips, Andrews</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC659</td>
<td>Understanding Reflective Optical Design</td>
<td>Contreras</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Fri</td>
<td>SC154</td>
<td>Electro-Optical Imaging System Performance</td>
<td>Holst</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Fri</td>
<td>SC789</td>
<td>Introduction to Optical and Infrared Sensor Systems</td>
<td>Shaw</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td><strong>Laser Sensors and Systems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tues</td>
<td>SC167</td>
<td>Introduction to Laser Radar</td>
<td>Kamenar</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC188</td>
<td>Laser Beam Propagation</td>
<td>Phillips, Andrews</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Tues</td>
<td>SC160</td>
<td>Precision Stabilized Pointing and Tracking Systems</td>
<td>Hilkert</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC720</td>
<td>Cost-Conscious Tolerancing of Optical and IR Systems</td>
<td>Youngworth</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC997</td>
<td>High Power Laser Beam Quality</td>
<td>Ross</td>
<td>8:30 am to 12:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC995</td>
<td>Target Detection Algorithms for Hyperspectral Imagery</td>
<td>Nasrabadi</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
</tbody>
</table>

**Sensing Technologies and Applications**

<table>
<thead>
<tr>
<th>Day</th>
<th>SC</th>
<th>Course Title</th>
<th>Instructor</th>
<th>Time</th>
<th>Cost</th>
<th>Members / Non-members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tues</td>
<td>SC952</td>
<td>Applications of Detection Theory</td>
<td>Carrano</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC901</td>
<td>Sensor Array Signal Processing</td>
<td>Rao</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC995</td>
<td>Target Detection Algorithms for Hyperspectral Imagery</td>
<td>Nasrabadi</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
</tbody>
</table>

**Sensor Data and Information Exploitation**

<table>
<thead>
<tr>
<th>Day</th>
<th>SC</th>
<th>Course Title</th>
<th>Instructor</th>
<th>Time</th>
<th>Cost</th>
<th>Members / Non-members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>SC728</td>
<td>Network Centric Target Tracking and Classification</td>
<td>Drummond</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Mon</td>
<td>SC194</td>
<td>Multispectral and Hyperspectral Image Sensors</td>
<td>Lomheim</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Weds</td>
<td>SC387</td>
<td>Multivariate Analysis of Imaging and Sensor Data</td>
<td>Bajorski</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC158</td>
<td>Fundamentals of Automatic Target Recognition</td>
<td>Nasr</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
<tr>
<td>Thurs</td>
<td>SC181</td>
<td>Predicting Target Acquisition Performance of Electro-Optical Imagers</td>
<td>Vollmerhausen</td>
<td>8:30 am to 5:30 pm</td>
<td>$375</td>
<td>$325 Members / $375 Non-members</td>
</tr>
</tbody>
</table>

Make SPIE your resource. Register for a course today

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### Signal, Image, and Neural Net Processing

- **Mon SC066**
  - Fundamentals of Electronic Image Processing (Weeks)
  - 8:30 am to 5:30 pm, $540
  - Members / $630 Non-members

- **Mon SC630**
  - Digital Signal Processing with Field Programmable Gate Arrays (Meyer-Bäse)
  - 1:30 to 5:30 pm, $350 Members / $400 Non-members

- **Tues SC952**
  - Applications of Detection Theory (Carrano)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Tues SC994**
  - Multisensor Data Fusion for Object Detection, Classification and Identification (Klein)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Tues SC946**
  - Super Resolution in Imaging Systems (Bagheri, Javidi)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Weds SC901**
  - Sensor Array Signal Processing (Rao)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Thurs SC970**
  - Computational Optical Imaging (Brady)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Thurs SC995**
  - Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Thurs SC959**
  - Image Chain Modeling of Digital Camera Systems (Fiete)
  - 1:30 to 5:30 pm, $275 Members / $325 Non-members

### Unmanned, Robotic, and Layered Systems

- **Mon SC894**
  - Introduction to INS and INS-Based Integrated Navigation (Soloviev)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Mon SC993**
  - Soil Physics For Non-Soil Engineers: Moisture, Thermal, And Dielectric Soil Properties Affecting IED Detection (Hendrickx)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Tues SC952**
  - Applications of Detection Theory (Carrano)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Thurs SC996**
  - Introduction to GPS Receivers (Zhu)
  - 8:30 am to 12:30 pm, $275 Members / $325 Non-members

- **Thurs SC549**
  - Incorporating GPS Technology into Commercial and Military Applications (Uijt de Haag)
  - 1:30 to 5:30 pm, $275 Members / $325 Non-members

### Optical and Optomechanical Engineering

- **Mon SC156**
  - Basic Optics for Engineers (Ducharme)
  - 8:30 am to 5:30 pm, $515 Members / $605 Non-members

- **Mon SC254**
  - Integrated Opto-Mechanical Analysis (Genberg, Doyle)
  - 8:30 am to 5:30 pm, $530 Members / $620 Non-members

- **Tues SC178**
  - Introduction to Radiometry and Photometry (Grant)
  - 8:30 am to 12:30 pm, $390 Members / $440 Non-members

- **Tues SC220**
  - Optical Alignment Techniques (Guyer)
  - 8:30 am to 12:30 pm, $275 Members / $325 Non-members

- **Weds SC950**
  - Advanced Infrared Imaging Radiometry (Richards)
  - 8:30 am to 5:30 pm, $275 Members / $325 Non-members

- **Weds SC221**
  - Optomechanics and Tolerancing of Instruments (Hatheway)
  - 8:30 am to 5:30 pm, $480 Members / $570 Non-members

- **Thurs SC720**
  - Cost-Conscious Tolerancing of Optical and IR Systems (Youngworth)
  - 1:30 to 5:30 pm, $275 Members / $325 Non-members

- **Thurs SC997**
  - High Power Laser Beam Quality (Ross)
  - 8:30 am to 12:30 pm, $275 Members / $325 Non-members

- **Thurs SC1000**
  - Introduction to Infrared and Ultraviolet Imaging Technology (Alkairos)
  - 8:30 am to 5:30 pm, $665 Members / $745 Non-members

### Industry Workshops

#### Business + Professional Development

- **Tues WS846**
  - Essential Skills for Engineering Project Leaders (Hinkle)
  - 1:30 to 5:30 pm, $275 Members / $325 Non-members

- **Weds WS933**
  - Complying with the ITAR: A Case Study (Scarlett, Moss)
  - 1:30 to 5:30 pm, $275 Members / $325 Non-members

- **Thurs WS951**
  - Leading Successful Product Innovation (Carrano)
  - 8:30 am to 12:30 pm, $275 Members / $325 Non-members

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Two Days Only
Cypress 1 Foyer

Tuesday 6 April - 9:30 am to 5:00 pm
Wednesday 7 April - 10:00 am to 5:00 pm

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• Meet with employers and interview on the spot
• Learn more about opportunities in our industry

These companies will be on hand to discuss career opportunities, as of 5 March 2010
The Penguin UAV airframe is an all-composite technology demonstrator that is ready to accept a wide variety of different avionics, engines, and sensors.

ATTENDEES WILL SEE:
Robotics and unmanned systems currently deployed by the United States Armed Forces | General Atomics Aeronautical Systems, Inc. Reaper | ISP Optics Penguin | Live demonstrations of unmanned ground vehicles | Cutting-edge technology in use, or being developed, for defense, industrial, and commercial applications | The latest real world applications of IR imagers, sensors, and optics
Exhibition: 6 – 8 April 2010
Conferences and Courses: 5 – 9 April 2010
Orlando World Center Marriott Resort & Convention Center
Orlando, Florida, USA

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How to use this directory

SPIE Defense, Security, and Sensing exhibitors are listed in alphabetical order with details about products or services each is exhibiting. Companies are additionally cross-indexed by technology areas in the Product Category Index on pages 96–105, to allow you to quickly shop for products for your engineering and business needs.

Booth numbers are provided in the Exhibitor Directory, and may be cross-referenced with the maps on pp. 22–23. The address of each exhibitor is also listed, making this Exhibition Guide an excellent reference tool.
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#216 Donotech Inc.
#217 National Aperture, Inc.
#218 Navitar, Inc.
#219 Special Optics
#220 Cobham Sensor Systems
#221 Cobham/Carleton Life Support Systems Inc.
#222 Spectral Systems
#223 Z&Z Optoelectronics
#224 JENOPTIK Optical Systems, Inc. - AL (formerly MEMS Optical, Inc.)
#225 Coastal Optical Systems, Inc., see Jenoptik Optical Systems, Inc.
#226 JENOPTIK Laser, Optik, Systeme GmbH
#227 Jenoptik Optical Systems, Inc.
#228 BEI Precision Systems & Space Co.
#229 Pentax
#230 Meadowlark Optics, Inc.
#231 JSR/JM Energy
#232 Epix, Inc.
#233 Laser Focus World
#234 Ophir-Spiricon, Inc.
#235 OPTICS 1, Inc.
#236 D&P Instruments
#237 Schneider Optics, Inc.
#238 OFS - Specialty Photonics Division
#239 nPoint, Inc.
#240 Criterion Instrument
#241 Davidson Optronics, Inc.
#242 Pco Graphite, An Entegris Company
#243 WZW-Optic AG
#244 Optiview Systems Inc.
#245 Innrad, a PPGI Company
#246 Laser Optics a PPGI company
#247 MRC, a PPGI company
#248 Photonic Products Group Inc. (PPGI)
#249 KOPIN
#250 JDSU
#251 MiCQ Inc.
#252 Infrared Cameras Inc.
#253 BARR Associates Inc., a subsidiary of Williams Advanced Materials, Inc.
#254 Thin Film Technology, a subsidiary of Williams Advanced Materials, Inc.
#255 Williams Advanced Materials
#256 Photron
#257 Voltage Multipliers Inc.
#258 Esterline CMC Electronics
#259 BaySpec, Inc.
#260 PerkinElmer Inc.
#261 Zygo Corp.
#262 Physical Optics Corp.
#263 Opnext, Inc.
#264 NorPix, Inc.
#265 Spectroscopy Magazine
#266 Kentek Corp.
#267 Flex Interconnect Technologies
#268 Infinite Optics Inc.
#269 Lattice Materials LLC
#270 Acktar Ltd.
#271 StingRay Optics, LLC
#272 Edmund Optics
#273 RICOR - Cryogenic & Vacuum Systems
#274 Corning Inc.
#275 Max Levy Autograph, Inc.
#276 Rocky Mountain Instrument Co.
#277 Laser Components IG, Inc.
#278 Lambda Research Optics Inc.
#279 Optical Support, Inc.
#280 Rainbow Research Optics, Inc.
#281 Vytran LLC
#282 CiDRA Precision Services, LLC
#283 Infrared Coatings, Inc.
#284 ABTech Inc.
#285 Epner Technology, Inc.
#286 Boston Micromachines Corp.
#287 Menlo Systems GmbH
#288 Thorlabs, Inc.
#289 Axsys Technologies-GDAIS
#290 Clear Align
#291 Omagi,Q, LLC
#292 ABB Analytical
#293 National Defense Industrial Association
#294 Isuzu Glass Inc.
#295 Opto Diode Corp.
#296 Micro Laser Systems, Inc.
#297 Cal Sensors, Inc.
#298 Ideal Aerosmith Inc.
#299 Exotic Electro-Optics
#300 II-VI Infrared
#301 Infrared Systems Development Corp.
#302 Electro-Optical Imaging, Inc.
#303 Analog Modules, Inc.
#304 CREOL, The College of Optics & Photonics, Univ. of Central Florida
#305 Florida Photonics Cluster
#306 Pinellas County Economic Development
#307 Global Systems International
#308 Tecport, Inc.
#309 LightPath Technologies, Inc.
#310 Quality Thin Films, Inc.
#311 ER Precision Optical Corp.
#312 WIBE Telescopic Mast Systems
#313 American Photonics Co.
#314 Ocean Thin Films
#315 Absolute Coating
#316 Advanced Cooling Technologies, Inc.
#317 INInova AB
#318 OPOTEK, Inc.
#319 AGM Container Controls, Inc.
#320 RoMack, Inc.
#321 Lockheed Martin - Santa Barbara Focalplane
#322 Lockheed Martin Aculight
#323 OptoSigma Corp.
#324 C&M Machine Products
#325 Catalyst Manufacturing Services
#326 Hoppe Tool, Inc.
#327 Innovative Wireless Technologies
#328 Prioria Robotics, Inc.
#329 Strongwatch Corp.
#330 Rochester Precision Optics LLC
#331 Sarnoff Corp.
#332 Rochester Technologies
#333 General Imaging
#334 Explorer Technology
#335 Advanced Imaging Magazine
#336 OptiKos Corp.
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click: sony.com/gige
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#634, #635  ULIS

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#642  Eltek USA Inc.

#643  Reynard Corp.

#703  FLIR Systems, Inc.

#710  Ophir Optics, LLC

#711  SBIR

#716  Active Silicon Ltd.

#717  SCHOTT North America, Inc. - Defense

#718  OZ Optics Ltd.

#725  Photonics Media

#740  GE Intelligent Platforms

#741  IO Industries, Inc.

#803  FLIR Systems

#807  Umicore Optical Materials USA Inc.

#811  ISP Optics Corp.

#813  Labsphere, Inc.

#817  Qioptiq

#824  Ocean Optics, Inc.

#825  Goodrich ISIR Systems

#826  Electro Optical Industries, Inc.

#841  CVI Melles Griot

#903  L-3 Advanced Laser Systems Technology, Inc.

#903  L-3 Cincinnati Electronics

#903  L-3 Communications

#903  L-3 CyTerra

#903  L-3 Electro-Optical Systems

#903  L-3 Nova Engineering

#903  L-3 Tinsley

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#910  Laser Research Optics

#910  Meller Optics, Inc.

#911  CI Systems, Inc.

#912  H.N. Burns Engineering Corp.

#917  Opgal Ltd.

#935  Kigre, Inc.

#935  Spica Technologies, Inc.

#935  TwinStar Optics, Coatings, & Crystals

#943  Brush Wellman Inc.

#1010  Ontar Corp.

#1011  Ampex Data Systems Corp.

#1012  Solid State Scientific Corp.

#1013  PolarOnyx, Inc.

#1015  Engineered Surface Finishes, A Group of Cabot Microelectronics Corp.

#1017  ELCAN Optical Technologies

#1025  AMETEK Precitech, Inc.

#1027  Univ. of Massachusetts/Lowell

#1029  AIRM INFRAROT-MODULE GmbH

#1034  Research Electro-Optics, Inc.

#1035  Vectronix Inc.

#1037  OptiSwitch Technology Corp.

#1038  Brimrose Technology Corp.

#1039  Pulse Instruments

#1040  ITRES Research Ltd.

#1041  Varian, Inc.

#1042  Sinclair Manufacturing

#1043  Trioptics GmbH

#1102  DRS Technologies, Inc.

#1110  A.J. Tuck Company

#1111  Coherent Inc.

#1112  Dow Electronic Materials

#1113  Georgia Tech Research Institute/SENSIAC

#1114  Northrop Grumman

#1114  Cutting Edge Optronics

#1114  Northrop Grumman Land Forces Division, Xetron Campus

#1117  Boulder Nonlinear Systems, Inc.

#1118  Saint-Gobain Crystals

#1119  CALCULEX, Inc.

#1124  Universal Photonics, Inc.

#1125  Applied Image, Inc.

#1126  Vincent Associates

#1127  Optimax Systems, Inc.

#1128  Gurely Precision Instruments, Inc.

#1129  OptiPro Systems

#1130  Photek, Ltd.

#1130  Sydor Instruments LLC

#1131  ET Precision Optics Inc.

#1134  Syntec Optics

#1135  Optics Technology, Inc.

#1136  IRcameras, Inc.

#1137  China Germanium Co., Ltd.

#1139  Heraeus

#1140  Photo Sciences, Inc.

#1141  Optiforms

#1142  Sensor Electronic Technology, Inc.

#1201  SCD, USA, LLC

#1210  Headwall Photonics, Inc.

#1212  Photonic Sense GmbH

#1214  RPMC Lasers, Inc.

#1215  Teledyne Imaging Sensors

#1215  Teledyne Judson Technologies

#1215  Teledyne Microelectronics

#1215  Teledyne Reynolds, Inc.

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#1229  American Diamond Turning, Inc.

#1230  Teraxion Inc.

#1231  Fosta-Tek Optics

#1234  Andover Corp.

#1235  Applied Optronics

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sales@bodkinderdesign.com; www.bodkinderdesign.com

Bodkin Design and Engineering, LLC has been providing concept development, prototype design/build, and engineering services since 1992. Headquartered in Newton, Massachusetts, the company serves the international OEM, commercial, military, and research communities. Specializing in cutting-edge electro-optic technology, BD&E has overseen the successful introduction of products ranging from miniature infrared cameras and spectrometers to heavy equipment for railroad yards. Contact: Greta Broughton, Administrative & Marketing Assistant, gbroughton@bodkinderdesign.com; David Biss, Engineer/Scientist, dbiss@bodkinderdesign.com.
Boulder Nonlinear Systems, Inc.

450 Courtenay Way Unit 107, Lafayette, CO, 80026
303/604-0077; fax 303/604-0066
info@bnonlinear.com; www.bnonlinear.com

New Product: 16-bit DVI Controller for Spatial Light Modulator.

Boulder Nonlinear Systems (BNS) designs, manufactures, and sells standard and custom light control solutions. Spatial Light Modulators, Polarization Rotators and Optical Shutters are offered for beam forming, beam steering, biotechnology, microscopy, military/civil defense, phase/polarization control pulse shaping wavefront analysis/testing, and other applications. Contact: Kelly Gregorak, Director, Sales & Marketing, kelly@bnonlinear.com.

Brimrose Technology Corp.

30 Spinelli Pl, Cambridge, MA, 02138
617/868-4178; fax 617/868-7996
info@boulderimaging.com; www.boulderimaging.com

New Product: Quazar, Intelligence on Demand – high performance digital video recorder (HPDVR™).

Boulder Imaging, Inc. is the leading U.S. imaging specialist. We manufacture advanced end-to-end solutions that sense, record and analyze critical event data in real-time. Over the last 15 years our expertise and tools for scientific, engineering, and machine vision applications have assisted organizations in the military, aerospace, manufacturing, medical, and research fields. Contact: Debbie Fields, Sales Manager, dfields@boulderimaging.com; Rochelle Saidman, Marketing Manager, rsaidman@boulderimaging.com.

C&M Machine Products

603/545-4181; fax 707/545-5113
info@calsensors.com; www.calsensors.com

New Product: Lead selenide and lead sulfide detectors with integrated electronics in compact TO-8 package.

Cal Sensors is the leading manufacturer of lead selenide (PbSe) and lead sulfide (PbS) infrared detectors, arrays, and broad band emitters. With over 20 years of expertise, Cal Sensors’ detectors provide superior sensitivity over 1 to 5.5 micron wavelengths. Common applications include spectroscopic, imaging, medical, automotive exhaust, gas detection and moisture analysis instruments, as well as temperature measurement, flame detection and combustion control. Contact: Candy Racuya, Sales Support, candy@calsensors.com.

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1500 Cherry St, Ste C, Louisville, CO, 80027
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info@calsensors.com; www.calsensors.com

New Product: Low Cost, Low Power, Text Picture Message Capable, Passive IR UGS: SPOT (Silhouette Profiling Optical Tripwire) and AOTF SWIR Hyperspectral Imager.

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419/862-4173
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607/263-1082; fax 607/263-1092
dv@cm-machineproducts.com; www.cm-machineproducts.com

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115 Follett St, Gallatin, TN, 37066
615/259-2828; fax 615/259-7844
info@calsensors.com; www.calsensors.com

New Product: Lead selenide and lead sulfide detectors with integrated electronics in compact TO-8 package.

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EM4, the premiere US manufacturer of high reliability, hermetically packaged, fiber pigtailed and free space optoelectronic components and subsystems for harsh environments: terrestrial, marine and aerospace. Featured products include 100 mW DFB lasers (C and L band, 5 GHz direct mod); 10W multimode pump lasers (780nm-980nm); 800mW SM pump lasers (915nm-1064nm); < 10 ns rise/fall time Acousto-Optic Modulators (530nm, 1060nm and 1550nm); 20 GHz detectors; high power fiber coupled isolators. Contact: Ed McCarren, Director of Sales and Marketing, emc@em4inc.com; Basil Garabet, CEO, bgarabet@em4inc.com.

Epamin Corporation #3114
3006 Northrop Way #103, Bellevue, WA, 98004
425/284-5200; fax 425/284-5201
cmiller@epamin.com; www.epamin.com
New Product: SXGA (1280x1024) Microdisplay; Rev 3 Low Power SVGA+ (852x600) Microdisplay.
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630/375-6674; fax 630/375-5894
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Epitaxial Technologies, LLC #1409
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410/455-5594; fax 410/455-5595
www.epitaxialtechnologies.com
Epitaxial Technologies develops and produces breakthrough sensor products including photon counting photodetector arrays and ultrasensitive photoreceivers with widespread applications in fiber optic and free-space lasercomm, ladar and infrared imaging for missile defense, homeland security and spectroscopic applications. Contact: Olaley A. Aina, President, oaina@epitaxialtechnologies.com.

Epix, Inc. #244
381 Lexington Dr, Buffalo Grove, IL, 60089-6934
847/465-1818; fax 847/465-1919
epix@epixinc.com; www.epixinc.com
New Product: SILICON VIDEO 10C 10 megapixel camera, PIXCI SV7 analog video capture frame grabber.
EPIX, Inc. designs and manufactures cameras, frame grabbers, imaging computer systems, and software for image processing, image capture, and video to disk systems. We create solutions for OEM imaging applications and can provide customization for specific requirements. Contact: Charlie Dijak, Sales, cad@epixinc.com; Chuck Petersen, Vice President, acp@epixinc.com.

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name@eroptics.com; www.eroptics.com

Esterline CMC Electronics #335
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860/741-3435; fax 860/745-7212
info@extec.com; www.extec.com

ExoTec Precision, GSI Group #1503
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44 1823 354733; fax 44 1823 340489
www.exotecprecision.com
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Fairchild Imaging #3118
1801 McCarthy Blvd, Milpitas, CA, 95035
408/433-2500; fax 408/435-7352
sales@fcimg.com; www.fairchildimaging.com
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Production processes include electro-refining, zone-refining, crystal growth of antimonide along with the high purity metals; antimony, indium, and tin. The production of the III-V semiconductors indium antimonide and gallium antimonide is available in diverse applications: solid-state lighting, excimer and high power lasers, micro lithography, optical storage, thermal and medical imaging, wireless communications and more. Our crystal technology enables customers to capitalize on the unique properties of crystal materials to make their products better. Contact: Andy Timmerman, Director of Sales, atimmerman@fairfieldcrystal.com; Chris Snyder, Administrator, csnyder@fairfieldcrystal.com.

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www.firebird.bc.ca

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**Firebird Technologies Inc.**

**Flex Interconnect Technologies**

1603 Watson Ct, Milpitas, CA, 95035

408/635-3540; fax 408/956-8278

sales@fit4flex.com; www.fit4flex.com

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978/901-8000; fax 978/901-8532

info@flir.com; www.flir.com

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**FLIR Systems, Inc.**

**Florida Photonics Cluster**

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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: James Pearson, Executive Director, jpearson@creol.ucf.edu; Alex Fong, President, afong@olinet.com.
**FluxData Inc**

### Address
125 Tech Park Dr, Rochester, NY, 14623

### Contact Information
- Phone: 800/425-0176
- Email: info@fluxdata.com; www.fluxdata.com
- New Product: Series of multispectral, VIS/NIR, Firewire and GigE cameras and systems; and MS unattended ground sensors.

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**Fost-Tek Optics**

### Address
320 Hamilton St, Leominster, MA, 01453

### Contact Information
- Phone: 978/534-6511; fax 978/537-2168
- Email: info@fosta-tek.com; www.fosta-tek.com
- New Product: Series of multispectral, VIS/NIR, Firewire and GigE cameras and systems; and MS unattended ground sensors.

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**Fresnel Technologies Inc.**

### Address
101 W Morningside Dr, Fort Worth, TX, 76110

### Contact Information
- Phone: 817/926-7474; fax 817/926-7146
- Email: info@fresneltech.com; www.fresneltech.com
- New Product: Series of multispectral, VIS/NIR, Firewire and GigE cameras and systems; and MS unattended ground sensors.

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**Garrett Metal Detectors**

### Address
1881 W State St, Garland, TX, 75042

### Contact Information
- Phone: 972/494-6151; fax 972/494-1881
- Email: cm-erw@garrett.com; www.garrett.com
- New Product: The model “Recon-Pro, AML1000” is an all metals locator designed to locate mines, UXO, and IED’s.

Garrett Metal Detectors is a world leader in Security, Hobby, and Military metal detection instruments. Established in 1964, the company is recognized for high quality and innovative product design. Garrett products are seen in many airports, government facilities, military bases, and at the world Olympic games. Contact: Ron Hitchler, Program Director; CM Division, ron.hitchler@garrett.com; Robert Podhrasky, VP, Chief Operating Officer, bobsp@garrett.com.

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**GE Intelligent Platforms**

### Address
Edenfield, Larges Ln, Bracknell, United Kingdom, RG12 9AT

### Contact Information
- Phone: 44 1344 381281; fax 44 1344 13441282
- Email: cm-erw@garrett.com; www.garrett.com

GE Intelligent Platforms provides extensive expertise in video and image processing. Our rugged modules provide real-time image processing, multiple target detection, target tracking, image fusion and image stabilization for electro-optical systems operating in the military and paramilitary environment. We offer a previously unattainable level of situational awareness to platforms such as armored vehicles, aircraft, remote unmanned platforms and security and surveillance systems. Contact: Roger Joel, Director of Sales and Marketing, Roger.Joel@ge.com; Larry Schaffer, Director of Business Development, Larry.Schaffer@ge.com.

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**General Atomics Aeronautical Systems Inc.**

### Address
14200 Kirkham Way, Poway, CA, 92064

### Contact Information
- Phone: 858/312-2810; fax 858/312-4247
- Email: cm-erw@garrett.com; www.garrett.com

General Atomics Aeronautical Systems, Inc. is a leading manufacturer of unmanned aircraft, tactical reconnaissance radars, and surveillance systems, including the Predator® UAS series and the Lynx® SAR/GMTI sensor system. GA-ASI designs, manufactures, and integrates the Lynx radar and CLAW® sensor control and image analysis software into manned ISR and unmanned aircraft. It also develops solid-state lasers, electro-optic sensors, and ultra-wideband data links for government applications. Contact: Aaron Dodell, aaron.dodell@ga.com.

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**General Atomics Aeronautical Systems Inc. - UAV Display**

### Address
14200 Kirkham Way, Poway, CA, 92064

### Contact Information
- Phone: 858/312-2810; fax 858/312-4247
- Email: cm-erw@garrett.com; www.garrett.com

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**Gentec Electro-Optics Inc.**

### Address
445 St-Jean-Baptiste Ste 160, Quebec, QC, Canada, G2E 5N7

### Contact Information
- Phone: 418/651-8003; fax 418/651-1174
- Email: cm-erw@garrett.com; www.garrett.com

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Manufacturer of custom blanks. Products include fused quartz, fused silica, optical glasses, filter glasses, and low/ultralow expansion glasses. Capabilities include annealing, slumping, sawing, grinding, edging, drilling, water jet cutting, CNC shaping and CNC generating. Contact: Daniel Saltzman, President, d_saltzman@glassfab.com; Wayne Leon, Sales Manager, w_leon@glassfab.com.

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Goodrich ISR Systems

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Great River Technology

6121 Indian School Rd NE Ste 141, Albuquerque, NM, 87110
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New Product: ARINC 818 dual channel XMC transceiver card and four channel ARINC 818 switch.

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information@headwallphotronics.com; www.headwallphotronics.com
New Product: High Efficiency Hyerspec sensors offer highest spectral imaging performance for NIR, SWIR, MWIR.
Manufacturer of high performance hyperspectral sensors for military and defense. Sensors available for airborne, pan and tilt, and point and stare applications. Spectral ranges of products - UV, Vis, VNIR, NIR, SWIR and MWIR. Core sensor technology: Very small, high performance spectral instruments characterized by high signal-to-noise and high dynamic range for UAV and UGS platforms. Products: Hyperspectral sensors, Raman spectrometers, handheld biosensors, spectral instruments for end-users and integrators. Contact: Kirk Grim, Federal Programs, information@headwallphotronics.com; David Bannon, Sales & Marketing, information@headwallphotronics.com.

**Heraeus** #1139
100 Heraeus Blvd, Buford, GA, 30518
678/714-4350; fax 678/714-4355
sales.hqa-optics@heraeus.com; www.heraeus.com
New Product: Spectrosil synthetic fused silica for deep UV applications. TSC-3 plate.
Heraeus is a leader in the manufacturing of high purity quartz materials and components, and produces various types of high purity fused silica for use in semiconductor manufacturing, telecommunications, optical, chemical, lamps and a variety of other advanced applications. Contact: Michele Follmar, Customer Service/Sales, michele.follmar@heraeus.com; Robert Sawyer, Account Representative, robert.sawyer@heraeus.com.

**Hitachi Kokusai Electric America, Ltd.** #1340
150 Crossways Pk Dr, Woodbury, NY, 11797
516/921-7200; fax 516/496-3718
sales@hitachikokusai.us; www.hitachikokusai.com
New Product: KP-D5000 - Day/night, low light camera. 580TVL, 53 db, fog reductions, image processing, ANR and more.
Hitachi Kokusai Electric America, Ltd. formed in 1963, HQ in Woodbury, NY. Hitachi is a worldwide supplier of video cameras. For over 47 years, the Industrial Video Systems Division (IVS) has been selling miniaturized, solid state, analog and digital cameras that are used in the imaging, vision and surveillance markets. Hitachi offers one of the largest families of cameras of any manufacturer in the imaging industry. All cameras are ISO 9002, RoHs and CE international standards. Contact: Lawrence Ottaviano, Surveillance Product Manager, larry.ottaviano@hitachikokusai.us; Andy Miyaguchi, Chief Engineer, andy.miyaguchi@hitachikokusai.us.
UAV reconnaissance. Such as 360° camp surveillance, threat detection, vehicle protection and panoramic technology into their vision systems used for applications sensor and any market. ImmerVision helps OEM and integrators to embed technology that enables any video device to see everything around you. ImmerVision provides a unique patented 360° panomorph optics.

www.immervision.com
514/989-0006; fax 514/989-0045
info@imperx.com; www.imperx.com


Florida based Imperx makes rugged, lightweight, shock and vibe tested Visual Spectrum and NIR cameras used extensively in Military and Industrial systems. Combining real world Airborne experience with ultra low power consumption, extended temperature ratings, in-field upgradable F/W, multiple: fields of interest, binning and triggering options, Imperx cameras are consistently chosen for UAV and manned Airborne systems. Imperx also makes a complete line of Laptop frame grabbers for Mobile Ops. Contact: Mr. Nathan Cohen, Sales Manager, Nathan@imperx.com.

IMPEX HighTech GmbH
Hovesaatstr 6, Rheine, Germany, 48432
49 5971 981650; fax 49 5971 981659
sales@impex-hightech.de; www.impex-hightech.com

New Product: Large sapphire windows different complex forms with high surface polishing quality and high flatness.

IMPEX HighTech is manufacturer of laser, custom optics and optical crystals core business is sapphire crystal growth and laser crystal. Since several years IMPEX HighTech also produces its own real monolithic, passive q-switched lasers (Nd:YAG/Cr4+:YAG) at 1064 nm and 532 nm with >200 μJ at 1 kHz repetition rate and 2 ns pulse width. To complete the product range IMPEX offers also continuous wave (CW) lasers (Longitudinal multimode or single frequency) at 1064 nm and 532 nm.

Contact: Norbert Munser, Managing Director, munser@impex-hightech.de.

IMT North America
11 Bridge St, West Wyoming, PA, 18644
570/954-0933; fax 570/693-3631
www.imtag.ch

Supplying your needs for structured coatings, reticles, calibration plates for machine vision, encoder disks and electrically conductive layers, IMT is a world leader in coating technology and microlithography. With over 50 years experience and highly automated processes, high quality and repeatability are guaranteed. We truly are “Precision on Glass”. Come and see what we can do for you. Contact: Robert Trottini, Sales Manager, rtrottini@imtagmask.com.

ImmerVision provides a unique patented 360° panomorph optics technology that enables any video device to see everything around you. Panomorph technology is the combination of 360° panomorph lenses and immersive viewing functionality, customized for any camera, any sensor and any market. ImmerVision helps OEM and integrators to embed panoramic technology into their vision systems used for applications such as 360° camp surveillance, threat detection, vehicle protection and unmanned reconnaissance.

www.immervision.com
2020 University, Montreal, QC, Canada, H3A 2A5
514/985-4007; fax 514/282-8612

ImmerVision helps OEM and integrators to embed technology that enables any video device to see everything around you. Panomorph technology is the combination of 360° panomorph lenses and immersive viewing functionality, customized for any camera, any sensor and any market. ImmerVision helps OEM and integrators to embed panoramic technology into their vision systems used for applications such as 360° camp surveillance, threat detection, vehicle protection and unmanned reconnaissance.
**Exhibitor Directory**

**Infinite Graphics**
4611 East Lake St, Minneapolis, MN, 55406
612/721-6283; fax 612/721-3802
www.igi.com


IGI provides Precision Imaging. 3D photostresser patternung and Grayscale imaging of thin and thick photoresist. Other services include photoasks, ablation masks, photoplotting, imaging of glass parts, metallization, protective coatings, custom software, and engineering solutions. IGI can image on parts of all sizes including thick substrates and sizes up to 40". IGI has 40 years of experience in understanding customers’ needs and providing the best services and software. Contact: Pete Maitland, Sales Manager, pmaitland@igi.com.

**Infrared Coatings, Inc.**

*New Product: Optically black coatings transparent to infrared light. Formulations include polyesters, vinyls, polyurethanes, epoxies, enamels and 400 degree baked coatings for metals which are impervious to solvents and scratching. Covert vehicles and equipment for example, can be made invisible to the eye while being totally readable and identifiable when viewed with infrared viewers. Contact: Patrick McIntyre, Owner, sales@infraredcoatings.com.*

**Infrared Systems Development Corp.**

7319 Sandscove Ct Ste 4, Winter Park, FL, 32792
407/679-5101; fax 407/679-5520
sales@infraredsystems.com; www.infraredsystems.com

*Designs and manufactures heated and cooled blackbody sources of all sizes, Detector array processors, high speed integrators and custom electro-optical systems for all aspects of infrared analysis. Femto-Second Laser Pulse Spectroscopy Systems, multi-spectral target simulators, low noise detector preamplifiers, Infrared Detector and FPA test stations. Spectral and Multi-Channel Discrete Radiometer systems for R&D, production and field testing of IR Targets and countermeasures. Contact: Andrew Duran, President/Chief Executive Officer, andrew@infraredsystems.com; Kimberly Griffin, Sales/Marketing, kimberly@infraredsystems.com.*

**Innovative Wireless Technologies**

1047 Vista Park Dr Ste A, Forest, VA, 24551
434/316-5230; fax 434/316-5232
RH-coos@lwwireless.com; www.lwwireless.com

**INO**

2740 rue Einstein, Quebec City, QC, Canada, G1P 4S4
418/657-7006; fax 418/657-7009
info@ino.ca; www.ino.ca

INO is a world class center of expertise in optics dedicated to serving industry. We provide services such as feasibility studies, design, development, prototyping, and small scale production. INO is one of a small number of companies worldwide with infrared uncooled detector technology. We have complete in-house capabilities for detector design, simulation, fabrication, testing, and packaging. We offer standard focal plane arrays, custom detector development, and detector foundry services. Contact: Pierre Talbot, Business Development Manager, pierre.talbot@ino.ca.

**Inrad, a PPGi Company**

181 Legrand Ave, Northvale, NJ, 07647-2498
201/767-1910; fax 201/767-9644
sales@inrad.com; www.inrad.com

Inrad excels in crystal growth technology, offering complete in-house capabilities from growth and fabrication through optical polishing, coating, testing and final inspection. Product line includes x-ray toroids, nonlinear and Electro-optic crystals, Pockels cells, drivers and harmonic-generation systems. Contact: Thomas Pelnar, Director, International Sales & Business Development, Tpelnar@ppgrinc.com.

**Insaco, Inc.**

1365 Canary Rd, Quakertown, PA, 18951-9006
215/536-3500; fax 215/536-7750
sales@insaco.com; www.insaco.com

Insaco is a precision machining company that provides finished pieces to customer specification from ultra hard materials including ceramics, sapphire and glass. (No plastics or metals as too soft for our diamond grinding technology). Insaco is ITAR compliant and our engineers are available to discuss concepts and material choices. New five-axis machining capability and high volume robotic production equipment allow for better cost efficiencies. Contact: Scott Mittl, Sales Engineer, smittl@insaco.com; Klaus Burchhardt, PE, Sales Engineer, kabl@insaco.com.

**Instro Technology Systems**

99 Pine Hill Rd, Nashua, NH, 03063
603/821-1819; fax 603/821-1878
kdube@instro-usa.com; www.instro.com
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Intelligent Optical Systems, Inc. #1509
2520 W 237th St, Torrance, CA, 90505
310/530-7130; fax 310/530-7417
ios_business@intontsys.com; www.intontsys.com


IOS’s cutting-edge products for military, industrial, law enforcement, medical, and research markets have received international acclaim, including selection to Time Magazine’s “Best Inventions of 2007.” Our physicists, engineers, chemists, and software experts, working in state-of-the-art labs, develop optical devices for chemical, physical, and biological detection; nondestructive evaluation; nonlethal countermeasures; image processing; covert tracking, and many other advanced applications. Contact: Robert Lieberman, President, rlieberman@intontsys.com.

Intevac Photonics, Inc. #111
3560 Basset St, Santa Clara, CA, 95054
408/986-9888; fax 408/654-9869
imaging@intevac.com; www.intevac.com

New Product: Night Port™ is a digital night vision viewer utilizing Intevac’s EBAPS™ ISIE11 sensor technology.

Intevac Photonics is a leader in the development of high-sensitivity imaging products, vision systems and miniature Raman instruments. Intevac Photonics has two divisions: Intevac Vision Systems (IVS) which develops imaging technology combining state of the art semiconductor photocathode technology with silicon-based digital video technology; DeltaNu, a pioneer in small footprint, Raman spectrometers. Markets served include military, law enforcement, industrial, physical and life science. Contact: Mike Mohawk, Director of Business Development, info@intevacphotonics.com; Bryan Ray; info@intevacphotonics.com.

IO Industries, Inc. #741
12/1510 Woodcock St, London, ON, Canada, N6H 5S1
519/663-9570; fax 516/663-9571
info@ioindustries.com; www.ioindustries.com


IO Industries Inc. (www.ioindustries.com) designs high-performance DVR’s (Digital Video Recorders) for use in aerospace, manufacturing, scientific research and the entertainment industry. Customers include the U.S. Government and most major defense contractors. DVR Express Core, our new ultra-compact low power DVR with solid state storage, is ideally suited for use in vehicles, aircraft and UAV’s. IO Industries designs the software and hardware used in our DVR’s for the best performance. Contact: Adam Little, Applications Engineer, alittle@ioindustries.com; Sales, sales@ioindustries.com.

IPG Photonics Corp. #1430
50 Old Webster Rd, Oxford, MA, 01540
508/373-1100; fax 508/373-1103
sales.us@ipgphotonics.com; www.ipgphotonics.com

IPG Photonics is the leader in high-power fiber lasers for the industrial, defense, medical and telecommunications markets. IPG has standard products at power levels up to 5 kW SM and 50 kW MM, at the 1 μm wavelength. High power lasers are also available in “eyesafer” wavelengths. IPG also delivers LiDAR transmitters at 1 μm and 1.5 μm wavelengths. Recently, compact, ruggedized versions of IPG’s high-power fiber lasers have been successfully integrated onto a variety of military platforms. Contact: Mike O’Connor, Director of Advanced Applications, moconnor@ipgphotonics.com.

IRCAM GmbH #1428
Nuemberger Str 71, Erlangen, Germany, 91052
49 9131 970 0980; fax 49 9131 970 09899
info@ircam.de; www.ircam.de

New Product: The IRCAM ARGOS PV is an IR measurement system for non destructive testing of solar cells.

IRCAM is a German manufacturer of advanced IR cameras and systems for IR imaging and thermography. IRCAM offers the dual-band and dual-color IR camera series IRCAM GEMINIS for synchronous, pixel-registered acquisition in two bands (MWIR & LWIR) or two small spectral ranges (MWIR & MWIR). Other camera series are the high-speed IRCAM VELOX, the scientific IRCAM EQUUS, the IRCAM TAUROUS and the uncooled IRCAM CALEO. Filter wheel, motor focus and Gigabit Ethernet are available. Contact: Dr. Monica Lopez Saenz, Managing Director, info@ircam.de; Dr. Oliver Schreer, Managing Director, info@ircam.de.

IRCameras, Inc. #1136
1600 Providence Hwy, Walpole, MA, 02081
508/668-5650; fax 508/668-5054
elliott@ircameras.com; www.ircameras.com

New Product: IR 360 Panoramic Thermal Imaging Camera system and 640 x 480 MWIR cameras with continuous zoom optic.

IRCameras is a leading supplier of cutting edge infrared imaging technology. We provide infrared systems for a broad range of applications including R&D, process control, search and rescue, security and surveillance, unmanned vehicle sensors, predictive maintenance and more. By offering a full spectrum of imaging systems ranging from Visible with illuminators to Shortwave, Mid Wave and Long Wave Infrared solutions, we are able to address the most demanding applications. Contact: Elliott Rittenberg, President, elliott@ircameras.com; Mike Larson, VP of Business Development, mike@ircameras.com.

IRnova AB #540
Electrum 236, Kista, Sweden, 16440
46 8 793 66 00; fax 46 8 750 54 30
info@ir-nova.se; www.ir-nova.se

IRnova is supplying high quality infrared detectors to leading infrared camera and system manufacturers. The main focus is on development and production of QWIP Focal Plane Arrays. IRnova is also offering DDCAs (Detector Dewar Cooler Assembly). Compact integral solutions for small size/weight applications, as well as long life split cooler DDCas. IRnova has a long track record with thousands of supplied detectors and well established manufacturing with high yield and capability. Contact: Lars Karlsson, VP Sales & Marketing, lars.karlsson@ir-nova.se; Bernhard Hirschauer, CEO, bernhard.hirschauer@ir-nova.se.

ISP Optics Corp. #811
1 Bridge St, Irvington, NY, 10533
914/591-3070; fax 914/591-3715
www.ispoptics.com

New Product: TOPAZ Compact 20/60 mm LWIR Dual FOV objective for UAV systems.

ISP Optics is a manufacturer of high precision infrared optical elements and infrared systems. ISP Optics recently expanded IR Optics product lines by adding IR Thermal Lens Imaging Kits and Infrared Objective. ISP Optics online IR Catalog, and IR Systems custom solutions are available. Contact: Mark Lifshotz, National Sales Manager, sales@ispoptics.com; Ran Carmeli, General Manager, ISP Optics Israel, rcarmeli@ispoptics.com.
ISP Optics Corp. - UAV Factory Division Display

24A Ganibu Dambis St, Rīga, LV, 1105
371 29119398
www.uavfactory.com

Penguin - Hi-performance, modular, composite airframe for unmanned system integrators, developers and researchers.

Isuzu Glass Inc.

23505 Crenshaw Blvd Ste 130, Torrance, CA, 90505
310/517-1866; fax 310/517-1869
sales@isuzuglass.com; www.isuzuglass.com

New Product: IIR-SF1 IR transmitting Sulfide Glass for transmission from 8 to 11 microns.

Manufacturer of molded glass optical components, lenses, lens arrays, solar secondary concentrators. Optical filter glasses, IR heat absorbing, laser safety, neutral density, color compensation, UV absorbing, UV transmitting, IR transmitting glass. Custom and standard product. Contact: Mike Preston, Sales Manager, mike@isuzuglass.com; Hiro Yokoi, Vice President, Hiro@isuzuglass.com

ITRES Research Ltd.

3553 31st St NW Ste 110, Calgary, AB, Canada, T2L 2K7
403/250-9944; fax 403/250-9916
info@itres.com; www.itres.com

ITRES is a leader in the development and delivery of advanced infrared (IR) technologies for defense and homeland security. Our experienced team of scientists, engineers, and technicians is dedicated to providing the highest quality products and services to our customers. We supply a wide range of products and services, including IR cameras, IR imaging systems, and IR analysis services. Our products are designed to meet the stringent requirements of defense and homeland security applications.

JAI, Inc.

625 River Oaks Pkwy, San Jose, CA, 95134
408/383-0300; fax 408/383-0301
camer sales.americas@jai.com; www.jai.com

JAI provides innovative camera technology for use in demanding defense, aerospace, and homeland security applications. Included are commercial off-the-shelf (COTS) products and custom modifications of standard cameras tailored to fit specific customer requirements. Products range from standard interfaced cameras, to high resolution digital models, to advanced Gen III intensified systems capable of clear imaging in “cloudy starlight” conditions. Contact: Ken Zinsli, Director, Homeland Security & Defense, kwz@jai.com

JANOS Technology, Inc.

55 Black Brook Dr, Keene, NH, 03431
603/757-0070; fax 603/757-0069
sales@janostech.com; www.janostech.com

JANOS is a leader in the design and manufacture of high performance infrared imaging systems and components that meet the stringent requirements of defense and security applications. With a highly skilled engineering team, state of the art in-house coating capability and advanced manufacturing technology such as MRF JANOS provides complete solutions from design through volume manufacturing. Contact: Milan Zeman, Senior Manager of Business Development, mzeman@janostech.com; Cheryl Aaron, Marketing Manager, caaron@janostech.com

ITT Visual Information Solutions

4900 Pearl East Circle, Boulder, CO, 80301-2476
303/786-9900; fax 303/786-9909
info@ittvis.com; www.ittvis.com

ITT Visual Information Solutions will showcase ENVI, IDL and IAS, software solutions used widely in defense and intelligence communities to extract information from imagery and data. Visit Booth 1341 for demonstrations on using ENVI to quickly and accurately detect change in imagery, identify targets, extract features, and develop customized applications using IDL. Learn more about compressing and delivering imagery with IAS, ITT’s advanced JPIP streaming, enterprise solution.

JENOPTIK Laser, Optik, Systeme GmbH

Goesswitzer Strasse 25, Jena, Germany, 07745
49 3641 65 3148; fax 49 3641 65 3677
optics@jenoptik.com; www.jenoptik-los.com

Utilizing light as a tool in the infrared region, JENOPTIK gained many years of practical experience by doing business to the benefit of its customers. We are your reliable and innovative OEM partner for optical components, lenses and optical subsystems for the IR range. Serving the civil and military markets, our IR optics are applied in sensor technology, thermography, gas analysis, spectroscopy as well as in defense and security, e.g. image recognition and target acquisition. Contact: Dr. Marcus Servazi, Sales Optics, marcus.servazi@jenoptik.com; Ray Malcom, V.P., Sales & Marketing, Ray.Malcom@jenoptik-inc.com

JENOPTIK Optical Systems, Inc.

16490 Innovation Dr, Jupiter, FL, 33478-6428
561/881-7400; fax 561/881-1947
sales@jenoptik-inc.com

Jenoptik VarioCAM® HiRes LWIR cameras feature wi-fi control, 60 Hz frame rates, IP54 environmental rating, aluminum housing and ORI® for 1.2 megapixel resolution. Made in hand held and laboratory versions with 640 x 480 pixels or 384 x 288 pixel formats. VarioCAM® HiRes cameras are sold exclusively in North America by Jenoptik-IR (www.jenoptik-ir.com), a division of JENOPTIK Optical Systems, Inc. Contact: Ray Watts, Sales Manager, Jenoptik-IR, ray.watts@jenoptik-ir.com; Ray Malcom, V.P., Sales & Marketing, JENOPTIK Optical Systems, Inc., ray@jenoptik-inc.com

Plan to Attend FREE Product Demonstrations

Refer to page 8 for schedule and location.
JENOPTIK Optical Systems, Inc. - AL (formerly MEMS Optical, Inc.) #229
205 Import Cir, Huntsville, AL, 35806
256/859-1886; fax 256/859-5890
info@memsoptical.com; www.memsoptical.com
JENOPTIK Optical Systems, Inc. is a leading supplier and manufacturer of high performance refractive and diffractive microoptics and MEMS devices. JENOPTIK continues to develop and improve microoptics applications through the use of grayscale technology and other proprietary processes. Contact: info@memsoptical.com.

JRM Technologies Inc. #3100
150 Riverside Pkwy Ste 209, Fredericksburg, VA, 22406
540/371-6590; fax 540/479-6771
www.jrmtech.com

JSR/JM Energy #242
1280 N Mathilda Ave, Sunnyvale, CA, 94089
408/543-8800
www.jsrusia.com
New Product: Li+ Capacitor uses provides energy density 4 times greater than conventional EDLC supercapacitors.
JM Energy, a subsidiary of JSR Corporation has developed ULTIMO, a Lithium Ion Capacitor (LIC) which uses hybrid technology to provide an energy density 4 times greater than that of conventional EDLC supercapacitors. It also offers the safety, power and long cycle life typically associated with capacitors. ULTIMO is available in a variety of capacities for applications in automotive, transportation, aerospace, UPS, and renewable energy. Contact: Jeff Myron, Sales Representative, jmyron@jsrmicro.com.

Kaufman & Robinson, Inc. #3906
1306 Blue Spruce Dr, Fort Collins, CO, 80524
970/485-0187; fax 970/484-9350
alonzo@ionsources.com; www.ionsources.com

Kent Optronics, Inc. #1228
40 Corporate Park Dr, Hopewell Junction, NY, 12533
845/897-0138; fax 845/897-0603
info@kentoptronics.com; www.kentoptronics.com
Kent Optronics is specialized in advanced electro-optical product/technology by leveraging on its world-class optics and liquid crystal expertise, emphasizing on spectrum flexibility, efficiency and speed. We offer a diverse range of products to the U.S defense and industry customers in photonics, IR scene generation for hardware-in-the-loop simulation, laser protection, remote sensing and glazing sectors. We also offer customized solutions and prototypes for the designated applications. Contact: Eva Sun, Marketing Manager, ysun@kentoptronics.com; Le Li, CEO, leli@kentoptronics.com.

Kigre, Inc. #935
100 Marshland Rd, Hilton Head Island, SC, 29926
843/681-5800; fax 843/681-4559
kigreinc@cs.com; www.kigre.com
Kigre manufactures laser transmitters and components. Kigre’s compact eye-safe high power diode pumped 1.5μm lasers are suitable for laser range-finding, range-gated imaging and LIBS. The MK-11 and 81 (1Hz), MK-88 (10Hz) and MK-830 (30Hz) are 1535nm Q-switched laser products based upon conduction cooled High Efficiency Side Pump, (HESP) Diode Pumped Solid State Lasers (DPSS) technology. Contact: Michael J. Myers, President, kigreinc@cs.com; Jeffrey A. Myers, VP/COO, jeffmyers@hargray.com.
KLASTECH - Karpushko Laser Technologies

GmbH

Konrad-Adenauer-Allee 11, Dortmund, Germany, 44263
49 231 47730 648; fax 49 231 47730 620
info@klastech.com; www.klastech.com

New Product: Verve; KLASTECH’s award winning revolutionary technology delivers the world's smallest 266nm laser.

KLASTECH specializes in the manufacture of an entirely new and completely revolutionary range of CW Diode Pumped Solid State (DPSS) lasers. Powered by our patented intra-cavity frequency doubling laser technology, we offer products from 1064nm through to 266nm. Our technology inherently delivers lasers that produce Pitch Perfect, ultra quiet, single frequency laser light with diffraction limited beam profiles from compact, air cooled, power efficient platforms. Contact: Christopher J. Steinkretzer, Sales and Marketing Coordinator, n.steinkretzer@klastech.de.

L.A. Gauge Optics

#114

7440 San Fernando Rd, Sun Valley, CA, 91352
818/767-7193; fax 818/767-4946
sales@lagauge.com; www.lagauge.com

L.A. Gauge has set the standard for ultra precision machining of Beryllium and other exotic materials. L.A. Gauge Company is the #1 producer of Aluminum Beryllium components worldwide and a leading producer of Beryllium components for the aerospace, defense, and optics industries. L.A. Gauge capabilities include machining, polishing, and nickel plating. L.A. Gauge standards require ULTRA PRECISION finishing using sophisticated equipment and processing techniques. Contact: Dale Hostetter, Contracts Manager, sales@lagauge.com; Jack Schnabel, Vice President of Sales, sales@lagauge.com.

L-3 Advanced Laser Systems Technology, Inc.

#903

2500 N Orange Blossom Trail, Orlando, FL, 32804
407/722-5512; fax 407/770-2984
marketing.alst@l-3com.com; www.l-3com.com

New Product: Compact Designator Module (CDM): A small package with exceptional beam divergence and brightness.

L-3 Communications – Advanced Laser Systems Technology (L-3 ALST) is an ISO 9001-2000 certified, cost effective manufacturer with more than two decades experience providing custom laser solutions to a variety of integrator applications, with a core strength of providing custom packaging for aggressive customer space requirements. ALST’s military hardened Eyesafe Laser Rangefinder, Laser Designator and Designator/Rangefinder solutions give your design a competitive edge. Contact: Jeremy Hickman, Vice President Business Development, jeremy.hickman@l-3com.com.

L-3 Cincinnati Electronics

#903

7500 Innovation Way, Mason, OH, 45040-9699
513/573-6744; fax 513/573-6290
IRProductSales.CE@L-3Com.com; www.L-3Com.com/ce

L-3 Cincinnati Electronics, located in Mason, Ohio supplies mission critical infrared imaging technologies for defense and homeland security operations. CE's advanced sensor technology provides the ability to detect targets through obscurants, in adverse weather, and under zero illumination. The inherent performance of our staring InSb MWIR sensors provide the strategic advantage to rapidly classify and engage emerging asymmetric threats - offering smaller pixels on a tighter pitch for unmatched high definition reconnaissance, persistent surveillance and target acquisition. Contact: Glenna Debo, Manager, Marketing Administration, Glenna.Debo@L-3Com.com; Phil Hansel, Manager, Marketing Administration, Phil.Hansel@L-3Com.com.

L-3 Cincinnati Electronics

#903

140 Industrial Way, Buellton, CA, 93427
805/686-8848; fax 805/686-8858
jim.giacobazzi@l-3com.com; www.l-3com.com/ltc

L-3 Cincinnati Electronics, located in Buellton, California supplies cost-effective, high-performance VOx microbolometer detectors. In-house capabilities support a wide range of customer-specific solutions - from ROIC design through delivery and support of VOx infrared detectors. L-3 has developed the latest VOx microbolometer production facility in the world, consisting of an impressive clean-room wafer fabrication, packaging laboratory and wafer/detector test facility. Constant customer focus ensures that IR camera manufacturers and system integrators will receive high quality products and on-time delivery.

KOPIN

#317

200 John Hancock Rd, Taunton, MA, 02780
508/824-6696
www.kopin.com

Kowa Optemed, Inc.

#3201

20001 S Vermont Ave, Torrance, CA, 90502
310/327-1913; fax 310/327-4177
kowa-usa-info@kowa.com; www.kowa-usa.com

New Product: LMZ1000 (20-1000mm) 50x zoom lens for long distance surveillance and security applications.

Kowa is a high-end manufacturer of quality optics and CCTV lenses with over 50 years of lens manufacturing experience. Visit our booth for information on our large selection of zoom lenses for border security and long range surveillance applications. Contact: Andrew Kam, Sales Consultant, andrew@kowa.com.

Kreischer Optics, Ltd.

#1329

1729 Oak Dr, McHenry, IL, 60050-0306
815/344-4220; fax 815/344-4221
optics@kreischer.com; www.kreischer.com

New Product: Complete line of transmission spheres for 4” aperture Fizeau interferometers.

Employs master optics using state-of-the-art CNC technology to manufacture custom optical components and subassemblies including aspheric, cylindrical and spherical lenses, mirrors, prisms, windows and master test glasses. Lens design and coating performed in-house. Kreischer Optics also manufactures its own line of transmission spheres. Rapid prototyping available including custom aspheres. Contact: Cody B. Kreischer, President, cody@kreischer.com.

Kugler of America LTD

#3117

48 South Rd Unit I, Somers, CT, 06071
860/749-6400; fax 860/749-6600
info@kuglerofamerica.com; www.kuglerofamerica.com

New Product: Fly-cutter F1000-4 axis Wafer XYZC posi. accuracy up to 50 nm, Ra <1nm For Wafer thinning.

We are a leading manufacturer of ultra-precision Machining Systems for Optical Surfaces, Optical 3D Structured Surfaces, Wafer-thinning, and Micromachining applications, as well as Laser Micro machining. We do have one of the World’s foremost known Optics machining facility. Contact: Meinrad Schirmeister, info@kuglerofamerica.com.

Kugler of America LTD

#3117

48 South Rd Unit I, Somers, CT, 06071
860/749-6400; fax 860/749-6600
info@kuglerofamerica.com; www.kuglerofamerica.com

New Product: Fly-cutter F1000-4 axis Wafer XYZC posi. accuracy up to 50 nm, Ra <1nm For Wafer thinning.

We are a leading manufacturer of ultra-precision Machining Systems for Optical Surfaces, Optical 3D Structured Surfaces, Wafer-thinning, and Micromachining applications, as well as Laser Micro machining. We do have one of the World’s foremost known Optics machining facility. Contact: Meinrad Schirmeister, info@kuglerofamerica.com.
Exhibitor Directory

L-3 Cincinnati Electronics  #903
150 N San Gabriel Blvd, Pasadena, CA, 91107-3426
626/395-7460; fax 626/395-7490
IRProductsSales.CE@L-3Com.com; www.L-3Com.com/ce
L-3 Cincinnati Electronics, located in Pasadena, California supplies linear drive amplifiers and cryogenic coolers that empower designers with on-demand refrigeration for controlling thermodynamics events. This ultimate control delivers peak efficiency, extended life, lower power and reduced audible noise and allows the optimized design and utilization of the many newer superconductive materials used in long range, large format IR sensors. Contact: Glenna Debo, Manager, Marketing Administration, Glenna.Debo@L-3Com.com; Phil Hansen, Manager, Marketing Administration, Phil.Hansel@L-3Com.com.

L-3 Communications  #903
600 Third Ave, New York, NY, 10016
513/573-6744; fax 513/573-6290
www.l-3com.com
L-3 Communications is a prime contractor in Command, Control and Communications, Intelligence, Surveillance and Reconnaissance (C3ISR), Government Services, Aircraft Modernization and Maintenance (AM&M) and has the broadest base of Specialized Products in the industry. L-3 is also a major provider of homeland defense products and services for a variety of emerging markets. Contact: Glenna Debo, Manager, Marketing Administration, Glenna.Debo@L-3Com.com; Phil Hansen, Manager, Marketing Administration, Phil.Hansel@L-3Com.com.

L-3 CyTerra  #903
7558 Southland Blvd, Orlando, FL, 32809
407/926-1900; fax 407/859-5131
info.cyterra@l-3com.com; www.l-3com.com/cyterra
L-3 CyTerra specializes in threat detection for military, humanitarian, and homeland security applications. Detecting concealed threats in a range of landscapes, our technologies provide users with enhanced situational awareness and greater confidence in a variety of security scenarios. L-3 CyTerra products are manufactured under high quality standards and capitalize on decades of experience. U.S. government agencies such as the Army and Marine Corps are just a few clients who look to L-3 CyTerra to help solve their real-world challenges. Contact: Sarah Farmer, Business Development Manager, sarah.farmer@l-3com.com.

L-3 Electro-Optical Systems  #903
3414 Herrmann Dr, Garland, TX, 75161
972/840-5629; fax 972/271-2195
EOSSales@L-3Com.com; www.L-3NightVision.com
For 45 years, L-3 Electro-Optical Systems (EOS) has been a leading supplier of Electro Optical, Thermal and Applied Optics solutions utilizing latest night vision and electro-optical technologies. L-3 EOS develops cutting edge night vision products for customers that demand the finest, most reliable night vision available. Contact: David Rediger, Director, Channel Sales, David.Rediger@L-3Com.com; Stefan Pryor, Domestic Sales Manager, Stefan.Pryor@L-3Com.com.

L-3 Nova Engineering  #903
5 Circle Freeway Dr, Cincinnati, OH, 45246
800/341-6682
info@nova-eng.com; www.nova-eng.com
L-3 Nova’s wireless data communication technologies include remote imagery systems, mobile ad hoc wireless routers, coin-sized UHF transceivers, miniature SATCOM, and fusion-enabled smart sensors. RF micro-miniature assembly techniques produce size/power/weight optimized devices for specialized applications. Engineering Design Services with unparalleled expertise in communications systems and advanced waveform design, including software-defined-radios, augments Nova’s COTS products. Contact: Nicole Beckwith, Business Development Assistant, Nicole.Beckwith@L-3com.com.

L-3 Tinsley  #903
4040 Lakeside Dr, Richmond, CA, 94806
510/222-8110; fax 510/223-4534
sales@asphere.com; www.asphere.com
Manufacturer of custom precision optical components, assemblies and sub-systems. Fabricates complex aspheric surfaces for reflective and refractive systems from 50mm to 1.5 meters in size and a wide variety of materials, including glass, Be, Al and SiC. Founded in 1926 and also known in the industry as the “Asphere Company”, Tinsley has many years of experience fabricating precision optics in such areas as Space and Astronomy, Laser Fusion, Surveillance and Tactical applications. Contact: Clay Sylvester, Director of Sales & Marketing, clay.sylvester@L-3com.com; JB Barentine, Director, Business Development & Strategic Growth, john.m.barentine@L-3com.com.

Labsphere, Inc.  #813
PO Box 70, North Sutton, NH, 03260
603/927-4266; fax 603/927-4694
labsphere@labsphere.com; www.labsphere.com
Labsphere provides innovative light measurement technology producing best-in-class test and measurement systems for light measurement and sensor calibration, diffuse reflectance materials, and reflectance spectroscopy accessories. Products include uniform light sources to calibrate imaging devices and camera systems in the visible and IR; light measurement systems for lasers, LEDs, and traditional light sources; and reflectance standards for calibrating spectroscopic measurement systems. Contact: Brian Lai, Eastern Regional Sales Manager, blai@labsphere.com; Victoria Rivera, Western Regional Sales Manager, vriversa@labsphere.com.

LaCroix Optical Co.  #3401
PO Box 2556, Batesville, AR, 72503
870/698-1881; fax 870/698-1880
www.lacroixoptical.com
LaCroix Optical Co. is a manufacturer of custom precision optics including achromats, lenses, windows, prisms, wedges and mirrors. LaCroix Optical Co. is ISO 9001 and ITAR registered and complaint company that can supply your optical components in any volume. A combination of modern and conventional production equipment plus an in-house coating facility allows LaCroix Optical Co. to be responsive to your needs. Please visit our website at www.lacroixoptical.com. Contact: Tom Cox, Manufacturing Engineer, tom@lacroixoptical.com; Kirk Warden, Executive Vice President, kirk@lacroixoptical.com.

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1695 W MacArthur Blvd, Costa Mesa, CA, 92626
714/327-0600; fax 714/327-0610
lambdaresearch.com; www.lambdaresearch.com

New Product: Custom BaF2 spherical and cylindrical lenses up to 6.0" dia. with AR coating in IR region.
Lambda is a leading optics manufacturer for the defense and security industries. Lambda offers prisms, spherical and cylindrical lenses, high power optics for 1064nm and 1550-1580nm, and thermal imaging optics. Lambda performs environmental (humidity, salt-spray, temperature) and optical tests in house. Contact: Jae Oh, Marketing Manager, joh@lambda.cc; James Choi, Sales Manager, jchoi@lambdaresearch.com.

Laser Components IG, Inc. #430
9 River Rd, Hudson, NH, 03051
603/821-7040; fax 603/821-7041
info@laser-components.com; www.lasercomponents.com

New Product: Bright New Multi-Junction 1550nm Pulsed Laser Diode Technology applied to a New Eye-Safe Wavelength.
Provides high power laser optics from 193nm to 10.6μm. IR lead salt diode lasers (3-25μm) and SPECILAS diode lasers in the range of 750-2050nm, including VCSEL's and DFB's. Quantum Cascade Lasers and Flexpoint miniature laser modules available. Glass polarization filters, laser safety eyewear, fiber optic assemblies and color sensors. Spectroscopic instrumentation including NIR SPECTROMETERS and Echelle spectrum analyzers. Avalanche Photo Diodes (APD's) and Pulsed Laser Diodes (PLD's) in stock. Contact: Matt Robinson, Sales Engineer, robinson@laser-components.com; Robert Gulino, Sales Engineer, gulino@laser-components.com.

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Laser Focus World #300
PennWell Publishing, 98 Spirt Brook Rd, Nashua, NH, 03062-5737
603/891-0123; fax 603/891-0574
www.laserfocusworld.com

Laser Operations LLC #1339
15632 Roxford St, Sylmar, CA, 91342
818/986-0000
info@laseroperations.net; www.crpclasers.com

New Product: BrightLock Ultra-G series provides 6W CW at 532nm in a compact and passively cooled package.
Laser Operations LLC, manufacturer of the industry leading QPC Lasers product line, is a vertically integrated laser diode manufacturer shipping high brightness lasers globally into several markets including medical, defense, industrial and consumer displays, from its high volume 40,000 sq. ft. laser manufacturing facility located in Sylmar, CA. Contact: Laurent Vaissie, Vice President of Marketing and Sales, lvaissie@laseroperations.net; Steve Benda, Director of Business Development, sbenda@laseroperations.net.

Laser Optics a PPGI company #316
181 LeGrand Ave, Northvale, NJ, 07647
201/767-1910; fax 201/767-9644
sales@laseropticsinc.com; www.laseropticsinc.com

Manufacturer of optics, coatings and sub-assemblies for military, industrial and medical applications. Components from glass, fused silica, zinc selenide, silicon, and germanium include plano, spherical and prismatic optics. Custom fabrication of mirrors, lenses, prisms, waveplates, and cavity optics. Specialists in coatings for high power lasers. Contact: Jeffery Brunner, Director-Sales & Business Development, jbrunner@ppgrpinc.com.

Laser Research Optics #910
120 Corliss St, Providence, RI, 02904
401/331-3838; fax 401/331-4004
sales@laserresearch.net; www.laserresearch.net

Laser Research Optics supplies CO2 laser optics for 25 to 200 watt lasers, factory direct and optimized for 10.6 micron. Featured are ZnSe positive focusing lenses in plano-convex, plano-concave, and meniscus configurations in 1/2” to 2” dia., focal length 1” to 20”. CO2 laser turning mirrors offered are made from molybdenum for harsh environments; other mirrors include copper, dual band, silicon and phase retardation. These OEM quality replacement optics ship from stock within 12 hours. Contact: Scott Rouillard, Sales, scott@melleroptics.com; Steve Lydon., steve@melleroptics.com.

Laser Technology, Inc. #3119
7070 S Tucson Way, Centennial, CO, 80112
303/649-1000; fax 303/649-9710
info@lasertech.com; www.lasertech.com

Lattice Materials LLC #413
516 E Tamarack St, Bozeman, MT, 59715
406/586-2122; fax 406/587-9055
marketing@latticematerials.com; www.latticematerials.com

For over 20 years, Lattice Materials has specialized in manufacturing custom silicon and germanium components for IR optics, laser optics, and thin film coating sources. Our ingot growth team has over four decades of experience meeting the demanding requirements of infrared optical imaging systems used in a wide variety of applications and environments. Stop by our booth or call our experienced Sales staff today to find out how Lattice Materials can help you. Contact: Bob Spetz, Sales Engineer, Marketing@latticematerials.com; Patti Lee, Technical Sales, Sales@latticematerials.com.

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386 4 20 20 243
www.le-tehtnka.com

New Product: Actively controlled Joule Thomson cooler.
Development of Stirling cooler.

You can find in our program high technology cooling systems based on Joule-Thomson effect (self-regulated, fixed, fast cooldown, nonstandard) and on Stirling cycle (rotary or linear drive). Contact: Franc Megusar, Director of cryogenic department, franc.megusar@le-tehtnka.si.
LightPath Technologies, Inc. is a recognized leader in aspheric optical solutions for medical, industrial, defense, and communication applications. We offer a full line of aspheric optics and assemblies, including molded aspheric optics, GRADIUM optics, fiber collimators, optical isolators, and optical assemblies. LightPath specializes in aspheric optics and assemblies for medical, industrial, defense, and communication applications. LightPath is TUV ISO 9001 and SGS 9001:2000 certified. Contact: Ms. June Black, Customer Service, jblack@lightpath.com; Petros Ruglass, Customer Service, pruglass@lightpath.com.

Lightworks Optics, Inc. is a world leader in design and production of rugged, lightweight, compact, high-performance fiber lasers for laser radar & sensing. We also provide custom laser solutions. Products include: Aculight® Perseus™ pulsed fiber lasers with 1.5-μm output, Aculight Telesto™ pulsed fiber lasers with 1-μm output, Aculight Argos™ optical parametric oscillators for spectroscopy & sensing. Contact: Dr. Robert Afzal, Lockheed Martin Senior Fellow, robert.afzal@lmco.com.

Leybold Optics USA, Inc. is a world leader in design and production of advanced integrated optical systems, focusing on complex systems needs of top space, defense and commercial companies. By working collaboratively with our customers, Leybold Optics integrates the design and manufacturing of advanced optical systems and provides comprehensive customer support through all project phases. Contact: Lisa Belodoff, Director of Marketing, lbelodoff@lwoptics.com; Phil Eads, Business Development, peads@lwoptics.com.

LightPath Technologies, Inc. is a world leader in design and production of rugged, lightweight, compact, high-performance fiber lasers for laser radar & sensing. We also provide custom laser solutions. Products include: Aculight® Perseus™ pulsed fiber lasers with 1.5-μm output, Aculight Telesto™ pulsed fiber lasers with 1-μm output, Aculight Argos™ optical parametric oscillators for spectroscopy & sensing. Contact: Dr. Robert Afzal, Lockheed Martin Senior Fellow, robert.afzal@lmco.com.

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Lockheed Martin Aculight has unveiled the new generation of Aculight® Telagis™ pulsed fiber lasers, which are designed for aerospace and defense applications. Contact: Robert Afzal, Lockheed Martin Senior Fellow, robert.afzal@lmco.com.

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LightPath Technologies, Inc. is a recognized leader in aspheric optical solutions for medical, industrial, defense, and communication applications. We offer a full line of aspheric optics and assemblies, including molded aspheric optics, GRADIUM optics, fiber collimators, optical isolators, and optical assemblies. LightPath specializes in aspheric optics and assemblies for medical, industrial, defense, and communication applications. LightPath is TUV ISO 9001 and SGS 9001:2000 certified. Contact: Ms. June Black, Customer Service, jblack@lightpath.com; Petros Ruglass, Customer Service, pruglass@lightpath.com.

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New Product: Lightworks Optics High Volume Production facility is now open in Vista, CA!

Lightworks Optics, a leading solutions partner for advanced integrated optical systems, focuses on complex optical needs of top space, defense and commercial companies. By working collaboratively with our customers, Lightworks Optics integrates the design and manufacturing of advanced optical systems and provides comprehensive customer support through all project phases. Contact: Lisa Belodoff, Director of Marketing, lbelodoff@lwoptics.com; Phil Eads, Business Development, peads@lwoptics.com.

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McQ Inc.
1551 Forbes St, Fredericksburg, VA, 22405
540/373-2374; fax 540/371-1358
info@mcqinc.com; www.Mcqinc.com

New Product: OmniWatch high def video sensor combines wireless communications and advanced image processing.

McQ is recognized as the high technology leader in remote surveillance, security and environmental monitoring products. For 25 years, McQ has earned a reputation for delivering rugged, state of the art surveillance and remote sensor systems that are networked and operate over a long period of time. McQ has a varied client base with a wide range of commercial, industrial and government clients. McQ Headquarters and Production facility is located in Fredericksburg, Va. Contact: Karen Lindsey, Marketing Director, klindsey@mcqinc.com; Amy Slocum, Product Manager, aslocum@mcqinc.com.

Meadowlark Optics, Inc.
5964 Iris Pkwy, PO Box 1000, Frederick, CO, 80530
303/833-4333; fax 303/833-4335
sales@meadowlark.com; www.meadowlark.com

New Product: Selectable Bandwidth Tunable Optical Filter - for 420nm to 730nm with a user selectable bandwidth.

A recognized authority in polarization and polarization manipulation devices such as waveplates, liquid crystal variable retarders, polarizers, tunable optical filters, polarimeters and spatial light modulators. Also offering custom design, fabrication, and assembly. Contact: Chris Toomey, Sales Engineer - Eastern, ctoomey@meadowlark.com; William Barbarow, Sales Engineer - Western, wbarbarow@meadowlark.com.

Meller Optics, Inc.
120 Corliss St, Providence, RI, 02904-2602
401/331-3717; fax 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 company. Contact: Craig D. Schweriner, Sales Manager, craig@melleroptics.com; Steve Lydon, Sales, steve@melleroptics.com.

Menlo Systems GmbH
Am Klopferspitz 19, Martinsried, Germany, 82152
49 89 189 166 0; fax 49 89 189 166 111
sales@menlosystems.com; www.menlosystems.com

New Product: All-fiber-coupled THz spectrometer at 1.5 micron.

Menlo Systems is a leading developer and global supplier of instrumentation for high-precision metrology. Known for its Nobel Prize winning optical frequency comb technology, the Munich-based company and its US subsidiary also supply femtosecond phase stabilization units, femtosecond lasers, THz systems and a broad spectrum of high-sensitivity ultrafast photodetectors. Contact: Sales Team, sales@menlosystems.com; Brent Wheelock, North American Field Engineer, b.wheelock@menlosystems.com.

MICOS USA, LLC
15375 Barranca Pkwy Ste G-101, Irvine, CA, 92618
949/480-0538; fax 949/480-0538
admin@micosusa.com; www.micosusa.com

Founded in 1990, MICOS supplies micro and nano-positioning equipment with a focus on the research market. We offer a full range of precision positioners and control electronics as well as complete system integration services. Additionally, MICOS is known as the premier supplier for vacuum to 10-10 mbar, clean room and extreme temperature applications. Contact: Manfred Schneider, info@micosusa.com.

Micro Laser Systems, Inc.
12841 Western Ave Ste H, Garden Grove, CA, 92841
714/898-6001; fax 714/897-0979
sales@microlaser.com; www.microlaser.com

New Product: FC40 Large Fiber Collimator.

We’re a manufacturer of high performance Free Space and Fiber Coupled Diode Laser Systems ranging from 375nm to 1600nm and up to 490mW. Many lasers operate with narrow linewidth and very high stability. New larger fiber collimator FC40 will be introduced. Accessories include beam expanders, focusing optics, isolators, radial polarizers and Fiber Collimators. Semi-custom and custom laser/optical systems and fiber optic systems are routinely manufactured for OEM users. Contact: Norma Adachi, Marketing Dir., norma@microlaser.com; Yoshi Adachi, President, yoshi@microlaser.com.

Micro Photon Devices
Via Stradivari 4, Bolzano, Italy, 39100
39 0471 051212; fax 39 0471 501524
www.microphotondevices.com

MPDs single-photon detection modules have ultra-fast timing resolution, high photon detection efficiency, low power consumption, small size and are extremely robust and reliable. The company benefits of the efforts and the expertise of a research group at Politecnico di Milano, lead by Professor Sergio Cova. Contact: Nick Bertone, nick.bertone@optoelements.com.

Microfluidic Systems, Inc.
47790 Westinghouse Dr, Fremont, CA, 94539
510/354-0400; fax 510/354-0404
www.microfluidicsystems.com

New Product: Fully automated, networked biological identification systems and assays.

MFSI has developed a series of systems and assays for biological identification ranging from large, outdoor-operating to small laboratory and diagnostic applications. Contact: Todd Austin, Business Development, taustin@microfluidicsystems.com; M. Allen Northrup, CEO, northrup@microfluidicsystems.com.

Micromechatronics, Inc.
200 Innovation Blvd Ste 155, State College, PA, 16803
814/861-5688; fax 814/861-1418
contact@mmech.com; www.mmech.com

New Product: High Voltage non-magnetic piezoelectric DC-DC converters featuring small size and low profile.

Micromechatronics specializes in piezoelectric-based products. Our products include piezoelectric actuators, piezoelectric motors, piezoelectric transformers as well as complementary technology. Our company also commercializes ATILA Finite Element software for the simulation and design with smart material structures and applications. Contact: Alfredo Vazquez Carazo, CEO & CTO, contact@mmech.com.

Exhibitor Directory
Microvision, Inc. #1510
6222 185th Ave NE, Redmond, WA, 98052
425/936-6847; fax 425/936-4403
sales@microvision.com; www.microvision.com

Microvision (NASDAQ: MVIS) is a global leader in the design and development of an ultra-miniature display and imaging engine technology, PicoP™. PicoP is an ultra-miniature laser projector capable of producing color rich, high-resolution, large images but small enough and low power enough to be embedded directly into mobile and accessory devices (such as a mobile phone). PicoP creates a big viewing experience from an extremely small package. Contact: Gary Peterson, gary_peterson@microvision.com; Jack Clevenger, jack_clevenger@microvision.com.

MIDAC Corporation #3518
130 McCormick Ave Ste111, Costa Mesa, CA, 92626
714/546-4322; fax 714/546-4311
info@midac.com; www.midac.com

New Product: Light weight hermetically sealed Ethernet enabled .5 cm emission spectrometer w/closed cycle cooling.

MIDAC Corporation has produced rugged mid range .5 cm⁻¹ FTIR spectro-radiometers for passive remote sensing for 30 years. Developed for the XM21 program, the system has been successfully deployed on many mobile platforms including manned and unmanned aerial vehicles. A variety of foreoptics and detector cooling packages are available and the system is network ready. A sealed 17 pound version is being introduced this year. Contact: Carole M. Auth, Vice President, cauth@midac.com; Martin Panek, Sales Manager, mpanek@midac.com.

Mindrum Precision, Inc. #1414
10000 Fourth St, Rancho Cucamonga, CA, 91730
909/989-1728; fax 909/987-3709
sales@mindrum.com; www.mindrum.com

Custom component manufacturer of glass, quartz, ceramic, exotic materials, metals and plastics. 5 axis capability in drilling, shaping and polishing. Prototype work is welcome. Some engineering assistance is available. Currently supplying to the commercial and military markets. Our 54th year in business. ISO certified 9001-2008. Contact: Todd VanSon, Sales Manager, sales@mindrum.com; Linda Kondris, Sales Associate, sales@mindrum.com.

Moog-QuickSet #125
3650 Woodhead Dr, Northbrook, IL, 60010
847/498-0700; fax 847/498-1258
sales@quickset.com; www.quickset.com

Moog QuickSet designs, manufactures and integrates complete positioning systems and components with electromechanical motion control technology to accommodate advanced security and surveillance, sensor and communications requirements. We provide pan & tilts, tripods and surveillance nodes for military and industrial markets that require rugged yet precise positioning systems for harsh environments. With facilities in the US and 27 countries, Moog QuickSet is a focused global company. Contact: Jim Fennig, Director of Sales & Marketing, jimf@quickset.com; Sherry Edecker, Manager of Inside Sales Support, sherry@quickset.com.
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National Aperture, Inc.
16 Northwestern Dr, Salem, NH, 03079
603/893-7393; fax 603/893-7857
sales@nationalaperture.com; www.nationalaperture.com

National Defense Industrial Association
2111 Wilson Blvd Ste 400, Arlington, VA, 22201
703/247-2571; fax 703/527-6945
www.ndia.org
NDIA is America’s leading non-profit Defense Association providing a legal and ethical forum for networking and knowledge exchange between the DoD, Department of Homeland Security, all branches of the US Military, and industry. NDIA has local chapters, 32 divisions for corporate involvement, and numerous conferences and trade shows. Individual and Corporate Memberships are available. US government and military are welcome to join free of charge. NDIA has roots dating back to 1919. Contact: Erica Utegaard, Corporate Member Sales Manager, eutegaard@ndia.org; Michael Kibler, Corporate Member Sales Director, mkibler@ndia.org.

National Reconnaissance Office
14675 Lee Rd, Chantilly, VA, 20151
703/808-2769
dii@nro.mil; http://dii.westfields.net
New Product: R&D funding programs that invests in advanced technology to improve remote sensing.
The National Reconnaissance Office is a U.S. Federal Government Intelligence organization. Contact: Dr. Bill Harter, Program Lead, dii@nro.mil; Mr. Gil Herlich, Sales Manager, gherlich@nro.mil.

NAVAIR IBST
Bldg 2109 Ste N 220, 48150 Shaw Rd Unit 5, Patuxent River, MD, 20670-1970
301/342-6008
ibst@navy.mil; www.navair.navy.mil
The Integrated Battlespace Simulation and Test (IBST) Department is the Naval Air Systems Command’s (NAVAIR) center of excellence and point-of-entry for modeling and simulation of the Battlespace environment. The Department is NAVAIR’s lead for the development and creation of synthetic and virtual battlespace environments in support of research, development, testing, training, systems evaluation and experimentation. The Department operates and manages Navy Installed System Test Facilities to support test and evaluation of aircraft avionics and weapon systems.

Navitar, Inc.
200 Commerce Dr, Rochester, NY, 14623
585/359-4000; fax 585/359-4999
info@navitar.com; www.navitar.com
Navitar, a global leader in imaging optics technology, manufactures machine vision lenses and electronic imaging optics. Its Special Optics division specializes in rapidly designing, prototyping, and manufacturing the most innovative and highest performing custom optical systems. Our products support a number of markets including semiconductor, electronics, flat panel display inspection, metrology, biomedical imaging, food and beverage inspection, pharmaceutical, factory automation and military. Contact: Craig Fitzgerald, c_fitzgerald@navitar.com.

New England Optical Systems
237 Cedar Hill St, Marlboro, MA, 01752
508/460-0019; fax 508/460-0098
sales@neopticalsystems.com; www.neopticalsystems.com
New England Optical Systems designs, builds, and tests custom infrared imagers and custom test equipment. Our engineers have over 60 years of combined experience designing systems for use in the NIR, SWIR, MWIR, and LWIR including: Single FOV/Multi-FOV/Continuous Zoom Systems, UAV/Gimbal Imagers, Interferometers/MFT Test Stations, and Custom Alignment Stations. NEOS provides unparalleled customer service coupled with the highest quality infrared products on the market, on-time and on-budget. Contact: Todd Stolberg, COO, tsstolberg@neopticalsystems.com; Greg Fitzgerald, CTO, gfitzgerald@neopticalsystems.com.

New Scale Technologies, Inc.
121 Victor Heights Pkwy, Victor, NY, 14564
585/924-4450; fax 585/924-4468
sales@newscaletech.com; www.newscaletech.com
NST creates disruptively small motion systems based on our patented piezoelectric SQUIGGLE® motor and magnetic TRACKER™ position sensor. Our products are smaller, more precise, robust and power-efficient than other micro motors and miniature optical encoders, and less expensive. We enable smaller products i.e. digital still/video cameras, phone cameras, electronic locks, micro-fluidics, medical devices, optics/ imaging systems, automotive, lasers, aerospace/defense systems, and micro-UAV/UGV applications. Contact: Ralph Weber, Product Manager, RWeber@newscaletech.com.

Newport Corp.
1791 Deere Ave, Irvine, CA, 92606
949/863-3144; fax 949/253-1680
sales@newport.com; www.newport.com
Newport has been enabling high-precision aerospace and defense technology development and production for over 30 years. We’re a global leader in precision motion systems, vibration control, optics, lasers, and photonics instrumentation, providing the foundation of many development, test, assembly and calibration systems that ensure the accuracy and reliability of our defense systems worldwide. Contact: Magnus Bengtsson, magnus.bengtsson@newport.com.

Nicomatic
165 Veterans Way Unit 200, Warminster, PA, 18974
215/444-9580; fax 215/444-9581
sales@nicomatic.net; www.nicomatic.com
New Product: DMM Ruggedized M83513 qualified connectors, 4D flex connectors, Microflex.
Nicomatic is a manufacturer of interconnect products; CMM 2mm pitch micro-connectors, CrimpFlex crimp connectors; FFC Jumper and Card Cables; Switch’Air tactile metal domes and arrays of domes. Contact: Phil Heft, Sales Manager, pheft@nicomatic.net; Helen Hoover, Sales, hhooover@nicomatic.net.
Northrop Grumman Land Forces Division, Xetron Campus

460 W Crescentville Rd, Cincinnati, OH, 45011
513/881-3299; fax 513/881-3352
marketing.xetron@ngc.com; www.northropgrumman.com

Novotech, Inc.

916 Main St, Acton, MA, 01720
978/929-9458; fax 978/929-9459
contact@novotech.net; www.novotechinc.com

New Product: Nanoform 250 Ultra and Optimum 2400 DT Machines.
Novotech is a global manufacturer of infrared optical materials. Germanium is our core product, stocked in ingots to zone refined bars to sieved evaporation grade materials. Optical products manufactured include cnc-generated Blanks, diamond turned Aspheres and Spheres, Windows, Dewars, Finished Optics, Substrates and Flats. IR materials include optical grade Germanium and Silicon. Complete vertical integration from recycling-reclamation to ingot crystal growth and precision fabrication. Contact: Peter Schwarzer, Account Manager, contact@novotech.net; Michael Hulen, President, mhulen@novotech.net.

NorPix, Inc.

1751 Richardson St Ste 6117, Montreal, QC, Canada, H3K 1G6
514/846-0009; fax 514/846-0117
sales@norpix.com; www.norpix.com

NorPix is a developer of digital video recording software and solutions. Our flagship product StreamPix4 supports a wide variety of GigE, Firewire A and B, CameraLink, and USB2 cameras. NorPix also provides turnkey solutions including software, cameras, computers, synchronization and timing such as IrigB or GPS positioning. Solutions available using a single up to 8 cameras per computer and frame rates up to 8000 fps or 625 mbytes/second at 500 fps x 1280 x 1024. Contact: Luc Nocente, President, sales@norpix.com.

Northrop Grumman Cutting Edge Optronics

20 Point W Blvd, St Charles, MO, 63301
636/916-4900; fax 636/916-4994
st-info-ceelaser@ngc.com; http://www.st.northropgrumman.com/ceelaser

Northrop Grumman Cutting Edge Optronics is a leading supplier of advanced laser diode and DPSS laser technology. CEO specializes in developing and manufacturing high performance laser diode arrays, laser gain modules, control electronics and complete laser systems for military, aerospace and commercial applications. Applications include Laser Pumping, LIDAR, Ranging/Designation and Directed Energy. Discover why CEO diode arrays and DPSS lasers are used in many of the worlds most advanced systems. Contact: Wade Collins, Sales Manager Military & Aerospace Lasers, wade.f.collins@ngc.com.

New Product: The DSNVG is the first optically fused monocular combining both I2 and infrared into one small unit.
Night Vision Depot is a U.S. manufacturer of high quality night vision systems and accessories. We provide innovative and cutting edge products and services to the military, law enforcement and consumer markets. Our excellent reputation has made us a dynamic night vision leader. Contact: Michael Graham, Sales Manager, mike.graham@nvdepot.com; Tim Stamey, Catherine Zile.

NKT Photonics A/S

Blokken 84, Birkerød, Denmark, 3460
45 4348 3900; fax 45 4348 3901
sales@nktPhotonics.com; www.nktPhotonics.com

New Product: Our new line of piezo-based tip/tilt stages are designed for static and dynamic positioning of optics.
NKT Photonics is a developer of digital video recording software and solutions. Our flagship product StreamPix4 supports a wide variety of GigE, Firewire A and B, CameraLink, and USB2 cameras. NorPix also provides turnkey solutions including software, cameras, computers, synchronization and timing such as IrigB or GPS positioning. Solutions available using a single up to 8 cameras per computer and frame rates up to 8000 fps or 625 mbytes/second at 500 fps x 1280 x 1024. Contact: Luc Nocente, President, sales@norpix.com.

NP Photonics

9030 S Rita Rd Ste 120, Tucson, AZ, 85747
520/799-7400; fax 520/799-7403
info@npphotonics.com; www.npphotonics.com

New Product: Single Frequency and High Power Fiber Lasers operating within the range 1900-2100nm.
NP Photonics is a leading manufacturer of fiber lasers for the sensing, medical and research markets. The NP Photonics proprietary fiber technology is used across a broad family of products including narrow linewidth, low phase-noise fiber lasers specifically designed for operation in an industrial environment.
Nu-Cast, Inc. #209
29 Grenier Field Rd, Londonderry, NH, 03053
603/432-1600; fax 603/432-0724
www.nucast.com

New Product: Coming Soon! Complex structures from a light weight, high stiffness hybrid alloy now in development.

Nu-Cast is an American Small Business since 1985, manufacturing precision aluminum investment castings. We are AS 9100 Certified, and produce castings supporting Military, Commercial and NASA programs. Our products include infrared/optical and laser housings, electronic/avionic chassis, and aircraft displays. Production requirements are manufactured from hard tooling and Pre production and R&D castings can be made from quick cast SLA’s generated from CAD data to save time and tooling costs. Contact: John Bowkett, Sr. Vice President, jbt@nucast.net; Doug Veysey, Marketing & Sales Manager, dvz@nucast.net.

Nufern #1224
7 Airport Park Rd, East Granby, CT, 06026
860/408-5000; fax 860/844-0210
info@nufern.com; www.nufern.com

Nufern® is a leading U.S. manufacturer of specialty optical fibers, fiber lasers and amplifiers serving diverse markets. Current products include over 300 standard fibers and range from sub-assemblies to complete turn-key fiber lasers and amplifiers. From its headquarters in East Granby, Conn., USA, Nufern’s integrated fiber and fiber laser teams also provide rapid and cost-effective OEM fiber laser design, assembly and contract manufacturing services. Contact: Fernando Martins, Customer Service Manager, fmartins@nufern.com; Violet D’Antonio, Customer Support Specialist, vdantonio@nufern.com.

NuPhoton Technologies, Inc. #112
41610 Coming PI, Murrieta, CA, 92562
951/696-8366; fax 951/696-8394
info@nu photon.com; www.nuphoton.com

New Product: NP2000-MOPA-100: 100mW output in 90nm x 70nm x 20mm footprint, 1lb weight, <10W power consumption.

NuPhoton Technologies is one of the pioneering companies in EDFAs and LIDAR sources. Since 1996, the company has been using proprietary, leading edge technologies to design and manufacture products for a wide spectrum of applications including DWDM systems, CATV networks, LIDAR / LADAR and FTTH. NuPhoton is ISO9001 and AS9100 certified. Contact: Norm Nelson, VP, Business Development, norm@nuphoton.com.

Ocean Optics, Inc. #824
830 Douglas Ave, Dunedin, FL, 34698-5761
727/733-2447; fax 727/733-3962
info@oceanoptics.com; www.oceanoptics.com

New Product: Raman, LIBS, Optical Transmittance Spectroscopy, Near Infrared Spectroscopy and more.

Inventors of the world’s first miniature spectrometer, Ocean Optics offers a wide range of optical sensing solutions, optical fibers, software, complete systems and more. Our products have been to the Moon, inside active volcanoes, to the top of Mount Everest and in the most vital life sciences applications. Where can we take you? Contact: Jorge Macho, Sales, Jorge.macho@oceanoptics.com; Kevin Kaye, Sales, kevin.kaye@oceanoptics.com.

Ocean Thin Films #537
8060 A Bryan Dairy Rd, Largo, FL, 33777
727/545-0741; fax 727/544-4221
info@oceanthinfilms.com; www.oceanthinfilms.com

Ocean Thin Films provides high quality, high volume reticle production, with services that range from reticle patterning to full assembly of optical systems for use in defense, security, and aerospace applications in our two fully integrated ITAR Certified facilities (30,000-square-foot in Largo, Florida and 33,000 square feet in Golden, Colorado). Contact: Lary Vair, Application Engineer, larry.vair@oceanthinfilms.com; John Dougherty, Application Engineer, john.dougherty@oceanthinfilms.com.

OFS - Specialty Photonics Division #308
55 Darling Dr, Avon, CT, 06001
860/678-0371; fax 860/678-0371
info@specialty photonics.com; www.specialtyphotonics.com

OFS Specialty Photonics Division is the industry leader in optical fiber design or modification for highly customized applications. It develops focused fiber solutions – the right fibers, cables, and other specialty optical fiber products – to meet the needs of established and growing industries. Contact: John Earnhardt, Sales Manager, jeanhartd@ofsoptics.com; John Posey, Industrial/Military Sales Rep, jposey@ofsoptics.com.

Ohara Corp. #1327
50 Columbia Rd, Branchburg, NJ, 08876
908/218-0100; fax 908/218-1685
sales@oharacorp.com; www.oharacorp.com

New Product: Complete line of UV/IR Fused Silica, CaF2, BaF2 and other IR materials such as Ge, Si, ZnS and others.

Ohara produces precision optical glass and optical materials. Product lines include over 150 types of optical glass, fused silica, calcium fluoride, germanium, silicon, sapphire and other IR and UV grade materials and crystals. Other services include ultra-clean polished substrates and precision index readings, along with other measurement services. Contact: Chris Ghoio, Director of Sales, chrisghio@oharacorp.com.

Ontar Corp. #1010
9 Village Way, North Andover, MA, 01845-2000
978/689-9622; fax 978/681-4585
sales@ontar.com; www.ontar.com

OPC Laboratory, Inc. #1427
704 River St, Fitchburg, MA, 01420-2913
978/345-2522; fax 978/345-5515
info@opcolab.com; www.opcolab.com

OPCO Laboratory, Inc. is a full service in-house manufacturer, providing high precision custom designed lenses, coated and replicated mirrors, diffraction gratings, turn-key electro-optical assemblies, and metallic and thin film coatings. We provide prototype and high volume production quantities for commercial and defense markets worldwide. Our state-of-the-art manufacturing, coating, QC, assembly, and class 1000 clean rooms, ensure precise and repeatable optical components. Contact: Robert Moody, Director Sales & Marketing, rmoody@opcolab.com; Ryan Pasakinskas, Sales Support Representative, rpa@opcolab.com.
Exhibitor Directory

Opnext, Inc.  
2233 Faraday Ave Ste E, Carlsbad, CA, 92008  
760/929-0770; fax 760/929-8782  
www.opnext.com  

New Product: The HL6395/96MG and HL6397/98MG offers 60°C with 10 and 20mW in 639nm wavelength band.  

Opnext is the optical technology partner of choice supplying systems providers and OEMs worldwide with the industry's largest portfolio of 10G and higher next generation optical products and solutions. The Company's industry expertise, future-focused thinking and commitment to research and development combine in bringing to market the most advanced technology to the communications, defense, security and biomedical industries. Contact: Bob Murphy, Director of Business Development, bmurphy@opnext.com.

OPOTEK, Inc.  
2233 Faraday Ave Ste E, Carlsbad, CA, 92008  
760/929-0770; fax 760/929-8782  
www.opotel.com  

New Product: HyperSpectral Imaging based on Tunable Lasers for pharmaceutical, chemical, and security industries.  

OPOTEK, Inc. manufactures efficient, compact, and widely tunable solid-state laser systems based on patented, OPO technology. OPOTEK's products are used in areas of Photochemistry, Photobiology, Medical Diagnostics, PhotoAcoustic Imaging, MALDI, LIF, REMPI, and Environmental Monitoring. Standard products range from stand-alone OPO modules to fully integrated computerized, turn-key systems. These products cover spectral ranges from ultra-violet, through the visible, to the near infrared. Contact: Eli Margalith, President, elimar@opotel.com.

Optical Support, Inc.  
7840 E Broadway Blvd Ste 160, Tucson, AZ, 85710  
520/546-0642; fax 520/545-0376  
msavard@opticalsupport.biz; www.opticalsupport.biz  

Optical Support provides complete optomechanical design services. Starting with a design concept, list of system requirements or an optical prescription, we provide complete optomechanical system design, drawings of optical elements as well as mechanical components and assemblies. This documentation package is ready for release, saving your team time and money they may need to manage other efforts. We can also purchase, inspect, assemble and test optical systems before your team gets started.

OPTICS 1, Inc.  
1050 Holt Ave Ste 12, Manchester, NH, 03109  
603/296-0469; fax 603/296-0473  
tlawver@optics1.com; www.optics1.com  

Optics 1 provides expert design and manufacture of precision optical components and opto-mechanical systems. Our Defense Systems and Commercial Systems groups provide solutions from low UV to far IR. Typical applications include military surveillance, night vision, and reconnaissance systems, simulation systems, and optical instrumentation and optical sub-assemblies. Contact: James Diamond, Sales and Marketing Manager, jdiamond@optics1.com; Doug Harwood, VP Business Development, dharwood@optics1.com.

Ophir-Spiricon, Inc.  
60 W 1000 N, Logan, UT, 84321  
435/753-3729  
sales@ophir-spiricon.com; www.ophir-spiricon.com  

New Product: BeamGage, the latest Beam Profiling software suite from the leaders in laser beam quality assurance.  

Ophir-Spiricon LLC provides laser beam measurement products for all types of lasers. Measure the quality of your laser so that your applications benefit from the best laser performance possible. Know your laser beam with Ophir-Spiricon products. Contact: Dick Rieley, Sales Engineer, dick.riele@ophir-spiricon.com; Kevin Kirkham, Sales Engineer - Product Specialist, kevin.kirkham@ophir-spiricon.com.

Opal Ltd.  
Industrial Area 5, PO Box 462, Karmiel, Israel, 20101  
972 4 995 3903; fax 972 4 995 3900  
info@opgal.com; www.opgal.com  

New Product: EyeR640 17μ Thermal Imaging Engine specially designed for OEM applications.  

OPGAL Optronics Industries is a leading global manufacturer of innovative thermal imaging cameras. OPGAL offers the widest selection of infrared cooled and uncooled OEM cameras and engines for military, paramilitary, security and aviation applications. Its products have been field tested worldwide for the past 25 years. Contact: Sylvie Dascalu, V.P. Sales & Contracts, dascalu@opgal.com; Omer Yanai, V.P. Marketing & Business Development, yanai@opgal.com.

Ophir Optics, LLC  
1600 Osgood St, North Andover, MA, 01845  
978/657-6410; fax 978/657-6056  
www.ophiroptics.com  

New Product: New zoom lenses: 15-300mm, f/4.0, CZ lens; 15-100mm, f/1.4, CZ lens; 33/100mm, f/1.2, DFOV lens.  

Manufacturer of precision IR optical assy., reflective and refractive components and IR optical coatings (incl. HC). Specializes in custom IR lens assemblies for military, homeland security and commercial applications. State-of-the-art equipment for processing includes CNC grinders/polishers and DT machines, computerized coating equip. and precision interferometers for testing of components and assy. ISO 9001:2000 certified. Supports US military specs for environ. and shock/vib. requirements. Contact: Glenn Breeze, Director Sales & Marketing, glenn.breeze@ophiroptics.com; Marianne Cannizzaro, Sales Associate, mcannizzaro@ophiroptics.com.

Ophir-Spiricon, Inc.  
60 W 1000 N, Logan, UT, 84321  
435/753-3729  
sales@ophir-spiricon.com; www.ophir-spiricon.com  

New Product: BeamGage, the latest Beam Profiling software suite from the leaders in laser beam quality assurance.  

Ophir-Spiricon LLC provides laser beam measurement products for all types of lasers. Measure the quality of your laser so that your applications benefit from the best laser performance possible. Know your laser beam with Ophir-Spiricon products. Contact: Dick Rieley, Sales Engineer, dick.riele@ophir-spiricon.com; Kevin Kirkham, Sales Engineer - Product Specialist, kevin.kirkham@ophir-spiricon.com.

Ophir Optics, LLC  
1600 Osgood St, North Andover, MA, 01845  
978/657-6410; fax 978/657-6056  
www.ophiroptics.com  

New Product: New zoom lenses: 15-300mm, f/4.0, CZ lens; 15-100mm, f/1.4, CZ lens; 33/100mm, f/1.2, DFOV lens.  

Manufacturer of precision IR optical assy., reflective and refractive components and IR optical coatings (incl. HC). Specializes in custom IR lens assemblies for military, homeland security and commercial applications. State-of-the-art equipment for processing includes CNC grinders/polishers and DT machines, computerized coating equip. and precision interferometers for testing of components and assy. ISO 9001:2000 certified. Supports US military specs for environ. and shock/vib. requirements. Contact: Glenn Breeze, Director Sales & Marketing, glenn.breeze@ophiroptics.com; Marianne Cannizzaro, Sales Associate, mcannizzaro@ophiroptics.com.

Optical Support, Inc.  
7840 E Broadway Blvd Ste 160, Tucson, AZ, 85710  
520/546-0642; fax 520/545-0376  
msavard@opticalsupport.biz; www.opticalsupport.biz  

Optical Support provides complete optomechanical design services. Starting with a design concept, list of system requirements or an optical prescription, we provide complete optomechanical system design, drawings of optical elements as well as mechanical components and assemblies. This documentation package is ready for release, saving your team time and money they may need to manage other efforts. We can also purchase, inspect, assemble and test optical systems before your team gets started.

OPTICS 1, Inc.  
1050 Holt Ave Ste 12, Manchester, NH, 03109  
603/296-0469; fax 603/296-0473  
tlawver@optics1.com; www.optics1.com  

Optics 1 provides expert design and manufacture of precision optical components and opto-mechanical systems. Our Defense Systems and Commercial Systems groups provide solutions from low UV to far IR. Typical applications include military surveillance, night vision, and reconnaissance systems, simulation systems, and optical instrumentation and optical sub-assemblies. Contact: James Diamond, Sales and Marketing Manager, jdiamond@optics1.com; Doug Harwood, VP Business Development, dharwood@optics1.com.
Optics Technology, Inc.  #1135
3800 Monroe Ave Door, Pittsford, NY, 14534
585/586-0950; fax 585/248-2371
info@opticstechnology.com; www.opticstechnology.com

Optiforms  #1141
42310 Winchester Rd, Temecula, CA, 92590
951/296-1300; fax 951/296-1178
info@optiforms.com; www.optiforms.com

Optiforms is the world leader in precision electroformed optics, cold shields, and specialized miniature structures. We offer electroformed standard and custom geometric shapes; thin film vacuum deposited optical coatings; electrodeposited metals such as High Density Gold or Rhodium; Cold Shields; EDM; Assemblies; EMI Shields; Radiation Shields; and reflector refurbishment. Recently celebrating 25 years of unmatched excellence to the optics industry, we welcome new custom applications.
Contact: Larry Walker, Director of Sales and Customer Service, lwalker@optiforms.com; Donna Stice, Customer Service Manager, dstice@optiforms.com.

Optikos Corp.  #630
107 Audubon Rd Bldg 3, Wakefield, MA, 01880
617/354-7557; fax 617/354-5946
sales@optikos.com; www.optikos.com

New Product: The BBS-200 Blackbody Source for calibrating thermal imagers, radiometers, and more.
Optikos Corporation is the world’s largest manufacturer of equipment for the measurement of optical image quality and a leading provider of optical product development services. As the world leader in the field of MTF testing, Optikos offers complete solutions for both component and system level tests on imaging systems operating from the ultraviolet to the far infrared. Optikos’s product line includes testing suites for measuring the performance of optical and electro-optical imaging systems. Contact: Jamie Hutchins, VP, Sales and Marketing, jhutchins@optikos.com; Jim Scott, Key Account Manager, jscott@optikos.com.

Optimax Systems, Inc.  #1127
6367 Dean Pky, Ontario, NY, 14519-8939
585/265-1066; fax 585/265-1033
sales@optimaxsi.com; www.optimaxsi.com

Optimax is America's largest optics manufacturer, with more than 100 opticians. Optimax makes Aspheres, Cylinders, Spheres, and Prisms to customer specifications. We excel in producing optics in small lot sizes (1 to 100 pcs) with diameters of 3-300mm. Optimax utilizes deterministic CNC machine tools for predictable removal rates and adherence to tight tolerances. With our in-house coating capabilities, Optimax can deliver precision optics in record time! Contact: Rick Plympton, VP Sales, rick@optimaxsi.com; Joe Spilman, Sales Engineer, jspilman@optimaxsi.com.

OptiPro Systems  #1129
6368 Dean Pky, Ontario, NY, 14519-8939
585/265-0160; fax 585/265-9416
sales@optipro.com; www.optipro.com

CNC Fabrication equipment: Grinding and polishing of spherical, aspherical and conformal optics. UltraForm Finishing (UFF) – Aspherical and Conformal 5-axis Sub-aperture polishing machine. eSX 150 the industry standard for grinding complex optical components. Manufacturer and Distributor of optical surface metrology equipment including the UltraCURV digital spherometer, Zeiss Surface Profilometers, UltraSurf non-contact surface measurement system for aspheres, cylinders and conformal optics.
Contact: Mike Bechtold, President, mike@optipro.com; David Mohring, Technical Sales Director, dmohring@optipro.com.

OptiSwitch Technology Corp.  #1037
6355 Nancy Ridge Dr, San Diego, CA, 92121
858/452-8787; fax 858/452-8788
sales@optiswitch.com; www.optiswitch.com

New Product: The PLDD-50-SP pulsed current source drives laser diodes at 50 amps, <4 ns pulses, and up to 15 KHz.
OptiSwitch Technology Corporation is a high technology innovator located in San Diego, CA, specializing in ultra-compact, ultra-lightweight and highly reliable pulsed diode and pulsed power systems. These systems range from pulsed laser diode drivers for man portable and airborne applications, to high power (10kV, 100kA) semiconductor switches for replacing spark gaps as means to achieve highly reliable pulsed power products. Contact: Rose Southall, Sales and Marketing Manager, sales@optiswitch.com.

Optiwave Systems Inc.  #314
7 Capella Ct, Ottawa, ON, Canada, K2E 7X1
613/224-4700; fax 613/224-4706
info@optiwave.com

Optiwave is a key provider of optical component and system design simulation software tools. Optiwave provides cutting edge design tools to hundreds of leading research institutions, military, and government agencies worldwide. Download free trial versions at: www.optiwave.com.
Contact: Optiwave Live Sales Dept., info@optiwave.com.

OPTIX Co.  #101
65 Zahari Stoyanov Str, Panagyurishte, Bulgaria, 4500
359 357 64125; fax 359 288 43624
www.optixco.com

New Product: Optix Co. introduces Night Vision Technology with hunting products including black-on-white imagery.
OPTIX Co. has established its name among the leading companies in the development and manufacturing of night vision and thermal-imaging assemblies, equipment and systems. A contemporary enterprise with a completely closed production cycle, OPTIX Co. a 100% private company that quickly built up a reputation for designing, manufacturing and testing cutting edge quality optical components and assemblies, opto-mechanical and optoelectronic systems and devices for civil and defense application.
Contact: Janice Hunter, US Sales Manager, janice.hunter@primoptix.com; Zanko Zankov, Sales & Marketing Engineer, zanko.zankov@optixco.com.

Optiprobe  #1103
1049 Broadway #1100, New York, NY, 10010
212/366-7686; fax 212/366-8025
info@optiprobe.com; www.optiprobe.com

New Product: Optiprobe introduces new line of precision bore measurement systems.
Optiprobe is a world class manufacturer of precision bore measurement systems and accessories. Our bore measuring tools are precision designed and manufactured to provide micro precision measurement for the automotive, medical, aerospace, military and industrial sectors. Our bore gauge measurement tools are manufactured to the highest GSP (Gage System Performance) standards. Contact: Paul Yorker, President, paul@optiprobe.com; Carolyn Greenberg, Director of Marketing, cgreenberg@optiprobe.com.

OptiFusion, Inc.  #1106
1117 W Royal Ln, Suite 206, Richardson, TX, 75080
972/947-1400; fax 972/947-1402
info@optifusion.com; www.optifusion.com

New Product: OptiFusion introduces new line of precision bore measurement systems.
OptiFusion is a world class manufacturer of precision bore measurement systems and accessories. Our bore measuring tools are precision designed and manufactured to provide micro precision measurement for the automotive, medical, aerospace, military and industrial sectors. Our bore gauge measurement tools are manufactured to the highest GSP (Gage System Performance) standards. Contact: Paul Yorker, President, paul@optiprobe.com; Carolyn Greenberg, Director of Marketing, cgreenberg@optiprobe.com.

Optiwave  #1032
7 Capella Ct, Ottawa, ON, Canada, K2E 7X1
613/224-4700; fax 613/224-4706
info@optiwave.com

New Product: Optiwave introduces new line of precision bore measurement systems.
Optiwave is a world class manufacturer of precision bore measurement systems and accessories. Our bore measuring tools are precision designed and manufactured to provide micro precision measurement for the automotive, medical, aerospace, military and industrial sectors. Our bore gauge measurement tools are manufactured to the highest GSP (Gage System Performance) standards. Contact: Paul Yorker, President, paul@optiprobe.com; Carolyn Greenberg, Director of Marketing, cgreenberg@optiprobe.com.

Optiswitch  #1034
359 357 64125; fax 359 288 43624
www.optiswitch.com

New Product: Optiswitch introduces new line of precision bore measurement systems.
Optiswitch is a world class manufacturer of precision bore measurement systems and accessories. Our bore measuring tools are precision designed and manufactured to provide micro precision measurement for the automotive, medical, aerospace, military and industrial sectors. Our bore gauge measurement tools are manufactured to the highest GSP (Gage System Performance) standards. Contact: Paul Yorker, President, paul@optiprobe.com; Carolyn Greenberg, Director of Marketing, cgreenberg@optiprobe.com.
Opto Diode Corp. #513

750 Mitchell Rd, Newbury Park, CA, 91320
805/499-0335; fax 805/499-8108
sales@optodiode.com; www.optodiode.com

New Product: New High Output Blue LEDs - OD469L.

Opto Diode Corporation (www.optodiode.com – Newbury Park, CA) manufactures advanced performance, standard and custom photodetectors, and reliable, high quality infrared and visible (IR) LEDs. The company’s domestic U. S. manufacturing plant includes a wafer fab to ensure delivery of volume quantities at competitive prices with short lead times. Industries served include T&M, biotechnology, military/defense, medical, entertainment, automotive, aerospace, R&D, industrial, lighting, and more. Contact: Jun Cha, Vice President, Sales and Marketing, russdahl@optodiode.com.

OptoElectronic Components #3602

28 Des Lilas St, Kirkland, QC, Canada, H9J 4A7
514/694-0336; fax 514/694-8535
sales@optoelectroniccomponents.com; www.optoelectroniccomponents.com

New Product: Photon Detector Carrier operates any Silicon Avalanche Photodiodes in Geiger mode.

Supplier of single photon counting detector modules with 30ps timing resolution from Micro Photon Devices, TCSPC electronics and software from PicoQuant, EM-CCD and intensified CCD with near photon counting capabilities from Photonic Science and Photon Counting Energy Discriminating X-Ray detectors from Gamma Medica-Ideas. Contact: Nick Bertone, President, nick.bertone@optoelectriccomponenets.com; Natalie Raymond, Marketing, natalie.raymond@optoelectric.com.

Optonet LLC #1514

6901 TPC Dr Ste 420, Orlando, FL, 32822
407/857-4410; fax 407/857-4409
sales@optonet.com; www.optonet.com

Manufacturer of custom, high precision, high power optical components with fast production turnaround. Provider of thin-film coating services including High Packing Density Plasma Assist Deposition (PAD). PAD advantages include Durable Low Temperature Coatings for Plastic, Non-Radioactive Coatings for IR optics, High Laser Damage Threshold Coatings, and more. Fast Turn Around within 48 hours available. Contact: Jun Cha, Vice President, juncha@optonet.com.

OptoSigma Corp. #608

2001 Deere Ave, Santa Ana, CA, 92705
949/851-5881; fax 949/851-5058
sales@optosigma.com; www.optosigma.com

The Optronics Co., Ltd. #S9

5-5 Shin Ogawamachi, Shinjuku-ku Tokyo, Japan, 162-0814
81 3 3269 3550; fax 81 3 5229 7253
intl@optronics.co.jp; www.optronics.co.jp

Ortec and AMETEK Company #1441

801 S Illinois Ave, Oak Ridge, TN, 37831
865/482-4411; fax 865/483-0396
ortec.info@ametek.com; www.ortec-online.com

New Product: Micro-Detective, a portable HPGe-based nuclide identifier to identify radioactive material.

The ORTEC product line of over 1600 products includes equipment and instruments for research in nuclear physics and nuclear medicine, nuclear power plant and government nuclear facility operations, special nuclear material safeguards, search and identification of radioactive materials, and chemical weapons detection. ORTEC has pioneered the world’s first commercial mechanically cooled, portable HPGe-based nuclide identifier, currently in use worldwide in the fight against radiological terrorism. Contact: Susie Brockman, Marketing Services Manager, Susie.Brockman@ametek.com.

OSRAM Opto Semiconductors #1438

1150 Kifer Rd Ste 100, Sunnyvale, CA, 94086
408/962-3700; fax 408/739-9120
info@osram-os.com; www.osram-os.com

New Product: Infrared Platinum Dragon with chip-in-stack technology generates 1W optical output from a 1mm2 chip.

OSRAM Opto Semiconductors, a leading supplier and manufacturer of solid-state optoelectronic products including IR components, HPL diodes, and LEDs, will exhibit their latest IR components and laser diode products in booth 1438. Learn about our new IR Platinum Dragon with stack chip technology, IR Diamond Dragon, IR OSTAR Lighting, laser bars, pulsed laser diode, HP single emitter laser diodes and more. For more information visit us at www.osram-os.com. Contact Karl Leahy, Director, IR/HPL Products, karl.leahy@osram-os.com; Sevugan Nagappan, Product Marketing Manager, sevugan.nagappan@osram-os.com.

OZ Optics Ltd. #718

219 Westbrook Rd, Ottawa, ON, Canada, K0A 1L0
613/831-0981; fax 613/836-5089
sales@ozoptics.com; www.ozoptics.com

Pacific Silicon Sensor Inc. #3618

5700 Corsa Ave Unit 105, Westlake Village, CA, 91362
818/706-3400; fax 818/705-9958
info@pacific-sensor.com; www.pacific-sensor.com

New Product: APD Arrays 8, 16 elements with QE >80% at 760–910 nm.

Design, development and high quality manufacturing of opto-electronic sensors and sensor systems including Silicon PINs, Avalanche Photodiodes, PIN and APD Arrays, Position Sensitive Detectors (PSD), Quadrant Photodiodes and Detectors for ionizing radiation. Contact: Bruce Bauman, Technical Sales, bbaumann@pacific-sensor.com; Edward Weiss, Technical Sales, eweiss@pacific-sensor.com.

Get the training you need to stay ahead of the technology curve.
See full course listing, pp. 16-18.
Visit the Florida Pavilion:  
500 Aisle booth 527

The University of Central Florida, the 3rd largest U.S. University and home of CREOL - The College of Optics and Photonics, provides exceptional education for BS, MS, and PhD degrees and partners with industry, government and universities to offer innovative R&D Collaborations.

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“Secret Capital of Small Business”  
-Fortune Magazine
**Aguilar, Account Executive, luis.aguilar@pentax.com.**

**Barnthouse, Account Executive, jonathan.barnthouse@pentax.com; Luis is supported by its patented unique design concept. Contact: Jonathan**

**include border control, campus security, etc. PENTAX Zoom Lens durability**

**Ge, MS ZnS, etc. Contact: Steve Allen, Vice President, Stephen.Allen@**

**World class Zinc Selenide production, lead by personnel with the longest**

**components, coatings, and assemblies from UV to IR wavelengths. PFG**

**specialties include high index, high included angle and truncated lenses**

**using the latest CNC milling, shaping, and polishing with MRF finishing**

**and edging technology. Double sided and planetary polishing for Windows,**

**and diffractive optics, calibration targets, eyepiece reticles and shadow**

**binary gray scale masks, laser imaged gold, ITO, components for infrared**

**and diffractive optics, calibration targets, eye-piece reticles and shadow**

**and designed to exact customer specifications, are engineered to meet**

**stringent performance requirements and operate in extreme environments.**

**Contact: Beth Haskell, Director of Defense Sales, beth.haskell@**

**bill.evelyn@perkinelmer.com.**

**PerkinElmer has 50 years of experience providing illumination and detection solutions that improve the safety and security of people and**

**their environment. Our sensors and optical detection technologies**

**accurately measure light, motion, heat, distance and gas in mission**

**critical applications for the defense industry. Our products, both standard**

**and designed to exact customer specifications, are engineered to meet**

**stringent performance requirements and operate in extreme environments.**

**Contact: Colin Green, VP Sales, cody@pfgoptics.com; Barbara**

**Sales Coordinator, sales@pfgoptics.com.**

**Phoenix Infrared #120**

3 Foundry St, Lowell, MA, 01852
978/458-8328; fax 978/458-8414
sales@phoenixinfrared.com; www.phoenixinfrared.com

**New Product: ZnSe Coated Optics; ZnSe polished, generated, blanks; Germanium generated blanks.**

**World class Zinc Selenide production, lead by personnel with the longest**

**continuous history of ZnSe production in the work. Infrared material ZnSe,**

**Ge, MS ZnS, etc. Contact: Steve Allen, Vice President, Stephen.Allen@**

**PhoenixInfrared.com.**

**Exhibitor Directory**

**Pentax #238**

600 12th St Ste 300, Golden, CO, 80401
888/267-6422; fax 303/728-0206
www.pentaxcctvus.com

**New Product: PENTAX Atmospheric Interference Reduction (PAIR) 55x zoom lens.**

**PENTAX is a leader in the global security market. PENTAX CCTV Lenses are widely used for key security applications such as air/sea ports, government, financial, industrial and commercial areas. The applications include border control, campus security, etc. PENTAX Zoom Lens durability is supported by its patented unique design concept. Contact: Jonathan Barnthouse, Account Executive, jonathan.barnthouse@pentax.com; Luis Aguilar, Account Executive, luis.aguilar@pentax.com.**

**PerkinElmer Inc. #339**

35 Congress St, Salem, MA, 01970
978/224-4100; fax 978/745-0894
info@perkinelmer.com; www.perkinelmer.com

**PerkinElmer has 50 years of experience providing illumination and detection solutions that improve the safety and security of people and their environment. Our sensors and optical detection technologies accurately measure light, motion, heat, distance and gas in mission critical applications for the defense industry. Our products, both standard and designed to exact customer specifications, are engineered to meet stringent performance requirements and operate in extreme environments.**

**Contact: Beth Haskell, Director of Defense Sales, beth.haskell@perkinelmer.com; Bill Evelyn, Eastern Regional Sales Manager, bill.evelyn@perkinelmer.com.**

**PFG Precision Optics #100**

733 Bienville Blvd, Ocean Springs, MS, 39564-2842
228/875-0165; fax 228/875-9354
sales@pfgoptics.com; www.pfgoptics.com

**New Product: PFG Precision Optics is now manufacturing Ge, Si, ZnS, ZnSe and CaF2 Lenses to your specifications!**

**PFG is an ISO 9001:2008 certified manufacturer of precision optical components, coatings, and assemblies from UV to IR wavelengths. PFG specialties include high index, high included angle and truncated lenses using the latest CNC milling, shaping, and polishing with MRF finishing and edging technology. Double sided and planetary polishing for Windows, Wedges, Filters, and Prisms. Custom vacuum-deposited and Ion-assisted coating. Assemblies include Telecentric, Eyepiece, Scan and Imaging Lenses. Contact: Colin Green, VP Sales, cody@pfgoptics.com; Barbara Dudiak, Sales Coordinator, sales@pfgoptics.com.**

**Phoenix Infrared #117**

Glascoed Rd, St Asaph, United Kingdom, LL17 0LJ
908/685-0352; fax 908/325-0250
sales@potl-tcd.co.uk; www.potl.co.uk

**New Product: IR windows and substrates.**

Manufacturer of IR optics and diamond-turned components with aspheric, diffractive and free-form surfaces in IR materials, plastics and metals; Polished and coated windows from prototype to high-volume production; Optical glass strip, molded and CNC-machined blanks of all optical materials. Contact: sales@nakedoptics.com; Buzz Nesti, buzz@nakedoptics.com.

**Phoenix Optical Technologies Ltd. #110**

26 Castleham Rd, St Leonards-on-Sea, E Sussex, United Kingdom, TN38 9NS
44 1424 850 555; fax 44 1424 850 051
sales@photeck.co.uk; www.photeck.co.uk

**New Product: Solar blind, photon counting image intensifier for missile warning systems.**

**Photek is a specialist manufacturer of detectors and camera systems for photon detection. Our product range includes; Photon Counting Camera Systems, Image Intensifiers, Photomultiplier Tubes, Streak Tubes, miniature high voltage power supplies and gating units. We are experts in UV and solar blind detection, ultra-fast FMT’s, large area image intensifiers and advanced photon counting camera systems. Contact: Ian Cox, Sales and Marketing Manager, ian.cox@photek.co.uk; Mike Pavia, US Sales, pavia@sydorinstruments.com.**

**Photek, Ltd. #1130**

2542 W 237th St, Torrance, CA, 90505
310/784-7460; fax 310/634-1574
info@photonengr.com; www.photonengr.com

**Photon Engineering, LLC #10**

440 S Williams Blvd Ste 106, Tucson, AZ, 85711
520/733-9657; fax 520/733-9609
info@photonengr.com; www.photonengr.com

**Photon Engineering, LLC is a consulting and software development firm based in Tucson, Arizona. Photon Engineering develops and markets FRED, the premier proven software to solve today’s challenging optical engineering problems. Users working within FRED’s 3D virtual prototyping CAD environment can model and analyze virtually any optomechanical system containing arbitrary coherent, incoherent, and partially coherent sources. Engineering consulting and short courses are offered worldwide. Contact: Carolyn Johnson, Sales, carolynj@photonengr.com; Donata Pfisterer, Sales & Customer service, donatap@photonengr.com.**

**Photo Sciences, Inc. #1140**

2542 W 237th St, Torrance, CA, 90505
310/784-7460; fax 310/634-1574
info@photo-sciences.com; www.photo-sciences.com

**New Product: Laser Imaged GOLD and ITO; Binary Gray Scale Masks; Patterned Infrared Optics.**

**PHOTO SCIENCES offers a full range of photomask related products. We manufacture laser imaged glass masks, stepper reticles and contact prints. Our FAST TRACK mask program offers free replacement for any reason within 30 days except redesign. Our Advanced Patterning Group manufactures laser imaged optics, glass and metal product which include binary gray scale masks, laser imaged gold, ITO, components for infrared and diffractive optics, calibration targets, eye-piece reticles and shadow masks. Contact: Wayne Henry, Sales Director - Photomask Group, wayneh@photo-sciences.com; Roger Horstman, Product Manager - Advanced Patterning Group, rogerh@photo-sciences.com.**

**Photoek, Ltd. #1130**

26 Castleham Rd, St Leonards-on-Sea, E Sussex, United Kingdom, TN38 9NS
44 1424 850 555; fax 44 1424 850 051
sales@photeck.co.uk; www.photeck.co.uk

**New Product: Solar blind, photon counting image intensifier for missile warning systems.**

**Photek is a specialist manufacturer of detectors and camera systems for photon detection. Our product range includes; Photon Counting Camera Systems, Image Intensifiers, Photomultiplier Tubes, Streak Tubes, miniature high voltage power supplies and gating units. We are experts in UV and solar blind detection, ultra-fast FMT’s, large area image intensifiers and advanced photon counting camera systems. Contact: Ian Cox, Sales and Marketing Manager, ian.cox@photek.co.uk; Mike Pavia, US Sales, pavia@sydorinstruments.com.**

**Photek, Ltd. #1130**

26 Castleham Rd, St Leonards-on-Sea, E Sussex, United Kingdom, TN38 9NS
44 1424 850 555; fax 44 1424 850 051
sales@photeck.co.uk; www.photeck.co.uk

**New Product: Solar blind, photon counting image intensifier for**
**Exhibitor Directory**

**Photonic Cleaning Technologies**  
PO Box 435, Platteville, WI, 53818  
608/467-5396; fax 608/467-5397  
sales@photoniccleaning.com; www.photoniccleaning.com

**Photonic Controls, LLC**  
502 IST Center, Horseheads, NY, 14845  
607/562-4700; fax 607/562-4704  
sales@photoniccontrols.com; www.photoniccontrols.com

**Photonic Products Group Inc. (PPGI)**  
181 Legrand Ave, Northvale, NJ, 07647  
201/767-1910; fax 201/767-9644  
sales@ppgrpinc.com; www.ppgrpinc.com  
PPGI develops, manufactures, and markets products for use in diverse Photonics industry sectors via distinctly branded businesses. INRAD specializes in crystal-based optical components and devices, laser accessories and instruments. Laser Optics in precision custom optical components, assemblies, and optical thin film coatings. MRC Optics in precision diamond turned optics, metal and crystal based optics, and opto-mechanical. Contact: John Ryan, VP of Sales & Marketing, Jryan@ppgrpinc.com.

**Photonic Sense GmbH**  
Arn Goldberg 3, Eisenach, Germany, 99817  
49 3691 73180; fax 49 3691 731879  
info@photonic-sense.com; www.photonic-sense.com  
Our core products are Germanium and Silicon in the form of rods, blanks, windows, lenses, and unique shapes. From 10 mm to 500 mm diameter, we can meet your standard or custom requirements. With expert knowledge of our materials and modern production capabilities, we offer the most advanced infrared material solutions to our customers. Contact: Dawn Jennings, Sales & Marketing Manager, dawn@photonic-sense.com.

**Photonic Systems Inc.**  
900 Middlesex Turnpike Bldg 5, Billerica, MA, 01821  
978/670-4990; fax 978/670-2510  
info@photonicss.com; www.photonicss.com

**Photron**  
9520 Padgett St Ste 110, San Diego, CA, 92126  
858/684-3556; fax 858/684-3558  
image@photron.com; www.photron.com  
New Product: Fastcam SA5 - world’s fastest mega pixel high speed camera operating to over 1,000,000 fps. Photron high speed video cameras include: The four mega pixel Fastcam SA2 high speed camera, providing 1080 HD resolution to 2,000 frames per second (fps); Fastcam SA4, mega pixel resolution to 3,600 fps; Low-cost Fastcam MC2 with tiny camera heads ideal for fault finding production line jams; The high-G Fastcam SA3 high speed camera with mega pixel resolution to 2,000 fps; The world’s fastest high speed camera; the Fastcam SA5. Contact: Andrew Bridges, Director, Sales & Marketing, abridges@photron.com; Emi Christensen, Office Manager, emi@photron.com.

**PHOTONIS USA**  
Sturbridge Business Park, PO Box 1159, Sturbridge, MA, 01566  
508/347-4000; fax 508/347 3849  
sales@usa.photonis.com; www.photonis.com  
PHOTONIS is a multi-national optic technology group innovating, designing, and manufacturing photo sensor technologies. PHOTONIS operates internationally in Night Vision, Industry and Scientific markets, manufacturing best-in-class Channeltron electron multipliers, micro channel plates and detectors, ion guides, reflectrons, glass coated wires and glass capillary arrays. Contact: Valerie Grib, Product Manager, v.grib@usa.photonis.com; Alan Hamill, Account Manager, a.hamill@usa.photonis.com.

**PHOTONIS**  
20600 Grammery Pl, Torrance, CA, 90501-1821  
310/320-3088; fax 310/320-5961  
www.poc.com  
New Product: The SITA system is a Soldier Information Technology Assistant with a flexible display for soldiers. Physical Optics Corporation is a “Small Systems Integrator” of advanced opto-electronic technology. POC’s emerging technologies are: FAERITO® digital data video, audio, data flight recorder; real-time 3D video display; IHC and HD video compression; OmniView 360° video monitoring system, LEXID™ hand held IED detection. The Army’s WPIC™ personal information carrier system for medical records and WEARNET™ wearable personal area network with SITA flexible display technology. Contact: Dave Silvestris, Director Business Development, dsilvestris@poc.com; Jim Apple, Director Homeland Security & Special Programs, japple@poc.com.

**Physical Optics Corp.**  
20600 Grammery Pl, Torrance, CA, 90501-1821  
310/320-3088; fax 310/320-5961  
www.poc.com  
New Product: The SITA system is a Soldier Information Technology Assistant with a flexible display for soldiers.

**Photonics Media**  
2 South St, Berkshire Common, Pittsfield, MA, 01201-6109  
413/499-0514; fax 413/442-3180  
photons@laurin.com; www.photonics.com  
Photons Media – the Pulse of the Industry - is Laurin Publishing Company’s international suite of media with more than 50 years as the industry’s leading publications. In print with Photonics Spectra, Biophotonics International, EuroPhotonics, and Photonics Showcase magazines, the Photonics Directory and online at Photonics.com. Contact: Bob Briere, Director of Sales, advertising@photons.com; Laura Marshall, Managing Editor, editorial@laurin.com.
PicoQuant GmbH

Rudower Chaussee 29, Berlin, Germany, 12489
49 30 6392 6560; fax 49 30 6392 6561
www.picoquant.com

Photon Counting Instrumentation product lines include Time-Correlated Single Photon Counting (TCSPC) electronics and detectors (PMT, SPAD), 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), Optical tomography and Quantum Key Distribution. Contact: Nick Bertone, nick.bertone@optoelements.com.

Pinellas County Economic Development

13805 58th St N Ste 1-200, Clearwater, FL, 33760
727/484-7332; fax 727/484-7053
www.pced.org


Pinellas County offers optics and photonics companies a progressive pro-business climate paired with performance-based job creation incentives, competitive tax rates, a network of established industry professionals, developed infrastructure and a skilled workforce. Pinellas County is committed to training tomorrow’s optics and photonics professionals through unique workforce development programs and extensive partnerships with defense companies, local colleges, and national universities. Contact: Dave Sobush, Business Development Manager, dsobush@pinellascounty.org.

Pleora Technologies

359 Terry Fox Dr Ste 230, Kanata, ON, Canada, K2K 2E7
613/270-0625; fax 613/270-1425
info@pleora.com; www.pleora.com

New Product: iPORT™ NTx-Pro IP Engine Compact board for adding real-time video distribution to any system.

Pleora Technologies supplies solutions for video distribution over GigE for real-time applications in the military, medical and manufacturing sectors. Our focus on video distribution, coupled with our commitment to integrated, customized solutions, makes Pleora ideal for military projects. Trusted by integrators, our technology delivers the reliability and high-performance required by mission-critical video applications, while leveraging the low cost and accessibility of the COTS GigE platform. Contact: John Butler, Business Manager, North America, john.butler@pleora.com; John Phillips, Product Manager, john.phillips@pleora.com.
You've known us as Rohm and Haas. Now we're Dow, with all the advantages you expect:

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What doesn't change is our ability to manufacture the largest format CVD substrates in the infrared market and a portfolio of high-quality zinc-based optical materials for the most challenging IR applications.

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**Poco Graphite, An Entegris Company**

300 Old Greenwood Rd, Decatur, TX, 76234  
940/627-2121  
www.ente gris.com  

Leading manufacturer of silicon carbide mirrors and optical components for laser, sensor, surveillance and astronomy applications. Flexibility of SUPERSiC® by Poco Graphite, allows for the efficient manufacture of lightweight, complex geometries and structures. Components can then be finished with optional CVD SiC coating, silicon cladding and/or diamond turned and polished. Material of choice for advanced optical applications; including Beryllium replacement and high flux scenarios. Contact: Chris Duston, Optics Manager, chris_duston@ente gris.com.

**Polymer Optics, LLC**

3100 Dutton Ave Unit 118, Santa Rosa, CA, 95407  
707/573-5929; fax 707/573-5951  
info@polyoptics.com; www.polyoptics.com  

Manufacturer of precision plastic optical components in prototype and production volumes. In-house capabilities include optomechanical design, diamond machining, mold design and manufacturing, injection and compression molding, and thin-film design and deposition of optical coatings on plastic. Contact: Daniel Fisher, President, dan@polyoptics.com.

**Pog Precision Optics Gera**

1090 Delacroix Circle, Nokomis, FL, 34275  
941/803-4927; fax 941/237-4800  
www.pog.eu  

New Product: White glass-ceramic calibration targets.  

Pog is a leading manufacturer of custom and standard microstructures on glass and ceramics – reticles, scales, calibration targets and test patterns. In-house photolithographic processes result in the highest possible quality for aerial production and small batch quantities. POG designs, develops and processes custom optical systems and components from the UV through IR for machine vision, semiconductor industry, aerospace and defense. Contact: info@pog.eu; Buzz Nesti, buzz.nesti@pog.eu.

**Polaris Sensor Technologies, Inc.**

200 Westside Square Ste 320, Huntsville, AL, 35801  
256/562-0087; fax 256/562-0088  
www.polarissensor.com  

New Product: Stereo Vision Upgrade Kit for TALON robot system, to perceive depth and improve situational awareness.  

Polaris Sensor Technologies, Inc., a woman-owned small business, provides customers with designs, prototypes, and analysis of state-of-the-art optical systems. Our personnel have extensive experience in high performance optical systems including sensors and seekers for aerospace and military systems; polarization based imaging systems and displays, stereo vision systems, image processing and 3D reconstruction, processing and visualization. Contact: David Chenault, President, david.chenault@polarissensor.com.

**Polymer Optics, Inc.**

470 Lakeside Dr Ste F, Sunnyvale, CA, 94085  
408/245-9588; fax 408/245-9587  
sales@polyoptics.com; www.polyoptics.com  

New Product: Mid-IR source, High power super continuum source, high power ns arbitrary waveform laser.  

World leading company in high energy/power ultrashort fiber lasers including second harmonic generation and super continuum source. Excellent for material processing, micromachining, spectroscopy, microscopy, biomedical instrumentation, and optical sensing applications. OEM and instrument version are available. Wavelength ranges from UV to Mid-IR. Contact: Jian Liu, President, jianliu@polyoptics.com; Lihmei Yang, Director, lihmeiyang@polyoptics.com.  

**Power Technology, Inc.**

PO Box 191117, Little Rock, AR, 722019  
501/407-0712; fax 501/407-0036  
sales@powertech nology.com; www.powertechnology.com  

Since 1969, Power Technology, Inc. has been designing and manufacturing standard and custom laser products for scientific, analytical, biomedical, industrial and military applications. The company’s extensive product line includes UV, Visible, & IR Laser Diode Technology with wavelengths from 263nm to 12.6um, temperature stabilized modules, lasers with beam circularization, and CW, pulsed, and modulated units. Custom design orders are welcome. Contact: Walter Burgess, Vice-President, Sales and Engineering, waburgess@powertechnology.com; Glenn Sullivan, Sales Engineer, gsullivan@powertechnology.com.

**Pranalytica, Inc.**

1101 Colorado Ave, Santa Monica, CA, 90401  
310/458-3345; fax 310/458-0171  
www.pranalytica.com  

New Product: Fully packaged high power QCL’s (>2.5w RT, >5w@80K) Handheld infrared Illuminators.  

Pranalytica has developed and is the only commercial manufacturer of full packaged high power quantum cascade lasers producing >2.5W CW/RT (>5W CW At 80K). In addition, Pranalytica manufactures handheld MWIR/LWIR illuminators for military applications and ultra sensitive trace gas detection instruments for commercial, environmental, defense, security and medical customers. Contact: Francis X. McGuire, Controller, fmcguire@pranalytica.com; C. Kumar N. Patel, President & CEO, patel@pranalytica.com.
Pulse Instruments is a leading manufacturer of systems and equipment for the aerospace, military, and homeland defense markets. Major product lines include optical targeting and situational awareness systems for armored vehicles; airborne camera systems for aerial refueling; precision sensor positioning gimbals for ultra-long range surveillance, tracking, and ranging applications. Contact: Geoffrey Miller, Director Business Development, geoff.miller@pvpaeo.com; John LeBlanc, Director, john.leblanc@pvpaeo.com.

PVP Advanced EO Systems, Inc. #906
14312 Franklin Ave Ste 100, Tustin, CA, 92780
714/508-2740; fax 714/508-2533
info@pvpaeo.com; www.pvpaeo.com
PVP Advanced EO Systems, Inc. has 20 years of experience as a premier manufacturer of precision electro-optical systems for the aerospace, military, and homeland defense markets. Major product lines include optical targeting and situational awareness systems for armored vehicles; airborne camera systems for aerial refueling; precision sensor positioning gimbals for ultra-long range surveillance, tracking, and ranging applications. Contact: Geoffrey Miller, Director Business Development, geoff.miller@pvpaeo.com; John LeBlanc, Director, john.leblanc@pvpaeo.com.

Qioptiq #817
78 Schuyler Baldwin Dr, Fairport, NY, 14450
585/627-4125; fax 585/425-7266
www.qioptiq.com
Qioptiq develops and manufactures demanding and cost-effective photon components and products for our extensive customer base. Operating globally we are committed to offering a world-class service truly being a one stop shop for optical and other photon solutions. Contact: Craig Taylor, Communications Manager, craig.taylor@uk.qioptiq.com; Beverly Demma, Regulatory Compliance Officer, Beverly.Demma@qdi.qioptiq.com.

QmagiQ, LLC #506
22 Cotton Rd Unit H Ste 180, Nashua, NH, 03063
603/821-3092; fax 603/821-3094
www.qmagiq.com
QmagiQ, LLC, designs and manufactures a variety of infrared focal plane arrays, sensor engines, and camera systems. Its products serve the commercial market for applications such as persistent surveillance, gas imaging, and radiometry. While the bulk of its products is currently based on Qwip photodetectors, the company is also vigorously pursuing several R&D projects to advance other promising technologies. Contact: Mani Sundaram, CEO/President, msundaram@qmagiq.com; Axel Reisinger, CTO, areisinger@qmagiq.com.

Quality Thin Films, Inc. #531
141 Burbank Road, Oldsmar, FL, 34677
813/855-1900; fax 813/855-5580
sales@qtf.com; www.qtf.com
New Product: QTF has developed high damage threshold 3-5μm coatings that withstand severe abrasion.
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 ultra-long range surveillance, tracking, and ranging applications. Contact: Mani Sundaram, CEO/President, msundaram@qmagiq.com; Axel Reisinger, CTO, areisinger@qmagiq.com.

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Free Popcorn
Popcorn carts will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.
spie.org/dss · TEL: +1 360 676 3290 · +1 888 504 8171 · customerservice@spie.org
Quebec Photonic Network
111 rue Lapiere, Local 1, O33 BP 128, LaSalle, QC, Canada, H8N 2J4
514/388-1677; fax 514/388-2098
www.quebecphotonique.ca

Quebec Photonic Network (QPN), a non-profit organization whose mission is to accelerate the economic development of the Optics-Photonics Industry of the Province of Quebec. The QPN provides a meeting place for the companies, research centers, institutions, organizations and individuals involved in the photonics in Quebec. It is the voice of the industry for: Business development agencies; Provincial and Federal government agencies; other Photonics Clusters. Contact: Michel Têtu, CEO, michel.tetu@photontiquequebec.ca; Françoise Lee, Member relations, francoiselee@photontiquequebec.ca.

Quickset International
See Moog-Quickset

Rainbow Research Optics, Inc.
6830 S Dawson Circle, Centennial, CO, 80112
303/371-3000; fax 303/371-1333
sales@rroptics.com; www.rainbowoptics.com

Rainbow Research Optics is an optics manufacturing and coating company recently relocated to a 30,000 sq. ft. facility in Centennial, Colorado. We offer precision optics from 3mm up to 17 inch and in house coatings that range from 193nm to 16 microns. Our products include: windows, lenses, mirrors, prisms, beamsplitters along with opto-mechanical assemblies. Contact: Hollie Marinecz, Sales Manager, h.marinecz@rroptics.com.

Raptor Photonics Ltd.
Willowbank Business Park, Millbrook Larme, County Antrim, Northern Ireland, United Kingdom, BT40 2SF
44 28 2827 0141; fax 444 28 2827 5685
info@raptorphotonics.com; www.raptorphotonics.com

New Product: Hawk EMCCD camera: the world's most compact, rugged and low power EMCCD camera.

Raptor Photonics Limited offers a full line of high performance, ultra low light digital and analogue cameras, which are optimized for day/night surveillance and homeland security applications. Raptor specializes in complete cameras and core engine solutions using EMCCD, CMOS and SWIR sensor technology. The extreme low light capability of Raptor's cameras makes them ideal in a variety of applications, including Border and Coastal Surveillance, Airport and Port Surveillance and Airborne EO systems. Contact: Olivier Bernard, Director, ob@raptorphotonics.com; Stephen Hamilton, Director, sh@raptorphotonics.com.

Raytheon
75 Coromar Dr, Goleta, CA, 93117
805/968-4292; fax 805/562-4797
RVSMarketing@raytheon.com; www.raytheon.com

Raytheon Company (NYSE: RTN), with 2009 sales of $25 billion, is a technology and innovation leader specializing in defense, homeland security and other government markets throughout the world. Raytheon provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of sensing; effects; C4I systems, and mission support services. With headquarters in Waltham, Mass., Raytheon employs 75,000 people worldwide. Contact: William Frye, Business Development Executive, whfrye@raytheon.com.

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1112 Heatherloch Dr, Gastonia, NC, 28054
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Research, Development & Engineering Command (RDECOM) - Aviation & Missile Research, Development and Engineering Center (AMRDEC) / Communications & Electronics Research, Development & Engineering Center (CERDEC)
10221 Burbeck Rd, Fort Belvoir, VA, 22060
703/704-3092; fax 703/704-2085
samuel.adams4@us.army.mil; www.nvl.army.mil

Located on Fort Belvoir, Virginia, the US Army RDECOM CERDEC Night Vision and Electronic Sensors Directorate (NVESD) is a center for the research and development of night vision and other sensor technologies. NVESD employs world class expertise in electro-optical electronic sensors to equip the Warfighter with imaging devices that improve surveillance and targeting, safety, and lethality while providing a broad range of increased capabilities for Soldiers, Ground/Airborne EO/IR (driving/pilotage), Force Protection, and IED/Mine and Minefield detection. Over the last forty years, NVESD has participated in and coordinated the efforts of both government and private industry in the research and development of night vision and electronic sensor technology.

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303/664-5000; fax 303/664-5001
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contact@romackfiberoptics.com; www.romackfiberoptics.com

RoMack, Inc. manufacturers fiber optic assemblies, components and related products specifically tailored for spectroscopic, laser, pharmaceutical, medical, process control and industrial applications. Products include but are not limited to: probes, connectors, adapters, patchcords, bundles, arrays, imagers, collimators, couplers, tapers, cuvetter holds and flow cells. RoMack, Inc. routinely takes concept to product creating solutions for the most difficult application problems. Contact: Lisa Young, Sales & Marketing Manager, lyoung@romackfiberoptics.com.

Ross-Hime Designs Inc. #3421

1313 5th St SE, Minneapolis, MN, 55414
651/699-5610; fax 651/695-0320
www.anthrobot.com

New Product: The Patent pending Super Seeker is a revolutionary advance in missile seeker gimbal technology.

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New Product: Engineered diffuser optical films available in circular, square and line patterns in 40-80 degrees.

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Rutherford Appleton Laboratory #3214

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858/675-7404; fax 858/675-2028  
www.surfaceoptics.com  
New Product: SOC introduces the SOC710, our new, compact, portable, low-cost hyperspectral imaging line.  
Sydor Instruments LLC  
31 Jet View Dr, Rochester, NY, 14624  
585/278-1168; fax 585/278-1169  
info@sydorinstruments.com; www.sydorinstruments.com  
Sydor Instruments is an advanced development company with a history of developing application specific electro-optical systems for customers when commercially available solutions don’t fully meet program specifications and requirements. The company specializes in image/signal acquisition systems, digital streak cameras, and single photon detectors where the highest resolution and accuracy is required for high value time signal detection, discrimination, and analysis. Contact: Daniel Rao, Business Development, darr@sydorinstruments.com; Mike Pavia, President, pavia@sydorinstruments.com.

Syntec Optics  
7100 Junction Rd, Pavilion, NY, 14534  
585/768-2513; fax 585/768-7138  
info@syntecoptics.com; www.syntecoptics.com  
Hybrid solutions that push the polymer envelope. Syntec Optics is the largest independent custom manufacturer of precision plastic optics in the U.S. Capabilities consist of optical and mechanical design, including optics that combine polymer and glass; optical and opaque mold building; including injection tunneling; single-point diamond turning, including HRD™ for high refraction, high thermal optics and also plano polishing. Fully integrated custom metrology and assembly services. Contact: Thomas Goundry, Sales, tgoundry@syntecoptics.com; Rick Arndt, VP/GM, ranrdt@syntecoptics.com.

TDK-Lambda Americas Inc.  
405 Essex Rd, Neptune, NJ, 07753  
732/922-9300; fax 732/922-1441  
sales@us.tdk-lambda.com; www.us.tdk-lambda.com  
New Product: Genesys™ 5kW of AC/DC Power in 2U highest density programmable DC power with user friendly interface.  
Teledyne Imaging Sensors  
1049 Camino Dos Rios, Thousand Oaks, CA, 91360  
805/373-4558; fax 805/373-4775  
www.teledyne-si.com  
Teledyne Imaging Sensors (TIS) is engaged in the design, development and production of high performance visible and infrared sensor subsystems used in DoD, and government, tactical and space applications as well as astronomy and civil space applications. TIS also has developed and is manufacturing laser eye protection spectacles, whose initial application is to protect military pilots. Contact: Robert Koegle, Program Manager, rkoegle@teledyne.com; John Auyeung, Program Manager, jauyeung@teledyne.com.
Teledyne Judson Technologies

Teledyne Judson Technologies (TJT) is a global leader for IR sensors from the VIS to VLWIR spectrum used in military, space, and commercial markets. TJT has added two dimensional imaging to its legacy product suite. Presently, we are shipping NIR InGaAs qVGA cameras. Products are used in surveillance, law enforcement & security, laser beam diagnostics and range finding, and chemical & biological detection. We offer supplementary electronics, optics, Peltier cooling, and cryo-cooled modules. Contact: Joseph Kimchi, Vice President, Engineering, jkimchi@teledynejudson.com.

Teledyne Microelectronics

For more than 40 years Teledyne Microelectronic Technologies has served the Defense and Aerospace markets with products, packaging and manufacturing services. TMT’s Lighting and Display group is known for extremely efficient, high reliability, LED backlights and light engines for use in helmet mounted displays, weapon sights and electronic view finders. TMT’s Optoelectronics group designs and produces ruggedized receivers, transmitters and transceivers for Defense, Aerospace and Space applications. Contact: Shannon Giddens, Business Development Manager, sgiddens@teledyne.com; Sam Calvillo, Vice President, Business Development, scalvillo@teledyne.com.
Exhibitor Directory

Teledyne Reynolds, Inc. #1215
5005 McConnell Ave, Los Angeles, CA, 90066
310/823-5491; fax 310/823-9311
reynoldsinc@teledyne.com; www.teledyne-reynolds.com

New Product: Optical inertial helmet tracking system based on an innovative optical angle measurement technology.

Teledyne Reynolds has become a leader in the design and manufacture of Helmet-Mounted Display (HMD) components and subsystems, including high durability helmet interface cabling, advanced helmet tracking and helmet-to-vehicle interface systems. These HMD systems are particularly suited to servicing rotary wing and combat vehicle applications. They are characterized by high durability, reliability, accuracy and long operating life. They are attractively priced. Contact: Dale Hollis, Vice President, dhollis@teledyne.com; Dianna German, Marketing/Sales Manager, dgerman@teledyne.com.

Telops Inc. #1316
100 - 2600 ave St-Jean-Baptiste, Quebec, QC, Canada, G2E 6J5
418/864-7808; fax 418/864-7843
contact@telops.com; www.telops.com

Telops specializes in the design and production of sophisticated opto-electronic systems for the defense, aerospace and telecommunications industries. In addition to providing specialized opto-electronic engineering services, Telops has also developed the HyperCam, an infrared hyperspectral imager which allows standoff chemical detection at a distance of up to five kilometers. Contact: Vincent Farley, Business Development Manager, vincent.farley@telops.com; Gary Lux, Business Development Manager, gary.lux@telops.com.

Temmek Optics Ltd. #3607
PO Box 159, Yavne, Israel, 81101
972 8 943 8408; fax 972 8 943 8390
temmek@temmek.com; www.temmek.com

New Product: Temmek Optics proudly present RONIT-XL, IR continuous ZOOM lens for large (1024x768) UnCooled FPA.

Temmek Optics is a leader in the design and manufacture of IR continuous zoom lenses and discrete zoom IR lenses for Uncooled LWIR and cooled MWIR for large format FPAs. The proven reliability of Temmek products is evidenced by the combat proven hundreds IR zoom lenses installed on AFVs. Temmek Optics is completely autonomous in the manufacturing of IR lens assemblies: from optics and opto-mechanical design, through aspheric diamond turning, and coating to final assembly and testing. Contact: Ronny Zilberman, Marketing Director, rony@temmek.com; Donny Maresse, VP Operation, donny@temmek.com.

Teraxion Inc. #1230
2716 Einstein, Sainte-Foy, QC, Canada, G1P 4S8
418/658-9500; fax 418/658-9595
info@teraxion.com; www.teraxion.com

New Product: The new PureSpectrum-MNL is a Multi-channel Narrow Linewidth Semiconductor Laser System.

TeraXion is a manufacturer of high performance optical components and sub assemblies for the Telecom, Industrial, Aerospace and Defense markets. Products include High power reflectors and Pulse stretcher for CW and Ultra Fast Fiber lasers, High performance laser modules for Lidar systems, Narrow line width laser modules for sensing systems, and Tunable or Latchable dispersion compensator for high speed communication systems. TeraXion customized high end optical devices for Aerospace applications. Contact: Ghislain Lafrance, VP Defense & Aerospace, glafrance@teraxion.com; Nicholas Gagnon, Product Manager - Industrial/ Energy, ngagnon@teraxion.com.

Textron Defense Systems #3221
201 Lowell St, Wilmington, MA, 01887
978/657-2100; fax 978/657-2229
inquiry@systems.textron.com; www.textron.com

Visit Textron Defense Systems, an operating unit of Textron Systems, a Textron Inc. company, at Booth #3221. The company will feature technologies from its Directed Energy Weapons business line, as well as its Tactical- and Urban-Unattended Ground Sensors and Warball multi-sensor active ball turret. Learn more about Textron Defense Systems at www.textrondefense.com. Contact: Todd Kulik, Manager, Business Development, tkulik@systems.textron.com; Jay Johnson, Sr. Director, Business Development, jjohnson@systems.textron.com.

Thales Cryogenics B.V. #3503
Hooge Zijde 14, Eindhoven, The Netherlands, 5626 DC
+31-(0)40-2503723
hans.vanderweijden@nl.thalesgroup.com; Contact: Hans van der Weijden,

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Teknik House, 2 Pembroke Ave, Waterbeach Cambridge, United Kingdom, CB25 9QR
44 1223 204 000; fax 44 1223 201 010
enquiries@thermoteknix.com; www.thermoteknix.com

Thermoteknix will showcase their new shutterless 384x288 and 640x480 MicroCAM products - the world’s smallest, lowest power consuming infrared cameras. Featherweight MicroCAM weighs 26g (1oz), measures a miniature 4x4cm (1.57x1.57 inch) and has a minimal power consumption of <0.6 Watt. MicroCAM uses 30% less power than its nearest competitor making it perfect for all size, weight and battery critical operations. MicroCAM is a member of the Thermoteknix MIRICLE high performance thermal imagers. Contact: Alistair Brown, Product Manager (Imaging), a.brown@thermoteknix.com; Dick Ludwig, Sales Manager USA, d.ludwig@thermoteknix.com.

Teledyne Reynolds has become a leader in the design and manufacture of Helmet-Mounted Display (HMD) components and subsystems, including high durability helmet interface cabling, advanced helmet tracking and helmet-to-vehicle interface systems. These HMD systems are particularly suited to servicing rotary wing and combat vehicle applications. They are characterized by high durability, reliability, accuracy and long operating life. They are attractively priced. Contact: Dale Hollis, Vice President, dhollis@teledyne.com; Dianna German, Marketing/Sales Manager, dgerman@teledyne.com.

Telops Inc.

100 - 2600 ave St-Jean-Baptiste, Quebec, QC, Canada, G2E 6J5
418/864-7808; fax 418/864-7843
contact@telops.com; www.telops.com

Telops specializes in the design and production of sophisticated opto-electronic systems for the defense, aerospace and telecommunications industries. In addition to providing specialized opto-electronic engineering services, Telops has also developed the HyperCam, an infrared hyperspectral imager which allows standoff chemical detection at a distance of up to five kilometers. Contact: Vincent Farley, Business Development Manager, vincent.farley@telops.com; Gary Lux, Business Development Manager, gary.lux@telops.com.

Temmek Optics Ltd.

PO Box 159, Yavne, Israel, 81101
972 8 943 8408; fax 972 8 943 8390
temmek@temmek.com; www.temmek.com

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Teraxion Inc.

2716 Einstein, Sainte-Foy, QC, Canada, G1P 4S8
418/658-9500; fax 418/658-9595
info@teraxion.com; www.teraxion.com

New Product: The new PureSpectrum-MNL is a Multi-channel Narrow Linewidth Semiconductor Laser System.

TeraXion is a manufacturer of high performance optical components and sub assemblies for the Telecom, Industrial, Aerospace and Defense markets. Products include High power reflectors and Pulse stretcher for CW and Ultra Fast Fiber lasers, High performance laser modules for Lidar systems, Narrow line width laser modules for sensing systems, and Tunable or Latchable dispersion compensator for high speed communication systems. TeraXion customized high end optical devices for Aerospace applications. Contact: Ghislain Lafrance, VP Defense & Aerospace, glafrance@teraxion.com; Nicholas Gagnon, Product Manager - Industrial/ Energy, ngagnon@teraxion.com.
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a subsidiary of Williams Advanced Materials, Inc. 
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Thorlabs is an innovative company serving the research and industrial communities by designing and manufacturing photonics equipment. Founded in 1989, Thorlabs continues to expand its product portfolio, which includes optomechanical, motion control, vibration isolation, optical, fiber, light analysis, laser, SLD, optical amplifier, and imaging components and systems. We have over 500 employees in locations throughout the United States, United Kingdom, Germany, France, Sweden, Japan, and China. Contact: Sales at Thorlabs, sales@thorlabs.com.

ThruVision Systems Ltd.  
Central 127 No 18 Milton Park, Abingdon, Oxfordshire, United Kingdom, OX14 4SA  
44 1235 433130; fax 44 1235 433140  
ron.frye@thruvision.com; www.thruvision.com

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sales@toweroptical.com; www.toweroptical.com

Trioptics GmbH  #1043
Hafenstr 35-39, Wedel, Germany, 22880
49 4103 18006 0; fax 41 4103 18006 20
info@trioptics.com; www.trioptics.com
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TwinStar Optics, Coatings, & Crystals  #935
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727/847-2300; fax 727-847-2304
sales@twinstaroptics.com; www.twinstaroptics.com
New Product: Solderable Edge Metalizations & Optical Assemblies.

ULIS  #634, 635
BP 27 ZI des Iles Cordees, Veurey Voroize, France, 38113
33 4 76 5374 70; fax 33 4 76 5374 80
ulis@ulis-ir.com; www.ulis-ir.com
New Product: UL 04 27 2 640 x 480 17 μm IR detector.

Umicore Optical Materials USA Inc.  #807
2976 S 614 Rd, Quapaw, OK, 74363
918/673-1650; fax 918/673-2121
optics@umicore.com; www.optics.umicore.com
Umicore offers infrared materials, thin-film optical coating and components for thermal imaging and sensing applications. Umicore supplies high quality germanium blanks and optics. Umicore’s innovation is GASIR®, a range of infrared chalcogenide glasses that are molded into finished optics with complex geometry, including asphero–diffractive surfaces. GASIR®1 and GASIR®3 molded optics are developed for high-volume, low-cost applications. Umicore’s optical-mechanical design competencies enable the manufacture of custom and standard infrared lens assemblies. Contact: Jeff Koch, Sales Manager, j.koch@umicore.com; Henri Chomette, Senior Sales Manager, h.chomette@umicore.com.

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kplouffe@unitedlens.com; www.unitedlens.com

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**Varian, Inc.**  
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custcare@varianinc.com; www.varianinc.com

**Vectronix Inc.**  
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Vectronix Inc. is a leader in the integrated multi-function electro-optic, north-finding and thermal/night vision industry, providing high quality, field-proven observance, detection, geo-positioning and targeting solutions in handheld and modular formats. Vectronix is synonymous with Swiss-quality optics, north-finding technology and digital magnetic compass technology. Vectronix Inc. is headquartered in Leesburg, VA and conducts manufacturing operations in Newington, NH. Contact: Mike Ledermann, OEM Sales and Support Engineer, mike.ledermann@vectronix.com.

**Velodyne Lidar, Inc.**  
345 Digital Dr, Morgan Hill, CA, 95037  
408/485-2800; fax 408/779-9227  
help@velodyne.com; www.velodynelidar.com  
New Product: High reliability lidar sensors with increased data rate and extended operating temperature.  
Velodyne Lidar, Inc. is a leading manufacturer of high definition lidar sensors. Headquartered in Morgan Hill, California, the company's HDL-64E is a 64-element LIDAR sensor that delivers a 360-degree HFOV and a 26.8-degree VFOV. It generates more than 1.3 million distance points per second. The HDL-64E is used in a variety of applications including terrestrial and marine autonomous vehicles, robotics, 3D mapping, security and surveying. For more information visit www.velodynelidar.com. Contact: Michael Dunbar, Business Development Manager, mdunbar@velodyne.com; Ann Gargiulo, Marketing Communications Manager, agargiulo@velodyne.com.

**Vincent Associates**  
803 Linden Ave, Rochester, NY, 14625  
585/385-5930; fax 585/385-6004  
vincentsassociates@uniblitz.com; www.uniblitz.com  
New Product: DSS Series are design scalable, compact, and durable bi-stable shutters. Patent Pending.  
Vincent Associates is the manufacturer of UNIBLITZ electronics and manufacturing for precision fiber processing. Contact: Jim Stathis, OEM Sales and Support Engineer, mike.ledermann@vectronix.com.

**Vision Systems Technology, LLC**  
10955 Avenida Del Gato, San Diego, CA, 92126  
858/449-1562  
vst@visionsystech.com; www.visionsystech.com  
New Product: The VA 12 bit cameras feature 1MP, 2MP, 2MP-HDTV, 4MP, and 8MP for ISR, Aerial, and UAV applications.  
Vision System Technology, LLC is a leading supplier of digital imaging products. Our digital products provide the latest technology and features available today. We serve the Military, Aerial, Industrial, and Scientific markets. Contact: Terry Guy, VP Sales & Marketing, terry.guy@visionsystech.com; Kris Balch, President, kris.balph@visionsystech.com.

**Vision4ce LLC**  
180 Tarn Glade, Severna Park, MD, 21146  
410/354-9181  
info@vision4ce.com; www.vision4ce.com

**Voltage Multipliers Inc.**  
8711 W Roosevelt, Visalia, CA, 93291  
559/651-1402; fax 559/651-0440  
www.voltagemultipliers.com

**Vytran LLC**  
1400 Campus Dr W, Morganville, NJ, 07751  
732/972-2880; fax 732/972-4690  
info@vytran.com; www.vytran.com  
New Product: GPX-3000 versatile glass processing system for fused fiber laser component and sensing development.  
Vytran is an innovative supplier of high performance fiber fusion splicing and glass processing for fiber laser, sensing, and specialty fiber. Solutions are designed to reduce customers’ risk, speed products to market and lower cost of ownership. The patented filament fusion technology provides process control unattainable by other methods. Innovations in fiber cleaving and recoating make Vytran a leader in reliable, R&D development and manufacturing for precision fiber processing. Contact: Jim Stathis, Business Development Manager, jstathis@vytran.com.

**Wafer Technology Ltd.**  
34 Maryland Rd, Tongwell, Milton Keynes Buckinghamshire, United Kingdom, MK15 8HJ  
44 1908 210444; fax 44 1908 210443  
sales@wafertech.co.uk; www.wafertech.co.uk  
Wafer Technology, a member of the IQE plc group of companies, manufactures the world’s broadest range of III-V substrates (GaAs, InP, GaSb, InSb and InAs) using both VGF and LEC growth techniques. Material is epi-ready substrates in 2", 3" and 4" diameter. Unrivalled choice of material types and forms enables it to support almost any customer application. All products are manufactured at the company’s Milton Keynes (U.K.) headquarters according to ISO 9001/14001 certified processes. Contact: Tom Taylor, Sales Manager, ttaylor@wafertechus.com.

**Vision System Technology, LLC**  
10955 Avenida Del Gato, San Diego, CA, 92126  
858/449-1562  
vst@visionsystech.com; www.visionsystech.com  
New Product: The VA 12 bit cameras feature 1MP, 2MP, 2MP-HDTV, 4MP, and 8MP for ISR, Aerial, and UAV applications.  
Vision System Technology, LLC is a leading supplier of digital imaging products. Our digital products provide the latest technology and features available today. We serve the Military, Aerial, Industrial, and Scientific markets. Contact: Terry Guy, VP Sales & Marketing, terry.guy@visionsystech.com; Kris Balch, President, kris.balph@visionsystech.com.

**Vision4ce LLC**  
180 Tarn Glade, Severna Park, MD, 21146  
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info@vision4ce.com; www.vision4ce.com

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1400 Campus Dr W, Morganville, NJ, 07751  
732/972-2880; fax 732/972-4690  
info@vytran.com; www.vytran.com  
New Product: GPX-3000 versatile glass processing system for fused fiber laser component and sensing development.  
Vytran is an innovative supplier of high performance fiber fusion splicing and glass processing for fiber laser, sensing, and specialty fiber. Solutions are designed to reduce customers’ risk, speed products to market and lower cost of ownership. The patented filament fusion technology provides process control unattainable by other methods. Innovations in fiber cleaving and recoating make Vytran a leader in reliable, R&D development and manufacturing for precision fiber processing. Contact: Jim Stathis, Business Development Manager, jstathis@vytran.com.

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34 Maryland Rd, Tongwell, Milton Keynes Buckinghamshire, United Kingdom, MK15 8HJ  
44 1908 210444; fax 44 1908 210443  
sales@wafertech.co.uk; www.wafertech.co.uk  
Wafer Technology, a member of the IQE plc group of companies, manufactures the world’s broadest range of III-V substrates (GaAs, InP, GaSb, InSb and InAs) using both VGF and LEC growth techniques. Material is epi-ready substrates in 2", 3" and 4" diameter. Unrivalled choice of material types and forms enables it to support almost any customer application. All products are manufactured at the company’s Milton Keynes (U.K.) headquarters according to ISO 9001/14001 certified processes. Contact: Tom Taylor, Sales Manager, ttaylor@wafertechus.com.

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**Xactra Technologies** #1436
9 Marway Circle, Rochester, NY, 14624
585/426-2030; fax 585/426-2709
sales@xactra.com; www.xactra.com

Xactra Technologies produces precision custom machined components for the optics/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, night vision, thermal weapon sites, laser instrumentation, and medical devices. Xactra Technologies: Quality obsessed, Schedule driven and Competitively focused. Contact: J. Michael Grady, VP, Sales@xactra.com.

**Xenics** #3313
Ambachtenlaan 44, Leuven, Belgium, 3001
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sales@xenics.com; www.xenics.com

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**Z&Z Optoelectronics Tech. Co., Ltd.** #227
No3 Keyuan South Road, High-Tech District, Chengdu, China, 610041
86 28 85139768; fax 86 28 85255889
zz_optic@vip.163.com; www.zzoptic.com

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**Zygo Corp.** #402
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<td>Ideal Aerosmith Inc.</td>
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<td>KLASTECH - Karpushko Laser Technologies GmbH</td>
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<td>M&lt;sup&gt;3&lt;/sup&gt; Measurement Solutions Inc.</td>
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<td>Max Levy Autograph, Inc.</td>
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<td>Meadowlark Optics, Inc.</td>
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<td>nPoint, Inc.</td>
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<td>Ohara Corp</td>
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<td>Optical Support, Inc.</td>
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<td>PI (Physik Instrumente) LR</td>
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<tr>
<td>POG Precision Optics Gera</td>
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<td>Precision MicroDynamics Inc.</td>
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<td>Sony Electronics Inc.</td>
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<td>StingRay Optics, LLC</td>
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<td>Surface Optics Corp.</td>
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<td>Teraxion Inc.</td>
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<td>Trioptics GmbH</td>
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<td>Vincent Associates</td>
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<td>Vision Systems Technology, LLC</td>
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<td>Xenics</td>
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<td>Zygo Corp.</td>
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<th>Nanotechnology</th>
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<td>Advanced Cooling Technologies, Inc.</td>
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<td>Aerotech, Inc.</td>
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<td>Advanced Research Corp.</td>
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<td>AMETEK Precitech, Inc.</td>
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<th>Life Sciences</th>
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<tr>
<td>Active Silicon Ltd.</td>
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<td>Boston Electronics Corp.</td>
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<td>Cal Sensors, Inc.</td>
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<td>EM4, Inc.</td>
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<td>Fairchild Imaging</td>
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<td>Intevac Photonics, Inc.</td>
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<td>Microfluidic Systems, Inc.</td>
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<td>PHOTONIS USA</td>
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<tr>
<td>PI (Physik Instrumente) LR</td>
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<tr>
<td>Power Technology, Inc.</td>
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<tr>
<td>Scintec Corporation</td>
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<tr>
<td>Solid State Cooling Systems</td>
</tr>
</tbody>
</table>

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### Non-Optical Lithography

- Max Levy Autograph, Inc.

### Optical Components

#### Absolute Coating
- AccuCoat, Inc.
- AcTek Ltd.
- American Photonics Co.
- AMF Optics, Inc.
- Angstrom Precision Optics Inc.
- Applied Optronics
- Argus International, Ltd.
- Asahi Spectra USA Inc.
- asphericon GmbH
- Axsys Technologies-GDAIS
- BEI Precision Systems & Space Co.
- Boston Electronics Corp.
- Boulder Nonlinear Systems, Inc.
- Brush Wellman Inc.
- China Germanium Co., Ltd.
- Clear Align
- Computer Optics Inc.

#### Criterion Instrument
- Deposition Sciences, Inc
- Donotech Inc.
- Dow Electronic Materials
- Edmund Optics
- ELCAN Optical Technologies
- Element Six
- EM4, Inc.
- eMagin Corporation
- Epner Technology, Inc.
- Esterline CMC Electronics
- ET Precision Optics Inc.
- Evaporated Coatings, Inc.
- ExoTec Precision, GSI Group
- Exotic Electro-Optics
- Fairfield Crystal Technology
- Feldmann GmbH
- FLIR Systems, Inc.
- Guild Optical Associates, Inc.
- Gurrey Precision Instruments, Inc.
- Hamamatsu Corp.
- Hardin Optical Company
- Heraeus
- Hoppe Tool, Inc.
- ImmerVision
- IMPEX HighTech GmbH
- Infinite Optics Inc.
- Innrad, a PPGI Company
- Insaco, Inc.
- ISP Optics Corp.
- Isuzu Glass Inc.
- Janos Technology, Inc.
- JDSU
- JenOPTIK Laser, Optik, Systeme GmbH
- Jenoptik Optical Systems, Inc.
- Jenoptik Optical Systems, Inc. - AL (formerly MEMS Optical, Inc.)
- Kent Optronics, Inc.
- Kentek Corp.
- Kowa Optimed, Inc.
- Kreischer Optics, Ltd.
- L-3 Electro-Optical Systems
- L-3 Tinsley
- LaCroix Optical Co.
- Lambda Research Optics Inc.

#### Laser Components IG, Inc.
- Laser Operations LLC
- Laser Research Optics
- LightPath Technologies, Inc.
- Max Levy Autograph, Inc.
- Meadowlark Optics, Inc.
- Meller Optics, Inc.
- Micro Laser Systems, Inc.
- Micro Photon Devices
- Micromechatronics, Inc.
- Mindrum Precision, Inc.
- Moore Nanotechnology Systems, LLC
- Multisorb Technologies
- Naked Optics Corp.
- Navitar, Inc.
- Novotech, Inc.
- nPoint, Inc.

#### OASYS Technology, LLC
- Ocean Optics, Inc.
- OFS - Specialty Photonics Division
- Ohara Corp
- OPO Laboratory, Inc.
- Ophir Optics, LLC
- OpenG, Inc.
- OPTICS 1, Inc.
- Optiwave Systems Inc.
- OPTIX Co.
- Opto Diode Corp.
- OptoElectronic Components
- Optonetic LLC
- OSRAM Opto Semiconductors
- PerkinElmer Inc.
- PFG Precision Optics
- Phoenix Optical Technologies Ltd.
- Polyoptic Optics Group Inc.

#### Photonic Products Group Inc.
- PicoQuant GmbH
- PLX, Inc.
- POG Precision Optics Gera
- Polymer Optics, LLC
- Polymicro Technologies A

### Optical Detectors

#### Analog Modules, Inc.
- Bodkin Design & Engineering, LLC
- Brimrose Technology Corp.
- Cal Sensors, Inc.
- Chunghwa Telecom Labs.
- Computer Optics Inc.
- Epitaxial Technologies, LLC

#### subsidiary of Molex Incorporated
- Precision Optical
- Quality Thin Films, Inc.
- Rainbow Research Optics, Inc.
- Research Electro-Optics, Inc.
- Reynard Corp.
- Rochester Precision Optics LLC
- Rocky Mountain Instrument Co.
- RoMack, Inc.
- Rubicon Technology, Inc.
- Saint-Gobain Crystals
- Sangat Precision Machining & Grinding
- Sierra Precision Optics
- Sinclair Manufacturing
- Solid Sealing Technology
- Special Optics
- Specialty Glass Products
- SpecTIR LLC
- Spectral Systems
- Spectrogon US Inc.
- Spire Semiconductor, LLC
- Sydor Instruments LLC
- Syntec Optics
- Tecport Optics, Inc.
- Teledyne Microelectronics
- Tehmek Optics Ltd.
- Teraxion Inc.
- TwinStar Optics, Coatings, & Crystals
- Umicore Optical Materials USA Inc.
- Vectronix Inc.
- Vincent Associates
- Wordingham Technologies
- WZW-Optic AG
- Xactra Technologies
### Optical/Laser Microlithography
- ASML Optics
- JENOPTIK Optical Systems, Inc.
- KLA/Tencor - Karpushko Laser Technologies GmbH

### Optics Manufacturing
- 4D Technology Corp.
- American Photonics Co.
- Angstrom Precision Optics Inc.
- ASML Optics
- Axsys Technologies-GDAIS
- Carl Zeiss Microlmaging, Inc.
- Cascade Optical Corp.
- China Germanium Co., Ltd.
- Computer Optics Inc.
- CVI Melles Griot
- Docter Optics, Inc.
- Edmund Optics
- Element Six
- EM, Inc.
- ExoTec Precision, GSI Group
- Fairfield Crystal Technology
- Feldmann GmbH
- Fresnel Technologies Inc.
- GlassFab Inc.
- Gooch & Housego
- Guild Optical Associates, Inc.
- Hardin Optical Company
- Headwall Photonics, Inc.
- Heraeus
- ImmerVision
- IMPEX HighTech GmbH
- Infinite Optics Inc.
- Insaco, Inc.
- Infratec GmbH
- Isuzu Glass Inc.
- JDSU
- Janos Technology, Inc.
- Janus Technologies, Inc.
- Jenoptik Optical Systems, Inc.

### Optical Test and Measurement Equipment, Interferometer
- 4D Technology Corp.
- ABB Analytical
- ABTech Inc.
- Asahi Spectra USA Inc.
- ASD Inc.
- ASML Optics
- BEI Precision Systems & Space Co.
- Ci Systems, Inc.
- D&P Instruments
- Docter Optics, Inc.
- Electro Optical Industries, Inc.
- Feldmann GmbH
- Gentech Electro-Optics Inc.
- Gooch & Housego
- Intelligent Optical Systems, Inc.
- Jenoptik Optical Systems, Inc.
- LabSphere, Inc.
- <sup>M</sup><sup><sup>&gt;</sup><sup>3</sup></sup>(</sup><sup>&gt;</sup><sup>3</sup></sup> Measurement Solutions Inc.
- Micro Photon Devices
- MIDAC Corporation
- NuOptics, Inc.
- NuPhoton Technologies, Inc.
- Ophir-Spiricon, Inc.
- Optical Support, Inc.
- Optekos Corp.
- OptoPro Systems
- Photon
- PLX, Inc.
- Polaris Sensor Technologies, Inc.

### Optical Materials and Substrates
- Absolute Coating
- Acktar Ltd.
- American Photonics Co.
- AMF Optics, Inc.
- Angstrom Precision Optics Inc.
- Argus International, Ltd.
- Brush Wellman Inc.
- China Germanium Co., Ltd.
- CVI Melles Griot
- Deosition Sciences, Inc
- Dnotech Inc.
- Dow Electronic Materials
- Element Six
- Evaporated Coatings, Inc.
- Exotic Electro-Optics
- Firebird Technologies Inc.
- GlassFab Inc.
- Goodrich ISR Systems
- Heraeus
- Hoppe Tool, Inc.
- IMPEX HighTech GmbH
- Infinite Optics Inc.
- Infrared Coatings, Inc.
- Insaco, Inc.
- ISP Optics Corp.
- Isuzu Glass Inc.
- JDSU
- Jenoptik Optical Systems, Inc.
- L.A. Gauge Optics
- LabSphere, Inc.
- Lambda Research Optics Inc.
- Laser Optics a PPGI company
- Laser Research Optics
- <sup>M</sup><sup><sup>&gt;</sup><sup>3</sup></sup>(</sup><sup>&gt;</sup><sup>3</sup></sup> Measurement Solutions Inc.
- Meller Optics, Inc.
- Moore Nanotechnology Systems, LLC
- Naked Optics Corp.
- Novotech, Inc.
- Nu-Cast, Inc.
- Ohara Corp
- Ophir Optics, LLC
- Optiforams
- Optonetics LLC
- Phoenix Infrared
- Phoenix Optical Technologies Ltd.
- Photonicsense GmbH
- Poco Graphite, An Entegris Company
- Precision Optical
- Quality Thin Films, Inc.
- Rainbow Research Optics, Inc.
- Research Electro-Optics, Inc.
- Rochester Precision Optics LLC
- Rocky Mountain Instrument Co.
- Rubicon Technology, Inc.
- Saint-Gobain Crystals
- Specialty Glass Products
- Spectral Systems
- Spectrogon US Inc.
- TwinStar Optics, Coatings, & Crystals
- Umicore Optical Materials USA Inc.
- WZW-Optic AG
- Z&B Optoelectronics Tech. Co., Ltd.

### Optical Fibers
- Cascade Optical Corp.
- CorActive High-Tech, Inc.
- Epitaxial Technologies, LLC
- INO
- IPG Photonics Corp.
- Laser Components Inc.
- Nufern
- Ocean Optics, Inc.
- OFS - Specialty Photonics Division
- Optiwave Systems Inc.
- Photonics Online
- Polymicro Technologies A subsidiary of Molex Incorporated
- RoMack, Inc.
- Vytran LLC

### Esterline CMC Electronics
- Gentec Electro-Optics Inc.
- Heraeus
- Micro Photon Devices
- Microfluidic Systems, Inc.
- MRC, a PPGI company
- National Reconnaissance Office
- Ocean Optics, Inc.
- Ocean Thin Films
- Opto Diode Corp.
- OptoElectronic Components
- OSRAM Opto Semiconductors
- Pacific Silicon Sensor Inc.
- PerkinElmer Inc.
- Phoenix Infrared
- Photonic Products Group Inc.
- (PPGI)
- PHOTONIS USA
- Photon
- PicoQuant GmbH
- Polaris Sensor Technologies, Inc.
- Proxitronic Detector Systems
- Absolute Coating
- Acktar Ltd.
- American Photonics Co.
- AMF Optics, Inc.
- Angstrom Precision Optics Inc.
- Argus International, Ltd.
- Brush Wellman Inc.
- China Germanium Co., Ltd.
- CVI Melles Griot

### Product Index
- PolarOnyx, Inc.
- Sarnoff Corp.
- SBIR
- Spectral Evolution
- Surface Optics Corp.
- Telops Inc.
- Trioptics GmbH
- Universal Photonics, Inc.
- Vision Systems Technology, LLC
- Zygo Corp.
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Xactra Technologies
Zygo Corp.

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Vytran LLC
WIBE Telescopic Mast Systems

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Florida Photonics Cluster
Georgia Tech Research Institute/SENSIAC
Photonics Media
Physics Today
Pinellas County Economic Development
Quebec Photonic Network
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Spica Technologies, Inc.

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ImmerVision
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IRCAM GmbH
ITT Visual Information Solutions
L-3 Nova Engineering
M<sup>3</sup> Measurement
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Textron Defense Systems

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Isuzu Glass Inc.
JSR/JM Energy
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OPOO Laboratory, Inc.
Ophir-Spiricon, Inc.
Physical Optics Corp.
Spectrolab, Inc. A Boeing Company
Spire Semiconductor, LLC
Surface Optics Corp.
Tecport Optics, Inc.

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Pyhtron Inc.
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WZW-Optic AG

X-Ray Lithography
L-3 Tinsley

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Laser Focus World/PennWell Technology Division
Laser Institute of America
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Leybold Optics USA, Inc.
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LightPath Technologies, Inc./HQ
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LightWorks Optics, Inc.
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Mad City Labs., Inc.
Market Tech, Inc.
Max Levy Autograph, Inc.
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Mentor Graphics Corp./Design to Silicon
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MICOS USA
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Mightex Systems/Headquarters
Mildex, Inc.
Mindrum Precision, Inc.
Minus K Technology Inc.
MLD Technologies, LLC/Business Office
Molded Plastic Optics, LLC
MPA Crystal Corp./US Subsidiary
MPB Communications Inc./Head Office
masa jena Mikroschichtoptik GmbH
MTI Corp.
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Multisorb Technologies/Headquarters
Multivave Photonics/HQ
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Nanjing Creator Optics Co., Ltd.
NANO-UV SAS
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National Institute of Standards and Technology/Optical Technology Division.
New England Optical Systems
New England Photoconductor Corp.
New Mexico Optics Industry Association
New Scale Technologies, Inc./Main Office
New Source Technology, LLC
Newport Corp./Headquarters
Newport Spectra-Physics
nLIGHT Corp./Corp HQ
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NorPix, Inc.
Northrop Grumman Cutting Edge Optronics/GEQ HQ
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rPoint, Inc.
Nufern
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Ocean Thin Films/Manufacturing Facility
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OFS/Specialty Photonics Div
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OZ Optics Ltd.
Pacific Coast Optics
Pacific Quartz Inc.
Pacific Silicon Sensor Inc.
Pavilion Integration Corp.
PF/ Precision Optics, Inc.
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Photon Design
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Photonics Innovations, Inc.
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PHOTONIS/Headquarters - Electron Tubes
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Photon USA, Inc.
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piezosystem jena, Inc.
Point Source Ltd.
PolarOnyx, Inc.
Polymer Optics, LLC
Polymicro Technologies, A Subsidiary of Molex Incorporated
Povolzhskaya State Academy of Telecommunications and Informatics
Power Technology, Inc.
Precision Asphere, Inc.
Precision Ferrites and Ceramics, Inc./OptoElectronic Devices
Precision Glass & Optics
Princeton Instruments/HQ
PTE Inc.
PVP Advanced EO Systems, Inc.
QED Technologies, Inc./Corp. HQ
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Qiopiq GmbH
Qiopiq LINOS, Inc.
Qiopiq Ltd.
Qiopiq Optikai Rendszerk Kft.
Qiopiq Polymer, Inc.
Qiopiq S.A.S./Headquarters
Qiopiq Singapore Pte Ltd.
Qiopiq Space Technology
Quantel USA/North American Headquarters
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Rainbow Research Optics, Inc.
Rayleigh Optical Corp.
Raytheon Co./Vision Systems
RBIT a Non-Profit Partnership
Redfern Integrated Optics, Inc.
Research Electro-Optics, Inc.
Raytheon Corp.
Rocky Mountain Precision Optics, LLC
Robert Bosch USA/Headquarters
Romly Optics Co.
RoMack, Inc.
RPC Photonics, Inc.
RPMC
Rubicon Technology Inc.
Rutherford Appleton Lab./Space Science & Technology Division
Sacher Lasertechnik GmbH
Salem Distributing Co./Precision Div.
Santa Barbara Infrared, Inc.
Sensor North America Inc./North America
SCANLAB America, Inc.
SCD Semiconductor Devices
Schneider Optical Machines, LLC
Schneider Optics, Inc./Industrial Optics Div.
SCHOTT North America Inc./North America
SciCure, Inc.
Scientific Solutions, Inc.
SciTec Corp.
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