

# SPIE Defense, Security & Sensing

**Exhibition: 14–16 April 2009**

**Conferences + Courses: 13–17 April 2009**

Orlando World Center Marriott Resort & Convention Center  
Orlando, Florida, USA



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Visible

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Facial recognition / identification



Visible image

LWIR image

SWIR image





Don't Miss These Free Presentations

**Re-engineering Engineering, p. 6**



**Norman R. Augustine**  
Retired Chairman and Chief Executive Officer, Lockheed Martin Corp.

**Future Direction in U.S. Government Funding, p. 6**  
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**UAVs, p. 6**



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Orlando World Center Marriott Resort & Convention Center  
Orlando, Florida, USA

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*2009 Symposium Chair*  
**Ray O. Johnson**  
Chief Technology Officer  
Lockheed Martin Corp.



*2009 Symposium Cochair*  
**Michael T. Eismann**  
Technical Advisor  
Electro-Optics Sensor Technology Div.  
Air Force Research Lab.

# General Information

## Registration Hours

Orlando World Center Marriott Resort & Convention Center  
Arrival Concourse next to Canary Ballroom

Sunday 12 April	5:00 to 8:00 pm
Monday 13 April	7:00 am to 4:00 pm
Tuesday 14 April	7:30 am to 6:00 pm
Wednesday 15 April	7:30 am to 5:00 pm
Thursday 16 April	7:30 am to 4:00 pm
Friday 17 April	7:30 to 11:00 am

## Exhibition Hours

Orlando World Center Marriott Resort & Convention Center  
Cypress and Palms Ballroom

Tuesday 14 April	10:00 am to 6:00 pm
Wednesday 15 April	10:00 am to 5:00 pm
Thursday 16 April	10:00 am to 2:00 pm

## Food and Beverage Services

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### Coffee Breaks

Complimentary coffee will be served Monday through Friday at approximately 10:00 am and 3:00 pm. Please check the individual technical conference listings for exact times and locations. Tuesday through Thursday in the Exhibition Hall.

### Lunch Locations

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

### Desserts

Tuesday and Wednesday

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

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Booth 503

Popcorn carts will be located in the Exhibition Halls, back of 1500 Aisle and back of 3600 Aisle. It will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 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.

## Business Services

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### Concierge Desk

The Marriott Group Concierge will have a fully staffed Concierge Desk near SPIE registration to assist attendees with discounted attraction tickets, restaurant reservations, golf tee times, and local information.

### SPIE Copy Center

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). The Copy Center will be located in the Atrium across from the Crystal Ballrooms.

### SPIE Message Center

The SPIE Message Center telephone number is 407 238 4000. Messages will be taken during registration hours Sunday through Thursday. Please check the message board at the message center near SPIE registration daily to receive your messages.

### Child Care

All About Kids Professional Child Care, toll free 1-800-728-6506, Phone (407) 812-9300, [www.All-About-Kids.com](http://www.All-About-Kids.com), or email [AAboutKids@aol.com](mailto: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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# General Information

## SPIE Onsite Services

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### 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.

### Industry Resources Booth #S1

Cypress Foyer

The SPIE Industry Resources Booth provides the tools you need to move ideas and technology to the market. Visit the booth for information on events, marketing opportunities, education, and training that SPIE can provide you to make your venture a success. Books from SPIE Publications will be available for purchase.

### SPIEWorks Career Fair

Cypress Foyer

In addition to the onsite recruitment activities, SPIEWorks offers you online services to help you with your search for employment before, during and after the conference. Visit the online Career Fair being held in conjunction with SPIE Defense, Security, and Sensing; post your resume, view jobs, or sign-up for “Job Alerts” and receive opportunities by email long after this event is over. For more information see p. 12.

### Press & Media Center

Crystal 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](mailto:media@spie.org).

### Guest Hospitality Suite

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.

## Policies

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### 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.

### Internet Pavilion

Crystal Foyer



SPIE will have a complimentary Internet Pavilion at the meeting site Sunday through Thursday where 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



SPIE is pleased to provide complimentary wireless access to the Internet for all conference attendees bringing 802.11b wireless-enabled laptops or PDAs.

### Parking

(Note: All rates are subject to change)

Self-parking at the Marriott is \$12.00. Valet parking is \$21.30. Both include in/out privileges. Tax is extra @ 7.5%. Parking can be billed to the guest's room.

### Parking and Shuttles for Attendees not staying at the Orlando World Center Marriott

**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 from the nearby Premier Outlet Mall. Defense, Security + Sensing attendees, exhibitors, and visitors not staying at the Orlando World Center Marriott should plan to use the complimentary shuttle service departing from the Premier Outlet Mall starting with Monday, 13 April. There is ample parking at the Premier Outlet Mall overflow parking lot.

Shuttles will start at 7:00 am Monday through Thursday.

### 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.

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## Symposium-Wide Plenary Presentation

### Re-engineering Engineering

Tuesday 14 April · 9:00 to 10:00 am · Crystal H Ballroom



**Norman R. Augustine**

Retired Chairman and Chief Executive Officer, Lockheed Martin Corp.

The pace of change of modern technology requires that the engineering profession reinvent itself. This will be demanding because of the explosion of new knowledge coupled with the growing importance of engineering to the solution of many global problems. The engineer of the 21st century will have certain fundamentals in common with the one of the 20th century; however, the 21st century engineer is unlikely to recognize the education received by his or her predecessor. Even the language is different ... think about it: mouse, chip, computer, virus, and more!

Mr. Augustine has been presented the National Medal of Technology by the President of the United States and received the Joint Chiefs of Staff Distinguished Public Service Award. He has five times received the Department of Defense's highest civilian decoration, the Distinguished Service Medal. He is co-author of The Defense Revolution and Shakespeare in Charge and author of Augustine's Laws and Augustine's Travels. He was selected by Who's Who in America and the Library of Congress as one of "Fifty Great Americans" on the occasion of the Who's Who's 50th Anniversary.

## Special Session

### Future Direction in U.S. Government Funding

Wednesday 15 April · 3:30 to 5:45 pm · Crystal J1 Ballroom



Session Chair: **Paul F. McManamon**, Air Force Research Lab. (ret)

Learn from US Government program experts about the future areas of Army, Navy, and Air Force Funding. Discover which technical problems program managers are trying to solve and tie in your organizational strategy to impact potential solutions.

Presentations include:

#### Army Strategic Research Directions in Sensors and Processing



**John M. Pellegrino**

Chair, US Army Research, Development, & Engineering Command Sensors Technical Focus Team and Director, Sensors & Electron Devices Directorate, US Army Research Laboratory

#### Air Force Basic Research Directions



**Brendan B. Godfrey**

Director, Air Force Office of Scientific Research

#### Creating the Future: the Naval Science and Technology Strategy



**Walter F. Jones**

Executive Director, Office of Naval Research








**1999** - Alpha: the world's smallest, lowest power IR camera



**2003** - Omega: the next generation. Still the smallest, low-power IR camera, with over 10,000 sold.



**2004** - Automotive IR core: over 70,000 sold to date



**2009** - FLIR raises the bar yet again... with the Tau family of IR cameras



**2005** - Photon: the world's most versatile OEM IR camera, over 35,000 sold to date

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SEE TAU AT BOOTH #903 (YOU MIGHT HAVE TO SQUINT...IT'S PRETTY SMALL).

## Hot Topics Session

Hear leaders in government and industry discuss recent advances, current challenges, and opportunities.

### Cyber Sensing Hot Topics

(Conference 7352B)

Wednesday 15 April · 8:30 am to 11:00 am • Crystal J1 Ballroom

Conference Chair: **Stephen Mott**, Sensors Directorate, Air Force Research Lab.

The term “cyber” has traditionally been used to refer to information systems and the networks which bind them. With the growing dependence on information systems by the modern world, cyber is thought of as a domain of operations where the entire electromagnetic spectrum (including electrons flowing over wires) is the medium. Although this seems overly broad, the medium itself is not what is truly important – it is how the operation of information systems is affected which defines what is and is not a part of the cyber domain. A basic example is that a “traditional” RF sensor can be considered a cyber sensor if it is being used in such a way as to detect the presence of a wireless network. As with any domain, the cyber domain requires the environment to be sensed in order to be able to have situational awareness. Cyber sensing seeks to exploit any part of the electromagnetic spectrum in order to provide the information necessary for that situational awareness so the integrity of information assets and the networks that bind them can be better maintained and defended.

### A chipless sensor tag based RFID technology for cyber-oriented environment sensing applications

Authors: **Sudhir Shrestha, Mangilal Agarwal, Vir V. Phoha, Kody Varahramyan**, Louisiana Tech Univ. (United States)

### An immunological model for detecting bot activities

Authors: **Md. E. Karim, Vir V. Phoha, Kiran S. Balagani**, Louisiana Tech Univ. (United States)

### Decentralized detection and patching of coverage holes in wireless sensor networks

Authors: **Jixing Yao, Guyu Zhang, Jinko Kanno, Rastko R. Selmic**, Louisiana Tech Univ. (United States)

### Using Qualia and novel representations in malware detection

Authors: **Bobby D. Birrer, Richard A. Raines, Rusty O. Baldwin, Mark E. Oxley**, Air Force Institute of Technology (United States); **Steven K. Rogers**, Air Force Research Lab. (United States)

## Industry Forum

Thursday 16 April · 9:00 to 9:40 am · Crystal H Ballroom

### Technical Requirements for Unmanned Aerial Vehicle Systems

**Dr. Michael Perry**, General Atomics,  
President of Photonics Division

Unmanned Aerial Vehicles require optics and photonics with exceptional performance at minimum size and weight. Combined with the increasing demand for ISR products from these platforms, the new needs for advanced EO/IR and radar technology provides fertile ground for innovation by scientists, engineers and end-users. During this presentation, you will learn about the technical challenges and requirements for optics, sensors, lasers and other technology utilized in remotely-piloted flight, reconnaissance and attack.

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**SPIE Buyers Guide**



Photo courtesy of General Atomics

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# Don't miss the Robotics+Unmanned Systems Displays

Orlando World Center Marriott Resort & Convention Center  
Palms Exhibition Hall

Tuesday 14 April . . . . .10:00 am to 6:00 pm

Wednesday 15 April . . . . .10:00 am to 5:00 pm

Thursday 16 April . . . . .10:00 am to 2:00 pm

SPIE Defense, Security, and Sensing Exhibition will again feature the Robotics+Unmanned Systems Displays, adjacent to the main Exhibition Hall.

Featuring:

- ▶ **DRS Technologies: #3421**  
Sentry HP and Neptune Unmanned Aerial Systems
- ▶ **GermFree #3615**  
40' Mobile Lab, Designed to safely analyze hazardous biological and chemical samples.
- ▶ **Goodrich Corporation #3219**  
Predator B Recon, Global Hawk Block 40, and iRobot demo
- ▶ **Latitude Engineering #3507**  
Aerostat Surveillance System with EO and IR video
- ▶ **University of Central Florida #3606**  
"Knight Rider" Autonomous vehicle that participated in the 2007 DARPA Urban Challenge.

*"The robotics pavilion was what brought me down here to see what's new. Thank you for what you are doing."*

**-Dr. Mike Beasock,**  
Raytheon Missile Systems  
2008 Attendee



**STATCam Aerostat Surveillance System from Latitude Engineering**



**DARPA Urban Challenge Finalist University Of Central Florida**



**GermFree Mobile Lab.**



**DRS Sentry HP Unmanned Aerial System**



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# Product Demonstrations

TIME	Tuesday	Wednesday
	14 April	15 April
10:30 am	<p><b>Compact ECqCL Products for Mid-IR Detection and Illumination</b>  <b>Eric Takeuchi</b>, Daylight Solutions</p> <p>Multi-watt external-cavity quantum cascade lasers (ECqCL) are now a commercial reality. Battery operated "thermal laser pointers" are also available. Performance from each type will be presented.</p>	<p><b>GigE Vision Video Transmission</b>  <b>Vincent Rowley</b>, Pleora Technologies/GigE Vision</p> <p>Pleora will show how the GEVPlayer application detects and connects to multiple GigE Vision cameras, and how Pleora's eDisplay devices can display the output of these cameras without using a PC.</p>
11:30 am	<p><b>Miniature Motion Control Systems: Auto Focus Zoom Demo</b>  <b>Fred Haas</b>, New Scale Technologies, Inc.</p> <p>Miniature motion control systems providing security application solutions. ASIC-driven SQUIGGLE® motor technology with TRACKER™ position sensors offer robust control, minimal power, maximum precision.</p>	<p><b>Stray Light Elimination</b>  <b>Dina Katsir</b>, Acktar Ltd.</p> <p>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.</p>
12:30 pm	<p><b>New Passive Materials for Controlled Thermal Signature</b>  <b>Daniel Feinman</b>, Acktar Ltd.</p> <p>Unique new materials for thermal signature and IR camouflage are presented.</p>	<p><b>CCD + Thermal Fusion</b>  <b>Ernest Grimberg</b>, Opgal Optronics Ltd.</p> <p>Unique algorithm that enables to combine and synchronize two different day/night video information channels. The result is a fused image which contains special overall amount of information.</p>
1:30 pm	<p><b>MWIR Hyperspectral Imager</b>  <b>Dario Cabib</b>, CI Systems</p> <p>CI Systems will demonstrate its compact, robust HS imager requiring no cooling of optics. The interferometer-based imager is ideal for pushbroom airborne applications and is commercially available.</p>	<p><b>Live Demonstration of MWAVE Infrared Zoom Camera</b>  <b>Jonathan S. Kane</b>, IRZoom.com/Computer Optics, Inc.</p> <p>The latest IR technologies can be used to improve identification and situational awareness. Dr. Kane will discuss short, mid, and long wave IR and offer hands-on demos of the newest IR camera system.</p>

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# SPIE Works



## Start Your Job Search Today!

Whether you are looking for a better job, re-entering the workforce or just starting your career, the SPIEWorks job site and SPIE Defense, Security, and Sensing Career Fair are both great places to start!

SPIEWorks—The job site designed for optics and photonics professionals.

- Search job listings by region, technology and keyword
- Post a standard or confidential resume and apply to jobs online
- Create a “Job Alert” or receive current jobs through an RSS feed
- Research potential employers and find out what sets one apart from the other
- Get advice from the experts – find out what they love about their jobs, and what they wish they had known before starting out

**Create a free SPIEWorks account today!**

**NOTE:** Many of the positions posted to this career event require an active security clearance or the ability to acquire one.  
All SPIEWorks services are free to individuals seeking employment.

### Attend the Career Fair at SPIE Defense, Security, and Sensing

Two Days Only – Free Admission – Registration Required  
*Cypress Ballroom Foyer*

**Tuesday 14 April . . . . . 10:00 am-3:00 pm**  
**Wednesday 15 April . . . . . 10:00 am-3:00 pm**

- Meet with employers and interview on the spot
- Learn more about opportunities in our industry
- Network!

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## Engineer Your Career Path

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### Essential Skills for Engineering Project Leaders

WS846

**Course level: Introductory**  
**CEU .35 \$310 / \$360 USD**  
**Wednesday 8:30 am to 12:30 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.

COURSE PRICE INCLUDES a comprehensive workbook and email/phone follow-up with the instructor after the workshop to assist with implementation.

### Complying with the ITAR: A Case Study

WS933

**NEW**

**Course level: Introductory**  
**CEU .35 \$310 / \$360 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.

#### INSTRUCTOR

**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.



### Leading Successful Product Innovation

WS951

**NEW**

**Course level: Intermediate**  
**CEU .35 \$310 / \$360 USD**  
**Tuesday 1:30 to 5:30 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).

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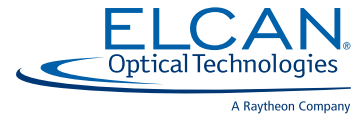
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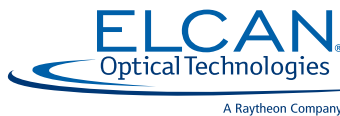
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KNOWLEDGE — NETWORKING — ADVANCEMENT

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# Daily Course Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
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## IR Sensors and Systems

SC713 <b>Engineering Approach to Imaging System Design</b> ( <i>Holst</i> ) 8:30 am to 5:30 pm, \$565 / \$660	SC214 <b>Infrared Window and Dome Materials</b> ( <i>Harris</i> ) 8:30 am to 5:30 pm, \$570 / \$660	SC835 <b>Infrared Systems - Technology &amp; Design</b> ( <i>Daniels</i> ) 8:30 am to 3:30 pm, \$880 / \$1120	SC796 <b>Allowable Stresses in Glass and Engineering Ceramics</b> ( <i>Pepi</i> ) 8:30 am to 12:30 pm, \$310 / \$360
SC545 <b>Infrared Characterization of Sources and Backgrounds</b> ( <i>Jacobs</i> ) 8:30 am to 5:30 pm, \$525 / \$620	SC178 <b>Introduction to Radiometry and Photometry</b> ( <i>McCluney</i> ) 8:30 am to 12:30 pm, \$420 / \$470	SC134 <b>Optical Design Fundamentals for Infrared Systems</b> ( <i>Kampe</i> ) 8:30 am to 5:30 pm, \$555 / \$645	SC710 <b>NIR and SWIR Imaging Applications</b> ( <i>Richards</i> ) 8:30 am to 12:30 pm, \$350 / \$400
SC278 <b>Infrared Detectors</b> ( <i>Dereniak</i> ) 8:30 am to 12:30 pm, \$420 / \$470	SC838 <b>Laser Range Gated Imaging Techniques</b> ( <i>Duncan</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC900 <b>Uncooled Thermal Imaging Detectors and Systems</b> ( <i>Hanson</i> ) 8:30 am to 5:30 pm, \$550 / \$640	SC067 <b>Testing and Evaluation of E-O Imaging Systems</b> ( <i>Holst</i> ) 8:30 am to 5:30 pm, \$580 / \$670
SC892 <b>Infrared Search and Track Systems</b> ( <i>Schwering</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC944 <b>The Radiometry Case Files</b> ( <i>Grant</i> ) 1:30 to 5:30 pm, \$310 / \$360	SC659 <b>Understanding Reflective Optical Design</b> ( <i>Contreras</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC181 <b>Predicting Target Acquisition Performance of Electro-Optical Imagers</b> ( <i>Vollmerhausen</i> ) 8:30 am to 5:30 pm, \$515 / \$605
SC840 <b>IR Detector Cryocoolers</b> ( <i>Rühlich</i> ) 8:30 am to 12:30 pm, \$310 / \$360		SC152 <b>Infrared Focal Plane Arrays</b> ( <i>Dereniak, Hubbs</i> ) 1:30 to 5:30 pm, \$310 / \$360	
		SC950 <b>NEW Advanced Infrared Imaging Radiometry</b> ( <i>Richards</i> ) 8:30 am to 12:30 pm, \$310 / \$360	

## Thermosense

	SC950 <b>NEW Advanced Infrared Imaging Radiometry</b> ( <i>Richards</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC710 <b>NIR and SWIR Imaging Applications</b> ( <i>Richards</i> ) 8:30 am to 12:30 pm, \$350 / \$400
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## Imaging and Sensing

SC713 <b>Engineering Approach to Imaging System Design</b> ( <i>Holst</i> ) 8:30 am to 5:30 pm, \$565 / \$660	SC178 <b>Introduction to Radiometry and Photometry</b> ( <i>McCluney</i> ) 8:30 am to 12:30 pm, \$420 / \$470	SC950 <b>NEW Advanced Infrared Imaging Radiometry</b> ( <i>Richards</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC901 <b>Sensor Array Signal Processing</b> ( <i>Rao</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC154 <b>Electro-Optical Imaging System Performance</b> ( <i>Holst</i> ) 8:30 am to 5:30 pm, \$580 / \$670
SC194 <b>Multispectral and Hyperspectral Image Sensors</b> ( <i>Lomheim</i> ) 1:30 to 5:30 pm, \$310 / \$360	SC157 <b>MTF in Optical and Electro-Optical Systems</b> ( <i>Ducharme</i> ) 8:30 am to 5:30 pm, \$550 / \$640		SC067 <b>Testing and Evaluation of E-O Imaging Systems</b> ( <i>Holst</i> ) 8:30 am to 5:30 pm, \$580 / \$670	SC789 <b>Introduction to Optical and Infrared Sensor Systems</b> ( <i>Shaw</i> ) 8:30 am to 5:30 pm, \$515 / \$605
	SC946 <b>NEW Super Resolution in Imaging Systems</b> ( <i>Bagheri, Javid</i> ) 8:30 am to 5:30 pm, \$515 / \$605			
	SC944 <b>NEW The Radiometry Case Files</b> ( <i>Grant</i> ) 1:30 to 5:30 pm, \$310 / \$360			
	SC952 <b>Applications of Detection Theory</b> ( <i>Carrano</i> ) 8:30 am to 12:30 pm, \$310 / \$360			

**Course registration is required.**  
See SPIE Cashier to Register.

# Daily Course Schedule

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## Sensing Technologies and Applications

SC719 <b>Chemical &amp; Biological Detection: Overview of Point and Standoff Sensing Technologies</b> ( <i>Gardner</i> ) 1:30 to 5:30 pm, \$310 / \$360	SC945 <b>NEW Optical Fiber Sensing Technology: Basic Principles &amp; Applications in Defense and Security</b> ( <i>Udd, Mendez</i> ) 1:30 to 5:30 pm, \$310 / \$360	SC948 <b>NEW Motes: Self-Organizing Wireless Networked Micro-Sensors</b> ( <i>Cole</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC901 <b>Sensor Array Signal Processing</b> ( <i>Rao</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
	SC952 <b>NEW Applications of Detection Theory</b> ( <i>Carrano</i> ) 8:30 am to 12:30 pm, \$310 / \$360			

## Sensor Data and Information Exploitation

SC194 <b>Multispectral and Hyperspectral Image Sensors</b> ( <i>Lomheim</i> ) 1:30 to 5:30 pm, \$310 / \$360		SC837 <b>Multivariate Analysis of Imaging and Sensor Data</b> ( <i>Bajorski</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC158 <b>Fundamentals of Automatic Target Recognition</b> ( <i>Nasr</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
			SC174 <b>Multispectral Image Processing</b> ( <i>Schowengerdt</i> ) 8:30 am to 5:30 pm, \$590 / \$680	
			SC181 <b>Predicting Target Acquisition Performance of Electro-Optical Imagers</b> ( <i>Vollmerhausen</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
			SC901 <b>Sensor Array Signal Processing</b> ( <i>Rao</i> ) 8:30 am to 5:30 pm, \$515 / \$605	

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## Signal, Image, and Neural Net Processing

SC630 <b>Digital Signal Processing with Field Programmable Gate Arrays</b> ( <i>Meyer-Baese</i> ) 1:30 to 5:30 pm, \$385 / \$435	SC717 <b>3D Visualization Techniques for Laser Radar</b> ( <i>Roth</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC715 <b>Independent Component Analysis and Beyond: Blind Signal Processing and its Applications</b> ( <i>Jung, Girolami</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC901 <b>Sensor Array Signal Processing</b> ( <i>Rao</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
SC953 <b>NEW Signal Processing and Multiscale Analysis in Complex Digital Document Spaces</b> ( <i>Coifman</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC066 <b>Fundamentals of Electronic Image Processing</b> ( <i>Weeks</i> ) 8:30 am to 5:30 pm, \$575 / \$665	SC949 <b>NEW Linear and Nonlinear Principal Component Analysis with Applications in Sensing and Processing</b> ( <i>Dianat</i> ) 8:30 am to 5:30 pm, \$515 / \$605		
	SC946 <b>NEW Super Resolution in Imaging Systems</b> ( <i>Bagheri, Javid</i> ) 8:30 am to 5:30 pm, \$465 / \$555			
	SC952 <b>NEW Applications of Detection Theory</b> ( <i>Carrano</i> ) 8:30 am to 12:30 pm, \$360 / \$410			

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# Daily Course Schedule

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## Laser Sensors and Systems

	SC717 <b>3D Visualization Techniques for Laser Radar</b> ( <i>Roth</i> ) 8:30 am to 12:30 pm, \$310 / \$360		SC160 <b>Precision Stabilization and Laser Pointing Systems</b> ( <i>Hilkert</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
	SC784 <b>Fiber Lasers for Defense Applications: Fibers, Components and System Design Considerations</b> ( <i>Samson, Torruellas</i> ) 8:30 am to 5:30 pm, \$515 / \$605			
	SC188 <b>Laser Beam Propagation for Applications in Laser Communications, Laser Radar, and Active Imaging</b> ( <i>Phillips, Andrews</i> ) 8:30 am to 5:30 pm, \$630 / \$720			
	SC167 <b>Introduction to Laser Radar</b> ( <i>Kammerman</i> ) 1:30 to 5:30 pm, \$515 / \$605			

## Displays

		SC159 <b>Head-Mounted Displays: Design and Applications</b> ( <i>Melzer, Browne</i> ) 8:30 am to 5:30 pm, \$520 / \$610		
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## Information Systems and Networks: Processing, Fusion, and Knowledge Generation

	SC952 <b>Applications of Detection Theory</b> ( <i>Carrano</i> ) 8:30 am to 12:30 pm, \$310 / \$360	SC948 <b>Notes: Self Organizing Wireless Networked Micro-Sensors</b> ( <i>Cole</i> ) 8:30 am to 5:30 pm, \$515 / \$605	SC901 <b>Sensor Array Signal Processing</b> ( <i>Rao</i> ) 8:30 am to 5:30 pm, \$515 / \$605	
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## Defense, Homeland Security, and Law Enforcement

SC719 <b>Chemical &amp; Biological Detection: Overview of Point and Standoff Sensing Technologies</b> ( <i>Gardner</i> ) 1:30 to 5:30 pm, \$310 / \$360	SC952 <b>Applications of Detection Theory</b> ( <i>Carrano</i> ) 8:30 am to 12:30 pm, \$310 / \$360			
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# Daily Course Schedule

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## Unmanned, Robotic, and Layered Systems

SC894 <b>Introduction to INS and INS-Based Integrated Navigation</b> (Soloviev) 8:30 am to 5:30 pm, \$515 / \$605	SC952 <b>Applications of Detection Theory</b> (Carrano) 8:30 am to 12:30 pm, \$310 / \$360		SC549 <b>Incorporating GPS Technology into Commercial and Military Applications</b> (Uijt de Haag) 1:30 to 5:30 pm, \$310 / \$360	
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## Optical and Optomechanical Engineering

SC156 <b>Basic Optics for Engineers</b> (Ducharme) 8:30 am to 5:30 pm, \$550 / \$640	SC178 <b>Introduction to Radiometry and Photometry</b> (McCluney) 8:30 am to 12:30 pm, \$420 / \$470	SC013 <b>Precision Mounting of Optical Components</b> (Yoder, Jr.) 8:30 am to 5:30 pm, \$600 / \$690	SC003 <b>Practical Optical System Design - EXPANDED 2-Day Format</b> (Fischer) 8:30 am to 5:30 pm, \$1010 / \$1230	
SC254 <b>Integrated Opto-Mechanical Analysis</b> (Genberg, Doyle) 8:30 am to 5:30 pm, \$560 / \$650	SC220 <b>Optical Alignment Mechanisms</b> (Guyer) 8:30 am to 12:30 pm, \$310 / \$360	SC659 <b>Understanding Reflective Optical Design</b> (Contreras) 8:30 am to 5:30 pm, \$515 / \$605		SC796 <b>Allowable Stresses in Glass and Engineering Ceramics</b> (Pepi) 8:30 am to 12:30 pm, \$310 / \$360
	SC221 <b>Optomechanics and Tolerancing of Instruments</b> (Hatheway) 8:30 am to 5:30 pm, \$515 / \$605	SC950 <b>Advanced Infrared Imaging Radiometry</b> (Richards) 8:30 am to 12:30 pm, \$310 / \$360		
	SC944 <b>The Radiometry Case Files</b> (Grant) 1:30 to 5:30 pm, \$310 / \$360	SC010 <b>Introduction to Optical Alignment Techniques</b> (Ruda) 8:30 am to 5:30 pm, \$925 / \$1145		

## Business and Professional Development

WS951 <b>Leading Successful Product Innovation</b> (Carrano) 1:30 to 5:30 pm, \$310 / \$360	WS846 <b>Essential Skills for Engineering Project Leaders</b> (Hinkle) 8:30 am to 12:30 pm, \$310 / \$360			
	WS933 <b>Complying with the ITAR: A Case Study</b> (Scarlett) 1:30 to 5:30 pm, \$310 / \$360			

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Tuesday 14 April . . . . . 10:00 am to 6:00 pm

Welcome Reception in the

Exhibition Hall. . . . . 5:00-6:00 pm

Wednesday 15 April. . . . . 10:00 am to 5:00 pm

Thursday 16 April. . . . . 10:00 am to 2:00 pm



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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 Index on pages 100–108, 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. 26–27. The address of each exhibitor is also listed, making this Exhibition Guide an excellent reference tool.

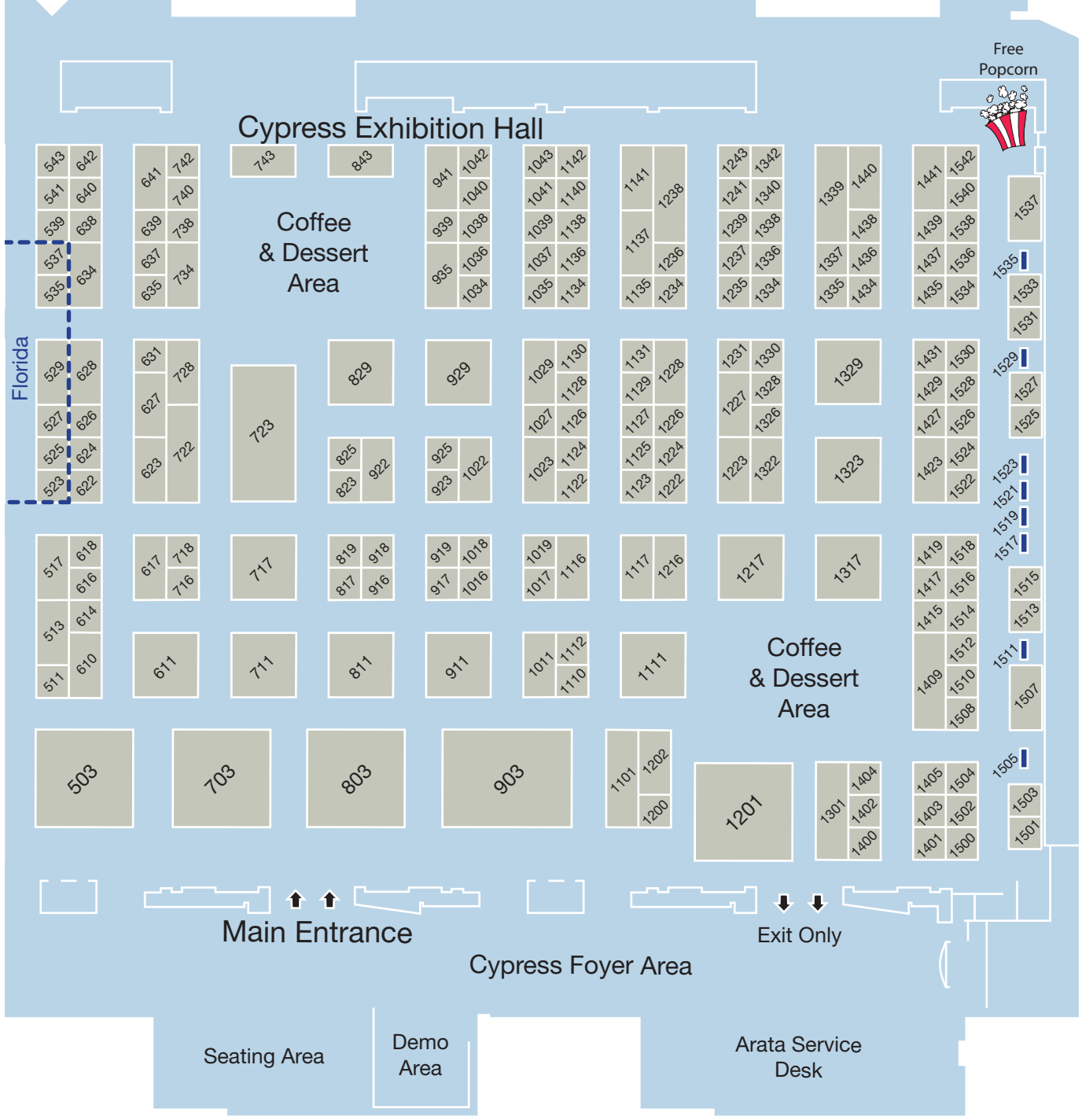


# Palms Exhibition Hall

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# Exhibition Floor Plan



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AMF Optics, Inc. is a manufacturer of precision optical components. Prototype through production quantities of cylindrical and spherical lenses, prisms, windows, mirrors and flats. Provider of UV-VIS-IR materials, diamond turned components including aspheres, spherical lenses, and metal mirrors. Supplier of polishing services and mold repair for stainless steel injection molds. Contact: Jeff Kenton, CEO, jkenton@amoptics.com; Robert Lafreniere, President, bob@amoptics.com.

**ABB Analytical****#917**

585 Charest Blvd E Ste 300, Quebec City, QC, Canada, G1K 9H4  
418/877-2944; fax 418/877-2834  
ftir@ca.abb.com; www.abb.com/analytical

ABB's Remote Sensing Industry continues to set the standards for FTIR Spectroradiometry used in various applications, like atmospheric sounding, military targets IR signature characterization and gas detection. ABB also develops specific solutions with reliable airborne and spaceborne optical instruments, infrared calibration systems, hyperspectral imagers and software for ground segments and simulation. Contact: Christian Vallières, Business Development Manager - Remote Sensing, christian.a.vallieres@ca.abb.com; Claude Roy, Product Line Manager, clauder.b.roy@ca.abb.com.

**Abtech Manufacturing, Inc.****#1340**

SPIE Corporate Member

126 Monadnock Hwy, Swanzey, NH, 03446  
603/358-6431; fax 603/358-0196  
info@abtechmfg.com; www.abtechmfg.com

**New Product: Compact rotary air bearing TIR gages, air bearing Y-Theta stages and high-speed air bearing spindles.**

ABTech designs and manufactures rotary and linear ultra-precision motion products for aircraft; aerospace; optical; semi-conductor; and nanotechnology research, metrology and production applications. Specialists in friction-free, low maintenance air bearings with sub-micron accuracy and extreme load and stiffness capabilities. Choose standard components or consult with our engineers to develop a unique multi-axis, turn-key solution for your most challenging motion and inspection applications. Contact: Matt Keenan, Technical Sales, mkeenana@abtechmfg.com.

**AccuCoat, Inc.****#3204**

111 Humboldt St, Rochester, NY, 14609  
585/288-2330; fax 585/288-2331  
alan@accucoatinc.com; http://www.accucoatinc.com

AccuCoat Inc. is a supplier of thin film coatings on plastic, metal, glass and a variety of other components. Producing a wide variety of antireflective, beamsplitter, hot & cold mirror, ITO, filter and metallic coatings as well as custom coatings to meet your dynamic applications. Experienced in handling prototype thru OEM volumes. Coatings available from the UV to the NIR. Over 60 years combined engineering experience can provide custom designed solutions. Contact: Alan Parsons, Sales Manager, alan@accucoatinc.com.

**Acktar Ltd.****#1124**

1 Leshem St Entrance A, Kiryat-Gat, Israel, 82000  
972 8 681 4213; fax 972 8 681 0198  
customer-support@acktar.com; www.acktar.com

**New Product: Black Metal Velvet™ - unique stray light suppression material having absorbance of 99.99%.**

Acktar is a world leader in production of black light absorbing coatings with absorbance above 99% at UV, VIS and IR. Virtually any substrate material can be coated. Coatings are produced by proprietary vacuum deposition technology, ~5 microns thick, have very low outgassing and high temperature stability 4K-720K. Applications include IR detectors, optical and aerospace systems. Recently Acktar was awarded by ESA as Supplier of Choice for NIRSPEC instrument of James Webb Space Telescope. Contact: Ronny Cotostiano, Product Manager, customer-support@acktar.com.

**Active Silicon Ltd.****#919**

17 Wilson St Ste 13, Chelmsford, 01824  
978/244-0490; fax 978/244-0491  
info@activesilicon.com; www.activesilicon.com

**New Product: Multi-channel Embedded PC with support for 8 simultaneous PAL or NTSC video inputs.**

Active Silicon specializes in supplying high quality frame grabber products and custom vision systems for Military, Aerospace and Security applications. Form-factor support includes PCI Express, COM Express, PMC, PC/104+ and cPCI. These provide acquisition solutions for a wide range of applications from low-cost analog cameras to high-end digital (HD-SDI, Camera Link and LVDS) formats. Available for Windows and Linux (both 32-bit and 64-bit versions) as well as DOS, VxWorks, QNX and Mac OS X. Contact: Shaun F Saber, VP Sales/Marketing North America, shaun.saber@activesilicon.com; info@activesilicon.com.

**Free Popcorn**

Popcorn carts will be located in the Exhibition Halls, back of 1500 Aisle and 3600 Aisle. Open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.



# Exhibitor Listing

## Acutronic USA, Inc.

#817

640 Alpha Dr, Pittsburgh, PA, 15238  
412/963-9400; fax 412/963-0816  
aus@acutronic.com; www.acutronic.com

ACUTRONIC (www.acutronic.com) is a worldwide recognized leader in the design and manufacture of motion simulation systems for the aviation, space, defense, maritime and automotive industries. Products available from Acutronic range from small, single-axis rate tables for the automotive industry to three-axis simulators for flight motion profiling to five-axis flight motion simulator systems for the missile test industry. Contact: Larry Zana, VP, Marketing and Business Development, lzana@acutronic.com; Keith Andrew, Sales Engineer, kandrew@acutronic.com.



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## Adimec

#1034



245 North St, Stoneham, MA, 02180  
781/279-0770; fax 781/279-0571  
salesus@adimec.com; www.adimec.com

**New Product: RA family of COTS Rugged Megapixel cameras for harsh environmental conditions.**

Adimec has been creating high-performance cameras and partnering with major OEMs and defense contractors around the world since 1992. Let Adimec's industry-leading image quality and object recognition capabilities make the difference in your application. Contact: Katie Janson, Marketing Communications Manager, salesus@adimec.com.

## AdTech Ceramics

#326

511 Manufacturers Rd, Chattanooga, TN, 37405  
423/755-5510; fax 423/755-5438  
sales@adtechceramics.com; www.adtechceramics.com

AdTech Ceramics produces custom multi layer co-fire HTCC, AlN microelectronic ceramic and metal packaging. Developmental platinum co-fire products. In addition, the 92% alumina material system can be formed and metallized using an injection molding process to meet complex shape requirements. Chemical milling products in Alloy 42 and Kovar including leads, stepped lids and seal rings can be made to custom requirements. Full Microwave modeling and custom design center. US based, ISO certified. Contact: Brian Bukovitz, Sales Manager, sales@adtechceramics.com; Jennifer Ashley, Sales Assistant, jennifer.ashley@adtechceramics.com.

## Advanced Cooling Technologies, Inc.

#3117

1046 New Holland Ave, Lancaster, PA, 17601  
717/295-6110; fax 717/295-6064  
j.kleinfelter@1-act.com; www.1-act.com

Advanced Cooling Technologies, Inc. (ACT) is a developer and manufacturer of heat pipes, pumped liquid and two-phase loops, and thermal storage devices. Our products have been used in applications from spacecraft thermal management to medical surgery temperature control, at temperatures ranging from -150 to 1,100°C. We serve customers worldwide in Aerospace, Military, Industrial Equipment, Consumer Products and Government R&D sectors. Contact: John Kleinfelter, Business Development Manager, j.kleinfelter@1-act.com; Jon Zuo, President, info@1-act.com.

## Advanced Diamond Technologies, Inc.

#1536

429 B Weber Rd #286, Romeoville, IL, 60446  
815/293-0900  
info@thindiamond.com; www.thindiamond.com

Advanced Diamond Technologies (ADT) is the leader in applying diamond for industrial, electronic, and medical applications. ADT was awarded a \$4.8 million contract from DTRA to develop diamond-based sensors using ADT's diamond (UNCD®) for the real time detection of water-based chemical and biological agents. ADT makes NaDiaProbes®, AFM probes made of diamond that last 100x longer than SiN probes and UNCD Wafers, diamond wafers suitable for development of MEMS devices. www.thindiamond.com.

## Advanced Imaging Magazine

#510

3030 Salt Creek Ln, Arlington Heights, IL, 60005  
847/454-2707; fax 847/454-2759  
www.advancedimagingpro.com

Since 1986, *Advanced Imaging* is the world's only publication dedicated exclusively and entirely to electronic imaging technology and its applications. We publish our print edition 11 times a year, update our website every business day, and also distribute our weekly newsletter every Thursday. Contact: Jack Johnson, Associate Publisher, jack.johnson@cygnuspub.com.

## Aerotech, Inc.

#400



101 Zeta Dr, Pittsburgh, PA, 15238-2897  
412/963-7470; fax 412/963-7459  
sales@aerotech.com; www.aerotech.com

**New Product: ARMS direct-drive rotary motion simulators for superior angular rates, accelerations, positioning.**

Aerotech manufactures motion simulators, multi-axis gimbal systems, single- and multi-axis positioning systems, and advanced control systems. These include those for angular testing and calibration of satellite sensors, missile seeker gimbals, inertial navigation guidance units, optical pointing and target tracking, and more. Components include linear, rotary, and lift stages; gimbals; gantries; nanopositioners; goniometers; motion controllers; drives; linear/rotary motors. Contact: Tom Markel, Product Manager, Positioning Systems Division, tmarkel@aerotech.com; Scott Schmidt, Applications Engineer, sschmidt@aerotech.com.

## AGM Container Controls, Inc.

#1439

3526 E Fort Lowell Rd, Tucson, AZ, 85716  
520/881-2130; fax 520/881-4983  
sales@agmcontainer.com; www.agmcontainer.com

**New Product: The NEPS 1000 Purge Systems provide dry gas purging with automatic operation to protect EO equipment.**

AGM Container Controls leads in the design and fabrication of products that control and monitor moisture (desiccators, humidity indicators), pressure and vacuum changes (breather valves) and shock and vibration (tie downs, shock overload indicators). These products are used for a variety of applications in defense and aerospace, electronic, electro-optical, industrial and commercial markets to protect and extend the life of critical equipment. Contact: Jim McCorry, Director of Business Development, mccorry@agmcontainer.com; Ron Corbin, Sales Manager, corbin@agmcontainer.com.





# how

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## AIM Infrarot-Module GmbH

#728

Theresienstr 2, Heilbronn, Germany, 74072  
49 7131 6212 0; fax 49 7131 6212 929  
mail@aim-ir.de; http://www.aim-ir.de

**New Product: Live demos: 1024x256-SWIR 2.5µm; 640x512-LWIR 15µm; MCT on GaAs, flexure bearing cooler w/ pulse tube.**

AIM develops and manufactures IR-detectors and cryocoolers for missile seekers as well as targeting or pilotage sights in most renowned ground based, ship or airborne applications. Beyond components and modules, AIM has conquered a niche for thermal sights and day/night fire control systems for small arms and crew served weapons with large engagement range. Contact: Rolf Muentner, Director Business Development, Rolf.Muentner@aim-ir.de.

## Alpes Lasers

#1116

1-3 Max-de-Meuron CP 1766, Neuchâtel, Switzerland, CH-2001  
41 3272 99510; fax 41-3272 13619  
info@alpeslasers.ch; www.alpeslasers.ch

**New Product: Fabry Perot QCLs with >200 cm-1 gain region for broadly tunable external cavity QCLs.**

Manufacturer of Quantum Cascade Lasers - tunable IR sources from 4 to 17+ microns and of THz Quantum Cascade Lasers. Contact: Antoine Muller, CEO, info@alpeslasers.ch; Fred Perry, fsp@boselec.com.

## ALViS Technologies Inc.

#3822

6F No 260 Guangming St, Xindian City Taipei, Taiwan, 231  
886 2 8911 9997; fax 886 2 8911 9700  
freemanchchen@gmail.com; www.alvis-tech.com

## Ametek HCC Industries

#110

4232 Temple City Blvd, Rosemead, CA, 91770  
626/443-8931; fax 626/443-6610  
www.hccindustries.com

**New Product: High Temperature Co-fired Ceramic packages through the acquisition of General Ceramics, Inc.**

Leader in high reliability hermetic packaging and inter-connects. Micro-electronic packages for Infrared, Microprocessor, and Optoelectronic applications; Hermetic connectors (Glass-to-Metal Sealed) for harsh environments; Fiber-Optic Connectors for hermetic applications; and Specialty Items such as Windows and Lids. Capabilities: custom design engineering, prototyping, high volume. Business units: HCC Aegis, Glasseal Products, General Ceramics, Hermetic Seal Corp, Sealtron and AMETEK SCP. Contact: Rob Winterburn, Division Manager Strategic Marketing, rob.winterburn@ametek.com.

## Ametek Precitech, Inc.

#918

SPIE Corporate Member

44 Blackbrook Rd, Keene, NH, 03431  
603/357-2511; fax 603/358-6174  
tina.hoppock@ametek.com; www.precitech.com

**New Product: Precitech HD-160 Spindle 33% improved stiffness  
Precitech HS-75 Spindle 50% improved stiffness.**

Ultra Precision machining with our Nanoform® Diamond Turing multi-axes lathes, unprecedented 0.01 nanometer programming resolution and 16 picometer feedback resolution. Designed for production of optical lenses, optical mold inserts, mirrors & precision mechanical components. We're committed to providing your company with the highest level of excellence using our Servoform Slow Tool Servo, Fast Tool Servo, highly stable Oil Hydrostatic Slides and our new line of high speed & heavy duty spindles. Contact: Chris Stroshine, Sales Manager, chris.stroshine@ametek.com; Kirk Rogers, Sales Manager, kirk.rogers@ametek.com.

## Ampex Data Systems Corp.

#618

SPIE Corporate Member

1228 Douglas, Redwood City, CA, 94063  
650/367-3365; fax 650/367-4514  
sales@ampexdata.com; www.ampexdata.com

**New Product: High Definition Solid State Recorder and New airborne File Server recorder for network recording.**

Ampex manufactures airborne and ruggedized solid state recorder and data acquisition systems. Our miniR solid state recorder is the most configurable, smallest, fastest unit for Test and Mission Recording Applications. Product line includes various solid state and disk-based recording solutions for demanding acquisition programs. Contact: Don Downing, Business Development Manager, don\_downing@ampexdata.com; Linda Nuti, Contracts Manager, linda\_nuti@ampexdata.com.

## Amplification Technologies, Inc.

#1527

1400 Coney Island Ave, Brooklyn, NY, 11230  
718/951-8021; fax 718/951-8030  
info@amplificationtechnologies.com;  
www.amplificationtechnologies.com

## Analog Modules, Inc.

#523

126 Baywood Ave, Longwood, FL, 32750-3426  
407/339-4355; fax 407/834-3806  
ami@analogmodules.com; www.analogmodules.com

**New Product: Handheld Binocular Laser Spot Tracker with Night Vision Capability.**

Analog Modules is an ISO 9001 certified company where 65 full-time employees are involved in design, development and manufacturing. AMI produces a wide range of standalone and OEM analog electronic products primarily for the laser and electro-optics industries. These products serve applications in medical, military, scientific and industrial markets. Contact: Kelly, Vice President Sales, kpacey@analogmodules.com; Bruce Soileau, Product Manager, bsoileau@analogmodules.com.

## Andover Corp.

#101

SPIE Corporate Member

4 Commercial Dr, Salem, NH, 03079-2800  
603/893-6888; fax 603/893-6508  
info@andovercorp.com; www.andovercorp.com

**New Product: IR ND filters, IR coatings, standard and custom.**

Andover manufactures high-quality optical filters and coatings in the UV to Mid IR range. We specialize in narrowband, image-quality and space-qualified filters. We have over 1000 standard items in stock and can provide custom parts in as little as one week. We are ITAR and ISO 9001:2000 registered. Contact: Phil Clark, Technical Sales, Rob Pursel, Sr. Optical Coating Engineer, rpursel@andovercorp.com.

**Don't Miss the**



**Robotics+Unmanned Systems  
Displays**

*Located in Palms Exhibition Hall*

*See p. 10 for details.*

## Angstrom Precision Optics Inc.

#3011

**SPIE** Corporate Member

190 Bennington Dr, Rochester, NY, 14616  
585/663-7230; fax 585/663-7236  
info@apoptics.com; www.apoptics.com

### **New Product: APO is now offering ultra parallel flat precision polished plano germanium windows.**

Manufacturer of precision polished plano elements. Products are windows, wedges, filters, mirrors and post fabrication of coated optics for UV, VIS and IR applications. Capabilities include CP, DS and O.D. polishing to <0.5 arc sec wedge, <10-5 scratch dig and 1/20 wave flatness. CNC dicing and slicing services. Materials include optical glass, fused quartz / silica, filter glass, germanium, Borofloat and float glass. APO provides quality optics at a low cost with our expedited 2-3 day delivery. Contact: Ron Schulmerich, President.

## Ann Arbor Sensor Systems, LLC

#3120

1995 Highland Dr Ste F, Ann Arbor, MI, 48108  
734/389-0184; fax 734/468-0244  
aas2@aas2.com; www.aas2.com

## AOptix Technologies Inc.

#3406

695 Campbell Technology Pkwy, Campbell, CA, 95008  
408/558-3300; fax 408/558-3301  
brhea@aoptix.com; www.aoptix.com

## Aphotik

#1140

5020 Old Ellis Pointe Ste 100, Roswell, GA, 30076  
770/642-7950; fax 770/642-0160  
sales@aphotik.com; www.aphotik.com

A designer and manufacturer of low light night vision cameras. Contact: Ruben Uribe, President, ruben@aphotik.com; Vince Kasprzak, Chief Scientist, vincek@aphotik.com.

## Apollo Optical Systems, Inc.

#542

**SPIE** Corporate Member

330 Clay Rd, Rochester, NY, 14623  
585/272-6170; fax 585/272-6177  
info@apollooptics.com; www.apollooptical.com

Manufacturer of custom precision optical components specializing in Single Point Diamond Turning and injection molded polymer optics in prototype and production volumes. In-house capabilities include SPDT, extensive metrology, injection molding, optical/mechanical design and engineering. AOS specializes in design and manufacturing of diffractive and refractive optics. Contact: Daniel McGarry, President, McGarry@ApolloOptical.com; Claude Tribastone, President, Manufacturing, Tribastone@ApolloOptical.com.

## Applied Energetics

#1503

3590 E Columbia St, Tucson, AZ, 85714  
520/917-3060  
sstautz@appliedenergetics.com; www.appliedenergetics.com

Applied Energetics, Inc., based in Tucson, Arizona, specializes in development and manufacture of advanced high performance lasers, high voltage electronics, advanced optical systems, and integrated guided energy systems for defense, aerospace, industrial, and scientific customers worldwide. Applied Energetics pioneered the development of Laser Guided Energy™ (LGE™) technology, and related solutions for defense and security applications. Contact: Ted Konopelski, General Manager, Military Laser Group, tkonopelski@appliedenergetics.com; Tom Donaldson, SVP Business Development and Government Relations, tdonaldson@appliedenergetics.com.

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# Exhibitor Listing

## Applied Image, Inc.

#431



1653 E Main St, Rochester, NY, 14609-7090  
585/482-0300; fax 585/288-5989  
imaging@appliedimage.com; www.appliedimage.com

"Your Single Source Photonics Solution Provider" dedicated to innovative OPTO-IMAGING Products & Services. Providing custom and "off the shelf" linear scales, test targets, reticles, encoders, image analysis standards, sinusoidal arrays, photo masks, ronchi rulings & other imaged components on various substrate materials for today's complex photonics needs. Now offering Imatest software with Applied targets for analyzing image quality. APPLIED IMAGE, where image concepts become reality. Contact: Paul Anderson, Vice-President, Panderson@appliedimage.com; Luke Hobson, Executive Sales Manager, Lhobson@appliedimage.com.

## Applied Optronics

#1335

111 Corporate Blvd Bldg J, South Plainsfield, NJ, 07080  
908/753-6300; fax 908/753-4041  
ernie.sirkin@applied-optronics.com; www.applied-optronics.com  
Manufacturer of high power semiconductor lasers from 635nm to > 2 micron. Contact: Ernest Sirkin, General Manager, ernie.sirkin@applied-optronics.com.

## Applied Quantum Technologies

#3826

3333 Durham Chapel Hill Blvd, Durham, NC, 27705  
919/403-0926; fax 919/287-2954  
smccain@appliedquantumtechnologies.com;  
www.appliedquantumtechnologies.com

**New Product: Coded aperture spectral imaging systems in the visible to infrared spectral ranges.**

AQT is commercializing technology in two areas- computational imaging and micro-systems for beam steering. We currently provide research and development services to government and private sector customers in the areas of spectral imaging, high-speed beam steering, and optical system design and analysis. Our technology allows for imaging systems with a set of capabilities (multi-spectral, wide field-of-view, polarization, 3D, real-time) that is currently unavailable in the marketplace. Contact: Scott McCain, Director of Optical Systems Research and Development, smccain@appliedquantumtechnologies.com; Felix Lu, Director of Microsystems Research and Development, felix.lu@appliedquantumtechnologies.com.

## Applied Technology Associates

#310

1300 Britt St SE, Albuquerque, NM, 87123  
505/767-1200; fax 505/768-1379  
contactata@aptec.com; www.aptec.com

## ARC Technologies

#3808



4459 White Bear Pkwy, White Bear Lake, MN, 55110  
651/789-9000; fax 651/789-9199  
info@arcnano.com; www.arcnano.com

ARC offers state-of-the-art nanoprecision R&D and manufacturing. The company features thin films, a MEMs lab, flip chip die bonding, and analytical lab (SEM/FIB), nanoprecision micromachining, electronics, instrumentation and assembly. With more than 36,000 total sq ft and 11,000+ sq ft of ballroom cleanrooms, ARC is very big into things very small and hard to make.

## Ariel Optics, Inc.

#3824



261 David Pkwy, Ontario, NY, 14519  
585/265-4820; fax 585/265-1052  
sales@arieloptycs.com; www.arieloptycs.com

Ariel Optics specializes in the manufacture of ultra precision plano optical components. Products include mirrors, windows, prisms, beamsplitters, wedges, light pipes, precision flats, penta-prisms, etc. We are regularly manufacturing components for R&D, military/defense, aerospace, medical, and commercial applications. We specialize in cost effective prototypes to mid-level production quantities. Feel free to contact us anytime. Contact: Joshua Gebhard, Sales Associate, sales@arieloptycs.com; Frederick Koch, President, Frederick@arieloptycs.com.

## ARTEMIS, Inc.

#3313

36 Central Ave, Hauppauge, NY, 11788  
631/232-2424; fax 419/858-5319  
yuly@artemisinc.net; www.artemisinc.net

**New Product: SlimSAR - Dual Frequency (L and X Band) Synthetic Aperture Radar (SAR) Pod For TIER 2+ UAVs.**

Contact: Yuly Margulis, President, yuly@artemisinc.net.

## ASD Inc.

#1110



2555 55th St Ste 100, Boulder, CO, 80301  
303/444-6522; fax 303/444-6825  
info@asdi.com; www.asdi.com

ASD Inc. is unsurpassed in solving some of the world's most challenging materials measurement problems with customer-focused solutions. We collaborate with industrial professionals, analytical researchers and remote sensing scientists to provide the most reliable, high-performance analytical instrumentation solutions for real-world applications, exactly where it is needed, on-site or at remote locations. Established in 1990 and based in Boulder, Colorado, United States of America, ASD Inc. has customers world-wide. Contact: David Hatchell, Remote Sensing Manager, david.hatchell@asdi.com; Nate Bloomingdale, Technical Sales, Remote Sensing, nate.bloomingdale@asdi.com.

## ASML Optics

#1326



3900 Lakeside Dr, Richmond, CA, 94806  
510/222-2310; fax 510/222-2357  
information@asml.com; www.asml.com

ASML Optics is a manufacturer of extreme precision optical components and systems for a broad range of commercial applications, serving customers worldwide. Provides Design-to-Image™ solutions including optical and mechanical design, optical fabrication and coating, assembly and system qualification, and distinct customer benefits with Asphere Advantage™ technology and PerfectWave™ metrology. Contact: Mark Bigelow, VP Sales, Mark.bigelow@asml.com; Rich Rogoff, General Manager, Rich.rogoff@asml.com.

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## asphericon GmbH

#3102

Wildenbruchstr 15, Jena, Germany, 07745  
49 3641 675 600; fax 49 3641 675 606  
info@asphericon.com; www.asphericon.com

Asphericon has become an acknowledged specialist for aspheric optics. The company success is based on proprietary technologies for manufacturing high precision aspheres by CNC grinding and polishing. asphericon provides its worldwide customers with high quality aspheres from prototype to large volume quantities. With unique technological capabilities asphericon offers a complete range of custom and off-the-shelf precision aspheres combining our quality with volume production savings. Contact: Jean-Luc Nogués, Sales Executive America, jlnogues@agiltek.com.

## Atlantic Positioning Systems

#537

6950 112th Cir, Largo, FL, 33773  
727/299-0150; fax 727/541-6403  
custserv@atlanticpositioners.com; www.atlanticpositioners.com

**New Product: SPS-250, SPS-500, SPS-1000, SPS-2000, SPS-4000 & SPS-8000 with SDC & MDC digital controls.**

Atlantic Positioning Systems is a world leader in design and manufacture of high accuracy, highly reliable, modular stabilized gimbals and controls that support the military Electro-Optical, C3I and radar markets. Our systems are ideally suited for pointing optical sensors, lasers, radars and communications antennas and are designed for ground stabilization, shipboard stabilization and airborne stabilization applications. Contact: Alex Doig, Manager, Business Development, alex.doig@cobhamdes.com; Scot Thompson, Manager, Business Development, scot.thompson@cobhamdes.com.

## Avo Photonics, Inc.

#313



700 Business Center Dr Ste 125, Horsham, PA, 19044  
215/441-0107; fax 215/441-9219  
sales@avophotonics.com; www.avophotonics.com

**New Product: Advanced contract design and manufacturing services for photonic and microelectronic customers in government markets.**

Avo Photonics designs products in System, Optical, Mechanical, Thermal, Electrical/RF and Materials engineering. Capability is supported by a complete suite of modeling tools ensuring design to production. Avo manufactures products consisting of photonic and electronic components from low to high volume. Avo's experience ranges from large complex free-space optical assemblies to small high accuracy die placement. Testing includes electro-optic characterization and environmental stress. Contact: Neal Stoker, Vice President Sales and Marketing, nstoker@avophotonics.com; Jalla Atkins, Manager, jatkins@avophotonics.com.



## Axsys Technologies

#503



24 Simon St, Nashua, NH, 03060  
603/864-6300; fax 603/864-6450  
www.axsys.com

Axsys Technologies is a global leader in the design and manufacture of high-performance imaging systems, optics, and related motion control technologies. The proven reliability and performance of Axsys products is evidenced by the company's expanding role as a strategic supplier for defense and homeland security markets and related high performance commercial markets such as law enforcement, utilities, and broadcast and film production. Contact: Peter Kornik, VP Sales, pkornik@axsys.com; Tom Breen, VP Sales, tbreen@axsys.com.

## BAE Systems

#717

PO Box 868, NHQ3-1115, Nashua, NH, 03061  
603/885-3522; fax 603/885-4490  
kim.campbell@baesystems.com; www.baesystems.com

BAE Systems is a leading provider of high performance uncooled IR modules and sights based on our advanced MicroIR® technology. Because of their robust, ruggedized design, our modules and sights are repeatedly chosen by commercial and government OEMs, integrators and end-users with mission critical applications. Modules and sights are available with resolutions ranging from 160x120 to 640x480. Contact: Dave Smialek, Mgr., Business Development, david.c.smialek@baesystems.com; Simon Pongratz, Mgr., MicroIR Sales, simon.pongratz@baesystems.com.



## Barr Associates Inc.

#923



Optical Thin Films, 2 Lyberty Way, Westford, MA, 01886  
978/692-7513; fax 978/692-7443  
barr@barrassociates.com; www.barrassociates.com

Barr Associates, Inc. is a leading producer of optical filters/coatings (wavelengths 200 nm to 50 μ) for Defense, Commercial, Aerospace, and Science. Defense use includes legacy Imaging and Direct View Optics for Night Vision, Surveillance, Targeting. Commercial use is Thermal Vision, Medical, and Laboratory instrument. Barr deploys the widest range of deposition technologies for diverse markets. Contact: Jack Bosch, Business Development Manager, Defense Applications, jbosch@barrassociates.com; George Minott, Commercial Bus. Dev., gminott@barrassociates.com.



## Bartington Instruments Ltd.

#3013

5 &10 Thorney Leys Business Park, Witney Oxfordshire,  
United Kingdom, OX28 4GE  
44 1993 706565; fax 44 1993 774813  
sales@bartington.com; www.bartington.com

**New Product: We manufacture low power, low cost and compact fluxgate magnetometers for surveillance applications.**

Bartington Instruments Ltd is a world leader in the design and manufacture of high precision fluxgate magnetometers and magnetic susceptibility instruments. Our equipment is used worldwide for vehicle detection, underwater detection and magnetic ranges. We design a range of precise single and three axis fluxgate magnetometers and data acquisition systems. Other applications for our equipment include physics, medical physics, environmental sciences and archaeology. Contact: Sales Department, sales@bartington.com.

## Battelle

#3907

505 King Ave, Columbus, OH, 43201  
614/424-7791  
www.battelle.org

**New Product: High-Performance Patterned Metallic Mesh Coatings.**

Battelle, established in 1929, is the largest private, independent R&D organization in the world. Battelle's technological reach includes overseeing more than 20,000 staff and more than \$4 billion in R&D at 130 locations, including private laboratories, management and co-management of six national laboratories, and numerous regional offices. Contact: Keith Ramsey, Senior Research Scientist, ramseyk@battelle.org; Jennifer Halman, Senior Research Scientist, halman@battelle.org.

# Exhibitor Listing

## BaySpec, Inc.

#1041

SPIE Corporate Member

101 Hammond Ave, Fremont, CA, 94539  
510/661-2008; fax 510/661-2009  
sales@bayspec.com; www.bayspec.com

**New Product: Nunavut 1064nm Raman System for Fluorescence-free, high throughput Sensitivity.**

BaySpec, located in the Silicon Valley, is a leading provider of fiber optic modules and sub-systems to the telecom, defense, fiber sensing, industrial, and biomedical industries. Our vision is "pervasive spectral sensing toward an optical tri-corder." Contact: Sales, Manager, sales@bayspec.com.

## BeamExpander.com

#3820

24 Pleasant Cir, Canton, MA, 02021  
781/255-1063; fax 781/459-0087  
info@beamexpander.com; www.beamexpander.com

BeamExpander.com specializes in high performance beam expanders for all popular laser wavelengths. We supply designs ranging from 1.5X to 20X including fixed ratio and zoom models. We also design and produce custom units to meet customer requirements. Many designs ship from stock, lead times rarely exceed one week. See www.beamexpander.com for more detailed information. Contact: Phil Barrows, President, phil@beamexpander.com.

## BEI Precision Systems & Space Co.

#244

1100 Murphy Dr, Maumelle, AR, 72113  
501/851-4000; fax 501/851-5476  
sales@beiprecision.com; www.beiprecision.com

**New Product: NanoSeries (Aerospace-ready modular optical encoders in "kit" or housed configurations).**

BEIPSSC has been a designer and producer of highly accurate (26+ bits) optical encoders for aerospace, military and commercial applications for over 50 years. We provide standard and custom components and value-added engineering designs as well as complete servo control systems. Gimbal systems and actuators where ultra-high accuracy, resolution, reliability and extreme environments are required. Over 90% of all optical encoders currently in space are from BEI. Contact: Mark Madsen, Business Development Manager, mmadsen@beiprecision.com; Marvin Kansky, Director of Business Development, mkansky@beiprecision.com.

## Big Sky Laser Technologies - see Quantel

#541

## Bodkin Design & Engineering, LLC

#3016

PO Box 81368, Wellesley, MA, 02481  
617/795-1968; fax 617/795-1969  
info@bodkindesign.com; www.bodkindesign.com

## Bookham Inc.

#114

SPIE Corporate Member

2584 Junction Ave, San Jose, CA, 95134  
408/383-1400  
sales@bookham.com; www.bookham.com

Bookham Inc. a world leader in high power laser diodes has been producing industry leading diodes for over 20 years incorporating core technologies such as E2 mirror passivation and automated hard soldering. Such processes deliver diodes with high brightness, outstanding reliability, a competitive advantage and reduced cost of ownership. Products are designed for the most demanding applications in defense and security arenas - communication, illumination, target designation and directed energy. Contact: Michael Cutler, michael.cutler@bookham.com; Deepika Ranaweera, deepika.ranaweera@bookham.com.

## Boston Electronics Corp.

#1116

SPIE Corporate Member

91 Boylston St, Brookline, MA, 02445  
617/566-3821; fax 617/731-0935  
boselec@boselec.com; www.boselec.com

**New Product: New photon counting detector for 1064 nm operating un-gated with picosecond time resolution.**

Supplier of photodetectors, photon sources and associated signal processing electronics. Tunable Quantum Cascade IR lasers and IR detectors a specialty. Also photon counting detectors and electronics for the UV-Vis-NIR. Contact: Fred Perry, fsp@boselec.com.

## Boulder Imaging Inc.

#743

SPIE Corporate Member

1500 Cherry St Ste C, Louisville, CO, 80027  
303/604-2368; fax 720/890-7731  
info@boulderimaging.com; www.boulderimaging.com

**New Product: New Turn-key Imaging Solutions for Video Recording & Analysis to better understand Critical Events.**

A proven partner for military and other critical imaging projects provides VisionRecorder™ systems for cutting-edge, real-time digital video recording, image processing, analysis & archiving. Complete high quality systems support any number of simultaneous video inputs (HOTLink, CameraLink, LVDS/RS422, DVI, GigE, NTSC/PAL, RS170, RGB/VGA) and continuously record for hours, with zero data drops, at speeds exceeding 1 GB/s for image capture in military testing, tracking, security & research. Contact: Darlene Davis, Director of Sales, ddavis@boulderimaging.com; Rochelle Shashi Saidman, Marketing Manager, rsaidman@boulderimaging.com.

## Boulder Nonlinear Systems, Inc.

#1125

SPIE Corporate Member

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

**New Product: Spatial Light Modulator with DVI Driver.**

Boulder Nonlinear Systems, Inc. (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, waveform analysis/testing, and other applications. Contact: Kelly Gregorak, Sales, kelly@bnonlinear.com; Kipp Bauchert, Solutions Engineering.

## Brimrose Corp. of America

#3214

Hunt Valley Loveton Center, #19 Loveton Circle, Sparks, MD, 21152-9201  
410/472-7070; fax 410/472-7960  
office@brimrose.com; www.brimrose.com

**New Product: AOTF VIS SWIR and LWIR Hyperspectral Imagers are solid state, 16,000 wavelengths/sec devices.**

Brimrose is the leader in solid state Acousto Optic Device Technology better than all the rest. Stop buy and we will tell you why. It is fundamental. Tired of having your Q-Switched Laser Systems fail because of this device. See Us. We also supply pigtailed Fiber Optic AO devices. Contact: Dr. Jolanta I. Soos, CTO, jsoos@brimrose.com; Carla Green, Sales Assistant, cgreen@brimrose.com.

**Brush Wellman Inc.****#113**

14710 W Portage River S Rd, Elmore, OH, 43416-4173  
419/862-4173  
www.brushwellman.com

**New Product: ALBEWELD and AlBeMet Optics.**

Brush Wellman is a world leader in advanced materials, including beryllium aluminum, for use in high performance applications both commercially and aerospace. The main emphasis at the DSS Conference will be aluminum beryllium materials for advanced optical systems. Contact: Tom Parsonage, Director, Market Development, t.parsonage@brushwellman.com; Larry Ryzek, V.P. Sales & Marketing, lawrence\_ryzek@beminc.com.

**Bullen Semiconductor****#3317**

950 S Franklin St, Eaton, OH, 45320  
937/472-3311  
sales@bullensemi.com; www.bullensemiconductor.com

**CALCULEX, Inc.****#1017**

132 W Las Cruces Ave, Las Cruces, NM, 88001  
505/525-0131; fax 505/524-4744  
sheril@calculex.com; www.calculex.com

CALCULEX designs and manufactures state of the art electronics for military, aerospace and commercial markets. CALCULEX solid state recorders are used worldwide in mission critical applications including USAF's 46th Test Wing at Eglin AFB, Boeing F-18 flight testing for the United States Navy, Lockheed Martin F-22 flight test program and reconnaissance programs at Recon/Optical and ELOP. Contact: Tom Beams, Executive Vice President/Chief Operations Officer, tbeams@calculex.com; Bill Taylor, National Sales Manager, billt@calculex.com.

**Cantronic Systems, Inc.****#428**

63A Clipper St, Coquitlam, BC, Canada, V3K 6X2  
604/516-6667; fax 604/516-6618  
info@cantronics.com; www.cantronic.com

**New Product: Hand Held Thermal Imager binocular especially designed for Homeland Security Applications.**

Cantronic Systems Inc. is a global technology leader in infrared imaging and commercial vision systems. Cantronic manufactures and distributes active and passive CCTV infrared imaging and night vision cameras. These complex camera systems are used for monitoring, protecting and managing facilities and people. Cantronic has supplied systems for use in demanding military, homeland security, medical, and industrial applications. Contact: Mark Mandell, VP Sales, mmandell@cantronics.com; Sandi Pavan, Sales Assistant, spavan@cantronics.com.

**Carl Zeiss MicroImaging, Inc.****#639**

One Zeiss Dr, Thornwood, NY, 10594  
800/233-2343; fax 914/681-7446  
micro@zeiss.com; www.zeiss.com/photo

**New Product: Carl Zeiss will display ZF & Visionmes lenses for machine vision cameras.**

Carl Zeiss is a leading international group of companies operating worldwide in the optical and opto-electronic industry. The business groups are generally ranked first or second in the strategic markets of medical and research solutions, industrial solutions and lifestyle products. The Carl Zeiss Photo Division produces high quality industrial lenses for use with machine vision cameras in a wide variety of large format and telecentric applications. Contact: Richard Schleuning, National Sales Manager, photo@zeiss.com.

**Cases by Source Inc.****#540**

16 McKee Dr, Mahwah, NJ, 07430  
888/665-9768; fax 201/831-0009  
info@sourcepac.com; www.casesbysource.com

**New Product: Molded soft cases.**

Manufacturer/distributor of stock and custom cases. Reusable protective packaging in plastic, metal, fabric (including molded soft cases), and wood - with or without foam or molded interiors. Thousands of cases for immediate delivery: Pelican, Zarges, SKB, Otter, Hofbauer, Gator and more. Built-to-spec for protection, organization and display of valuable instruments/merchandise. Customize a stock case with a foam or plastic interior for quick turnaround or let us develop a custom case for you. Contact: Matthew Adler, Vice President, info@sourcepac.com.

**CASIX VITROCOM****#1511**

20 Fuxing St, Fuxing Investment District, Fuzhou Fujian, China, 350014  
86 591 8362 0115; fax 86 591 8362 1248  
sales@casix.com; www.casix.com

Engaged in R&D, manufacturing excellence and quality improvement, CASIX focuses on developing and manufacturing high quality crystal, precision optics components and optical sub-assemblies for different market applications. VitroCom manufactures ultra high quality precision glass ferrules and alignment sleeves for the fiber optic market from borosilicate and clear fused quartz glasses. www.casix.com & www.vitrocom.com. Contact: CASIX, Inc., Sales and Marketing Division, sales@casix.com; Marketing@casix.com.

**CeramOptec Industries, Inc.****#443**


515 Shaker Rd, East Longmeadow, MA, 01028  
413/525-0600; fax 413/525-0611  
gina@ceramoptec.com; www.ceramoptec.com

**New Product: Vacuum feedthrough assemblies for single fibers, bundles. UV to NIR, high temp applications.**

CeramOptec Industries serves the scientific, medical, military and industrial markets with optical fiber, fiber bundles, assemblies, spectroscopic fibers and vacuum products. Stock and custom silica/silica fiber, PCS, HCS, silver halide optical fibers, capillary tubing and bundles and assemblies for use from the deep UV to MIR. Products from -190C to 1000C temperature, low to high NA (0.12 to 0.53). From preform manufacture to finished product, high quality at competitive prices. Contact: Cheryl Provost, Sales Engineer, cheryl.provost@ceramoptec.com; Kevin Bakhshpour, Director of Sales, kevinb@ceramoptec.com.

**Chengdu Ultra Pure Applied Materials Co., Ltd.****#1535**

No 3 Zhen Jianzou Rd, West Hight-Tech District, Chengdu Sichuan, China, 611731  
86 28 661 13286; fax 86 28 879 58501  
sales@upam.cn; www.upam.cn

Chengdu Ultra Pure Applied Materials Co., LTD (UPAM) is the best film coating and ceramic/sputtering targets manufacturing private company in China. UPAM accumulated large scales experiences in high power laser and mid to far Infrared films. The damage threshold can over 20J/cm<sup>2</sup>(1ns, 1064nm, 1on1). Our mid to far Infrared film can reach the highest transmission through China. UPAM's material department manufactured the high density HIP(2.1g/cm<sup>3</sup>) BN boat/liner/tube and LaB6 cathode for plasma. UPAM just supplied the best quality products which you can compare all over the China. You are welcome to visit our website: www.upam.cn and send the RFQ to sales@upam.cn.

# Exhibitor Listing

## CI Systems, Inc.

**SPIE** Corporate Member

90 W Cochran St Ste D, Simi Valley, CA, 93065  
805/520-2233  
contactus@ci-systems.com; www.ci-systems.com

#1023

## CiDRA Precision Services

50 Barnes Park N, Wallingford, CT, 06492  
203/744-4456; fax 203/774-4455  
cgranucci@cidracps.com; www.cidracps.com

CiDRA Precision Services, LLC is an industry leading supplier of custom-manufactured, micron-precision products from glass, ceramic, sapphire, and hard metal materials. We leverage our in-depth dicing, drilling, milling, grinding, and polishing capability to manufacture the highest quality products to customers exacting requirements. Contact: Kirk Schoell, VP, Operations, kschoell@cidracps.com; Jim Sirkis, President, jsirkis@cidracps.com.

#3119

## Clear Align

**SPIE** Corporate Member

2550 Boulevard of the Generals Ste 280, Eagleville, PA, 19403  
484/956-0510; fax 484/956-0511  
info@clearalign.com; www.clearalign.com

**New Product: ZoomZoom: synchronous continuous multi-band zoom technology, for surveillance and reconnaissance.**

Clear Align designs, prototypes and manufactures custom imaging, sensing and fiber optic systems for defense, aerospace and commercial customers. Clear Align's imaging expertise spans the UV to LWIR portion of the spectrum, delivering both narrow- and wide-field-of-view, multi-band, and zoom systems. Fiber optic and sensing expertise includes optical integration for communications, remote sensing and targeting, and medical applications, as well as high performance laser technology. Contact: David Huff, VP Business Development, david.huff@clearalign.com; Jeffrey Dallape, Manager Business Development, jeff.dallape@clearalign.com.

#1317

## Cloud Cap Technology, Inc.

2621 Wasco St, PO Box 1500, Hood River, OR, 97031  
541/387-2120; fax 541/387-2030  
zanmiller@cloudcaptech.com; www.cloudcaptech.com

#3413

## CMC Electronics Inc.

600 Dr Frederick Philips Blvd, Ville Saint Laurent, QC, Canada, H4M 2S9  
514/748-3148; fax 514/748-3100  
www.cmcelectronics.ca

Esterline CMC Electronics' Custom Electronics business designs and manufactures electronic components for the military and commercial aerospace markets as well as the military ground vehicle and manpack communications market. Its main product lines include custom displays, edgelit panels, interated keyboards, junction boxes, and hybrid microelectronics, including laser warning systems, electro-optics and fibre-optic transceiver. Contact: Andrew Krilick, Director Marketing and Business Development, andrew.krilick@cmcelectronics.ca; Angela McCune, Marketing Manager, angela.mccune@cmcelectronics.ca.

#430

## Coastal Optical Systems, Inc.

**SPIE** Corporate Member

16490 Innovation Dr, Jupiter, FL, 33478-6428  
561/881-7400; fax 561/881-1947  
sales@coastalopt.com; www.coastalopt.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. The camera comes 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 Coastal Optical Systems. Contact: Ray Malcom, VP of Marketing and Sales, ray.malcom@coastalopt.com; Jay Kumler, President, jay.kumler@coastalopt.com.

#329

## Cobham

2734 Hickory Grove Rd, Davenport, IA, 52804  
563/383-6000; fax 563/383-6430  
info@carletonls.com; www.carletonls.com

Cobham is a world leader in the application of air separation technology for aviation applications and in the design and manufacture of miniature stirling cycle cryogenic coolers. Contact: Bob Nelson, Business Development Manager, bnelson@carletonls.com; Asif Ahmed, Marketing Manager, aahmed@carletonls.com.

#323

## Coherent Inc.

**SPIE** Corporate Member

5100 Patrick Henry Dr, Santa Clara, CA, 95054  
408/764-4000; fax 408/764-4825  
tech.sales@coherent.com; www.coherent.com

World's leading manufacturer of photonics-based products for a wide range of commercial and scientific applications. Industry's largest and most diverse selection of lasers - over 100 different standard models - plus crystals, precision optics and a wide range of laser test and measurement equipment. Highly reliable, high performance product lines include CO<sub>2</sub>, continuous-wave, diode, diode module, diode-pumped solid-state, excimer, ion, tunable-dye, YAG, YLF and ultrafast lasers. Contact: Joseph Jordan, Advanced Technical Sales, joseph.jordan@coherent.com; Robert Bohorquez, Advanced Technical Sales, robert.bohorquez@coherent.com.

#1135

## Cohu Electronics

**SPIE** Corporate Member

12367 Crothwaite Circle, Poway, CA, 92064  
858/277-6700; fax 858/277-0221  
www.cohu-cameras.com

**New Product: The new 3960 HD, (Helios), from Cohu The Clear Choice for Quality.**

Cohu Electronics is a manufacturer of CCTV cameras for the Government, Industrial, and Traffic Security Surveillance markets. Come see the new 3960 HD camera at the Cohu Booth #3519. Contact: Tim Jones, Sr Applications Engineer, tjones@cohu.com; Charley Gilbert, Director of Sales, cgilbert@cohu.com.

#3519



# DEKEL

State-of-the-art  
continuous LWIR  
zoom lens



## OPTICAL

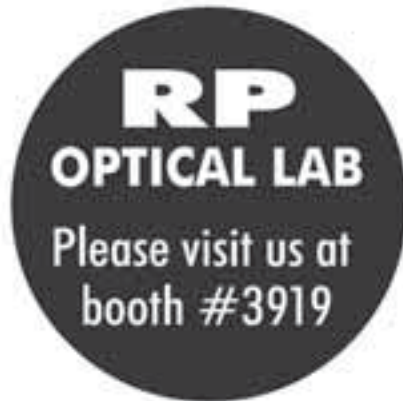
Type	DSP based motorized zoom lens for LWIR
Focal Length / F#	25 – 145 mm / 1.4

## MECHANICAL

Optical total lens track	150 mm,
Focus / Zoom mechanism	Motorized
External Dimensions	Max Diameter: 127 mm; Length: 142mm
Mount / Mechanical interface	Two "off-the-shelf" configurations are available Custom solutions are optional

## ELECTRICAL

Power input	12VDC, 1.0A
Communication protocol	RS-422 Full duplex



## Computer Optics Inc.

#1322

120 Derry Rd, Hudson, NH, 03051  
603/889-2116; fax 603/889-2393  
gordon@computeroptics.com; www.computeroptics.com

**New Product: Latest in stock IR Camera systems: MWave 20x Zoom/15-300mm. Fully integrated, compact, lightweight.**

The Infrared Zoom Lens Experts: Booth 1322. See the latest in IR zoom lens technology for the MWIR, LWIR and SWIR. COI/ IRZoom.com is a world leader in IR zoom lens technology. We offer the widest selection of stock IR lenses, plus custom design & manufacturing for highly precise military, surveillance, UVA/MRA aircraft, industrial, search/rescue and yes, optical consulting. We're proud of our 25 year collaboration with all branches of the US Military, industry, NASA and research institutions. Contact: Jon Kane, Business Unit Manager, IRZoom.com, jon@irzoom.com; Gordon Kane, CEO, gordon@computeroptics.com.

## Contour Fine Tooling

#127

143 Jaffrey Rd, Marlborough, NH, 03455  
603/876-4908; fax 603/876-4911  
dennis@contour-diamonds.us; www.contour-diamonds.com

## CoorsTek Technical Ceramics

#1027

555 NE 53rd Ave, Hillsboro, OR, 97124  
503/693-2173; fax 503/648-1501  
dcavanaugh@coorstek.com; www.coorstek.com

**New Product: Direct Sintered Silicon Carbide, optics systems structural components.**

CoorsTek, Inc is the largest alpha grade silicon carbide optics manufacturer in the USA for up to 1.5 meter class- space or ground telescope components, image sensors, surveillance systems or for directed energy applications. We offer advanced forming, sintering, grinding, lapping and precision metrology to make lightweight mirrors and optical structures. Materials are well suited for high precision applications in Metrology, Solar Energy, Photonic Devices and Optical surfaces and structures. Contact: David Bath, Principal Optics Engineer, dbath@coorstek.com; Dennis Cavanaugh, General Sales Manager, dcavanaugh@coorstek.com.

# Exhibitor Listing

## CorActive High-Tech, Inc.

#236

SPIE Corporate Member

2700 Jean-Perrin Ste 121, Quebec, QC, Canada, G2C 1S9  
418/845-2466; fax 418/845-2609  
sales@coractive.com; www.coractive.com

CorActive is a well financed independent developer and manufacturer of advanced Specialty Optical Fiber (SOF) products for OEM customers serving the LASER, telecommunications, sensor, defense, and aerospace industries. CorActive uniquely offers a full line of standard SOF products, including Double Clad, erbium doped, mid-IR transmission, ultra violet sensitive and attenuating optical fiber, plus custom fiber development services for specific applications. Contact: Jean Dubé, V.P. Sales, sales@coractive.com; David Beiko, Director of Sales, sales@coractive.com.

◆◆◆◆◆  
◆◆◆◆◆ **GENERAL REFRESHMENTS SPONSOR**

## Corning Inc.

#415

SPIE Corporate Member

1 Riverfront Plaza, Corning, NY, 14815  
607/974-9000; fax 607/974-8177  
dayjl@corning.com; www.corning.com

Corning Specialty Materials is a premier supplier of complete opto-mechanical solutions for the aerospace and defense industry. With a 157 year heritage of innovation, we provide keystone components for space-based, airborne, ground-based, and naval sensor systems. Corning is a vertically integrated U.S. manufacturer, recognized for process innovation, materials science, opto-mechanical design, diamond turning, optical grinding and polishing, and thin film coatings. Contact: Dave Young, Marketing Communications, youngdj@corning.com.

## CORWIL Technology Corporation

#3006

1635 McCarthy Blvd, Milpitas, CA, 95035  
408/321-6404; fax 408/321-6407  
info@corwil.com; www.corwil.com

## CPS Technologies Corp.

#1523

111 S Worcester St, Norton, MA, 02766  
508/222-0614; fax 508/222-0220  
marko@alsic.com; www.alsic.com

CPS Technologies is the leader in the design and production of AlSiC for high thermal conductivity and device compatible thermal expansion. AlSiC thermal management components manufactured by CPS include Hermetic Electronic Packages, Heat sinks, Microprocessor & Flip chip heat spreader lids, Thermal substrates, IGBT base plates, Pin Fin baseplates for Hybrid Electric Vehicles (HEV), Microwave & Optoelectronic Housings and large format System in Package (SiP) Heat Spreader Lids. Contact: Cheryl Oliveira, Vice President of Sales, coliveira@alsic.com; Bo Sullivan, Senior Account Manager, bsullivan@alsic.com.

## CREOL, The College of Optics & Photonics

#526

SPIE Corporate Member

4000 Central Florida Blvd Bldg 53, PO Box 162700,  
Orlando, FL, 32816-2700  
407/823-6800; fax 407/823-6880  
info@creol.ucf.edu; www.creol.ucf.edu

**New Product: Townes Laser Institute, developing new lasers for medical, manufacturing, and defense applications.**

CREOL, The College of Optics & Photonics at the University of Central Florida is an internationally recognized academic and research institution, offering MS and PhD degrees in Optics, and serving as a scientific, educational, and technical resource to industry. The College has 42 faculty, 54 research scientists, and 160 graduate students conducting research into all aspects of optics and photonics. Research expenditures exceed \$20M annually, with over 25% of funding from industrial partners. Contact: Bahaa Saleh, Dean & Director, CREOL, The College of Optics & Photonics, bsaleh@creol.ucf.edu; James Pearson, Director, Research & Administration, jpearson@creol.ucf.edu.

## Criterion Instrument

#436

5349 W 161st St, Brook Park, OH, 44142  
216/267-1733; fax 216/267-4542  
office@criteriontool.com; www.criteriontool.com

Criterion Instrument, a Female Owned, ISO 9001:2000 certified manufacturer, has been providing custom precision machined parts for over 50 years to the medical, aerospace, defense and commercial industries. From prototype to production we can support your projects. Capabilities include CNC milling, turning and CNC Swiss turning. Criterion wants to be part of the solution, let us quote your next project. Contact: Tanya DiSalvo, President, tdisalvo@criteriontool.com; Dennis Ondercin, VP/Estimator, dondercin@criteriontool.com.

◆◆◆◆◆  
◆◆◆◆◆ **METER BOARD SPONSOR**  
◆◆◆◆◆ **CVI Melles Griot**

#1111

SPIE Corporate Member

200 Dorado Pl SE, Albuquerque, NM, 87123  
505/296-9541; fax 505/298-9908  
optics@cvimellesgriot.com; www.cvimellesgriot.com

CVI Melles Griot is excited to be introducing 100s of new products this year! Visit us at booth #1111: Pick up our Volume 1, Issue 1 of All Things Photonics our New 2009 Catalog. Learn about our new exciting filter and shutter products that will save you money, time and improve your system performance. Talk to us about your challenging requirements and see how our greatly expanded capabilities in diamond turning, CNC optical fabrication, and Build-Your-Own component manufacturing competencies will help you get to market quicker. Visit us at cvimellesgriot.com to get the latest information on products and capabilities. What can we do to help make your projects a success?

## Cyclone, CRI

#3804

SPIE Corporate Member

77 Schelkovskoye Shosse, Moscow, Russia, 107497  
7 4954604800  
cyclone@asvt.ru; www.cyclone-jsc.ru

**New Product: Harrier RF - hand-held thermal imaging camera with eye-safe laser range finder.**

Design, development and manufacturing of thermal imaging cameras, low-light level TV cameras, integrated and multispectral systems. Contact: Oleg Yakovlev, Deputy General Director, cyclone@asvt.ru; Eugeny Maryutin, Head of Marketing Department, cyclone@asvt.ru.



**Get the training you need to stay ahead of the technology curve.**

*See full course listing, pp. 18-22.*

**D&P Instruments****#504**

1280 Hopmeadow St Unit E, Simsbury, CT, 06070  
860/658-0458; fax 860/651-0698  
microfts@aol.com; www.dpinstruments.com

Manufacturer of small, portable, battery powered remote sensing FT-IR spectrometers and accessories. Complete package available for highly calibrated measurements of absolute radiance, emissivity, and temperature of samples in the field. Contact: Win Wadsworth, President, microfts@aol.com.

**Davidson Optronics, Inc.****#205**


2223 W San Bernandino Rd, West Covina, CA, 91790  
626/962-5181; fax 626/962-5188  
sales@davidsonoptronics.com; www.davidsonoptronics.com

**Daylight Solutions****#3206**


13029 Danielson St Ste 130, Poway, CA, 92064  
858/391-1010; fax 858/679-9470  
info@daylightsolutions.com; www.daylightsolutions.com

**New Product: Mid-IR Fixed Wavelength Laser, CW and Pulsed models, room temperature operation with 30 mW output.**

Daylight Solutions provides tunable and fixed wavelength, External Cavity Laser systems in the Mid-IR being used today with advanced molecular detection systems and imaging instruments. The company's room temperature Mid-IR lasers provide the core technology for significant advancement in the fields of medical diagnostics, homeland security, military applications and industrial/environmental monitoring. Both Pulsed and CW solutions are available with broad tuning in the 4 to 12  $\mu\text{m}$  region. Contact: Chris Armacost, Director of Sales, carmacost@daylightsolutions.com.

**Dayton T. Brown, Inc.****#411**

1175 Church St, Bohemia, NY, 11716  
800/TEST456; fax 631/589-3648  
contactus@dtbtest.com; www.dtbtest.com

With its extensive laboratory facilities and equipment, DTB has been a major participant in quality assurance testing and engineering support programs for the defense & security industry. We work closely with clients to provide world-class reverse engineering and product improvement services, environmental and dynamics testing. No other testing lab offers the variety of testing services that we can provide to you in one location with a 24/7 schedule. Please visit us at [www.dtbtest.com](http://www.dtbtest.com). Contact: Tom Volpe, Business Development Manager, tvolpe@dtbtest.com.

**Defense Tech Briefs****#426**

1466 Broadway Ste 910, New York, NY, 10036  
212/490-3999; fax 212/986-7864  
joe@abpi.net; www.abpi.net

*Defense Tech Briefs* provides engineers with a one-stop source for the latest advances & tech transfer opportunities from Department of Defense R&D programs. Mailed with *NASA Tech Briefs* and distributed digitally, *Defense Tech Briefs* reaches over 90,000 aerospace, defense and government decision-makers - the largest circulation of any mil/aero engineering magazine. Sign up today for a free subscription or visit [www.defensetechbriefs.com](http://www.defensetechbriefs.com). Contact: Joe Pramberger, Publisher, joe@abpi.net; Linda Bell, Editorial Director, linda@abpi.net.

**Del Mar Photonics, Inc.****#3009**


4119 Twilight Ridge, San Diego, CA, 92130  
858/876-3133; fax 858/630-2376  
sales@dmphotonics.com; www.dmphotonics.com

**New Product: Femtosecond/Raman ready AFM Heron for AFM/STM/NSOM for nano applications.**

Femtosecond solid state and fiber lasers. Applications including manufacturing fiber sensors, waveguides, microfluidics, glass MEMS, FBG inscription, 3D optical fabrication, optical memory, plasma generation, stand-off detection using LIBS, generation of THz radiation, sensing, spectroscopy, microscopy, imaging. Narrow line width lasers and spectrometers for high-resolution applications. Components division provides optics made of fused silica, fluorides, sapphire, zinc selenide and germanium. Contact: Del Mar Photonics Sales Team, sales@dmphotonics.com.

**DenseLight Semiconductors Pte Ltd.****#1502**

6 Changi North St 2, Singapore, Singapore, 498831  
65 6415 7989; fax 65 6415 7988  
info@denselight.com; www.denselight.com

DenseLight Semiconductors designs, fabricates and manufactures Infrared Optoelectronics Light Sources, including Superluminescent LEDs, Broadband Light Sources, Single-Frequency Lasers and High Power Pulsed Lasers (form factors: chip, TO-can, BTF/DIL, module and benchtop) for applications in Sensing (Fiber-optics gyroscopes, gas/chemical sensing, FBG sensors, Brillouin OTDR, laser ranging), Medical healthcare (OCT imaging, non-invasive body-sensing) & communications (WDM-PON, network testers). Contact: HT Wong, VP Sales & Marketing, ht Wong@denselight.com; Yee-Loy Lam, CEO/CTO, yeeloy@denselight.com.

**Denton Vacuum, LLC****#229**

1259 N Church St, Moorestown, NJ, 08057  
856/439-9100; fax 856/439-9111  
sbarnes@dentonvacuum.com; www.dentonvacuum.com

**New Product: Discovery HDG; Ion Beam Deposition and Ion Beam Assisted Deposition.**

Denton Vacuum is a world-class supplier of PVD vacuum deposition equipment. Deposition systems include the Integrity<sup>®</sup>; precision optical coaters, Desk<sup>®</sup>; SEM sample preparation systems, Discovery<sup>®</sup>; RF/DC sputtering systems, Explorer<sup>®</sup>; series for R&D; our new HDG (horizontal dual gun) Ion Beam deposition system. DLC, optical interference, metal, metal oxide coatings are our specialty. Contact: Jim Colbridge, Sales & Marketing Manager, jcolbridge@dentonvacuum.com.

**Deposition Sciences, Inc****#740**


3300 Coffey Ln, Santa Rosa, CA, 95403  
707/578-6758  
solutions@depsci.com; www.depsci.com

**New Product: Deposition Sciences' New Transparent Conductive Coatings with EMI Shielding - Ideal for use in UAVs.**

Deposition Sciences, Inc. (DSI) provides innovative thin film coating products designed specifically to meet the demanding requirements of military, aerospace and defense applications. Highly durable, high performance optical coatings for extreme and rugged environments, DSI is a select vendor for a variety of aerospace and defense programs, including NPOESS, BSTS, MES, MSTI-3, Warfighter, and SBIRS-High. DSI coating capabilities range from UV through visible and NIR, MWIR out to LWIR. Contact: Bob Crase, Program Manager, craserj@depsci.com; Tatiana Goobanoff, Customer Service Supervisor, goobanoffn@depsci.com.



# Exhibitor Listing

## Devitech ApS

#1534

Sundsholmen 12, Norresundby, Denmark, 9400  
45 70 26 56 26; fax 45 70 26 56 27  
info@devitech.dk; www.devitech.dk

### New Product: High Performance VOx Uncooled LWIR Cameras and Engines.

Devitech is dedicated to the development and manufacture of high performance uncooled thermal cameras and engines based on vanadium oxide detector technology. Offers include mid-format and VGA format thermal imaging cameras with various lens and interface options, perfectly suited for challenging environmental conditions. The product line targets a wide range of civil and military applications, including driver's vision enhancers, forward observers, long range surveillance and perimeter control. Contact: Niels Heeser Nielsen, Managing Director, nhn@devitech.dk; Christina L. Wiederholt, Marketing Manager, clw@devitech.dk.

## Dexter Research Center, Inc.

#3512

7300 Huron River Dr, Dexter, MI, 48130  
734/426-3921; fax 734/426-5090  
info@dexterresearch.com; www.dexterresearch.com

Since 1977, Dexter Research Center, Inc. has been the preferred provider of infrared thermopile detectors for science and industry, including the defense and security sectors. Whether it's a standard or a custom designed detector, an integrated module or the opportunity to use our 30 plus years of infrared detection knowledge and engineering services to design your product, Dexter Research Center, Inc. is positioned to be your partner. Contact: Kurt Hochrein, Director - Customer Development, khochrein@dexterresearch.com.

## Digital Light Innovations

#3402

3201 Industrial Terrace Ste 120, Austin, TX, 78758  
512/615-4680; fax 512/615-4635  
sales@dlinnovations.com; www.dlinnovations.com

### New Product: DLP Discovery 4000, Pixel Precision 2.0, Pico Projector, D4000 NIR SLM Kit, ALP 4 High Speed.

Digital Light Innovations is an Authorized Design Partner and Reseller for Texas Instruments' DLP® technology, the most widely adopted and reliable spatial light modulator (SLM) on the market today. DLI specializes in custom engineering, commercialized integration, and sales of the DLP® Discovery™ products by Texas Instruments. DLI services the defense, spectroscopy, maskless lithography, hyperspectral imaging, IR projection and sensing, and adaptive optics industries. Contact: David Smith, Business Development Manager, dsmith@dlinnovations.com; Erin Taylor, Sales Engineer, etaylor@dlinnovations.com.

## Dilas Diode Laser, Inc.

#231



9070 S Rita Rd Ste 1500, Tucson, AZ, 85747  
520/232-3480; fax 520/232-3499  
sales@dilas-inc.com; www.dilas.com

DILAS' Tucson, AZ facility delivers the most innovative technologies and advanced product solutions in the industry. Our ISO certified and ITAR compliant facility designs, develops and manufactures high power, high brightness semiconductor laser components, modules and systems, including fiber coupled products for the military and aerospace industries. Contact: Georg Treusch, General Manager, VP, g.treusch@dilas-inc.com.

## Directed Perception, Inc.

#334



890C Cowan Rd, Burlingame, CA, 94010  
650/692-3900; fax 650/692-3930  
www.dperception.com

Directed Perception provides a complete line of pan & tilt devices for computer-controlled positioning of cameras, lasers, antennas and instruments. Directed Perception's pan/tilt devices offer high speed, precision, durability, as well as advanced features such as geo-pointing and inertial stabilization. For over 15 years Directed Perception has served leading systems integrators and OEMs in military, machine vision, R&D, and security & surveillance markets.

## Docter Optics, Inc.

#339



1425 West Elliot Rd Ste A-105, Gilbert, AZ, 85233  
480/844-7585; fax 480/844-7826  
doi@docteroptics.com; www.docteroptics.com

### New Product: Auto-Tessar® lenses, Stilar® 2.8/8 for 1.2" sensor chips, components for high-performance LED optics.

Docter Optics' core strengths: Optical Systems produces special-purpose lenses and optical subassemblies for security, biometrics, aerospace and defense industries. Precision Glass Components is world leader in economic production of free-forms, light pipes, aspheres, mirrors, arrays and prisms with diameters from 5 to 150 mm for solar power, defense industry, high-performance LED applications. Automotive Solutions and Express Glass Services are global leaders in their respective markets. Contact: Bruce Nielsen, Vice President, bruce.nielsen@docteroptics.com; Frank Müller, Sales Manager, frank.mueller@docteroptics.com.

## Dontech Inc.

#1441

700 Airport Blvd, Doylestown, PA, 18902  
215/348-5010; fax 215/348-9959  
sales@dontech.com; www.dontech.com

### New Product: Therma Klear™ transparent heated windows for visible, NIR cameras, sensors and lasers.

Since 1971, Dontech has designed and manufactured optical filters, coatings and assemblies for military, medical and industrial applications. Products include Visible, NIR, IR transparent heater and EMI/RFI windows, band pass and band rejection coatings, conductive coatings (<1 ohm/sq.) and broadband, NIR, IR antireflective coatings. Substrates include BK7, Sapphire, ZnS, ZnSe and plastics. Rugged, enhanced display assemblies. Contact: Jeff Blake, Director - Sales and Marketing, jblake@dontechinc.com; Bill Cusack, Regional Sales Manager, wcusack@dontechinc.com.

## Draka Communications Optical Fiber

#3109

2512B Penny Rd, Claremont, NC, 28610  
800/879-9862; fax 828/459-8267  
fibresales@drakafiber.com; www.drakafiber.com

Draka is a leading global manufacturer of optical fiber and cable for the telecom, datacom and specialty fiber markets. Products include ultra bend-insensitive SM (BendBright-Elite), high data rate OM4 MM (MaxCap 550), and harsh environment fibers (radiation, high temp, high strength, H2). Other Draka Elite specialty fibers include erbium doped fibers, PCS, PCF, PMF, DC fibers/modules, tight buffered fibers, ribbonized fibers as well as custom optical fibers to meet your application needs. Contact: Ryan Chappell, North American Fiber Business Manager, ryan.chappell@draka.com; Olaf Storaasli, Product Manager, Optical Fiber, olaf.storaasli@draka.com.



## DRS Technologies, Inc.

#1201



Reconnaissance, Surveillance & Target Acquisition, 3520 U.S. Hwy 1, Palm Bay, FL, 32905  
321/309-0433; fax 321/956-0126  
marketing@drs.com; www.drs.com

DRS Technologies, headquartered in Parsippany, New Jersey, U.S.A., is a leading supplier of integrated products, services and support to military forces, intelligence agencies and prime contractors worldwide. Focused on defense technology, the Company develops, manufactures and supports a broad range of systems for mission critical and military sustainment requirements, as well as homeland security. Contact: Chris Corsbie, Director, Marketing & Communications, ccorsbie@drs-rsta.com; Judy Deeter, Manager, Business Development, jedeeter@drs-rsta.com.

### ROBOTICS+UNMANNED SYSTEMS DISPLAY

## DRS Technologies, Inc.



Reconnaissance, Surveillance & Target Acquisition, 3520 U.S. Hwy 1, Palm Bay, FL, 32905  
321/309-0433; fax 321/956-0126  
marketing@drs.com; www.drs.com

**Display: DRS Technologies' unmanned aircraft mission is multi-role in approach in all environments - sea, air and land. Their tactical, expeditionary systems are engineered to compress the kill chain for operators by minimizing launch time and maximizing target time.**

Focused on defense technology, the Company develops, manufactures and supports a broad range of systems for mission critical and military sustainment requirements, as well as homeland homeland security. Contact: Jeff Singleton, Manager, Business Development, jeff.singleton@drs-c3.com.

## Drytech Inc.

#1434

54 Wrightstown-Cookstown Rd, PO Box 128, Cookstown, NJ, 08511-0128  
609/758-1794; fax 609/758-1774  
lhammons@drytechinc.com; www.drytechinc.com

Drytech designs and manufactures a range of moisture management and air purification products. These products including desiccators, molecular sieve filters and desiccant breathers, protect electropical components and systems from degrading effects of moisture and condensation. Typical applications include airborne turret mounted optical sensor pods. Contact: Anika Jones, Sales Administrator, jonesa@drytechinc.com.

## e2v

#308



106 Waterhouse Ln, Chelmsford, United Kingdom, CM1 2QU  
44 1245 453438; fax 44 1245 453725  
deborah.beckett@e2v.com; www.e2v.com

e2v has over 30 years of experience in the design and manufacture of CCDs, EMCCDs, CMOS image sensors and line scan image sensors for a variety of markets with capabilities including back-illumination, low noise, high quantum efficiency and sensitivity to photon wavelengths from X-ray through near-IR. e2v routinely provides image sensors for the most demanding applications in space, astronomy and scientific imaging as well as medical, industrial machine vision and security. Contact: Peter Fochi, Director, Space & Defense Imaging, peter.fochi@e2v.com.



= **Robotics and Unmanned Systems Displays in the Palms Exhibition Hall**  
See p. 10 for details.

## Earth Imaging Journal

#S-9

1208 Main St Unit A, Windsor, CO, 80550  
970/223-6295  
news@eijournal.com; www.eijournal.com

*Earth Imaging Journal* is devoted exclusively to exploring the world of remote sensing. The magazine is published by a professional staff with more than 60 combined years of experience covering the geospatial market and sponsored by a consortium of industry leaders. The magazine is complemented by its Web site (www.eijournal.com), which delivers a variety of online resources: comprehensive articles, press releases, an international industry directory, and more. Contact: John Hughes, Publisher, jhughes@eijournal.com.



LANYARD SPONSOR

## Edmund Optics

#1029



101 E Gloucester Pike, Barrington, NJ, 08007-1380  
856/547-3488; fax 856/573-6272  
sales@edmundoptics.com; www.edmundoptics.com

Edmund Optics (EO) is a leading producer of optics, imaging, and photonics technology, supporting the R&D, military, electronics, semiconductor, pharmaceutical, and biomedical markets around the globe. EO products are used in applications ranging from night vision to DNA sequencing to high-speed factory automation. For their military applications, EO's in-house manufacturing locations have been audited by an independent organization for compliance to US State Department guidelines. Contact: Allan Kreutzer, Director of Global Sales, AKreutzer@edmundoptics.com; Marisa Edmund, VP of Marketing and Communications, MEdmund@edmundoptics.com.

## EGIDE USA

#1224

4 Washington St, Cambridge, MD, 21613  
410/901-6100; fax 410/901-6250  
www.egide.fr

Egide designs and manufactures hermetic glass-to-metal and ceramic-to-metal packaging for telecommunications, industrial, military and aerospace applications. Products include: 14 pin butterflies, minidil, and various plug-in and flat pack style packages. Our products protect optical devices and circuits that control wave monitoring, guided missiles, flight control operations and more. Contact: Kirk Williamson, Sales Manager, kirk.williamson@egideusa.com.



WI-FI SPONSOR

## Elbit Systems of America

#1323

220 Daniel Webster Hwy, Merrimack, NH, 03054  
603/889-2500  
www.elbitsystems-us.com

Elbit Systems of America (ESA) is a leading global provider of high performance products and sub-system solutions focusing on the defense, homeland security, and commercial aviation markets. ESA is dedicated to supporting those who contribute daily to the defense and safety of the United States. ESA is wholly owned by Elbit Systems Ltd. (NASDAQ: ESLT), a global electronics company engaged in a wide range of programs for innovative defense, commercial aviation and homeland security applications. Contact: Ed Seibel, Executive Director, Business Development, ed.seibel@elbitsystems-us.com.

# Exhibitor Listing



**CONFERENCE BAG AND CONFERENCE BAG INSERT SPONSOR**

## **ELCAN Optical Technologies**

**#223**

450 Leitz Rd, Midland, ON, Canada, L4R 5B8  
705/526-5401; fax 705/526-5831  
info@elcan.com; www.elcan.com

**New Product: New Products on display include man-portable sighting systems such as SpecterDR and PhantomIRx.**

ELCAN provides Technology to Transform with a complete range of precision electro-optics for military platforms. ELCAN supplies mission critical components to major military contractors in North America and Europe. ELCAN's founding companies include Ernst Leitz, Hughes Aircraft and Texas Instruments. Today, ELCAN is part of the Raytheon company with more than 1400 employees and manufacturing facilities in Midland Ontario, Richardson Texas and Malaga Spain. Contact: Ricky L. Freeman, Regional Manager, Southeast US Programs, r-freeman@raytheon.com; John Reddy, Regional Sales Manager, East Coast USA, jreddy@elcan.com.

## **Electro Optics Magazine**

**#S-11**

8-10 Whiteladies Rd, Clifton, Bristol, United Kingdom, BS8 1PD  
44 117 906 4075; fax 44 117 973 2022  
sales@europascience.com; www.europascience.com

## **Electro-Optical Imaging, Inc.**

**#522**



4300 Fortune Pl Ste C, West Melbourne, FL, 32904  
321/435-8722; fax 321/435-8723  
info@eoimaging.com; www.eoimaging.com

**New Product: The Series 7000 automatic video trackers are designed to interface with HD and Camera Link cameras.**

E-O Imaging offers a line of off the shelf automatic video trackers for VME, PCI, PCIe and cPCI platforms. In addition to its line of standard tracker products the company specializes in custom designs and turnkey tracking systems for high performance tracking applications. Customer satisfaction and quality products are the company's number one priority. Contact: George A. Downey, President, gdowney@eoimaging.com; Nathan A. Harris, VP of Operations, nharris@eoimaging.com.



**GENERAL REFRESHMENTS SPONSOR**

## **Electro-Optical Industries, Inc.**

**#1035**



859 Ward Dr, Santa Barbara, CA, 93111-2960  
805/964-6701; fax 805/967-8590  
lindstrom@electro-optical.com; www.electro-optical.com

**New Product: MT100 Mobile Target Articulated/Tilttable 24"x24" Extended Area Source for Mobile Field Applications.**

World's leading supplier of Infrared and Visible test products and Systems, Blackbodies, Integrating Spheres, Collimators, Targets, Test Software, Turnkey, Test Station, Laboratory and Field Portable Systems. We offer the largest selection of Blackbodies in the Industry- from Cryogenic Sources to 3,000° C sources. Contact: Brent Lindstrom, Sales Director, lindstrom@electro-optical.com; Stephen Scopatz, President, sscopatz@electro-optical.com.

## **Electrophysics Corp.**

**#614**

373 Rte 46 W, Fairfield, NJ, 07004-2442  
973/882-0211; fax 973/882-0997  
info@electrophysics.com; www.electrophysics.com

## **Eltek USA Inc.**

**#3220**

25 Orchard View Dr Ste 207, Londonderry, NH, 03053  
603/421-0020; fax 603/421-0023  
jbarry@eltek.us; www.eltekglobal.com

Eltek is the leading Printed Circuit Board (PCB) Manufacturer, incorporated in 1970; Eltek provides the electronics industry with high density, high reliability rigid-flex, and rigid innovative solutions. Eltek's products are used in some of the most demanding environments within the medical, military and aerospace market sectors. Eltek is registered with the U.S. Department of State as an exporter of Defense Articles and Services. Contact: Jim Barry, President, jbarry@eltek.us; Joel Robbins, Regional Sales Manager, jrobbins@eltek.us.

## **EM Photonics**

**#1241**

51 E Main St Ste 203, Newark, DE, 19711  
302/456-9003; fax 302/456-9004  
galloway@emphotonics.com; www.emphotonics.com

## **EM4, Inc.**

**#627**



7 Oak Park, Bedford, MA, 01730  
781/275-7501; fax 781/275-7569  
sales@em4inc.com; www.em4inc.com

EM4, premiere US based manufacturer of optoelectronic components for the Defense and Industrial markets. Products include high power (up to 200mW) DFB lasers (1060nm-1620nm), High power (up to 8W) single emitter Multimode pumps (780nm-980nm), high power (up to 800 mW) SM pumps (915nm-1064nm), RF links and receivers up to 20GHz, high power fiber isolators and splitters (CW up to 10W) and Acousto-Optic Modulators (1060nm-1550nm). Contact: Ed McCartin, Director of Defense Sales, emccartin@em4inc.com; Basil Garabet, CEO, bgarabet@em4inc.com.

## **eMagin Corp.**

**#1538**

10500 NE 8th St #1400, Bellevue, WA, 98004  
425/749-3600; fax 425/749-3601  
cmiller@emagin.com; www.emagin.com

**New Product: SXGA 1280x1024 OLED-XL Microdisplay; SVGA Rev3 852x600 OLED-XL Microdisplay.**

A leader in virtual imaging technology, eMagin integrates high-resolution OLED microdisplays, magnifying optics, and systems technologies to create a virtual image that appears comparable to that of a large-screen television. With unique technology for producing high-performance small molecule OLED-on-silicon microdisplays and related optical systems, eMagin is the only company to supply these displays in commercial quantities to OEMs. For additional information, please visit www.emagin.com. Contact: Ming Shi, Director of Sales, mshi@emagin.com.

## **Emcore Corp.**

**#227**



2015 W Chestnut St, Alhambra, CA, 91803  
626/293-3626; fax 626/293-3432  
sales@emcore.com; www.emcore.com

**Plan to Attend**

**FREE Exhibitor Product Demonstrations**

Refer to page 12 for complete time, schedule, and location

**Energetiq Technology, Inc.**

**#3401**

7 Constitution Way, Woburn, MA, 01801  
781/939-0763; fax 781/939-0769  
mpurvis@energetiq.com; www.energetiq.com

**New Product: EQ-1000 LDLS Laser-Driven Light Source DUV-VIS light source is a high brightness - 170nm to visible.**

Energetiq Technology, Inc. is a manufacturer of advanced broadband, high brightness light products. Energetiq products include the recently introduced Laser-Driven Light Source, a novel new technology for broadband DUV/VIS/NIR high brightness light. The EQ-1000 LDLS is the first in a range of Laser-Driven Light Sources that have the highest brightness across the broadest spectral range, long life and stable output. Contact: Claire Brown, Director of Global Sales & Operations, cbrown@energetiq.com; Debbie Gustafson, Vice President of Sales and Service, dgustafson@energetiq.com.

**Engineered Surface Finishes,  
A Group of Cabot Microelectronics Corp.**

**#1419**

**SPIE** Corporate Member

870 N Commons Dr, Aurora, IL, 60504  
630/375-6674; fax 630/375-5594  
engineering@ensurfin.com; www.ensurfin.com

**Entegris, Inc.**

**#201**

**SPIE** Corporate Member

300 Old Greenwood Rd, Decatur, TX, 76234  
940/627-2121; fax 940/393-8435  
chris\_duston@entegris.com; www.entegris.com

**New Product: SUPERSiC® silicon carbide telescopes, designed and fabricated to near-net-shape.**

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

**Epitaxial Technologies, LLC**

**#1415**

1450 S Rolling Rd, Baltimore, MD, 21227  
410/455-5594; fax 410/455-5595  
oaina@epitaxialtechnologies.com; www.epitaxialtechnologies.com  
Epitaxial Technologies develops and produces breakthrough sensor products including photon counting photodetector arrays and ultrasensitive photoreceivers with widespread applications in free-space lasercomm, ladar and infrared imaging for missile defense, homeland security and commercial applications. Contact: Olaley A. Aina, President, oaina@epitaxialtechnologies.com.

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+1 360 715 3705, sales@spieworks.com

**SPIEBuyersGuide.com**

# Exhibitor Listing

## Epix, Inc.

#1226

 SPIE Corporate Member

381 Lexington Dr, Buffalo Grove, IL, 60089-6934  
847/465-1818; fax 847/465-1919  
sales@epixinc.com; www.epixinc.com

### **New Product: New 8 camera image capture system using two frame grabbers - all in one computer.**

EPIX, Inc. designs and manufactures frame grabbers, cameras, image acquisition and processing software, camera kits, and video to disk computer systems for machine vision, medical imaging, and high speed video analysis applications. We provide superior customer support from the initial purchase decision through image analysis. We can create custom cameras, frame grabbers, and software for your application. Contact: Charlie Diyak, Sales Manager, cad@epixinc.com.

## Epner Technology, Inc.

#3810

 SPIE Corporate Member

78 Kingsland Ave, Brooklyn, NY, 11222-5603  
718/782-5948; fax 718/963-2930  
info@epner.com; www.epner.com

Electroformed cold shields, custom designed infrared lightpipes, laser pump cavity reflectors, Laser Gold<sup>®</sup>, the NIST infrared standard, achieves theoretically low emissivity, and Laser Black<sup>®</sup> which "swallows light" and a broad range of electroplating, optical fabrication and coating technologies. Contact: David Epner, President, David@epner.com; Paul Brancato, General Manager, Paul@epner.com.

## Equipment Acquisition Resources, Inc.

#3015

 SPIE Corporate Member

555 S Vermont St, Palatine, IL, 60067  
847/705-7636; fax 847/705-7685  
sales@eartechology.com; www.eartechology.com

### **New Product: Leading Service Provider for Electronic Materials Abrasive Technology.**

EAR Technology is a leading service provider for electronic materials abrasive technology, maintaining the world's largest inventory of secondary market equipment for the photonics industry. EARBid is an online auction service that specializes in the remarketing and selling of semiconductor equipment. We have extensive experience in managing the disposition of surplus capital assets for the photonics industry. Contact: Mark Anstett, President, marka@eartechology.com; Bruce Costello, Director Auction Services, bruce@earbid.com.

## ER Precision Optical Corp.

#3218

505 W Robinson St, Orlando, FL, 32801  
407/292-5395  
audelhofen@eroptics.com; www.eroptics.com

### **New Product: Precision optics, including Aerospace, Medical, Defense, as well as custom and prototype optics.**

E.R. Precision Optical has been in business for 17 years. Providing top quality optics and assemblies for customers in a timely matter with every order. We have over 150 years combined experience in the optical field. Build to print, prototype, production, is all within our capabilities. Materials ranging from visible to IR, crystals to glass. We are ISO 9000 and HUB Zone certified since 2001. Contact: Jason Hess, Vice President, jhess@eroptics.com; Amy Udelhofen, Quality Manager, audelhofen@eroptics.com.

## ET Precision Optics Inc.

#203

 SPIE Corporate Member

33 Curlew St, Rochester, NY, 14606  
585/254-2560; fax 585/254-2966  
info@etprecision.com; www.etprecision.com

Since 1992, ET Precision Optics specializes in precision component machining. Our customers are optical manufacturers, medical, telecommunication, aerospace and military industries. We utilize 5-axis CNC mills, 9-axis lathes and EDM to machine high precision rotational and prismatic components. We hold tolerances as close as  $\pm 0.0002$ " and finishes of four RA. What sets us apart is our customer focus, commitment to quality (ISO-9001:2000 registered), attention to detail and on-time delivery. Contact: John Gligora, Manager, jgligora@etprecision.com.

## Evaporated Coatings, Inc.

#1505

 SPIE Corporate Member

2365 Maryland Rd, Willow Grove, PA, 19090-1708  
215/659-3080; fax 215/659-1275  
sales@evapcoat.com; www.evapcoatings.com

### **New Product: New Infrared coating capabilities.**

ECI offers a complete variety of thin film coatings for glass, metals, polymers, crystals and semiconductor materials. Designs offered include high performance anti-reflection, beamsplitters, NVIS filters, LWP/SWP filters, band pass filters, low-reflection attenuation coatings, ITO, solderable films, dielectric and metal mirrors. We utilize IAD, APS and IBS deposition. We deposit films for use from 200 nm to 10 microns. Contact: Patrick Wenrich, Sales Engineer; Stephen Schaffer, Vice President, sschaffer@evapcoat.com; Karen Farrell, Senior Sales Engineer, sschaffer@evapcoat.com.

## Exotic Electro-Optics

#1202

36570 Briggs Rd, Murrieta, CA, 92563  
951/926-2994; fax 951/926-1984  
www.exotic-eo.com

Manufacturer of infrared optical sub-assemblies, components, IR coatings and materials. Exotic specializes in the development and application of durable, rain erosion resistant exterior IR coatings. EMI is also considered the world's leading producer of heated infrared window assemblies. Contact: Phil Eads, Sales Manager; Todd Sanders, Sales Engineer.

## Fairfield Crystal Technology, LLC

#240

 SPIE Corporate Member

8 S End Plz, New Milford, CT, 06776  
860/354-2111; fax 860/354-3093  
info@fairfieldcrystal.com; www.fairfieldcrystal.com

### **New Product: We now offer BroadTran<sup>®</sup> "water clear" multispectral ZnS an ideal crystal for FLIR and other IR uses.**

Fairfield Crystal's develops a variety of crystal products serving diverse high tech industries: solid-state lighting, microlithography, laser, spectroscopy, semiconductor, defense and detection systems. We develop, characterize, test and manufacture novel crystals that meet stringent tolerances and characteristics for our customers to make their products better. Contact: Andy Timmerman, Director of Sales, atimmerman@fairfieldcrystal.com; Chris Snyder, Administrator, csnyder@fairfieldcrystal.com.



## Federal Laboratory Consortium for Technology Transfer #1528

c/o UTRS, Inc., 950 N Kings Hwy Ste 208, Cherry Hill, NJ, 08034  
856/667-7727; fax 856/667-8009  
tbrown@utrs.com; www.federallabs.org

The Federal Laboratory Consortium (FLC) is the nationwide network of federal laboratories providing the forum to develop strategies & opportunities for linking laboratory mission technologies & expertise with the marketplace. The FLC was organized in 1974 & formally chartered by the Federal Technology Transfer Act of 1986 to promote & strengthen technology transfer nationwide. Today, more than 250 federal laboratories & centers & their parent departments & agencies are FLC members. Contact: Mr. Frank Koos, Director, Technology Locator, fkoos@utrs.com.

## Fibercore Ltd. #3003

Fibercore House University Parkway, Southampton Science Park, Southampton Hampshire, United Kingdom, SO16 7QQ  
44 23 8076 9893; fax 44 23 8076 9895  
landise@cisco.com; www.fibercore.com

**New Product: CP1500Y: Er/Yb double clad fiber; SM300: pure-silica core singlemode fiber (300 - 532nm waveband).**

As the World's leading supplier of Specialty Singlemode Fibers, Fibercore Ltd has over 26 years experience exclusively dedicated to the design, manufacture and commercialization of Polarization Maintaining, Bend-Insensitive, Rare-Earth Doped, Cladding-Pump and Photosensitive fiber. To see how Fibercore Ltd can help with your requirements, visit us at Booth 3003. Contact: Ellen Landis, Director of Sales - North America, landise@cisco.com; Dr. Chris Emslie, Managing Director, emslic@cisco.com.

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## Fiberguide Industries, Inc. #116

 SPIE Corporate Member

1 Bay St, Stirling, NJ, 07980-1529  
908/647-6601; fax 908/647-8464  
info@fiberguide.com; www.fiberguide.com

**New Product: Mode Scrambler Option Eliminates High Power Laser Hot Spots.**

Multimode, single mode, graded index optical fibers from UV-IR, temperature from -269°C to +700°C. Design/engineer assemblies with widest range of endfittings/connectors and outer jackets. Manufacture 2D and V-Groove arrays designed for optical switches, WDM/DWDM and arrayed active devices; cables for SERCOS digital interface and VersaLink industrial automation; and reflection/ backscattering probes for measuring specular or diffuse reflection from a surface. Contact: Gary Churchill, Eastern Regional Sales Manager, gchurchill@fiberguide.com; Patrick Fung, Western Regional Sales Manager, pfung@fiberguide.com.

## Firebird Technologies Inc. #124

 SPIE Corporate Member

2950 Highway Dr, Trail, BC, Canada, V1R 2T3  
250/364-5605; fax 250/364-5643  
don@firebird.bc.ca; www.firebird.bc.ca



### Free Popcorn

Popcorn carts will be located in the Exhibition Halls, back of 1500 Aisle and 3600 Aisle. Open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

## Flex Interconnect Technologies #3516

1603 Watson Ct, Milpitas, CA, 95035  
408/635-3544; fax 408/956-8278  
sales@fit4flex.com; www.fit4flex.com

**New Product: Flexible circuits, Rigid-Flex and HDI flex.**

Flex Interconnect Technologies provides custom end-to-end solutions of reliable Design layout, Manufacturing, Assembly and Test of Flexible circuits, Rigid-Flex and HDI technology at an optimal cost of ownership. Industries served include Aerospace, Medical, Defense, Security, Sensing, Government, Communications, Computers and Semiconductors. Its ITAR registered facility in USA delivers quick-turn prototypes to high-volume production, with ISO 9000:2001, AS9100B, and CFR 820 certifications. Contact: Sylvia Macias, Customer Service, sales@fit4flex.com; Raj Badoni, Director of Sales and Marketing, raj@fit4flex.com.

## FLIR Systems, Inc. - Thermography Division #803

 SPIE Corporate Member

25 Esquire Rd, N. Billerica, MA, 01862  
978/901-8000; fax 978/901-8532  
info@flir.com; www.flirthermography.com

For over 35 years, FLIR Systems, Inc. has designed and manufactured more infrared camera technology innovations than any other company in the world. FLIR's state-of-the-art thermal imagers are used in diverse applications such as defense, navigation, public safety, electronic news gathering and search and rescue. Contact: Steve Chisholm, Inside Sales Manager, steve.chisholm@flir.com; Dave Bursell, Director, Scientific Segment Engineers, dave.bursell@flir.com.

## FLIR Systems, Inc. (CVS) #903

 SPIE Corporate Member

27700A Parkway Ave, Wilsonville, OR, 97070  
503/498-3149; fax 503/498-3153  
www.flir.com

**New Product: Tau is FLIR's smallest, lightest high performance thermal camera.**

FLIR offers a full line of uncooled and cooled infrared sensors and component products under the "Core by Indigo" brand. FLIR's volume detector fabrication capability, ROIC development, OEM packaging and program management gives you with the highest quality sensors at the lowest cost. Contact: Jay James, VP, Business Development, Cores & Components, jay.james@flir.com; Stan Laband, Director, OEM Camera Cores, stan.laband@flir.com.

## Fosta-Tek Optics #330

320 Hamilton St, Leominster, MA, 01453  
978/534-6511; fax 978/537-2168  
tlong@fosta-tek.com; www.fosta-tek.com

**New Product: Injection-compression molding achieves the accuracy of diamond turning with plastic optics.**

Fosta-Tek Optics is a one-stop resource for contract manufacturing of polymer based optical components. All manufacturing is done in the U.S.A, and we offer high performance and thin film coatings, precision molded optics, and optical filters for electronics. Products include laser protective eyewear lenses, night-vision optics, ADC scanner windows, lenses for sighting systems, and mirrored reflectors. Contact: Thomas Long, National Account sales Manager, tlong@fosta-tek.com.

# Exhibitor Listing

## Fotofab

#1038

3758 W Belmont Ave, Chicago, IL, 60618  
773/463-6211; fax 773/463-3387  
sales@fotofab.com; www.fotofab.com

**New Product: Fotofab offers Rapid Delivery of your custom metal parts. Ask about same-day turnaround.**

Fotofab manufactures Precision Metal Parts to meet the most critical design requirements in a wide range of applications. Typical applications: optical apertures, encoders, RF/EMI shields, step lids, contacts, screens, flat springs, antennas, masks, lead frames, and connectors, can be produced quickly and cost-effectively in prototype and production quantities. Standard delivery is two weeks, with same-day, three-day, and five-day delivery options available. Contact: Earl Danner, Sales & Marketing Manager, edanner@fotofab.com; Dan Sima, Marketing Coordinator, dsima@fotofab.com.

## Fresnel Technologies Inc.

#1112

 SPIE Corporate Member

101 W Morningside Dr, Fort Worth, TX, 76110  
817/926-7474; fax 817/926-7146  
info@fresneltech.com; www.fresneltech.com

**New Product: Polymer domes for the LWIR (8 to 14 micron) region of the infrared.**

Fresnel Technologies, Inc. manufactures infrared-transmitting materials and optics made from them, as well as plastics Fresnel lenses and related optical components. Specialties include lens arrays for passive infrared applications and optics for environmental monitoring at 3.4 microns. We also offer diamond turning for prototypes, tooling and production, including four-axis diamond machining of freeform optical surfaces, in plastics, metals and infrared materials such as Ge, ZnSe and others. Contact: Nelson E. Claytor, Ph.D., President, nclaytor@fresneltech.com; Richard N. Claytor, Ph.D., Founder and Member of Technical Staff, rclaytor@fresneltech.com.

## GDSI

#3018

925 Berryessa Rd, San Jose, CA, 95133  
408/451-2000; fax 408/451-2001  
jcollins@wafergrind.com; www.wafergrind.com

Based in the Silicon Valley, GDSI is a leading global "BEOL" engineering firm serving both fabrication and fabless organizations. Widely regarded as a pioneer in grinding, polishing and dicing of high value prototype material on a quick turn basis. Handling of a variety of substrates with a special emphasis on yield enhancement and process control. ISO 9001:2000 certified and ITAR registered. DMEA accreditation is pending as a "Trusted IC Foundry". Please visit www.wafergrind.com. Contact: Jeremy Favia, Sales Engineer, jfavia@wafergrind.com; Joe Collins, President, jcollins@wafergrind.com.

## GE Fanuc Intelligent Platforms

#1440

 SPIE Corporate Member

7401 Snaproll St NE, Albuquerque, NM, 87109  
505/875-0600; fax 505/875-0400  
www.gefanucembedded.com

**New Product: AIM12 is the smallest and lowest power, full-featured automatic video tracker and image processor.**

GE Fanuc Intelligent Platforms, a unit of General Electric, is a leading global provider of Applied Image Processing and Video Image Fusion for a wide range of industries and applications. Our customers include those in the space, aviation, naval, defense, and imaging industries. GE Fanuc Intelligent Platforms is an industry leader providing COTS modules, sub-systems and systems for defense applications such as tactical communications, signal intelligence, high-speed image and video recording. Contact: Roger Joel, Director of Sales & Marketing, roger.joel@gefanuc.com; Larry Schaffer, Director of Business Development, larry.schaffer@gefanuc.com.

## GE Security - Homeland Protection

#3517

205 Lowell Ave, Wilmington, MA, 01887  
978/909-1320  
sales@ge.com; www.gesecurity.com

GE is a leading provider of explosives detection systems for the aviation security industry. Used all over the world for screening passenger-checked luggage, GE's products and services are known for superior quality and reliability. Contact: Alison Hong, Product Marketing Manager, alison.hong@ge.com.



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## General Atomics Aeronautical Systems, Inc. #3412

10240 Flanders Ct, San Diego, CA, 92124  
858/457-8700; fax 858/457-8746  
www.galasers.com

General Atomics Aeronautical Systems, Inc. is a leading manufacturer of unmanned aircraft and tactical reconnaissance radars, including the Predator® and the Lynx® SAR/GMTI sensor system. GA-ASI designs, manufactures, and integrates the Lynx radar into aircraft, along with the CLAW® sensor control and image analysis software. It also integrates E/O sensor equipment into ISR aircraft and develops emerging technologies in solid-state lasers, diffractive optics, and ultra-wideband. Contact: Robin Snider, Engineering Manager, robin.snider@ga.com.

## Gentec Electro-Optics Inc.

#3201

 SPIE Corporate Member

445 St-Jean-Baptiste Ste 160, Quebec, QC, Canada, G2E 5N7  
418/651-8003; fax 418/651-1174  
info@gentec-eo.com; www.gentec-eo.com

**New Product: Introducing the HP70A water cooled High Power Detector that handles up to 10 kW of continuous power.**

Gentec-EO has over 35 years of experience in the laser measurement field. Our product line includes a complete range of laser power and energy meters, monitors, photo detectors, OEM detectors, beam diagnostics and diffractive optics. We are committed to providing the most accurate NIST traceable measurements available anywhere. Our pricing policies are amongst the most profitable for you. Combined with our high quality products, you will always get the highest quality/price ratio there is. Contact: Nathalie Becotte, Sales Manager, nbecotte@gentec-eo.com; Nicolas Litalien, Technical Advisor, nlitalien@gentec-eo.com.

## Georgia Tech Research Institute/SENSIAC

#209

 SPIE Corporate Member

400 10th St NW, Atlanta, GA, 30332  
404/407-6316; fax 404/407-9280  
kirk.inglehardt@gtri.gatech.edu; www.gtri.gatech.edu

Georgia Tech Research Institute (GTRI) is a world renowned R&D, T&E organization with expertise in all aspects of sensor systems (EO, IR, & RF). The Military Sensing Information Analysis Center, SENSIAC, the DoD & US Government's Center of Excellence in military sensing technologies, is resident at GTRI. SENSIAC brings together experts in acoustics, magnetic, seismic & chem-bio-nuclear sensing. When combined with GTRI's expertise, SENSIAC provides complete military sensing expertise for DoD. Contact: Tracy West, Research Scientist, tracy.west@gtri.gatech.edu.



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# Exhibitor Listing

## Germfree Labs Inc.

#3618

11 Aviator Way, Ormond Beach, FL, 32174  
800/888-5357; fax 386/677-0442  
info@germfree.com; www.germfree.com

Germfree Labs, Inc. manufactures gloveboxes, fumehoods and biological safety cabinets suitable for fixed laboratory and mobile laboratory applications. Germfree's primary containment equipment can be integrated with various chemical and biological sensing devices enabling the user to safely detect and handle hazardous samples. Germfree manufactures complete turnkey mobile laboratories, meeting international military and bio-containment requirements. Contact: Joe Masella, International Sales - High Containment, jmasella@germfree.com; Cliff Colby, VP Mobile and Modular Laboratory Sales, ccolby@germfree.com.

### ROBOTICS+UNMANNED SYSTEMS DISPLAY

## Germfree Labs Inc.

 #3615

11 Aviator Way, Ormond Beach, FL, 32174  
800/888-5357; fax 386/677-0442  
info@germfree.com; www.germfree.com

40' Truck based laboratory with integrated analytical equipment. The GERMFREE mobile laboratory was developed under a CRADA with E.C.B.C. and is designed to safely analyze hazardous biological and chemical samples. Most important the laboratory supports newly developed analytical equipment, including Raman and FTIR, integrated in the Class III Glovebox.

## GEViCAM, Inc.

#1405



1698 Yosemite Dr, Milpitas, CA, 95035  
408/262-5772; fax 408/262-0962  
info@gevicam.com; www.gevicam.com

### New Product: Gigabit Ethernet CCD/CMOS cameras and Smart Camera.

Designs and manufactures high-performance Gigabit Ethernet CCD/CMOS cameras for ITS, military, homeland security industrial machine vision, medical, and scientific markets. Also specializes in neural network smart cameras as stand-alone systems. GigE Vision compliance ensures compatibility with third-party hardware and software to simplify integration. Serving OEMs, end-users and research institutions worldwide. Contact: Matthew Hori, Sales Manager, sales@gevicam.com; Yasuko Kato, V.P. Administration, info@gevicam.com.

## Glass Fab Inc.

#128



257 Ormond St, Rochester, NY, 14605  
585/262-4000; fax 585/454-4300  
info@glassfab.com; www.glassfab.com

Manufacture of custom blanks. Products include fused quartz, fused silica, optical glasses, filter glasses and low/ultra low 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.

## Global Systems International

#1513



1273 Central Florida Pkwy, Orlando, FL, 32837  
407/251-4163; fax 407/251-4973  
www.globalsystemsint.com

Global Systems manufactures laser quality precision optical components for use in UV, Visible and IR applications. Our in house Optical fabrication produces: windows, mirrors, beamsplitters, wedges, prisms and spherical lenses. GSI can supply gain materials and crystals such as Nd:Yag, Er:Yag, Nd:YLF, Nd:YVO<sub>4</sub>, KTP, KTA and Sapphire Laser Rods. Contact: Jeff Orton, President, jorton@globalsystemsint.com; Eric Mackey, VP of optics, emackey@globalsystemsint.com.

## Gooch & Housego (UK) Ltd.

#111



Dowlish Ford, Ilminster, Somerset, United Kingdom, TA19 OPF  
44 1460 52271; fax 44 1460 54972  
sales@goochandhousego.com; www.goochandhousego.com

### New Product: The 'Fibre-Q' Acousto-Optic Modulator is designed for use in pulsed fibre laser amplifier systems.

Gooch & Housego PLC a global technology business supplying state of the art photonic products into the Aerospace & Defense, Industrial & Research and Biomedical & Life Sciences market sectors. G&H manufacture Acousto-Optics, Electro-Optics, Fiber-Optics, & Precision Optical Components & Sub Systems, combined with Materials Engineering, Crystal Growth, Polishing & Coating capabilities. Contact: Jim Dooley, North Americas Sales Director, jdooley@goochandhousego.com; Paul Morris, SVP Sales, pmorris@goochandhousego.com.

## Goodrich Corp.

#3213



100 Wooster Heights Rd, Danbury, CT, 06810  
203/797-5000; fax 203/797-6539  
www.goodrich.com

Goodrich Corporation, a Fortune 500 company, is a global supplier of systems and services to aerospace, defense and homeland security markets. Goodrich ISR Systems is a global leader in the design and manufacture of electro-optical systems, precision optics, and electronics for space, air, ground and commercial applications. Contact: Mark Ceccorulli, Director of Precision Optics, Mark.Ceccorulli@Goodrich.com.

## GPD Optoelectronics Corp.

#3115

7 Manor Pkwy, Salem, NH, 03079  
603/894-6865; fax 603/894-6866  
sales@gpd-ir.com; www.gpd-ir.com

## GSI Group

#1516



Lisieux Way, Taunton Somerset, United Kingdom, TA1 2JZ  
44 1823 354733; fax 44 1823 340489  
www.gsig.com

ExoTec Precision supports low volume prototypes through to volume production from exotic materials such as Beryllium, AlBeMet, SiC etc. Our plant is a full service operation. All processes including machining, diamond turning, plating, heat treating, polishing, and optical coating are controlled by our experienced technicians. We employ lean manufacturing strategies to best optimize production, while keeping costs affordable. Markets served: Defense, Space, Nuclear and commercial sectors. Contact: Peter Nation, Business Development Manager, pnation@gsig.com; John Vickery, Production Manager, jvickery@gsig.com.

## H.N. Burns Engineering Corp.

#825

3275 Progress Dr Ste A, Orlando, FL, 32826-3230  
407/273-3770; fax 407/273-0642  
misty@hnbec.com; www.hnbec.com



= Robotics and Unmanned Systems Displays in the  
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## Commercializing Nano-Bio Technologies: Disruptive innovation for biological testing in healthcare and security

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### Hamamatsu Corp.

#941



360 Foothill Rd, Bridgewater, NJ, 08807-2932  
908/231-0960; fax 908/231-1218  
[sales@hamamatsu.com](mailto:sales@hamamatsu.com); [www.sales.hamamatsu.com](http://www.sales.hamamatsu.com)

**New Product: High QE photomultiplier tubes for the high-sensitivity detection of low level light.**

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. These devices include photomultiplier tubes, photodiodes, image sensors, image intensifiers, and light sources. Hamamatsu Photonics is dedicated to the advancement of photonics through extensive research. Contact: Gus Asencios, Customer Support Manager, [gasencios@hamamatsu.com](mailto:gasencios@hamamatsu.com).

### Hardin Optical Company

#403



PO Box 219, Bandon, OR, 97411  
541/347-9467; fax 541/347-8176  
[optics@hardinoptical.com](mailto:optics@hardinoptical.com); [www.hardinoptical.com](http://www.hardinoptical.com)

Hardin Optical Company manufactures precision optical components for industrial and defense customers. We are your trusted source for custom optical fabrication and prototyping, thin film coatings, classical and IR, faceplates and windows, filters, mirrors and lenses, modification and rework. We take pride in our record of on-time delivery of quality products. Hardin Optical Company was founded in 1976 and employs over 80 people. Hardin Optical is a certified HUBZone Small Business. Contact: Bob Schalck, [optics@hardinoptical.com](mailto:optics@hardinoptical.com).

### Harris Corp.

#1417

1680 University Ave, Rochester, NY, 14610  
585/241-8190; fax 585/241-8193  
[kdunba02@harris.com](mailto:kdunba02@harris.com); [www.harris.com](http://www.harris.com)

Harris is an international communications and information technology company serving government and commercial markets in more than 150 countries. Headquartered in Melbourne, Florida, the company has annual revenue of more than \$5.3 billion and 16,500 employees - including nearly 7,000 engineers and scientists. Harris is dedicated to developing best-in-class assured communications<sup>®</sup>; products, systems, and services. Additional information about Harris Corporation is available at [www.harris.com](http://www.harris.com). Contact: Kacey Kiley, Marketing Communications, [kkiley@harris.com](mailto:kkiley@harris.com); Haley Yahn, Marketing Communications, [hyahn@harris.com](mailto:hyahn@harris.com).

### Headwall Photonics, Inc.

#508



601 River St, Fitchburg, MA, 01420  
978/353-4100; fax 978/348-1864  
[info@headwallphotonics.com](mailto:info@headwallphotonics.com); [www.headwallphotonics.com](http://www.headwallphotonics.com)

**New Product: High Efficiency Hyperspec NIR (900-1700nm), High Efficiency Hyperspec SWIR (1000-2500nm).**

Leading designer and manufacturer of imaging spectrometers and application-specific spectroscopy instruments for military/defense and homeland security. Core technology: high performance spectral instruments with high efficiency optics characterized by high signal-to-noise and high dynamic range. COTS Products: Hyperspectral imaging sensors, Raman spectrometers, single & dual-beam spectrometers, original holographic gratings. Formerly American Holographic/Agilent Technologies. Contact: Kirk Grim, Sales, [Information@headwallphotonics.com](mailto:Information@headwallphotonics.com); Jay Zakrzewski, Business Development, [Information@HeadwallPhotonics.com](mailto:Information@HeadwallPhotonics.com).

# Exhibitor Listing

## Heraeus Quartz America, LLC

#1016

SPIE Corporation  
Member

100 Heraeus Blvd, Buford, GA, 30518  
678/714-4350; fax 678/714-4358  
sales.hqa-optics@heraeus.com; www.heraeusoptics.com

## HGH Infrared Systems

#1337

IRcameras, Inc., 1600 Providence Hwy, Walpole, MA, 02081  
508/668-5650; fax 508/668-5054  
pattie@ircameras.com; www.ircameras.com

**New Product: HGH introduces the IR 360 panoramic infrared imaging camera for unparalleled wide area surveillance.**

Founded in 1982, HGH Infrared Systems designs and develops complete optronic systems for security, industrial and civil applications. Based in Igny, France, HGH is located at the heart of the French Optics Valley. Products include the new IR Revolution 360 panoramic infrared camera for total area surveillance, line scanners and pyrometric cameras for process monitoring, tunnel inspection systems, blackbodies, collimators and universal test benches for E/O systems. Contact: Ron Austin, Business Development Manager, ron.austin@hgh-infrared.com; Elliott Rittenberg, North American Sales Representative, elliott@IRcameras.com.

## High Tech Photonics

#530

23 Alafaya Woods Blvd, Oviedo, FL, 32765  
800/335-5582  
jim@jtingram.com

**New Product: Trace Gas measuring systems.**

Infrared Optical Fiber (1-18 $\mu$ m, 500-4000 wave numbers) Fiber Coupled ATR probes, Diamond ATR, Fiber Coupled Gas Probes, Fiber Coupled Reflection/Transmission Probes, Fiber Coupled Probes for liquids, solids, gases, process control, remote sensing, medical, Infrared Optical Fiber Accessories for FTIR, Fiber Coupled High Power LED light sources for spectroscopy, Trace Gas instrumentation for online monitoring. Contact: Jim Ingram, jim@jtingram.com.

## Hitachi Kokusai Electric America, Ltd.

#1223

150 Crossways Pk Dr, Woodbury, NY, 11797  
516/921-7200; fax 516/496-3718  
larry.ottaviano@hitachikokusai.us; www.hitachikokusai.com

**New Product: HC-268 2nd generation EM-CCD PTZ, Hi-Res, Hi Sensitivity, low light color camera.**

Hitachi Kokusai Electric America, Ltd was formed in 1963, and is HQ in Woodbury, New York. For over 46 years, the Industrial Video Systems Division (IVS), of Hitachi Kokusai Electric America, LTD. has been manufacturing miniaturized, solid state, analog and digital cameras that are used in the imaging, vision and surveillance markets. All the cameras in the product line are manufactured under quality control certification in accordance with ISO 9002 international standards. Contact: Lawrence Ottaviano, Regional Sales Manager, larry.ottaviano@hitachikokusai.us.

## HMS Technology Sales

#3913

SPIE Corporation  
Member

5 Echo Pl, Larkspur, CA, 94939  
415/924-6300; fax 415/924-6399  
hskolnik@hotmail.com

**New Product: Phasics wavefront sensors have high spatial resolution and dynamic range.**

HMS Technology Sales provides sales and support for Phasics wavefront sensors and LASCAD solid-state laser design software. Phasics 4-wave lateral shearing wavefront sensor applications include laser beam analysis, lens diagnostics, adaptive optics and beam optimization. LASCAD solid-state laser design software includes geometric and physical optics analysis as well as finite element analysis of thermo-mechanical stresses. The intuitive graphical user interface makes it easy to use. Contact: Harry Skolnik, President, hskolnik@hotmail.com.

## Hofstadter Analytical Services

#3921

SPIE Corporation  
Member

Norton Avenue Engineering Center, 10 N Norton Ave Ste 120,  
Tucson, AZ, 85719  
520/747-3282; fax 520/747-3282  
dan@hofstadteranalytical.com; www.hofstadteranalytical.com

Hofstadter Analytical Services provides structural, thermal and multi-physics analysis to the optics, electronics and sensor communities. Contact: Dan Hofstadter, Principal, dan@hofstadteranalytical.com; Lynn Kot, Director of Engineering, lynn@hofstadteranalytical.com.

## HOLOEYE Systems, Inc.

#1518

SPIE Corporation  
Member

6150 Yarrow Dr Ste F, Carlsbad, CA, 92009  
760/603-8140; fax 760/603-9825  
contact@holoeyesystems.com; www.holoeyesystems.com

HOLOEYE Systems is a professional integrator of microdisplay technologies for specialty applications and markets and offers complete solutions and development services: LCOS Microdisplay Components; LCOS Microdisplay Drive Board Components & Development; Optical System Design; Electronic Design; Prototype to High-Volume Manufacturing Services. Besides that HOLOEYE offers Spatial Light Modulator developer kits and standard and customized Diffractive Optical Elements. Contact: Klaus von Guenner, Sales & Marketing, contact@holoeyesystems.com.

## Hoppe Tool, Inc.

#3305

501 Slaters Ln #908, Alexandria, VA, 22314  
703/939-1601  
buckholly@mac.com; www.hoppetool.com

**New Product: Complex machined components and assemblies for Defense, Aerospace and Commercial optics industries.**

World-Class describes HOPPE, a company having embraced lean manufacturing and lights out production. Hoppe produces med. to high complexity components and assemblies in med. to high qty. on a 24 hr. 7 day/wk basis. Full assembly facilities allow us to build the parts that we make reducing the need for multiple suppliers, reducing cost and increasing quality. Hoppe works closely with cust. Engineers to "value engineer" items removing excess cost while reducing risk and increasing productivity. Contact: Daniel E. Walker, Manager, Business Development, dwalker@hoppetool.com; Eric D. Hagopian, President, hagopian@hoppetool.com.



**id Quantique SA****#1116**

Chemin de la Marbrerie 3, Carouge/Geneva, Switzerland, 1277  
41 22 301 83 71; fax 41 22 301 83 79  
info@idquantique.com; www.idquantique.com

**New Product: Photon Counting 900-1150 nm InGaAsP APD model id400.**

id Quantique will be showing a range of photon detection modules. Besides the new model id400, for single photon detection at 1064nm they will also present the id100 and the id201. The id100 is a photon counter based on a Si avalanche photodiode for VIS wavelengths. The id201 is a photon counter optimized for telecom wavelengths with adjustable quantum efficiency up to 25% and a deadtime up to 100µs. All parameters can be easily adjusted via the front panel or computer interface. Contact: Jim Melnyk, Applications Engineer, JMM@Boselec.com; Danielle Moreas, Marketing Manager, danielle.moraes@idquantique.com.

**Idaho Technology, Inc.****#1522**

390 Wakara Way, Salt Lake City, UT, 84108  
801/736-6354; fax 801/364-4269  
susan@idahotech.com; www.idahotech.com

**New Product: RAZOR EX system detects and identifies biological agents using cutting edge technology.**

Idaho Technology has been in the biodefense business since 1999 and continues to create fast, accurate, and easy to use systems to meet the needs of the biodefense industry. Unknown white powder, clandestine garage labs, building security, or military force protection: biodefense takes on many forms. The choice is yours. Biodefense requires the best tools for uncompromised protection: FAST, RUGGEDIZED, EASY. Contact: Tom Sawyer, Technical BioDefense Sales West, tom\_sawyer@idahotech.com; Christina Flowers, Technical BioDefense Sales East, christina\_flowers@idahotech.com.

**Ideal Aerosmith****#738**

1510 Gateway Dr NE, East Grand Forks, MN, 56721  
218/773-2455; fax 218/773-7665  
www.ideal-aerosmith.com

Ideal Aerosmith is a leading provider of product test and simulation solutions for the aerospace, defense, and automotive industries. Ideal is also a premier supplier of precision inertial guidance test systems, rotational tables, centrifuges, and high dynamic Hardware-in-the-Loop (HWIL) flight motion simulators. Ideal has provided cutting-edge test solutions since 1938. Today, high-tech companies around the world rely on Ideal for their electronics test and motion simulation solutions. Contact: Dennis Whitehead, Director of Sales and Marketing, dwhitehead@idealaero.com; Brian Stonecipher, Director of Sales - Motion, bstone@idealaero.com.

**II-VI Infrared****#1202**

375 Saxonburg Blvd, Saxonburg, PA, 16056  
724/352-1504; fax 724/352-4980  
info@iivii.com; www.iiviiinfrared.com

II-VI INFRARED, the world leader in CO<sub>2</sub> laser and infrared optics, designs and produces lenses, mirrors, windows, partial reflectors, beam splitters, phase retarders rhombs, beam expanders, polarizers, wave plates, modulators and more. IR materials include ZnSe, ZnS and ZnS MultiSpectral. Capabilities include optical design and engineering, optics manufacturing, diamond turning, thin film coating, optical assemblies, world-class quality assurance and international sales and support. Contact: Tom Neff, tneff@ii-vi.com.

**ImmerVision****#3201**

2020 University Ste 2320, Montreal, QC, Canada, H3A 2A5  
514/985-4007; fax 514/282-8612  
alessandro.gasparini@immervision.com; www.immervision.com

Adding ImmerVision revolutionary 360° panomorph lenses, for standard analog or IP video surveillance systems, allow users to view, record and playback a complete 360° field-of-view with their existing video surveillance cameras and removing all dangerous blind spots. ImmerVision is the leading global expert in 360° immersive imaging technology, and the developer of the panomorph lens and software. Contact: Alessandro Gasparini, Senior Vice President Sales & Marketing, alessandro.gasparini@immervision.com; Laurent Lafite, Vice President Marketing & Communications, laurent.lafite@immervision.com.

**Imperx, Inc.****#529**

SPIE Corporate Member

6421 Congress Ave Ste 204, Boca Raton, FL, 33487  
561/989-0006; fax 561/989-0045  
sales@imperx.com; www.imperx.com

**New Product: Tiny Feature Rich Cameras, ExpressCard CameraLink and HD-SDI Frame Grabbers.**

Imperx, Inc. designs and manufactures superior cooled and uncooled cameras for Military, Industrial and Scientific applications, in resolutions from VGA to 16 Megapixels. All cameras offer 8/10/12 bit selectable output in either the Camera Link or GigE Vision standards. Imperx cameras are used in demanding aerial and ground based systems for their high quality and widest standard feature set. Imperx is also the recognized leader in laptop frame grabbers for NTSC/PAL, Camera Link and SDI input. Contact: Nathan Cohen, Sales Manager, sales@imperx.com.

**IMT Masken und Teilungen AG****#311**

Im Langacher, Greifensee, Switzerland, CH-8606  
41 1 943 1900; fax 41 1 943 1901  
rtrottini@imtmask.com; www.imtag.ch

**New Product: Our Reactive Ion Etching process enables us to etch feature sizes as small as 0.25 microns.**

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

**Infinite Optics Inc.****#424**

SPIE Corporate Member

1712-F Newport Cir, Santa Ana, CA, 92705  
714/557-2299; fax 714/557-2170  
info@infiniteoptics.com; www.infiniteoptics.com

Infinite Optics specializes in standard and custom thin-film coatings from 193nm's to 25 microns. Our services include OEM production, proto-type development, special applications, optical fabrication, and quality control. We are committed to always satisfying our customer's requirements and specifications. Contact: Geza Keller, President, geza@infiniteoptics.com; Dan Houston, Engineering, dan@infiniteoptics.com.

**Infrared Associates, Inc.****#322**

2851 SE Monroe St, Stuart, FL, 34997  
772/223-6670; fax 772/223-6671  
irassoc@gate.net; www.irassociates.com



# Exhibitor Listing

## Infrared Cameras Inc. #303

2105 W Cardinal Dr, Beaumont, TX, 77705  
409/861-0788; fax 409/866-7229  
garys@infraredcamerasinc.com; www.infraredcamerasinc.com

## Infrared Systems Development Corp #718

**SPIE** Corporate Member

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, Kimberly Griffin, Sales/Marketing, sales@infraredsystems.com.

## Innolume GmbH #3514

**SPIE** Corporate Member

Konrad-Adenauer-Allee 11, Dortmund, Germany, 44263  
49 231 47730 200; fax 49 231 47730 250  
info@innolume.com; www.innolume.com

## Innovative Wireless Technologies #208

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

## INO (National Optics Institute) #3201

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

**New Product: INO is pleased to announce its new 640 x 480 pixel thermal infrared camera module IRXCore-640.**

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.

## Insaco, Inc. #638

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

Precision machining of technical ceramics including sapphire and quartz. Over sixty years as trusted partner to high tech customers. When precision fabrication of ceramic parts is critical, think of Insaco. www.insaco.com; 215-536-3500 phone. Contact: Scott Mittl, Sales Engineer, sdm@insaco.com; Klaus Burckhardt, Sales Engineer, kab@insaco.com.

## Intelligent Optical Systems, Inc. #1039

2520 W 237th St, Torrance, CA, 90505  
310/530-7130; fax 310/530-7417  
IOS\_business@intopsys.com; www.intopsys.com

## Intense Ltd. #642

1200-A Airport Rd, North Brunswick, NJ, 08902  
732/249-2228; fax 732-249-8139  
sales@intenseco.com; www.intenseco.com

**New Product: Hermes QCW Bars & Stacked Arrays, higher power to 2,000 W, qualified to MIL SPEC.**

High power, high reliability, QWI enabled laser diodes for target designation, illumination, and rangefinding applications. Single mode diodes, 800 to 980 nm, up to 200 mW. Individually addressable arrays to 200 mW. QCW bars & stacked arrays, MIL-SPEC, 8xx to 9xx nm to 2,000 W. High peak power, single emitters to 25 W. Short pulse IR diodes, 9xx to 1064nm and 1550 nm. Fiber laser and DPSS pumps - high power 9xx nm, and 793 to 7xx nm Thulium pumps. Contact: Kevin Laughlin, Vice President, kevin\_laughlin@intenseco.com.

## International Light Technologies #106

10 Technology Dr, Peabody, MA, 01960  
978/818-6180; fax 978/818-6181  
ilsales@intl-lighttech.com; www.intl-light.com

**New Product: ILT801 Multiplexer displays up to 8 simultaneous light measurements to USB capable PC.**

Since 1965, International Light Technologies, within our Sources Division, has been providing customers with off-the-shelf and customized solutions across a full spectrum of light sources including high power LEDs and modules, UV-Visible-IR lamps and specialized replacement lamps. Through our Systems Division, we have been solving the inherent difficulties in light measurement through the design and manufacture of a wide range of highly accurate light measuring instruments. Contact: Jill Fowler, Sales Manager.

## InterSense Inc. #1423

36 Crosby Dr Ste 150, Bedford, MA, 01730  
781/541-6330; fax 781-541-6329  
www.intersense.com

**New Product: IS-1200 InertiaHawk system- helmet tracking for enhanced vision / situational awareness applications.**

InterSense is a market leader in precision motion tracking technology. Our unique hybrid technology tracks motion with an unmatched combination of size, cost and precision, opening up new possibilities in many applications. Contact: Dean Wormell, Director, Applications Marketing, deanw@intersense.com.

## Intevac Photonics, Inc. #631

**SPIE** Corporate Member

3560 Bassett St, Santa Clara, CA, 95054  
408/986-9888; fax 408/654-9869  
imaging@intevac.com; www.intevac.com

**New Product: Night Port - Digital vision viewing & recording monocular for soldier, aviation and law enforcement.**

Intevac Photonics' E-O sensors and cameras permit sensitive detection of photons in the visible and NIR portions of the spectrum, enabling extreme low light imaging. Imaging products include LIVAR® long range target ID camera, NightVista® low light level camera, Night-Port™ low light viewing/recording digital monocular, and I-Port™ near-eye display. Scientific devices include ObserveR™ stand-off Raman and ReporteR™ palm-sized Raman spectroscopy. Contact: info@intevacphotonics.com; Mike Mohawk, Director of Business Development, imaging@intevac.com.



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- Exhibitors 200
- Attendees 10,000

For further information **The Optronics Co., Ltd. International Dept.**

Sanken Bldg., 5-5, Shin-Ogawamachi, Shinjuku-ku, Tokyo 162-0814 Japan  
Fax +81 3 5229-7253 E-mail: intl@optronics.co.jp <http://www.optronicsjp.com>

# Exhibitor Listing

## IPG Photonics Corp.

#109

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

IPG Photonics is a leader in high-power fiber lasers for the industrial, defense, medical and telecommunications markets. Presently, IPG has standard products at power levels up to 5kW SM and 50kW MM, at the 1 $\mu$ m wavelength. High power lasers are also available in "eyesafe" wavelengths. IPG also delivers LIDAR transmitters at 1 $\mu$ m and 1.5 $\mu$ m 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, Governmental and Special Applications, moconnor@ipgphotonics.com.

## IRCAM GmbH

#306

 SPIE Corporate Member

Nürnberg Str 71, Erlangen, Germany, 91052  
49 9131 970 0980; fax 49 9131 970 09899  
info@ircam.de; www.ircam.de

**New Product: Geminis 110k ML pro: Dual band IR camera for synchronous, pixel-exact images in MWIR and LWIR.**

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 and LWIR) or two small spectral ranges (MWIR and MWIR). Other camera series are the high-speed IRCAM VELOX, the scientific IRCAM EQUUS, the IRCAM TAURUS 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 Schreier, Managing Director, info@ircam.de.

## IRD Glass

#3121

 SPIE Corporate Member

810 E St Paul St, Litchfield, MN, 55355  
320/693-7217  
ird@irdglass.com; www.irdglass.com

**New Product: IRD Glass is now polishing Spinel substrates to 1/4 wave and 40/20 or better.**

IRD Glass specializes in manufacturing custom precision components from glass or ceramic, Spinel or other composites. Count on IRD to build to your specifications, meet your specific tolerances, and deliver on time. IRD Glass currently supplies such components as cylindrical and spherical lenses, prisms, wedges, windows, mirrors, sub-assemblies and optical thin film coatings, laser reflectors and chambers. IRD also has the back-end metrology to measure and verify their precision processes. Contact: Todd Anderson, VP, Sales and Marketing, todd@irdglass.com; Dirk Kvale, President, dirk@irdglass.com.

## Iridian Spectral Technologies

#3411

1200 Montreal Rd M-50, Ottawa, ON, Canada, K1A 0R6  
613/741-4513; fax 613/741-9986  
sales@iridian.ca; www.iridian.ca

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## IRnova AB

#335

Electrum 236, Kista, Sweden, 164 40  
46 8 793 66 00; fax 46 8 750 54 30  
info@ir-nova.se; www.ir-nova.se

**New Product: Proximity electronics reference kit/evaluation board adapted for IRnova QWIP FPAs and DDCAs.**

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.

## IRphotonics

#108

627 McCaffrey, St-Laurent, QC, Canada, H4N 1T3  
514/345-6982; fax 514/227-5210  
sales@irphotonics.com; www.irphotonics.com

**New Product: 2-5  $\mu$ m Mid Infrared Fiber Targeting Infrared Countermeasure systems (IRCM).**

IRphotonics is a leading manufacturer of advanced infrared fiber optic and material for use in industrial, medical, telecom and defense & aerospace applications. Based on a ground-breaking process allowing the production of infrared glass and optical fiber with exceptional properties in the 300 to 5500 nm optical window, IRphotonics' iGuide family of product can also transmit light from UV to the Mid infrared allowing for a wide range of multi-spectral applications. Contact: Ruben Burga, VP Sales, rburga@irphotonics.com; Antoine Kasprzak, Business Development Manager, akasprzak@irphotonics.com.

## IRZoom.com, see Computer Optics Inc.

#1322

## Isorad Ltd.

#1338

PO Box 239, Yavne, Israel, 81100  
972 8 943 4688; fax 972 8 942 1446  
bonnie@soreq.gov.il; www.isorad.co.il

Isorad Ltd., a government-owned company and commercial interface of Soreq Nuclear Research Center (SNRC), an applied R&D institute, affiliated with the Israeli Atomic Energy Commission. Soreq develops Electro Optics, Remote Sensing, Magnetic and Radiation-based technologies for Defense and Homeland Security applications and advanced Detection & Prevention technologies. Isorad provides licensing, marketing/manufacturing services for SNRC technologies and develops partnerships/collaborations. Contact: Mr. Amos Sonn, Head of Applied Technologies Division, asonn@soreq.gov.il.

## ISP Optics

#624

1 Bridge St, Irvington, NY, 10533  
914/591-3070; fax 914/591-3715  
josephm@isptoptics.com; www.isptoptics.com

ISP Optics is a manufacturer of high precision infrared optical elements including aspheric and diffractive lenses, windows, domes, prisms, wedges, beamsplitters, polarizers, filters, diffusers, mirrors & micro-optics made from ZnSe, ZnS, Ge, GaAs, CaF<sub>2</sub>, BaF<sub>2</sub>, Si, MgF<sub>2</sub>, LiF, KRS-5, KBr, KCl, NaCl, CsI, CdTe, Amtir, Sapphire, Crystal Quartz, Fused Silica and more. Antireflective, beamsplitter, dielectric and reflector coatings are available. Catalog, custom & OEM items. Contacts: Joe Mignano, joem@isptoptics.com; Fred White, fredw@isptoptics.com.

**Isuzu Glass Inc.****#405**

SPIE Corporate Member

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

**New Product: Moldable UV transmitting glass.**

Manufacturer of molded glass optical components. Lenses, lens arrays, micro lenses, secondary concentrators, rod lenses, IR materials. Manufacturers of optical filter glass. Laser safety glass, heat absorbing, color compensation, UV absorbing, UV transmitting, neutral density filter glasses. Contact: Mike Preston, Sales, mike@isuzuglass.com; Hiro Yokoi, Vice President, hiro@isuzuglass.com.

**ITC****#3103**

SPIE Corporate Member

5450 Campus Dr, Canandaigua, NY, 14424  
585/919-3000

inquiries@itcmems.com; www.itcmems.com

ITC, a 20,000 sq. ft. Class 100 MEMS/NEMS development and manufacturing facility located outside Rochester, NY. ITC maintains an extensive mix of tools and processes for 150MM MEMS fabrication and 8,000 sq. ft. MEMS and opto-electronics packaging. With an engineering and management team expert in MEMS process development and design for manufacturability ITC supports commercialization of microsystems and chip scale devices integrating mechanics, optics, micro-fluidics and chemistry on a chip. Contact: David Harris, Business Development & Sales, david.harris@itcmems.com.

**ITRES Research Ltd.****#3021**

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

**New Product: TABI-1800 - Thermal Airborne Broadband Imager. 1800 across-track imaging pixels, 8-10 microns, 0.2° C NEDT.**

ITRES (1979) provides digital airborne hyperspectral imaging sensors & commercial mapping services. High-performance imagers cover the ultraviolet, visible, shortwave, midwave, & thermal wavelengths (hyperspectral and broadband). Supporting products include RF-based remote operation capability, multiple sensor operation (MuSIC), and in-flight geocorrection (2009). High-resolution hyperspectral application areas include wetlands, coastlines, water quality, forestry, minerals/geology, biochemical survey, landmine and military target detection, thermal mapping, and emergency response. MASI-600 spotlight: 64 MWIR channels (3-5 microns).

**ITT Visual Information Solutions****#1011**

4990 Pearl East Circle, Boulder, CO, 80301  
303/786-9900; fax 303/786-9909  
www.ittvis.com

**New Product: ENVI Orthorectification Module-quickly, easily and accurately register data for map production use.**

ITT Visual Information Solutions will showcase ENVI and IAS, software solutions used widely in the worldwide defense and intelligence communities to exploit and deliver imagery information. Visit booth 1011 for demonstrations on the ENVI Feature Extraction Module used to quickly and easily extract features of interest from imagery, new ENVI SPEAR Tools that automate common image processing workflows and IAS for compressing and delivering images to the field quickly.

**ixFiber SAS****#3105**

Rue Paul Sabatier, Lannion, France, 22300  
33 2 96 04 10 50; fax 33 2 96 04 10 60  
info@ixfiber.com; www.ixfiber.com

**New Product: 2 micron range FBG, PM Double Clad Fiber, reduced cladding PM Gyro Fiber.**

ixFiber is a French Manufacturer of: Specialty Optical Fiber - Polarization Maintaining Fiber, Double Clad Fiber, Doped Fiber (Er, Yb, Tm, Nd,...), Photosensitive Fiber - Fiber Components based on Fiber Bragg Grating technology (FBG, LPG,...); Services and sub-assembly. Contact: Patrice Crochet, Sales Director, patrice.crochet@ixfiber.com.

**JAI, Inc.****#1508**

625 River Oaks Pkwy, San Jose, CA, 95134-1907  
408/383-0300; fax 408/383-0301  
camerasales.americas@jai.com; www.jai.com

JAI manufactures high quality, industrial-grade cameras used in machine vision, mil-aero, homeland security, medical and scientific applications. JAI's broad product line features both CCD and CMOS technologies, spatial resolutions from VGA to multi-megapixel, progressive and interlaced formats and sensitivity to light levels as low as .00001 lux. Camera types include visible, near-IR, UV and ICCD, with a wide variety of interfaces including analog, Camera Link and the GigE Vision standard. Contact: Vicki Stuart, Programs Manager, vls@jai.com; Ken Zinsli, Dir of Business Development, kwz@jai.com.

**Janos Technology, Inc.****#722**

SPIE Corporate Member

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

**Jazz Semiconductor****#1524**

4321 Jamboree Rd, Newport Beach, CA, 92660  
949/435-8000; fax 949/435-8757  
info@jazzsemi.com; www.jazzsemi.com

Jazz Semiconductor, the leader in Analog Intensive Mixed-Signal foundry solutions, offers high performance SiGe, RFCMOS and other specialty process technologies targeting highly integrated microwave and mmwave applications. Focus also includes Large Die (stitching), ROIC's, SOI, MEMS, and Customer Technology offerings to further support On Shore Wafer Fabrication needs. Jazz's modular process technologies are designed to offer significant power and efficiency savings. Visit www.jazzsemi.com. Contact: Mike Scott, Director, Aerospace and Defense Sales and Marketing, mike.scott@jazzsemi.com; Melinda Jarrell, Corporate Marketing, melinda.jarrell@jazzsemi.com.

**JCD Publishing Company****#811**

2932 Cove Trl, Winter Park, FL, 32789-1159  
407/629-5370; fax 407/629-5370  
info@jcdpublishing.com; www.jcdpublishing.com

JCD Publishing provides books and software for the imaging system professional working with infrared or CCD cameras. We provide short courses and consultation on imaging system analysis, design, testing, and evaluation. Contact: Gerald Holst, President.

# Exhibitor Listing

## JDSU

#401

430 McCarthy Blvd, Milpitas, CA, 95035  
408/546-5000; fax 408/546-4300  
info@jdsu.com; www.jdsu.com

Designer, developer and manufacturer of high performance optical coatings covering the spectral range of 220nm up to 25microns, and serving the defense, aerospace, imaging, instrumentation, and display markets. Formerly, Optical Coating Laboratory, Inc. (OCLI), JDSU Custom Optics continues the legacy of high precision and high customization leveraging decades of experience in coating design, thin film deposition, optics fabrication, and metrology to meet the most demanding requirements. Contact: Nada O'Brien, Product Manager, nada.obrien@jdsu.com; Chris Vomvolakis, Marketing Manager, chris.vomvolakis@jdsu.com.

## JENOPTIK Laser, Optik, Systeme GmbH - Optics Business Unit.

#329

SPIE Corporate Member

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

**New Product: Special optical domes for the IR, Compact high aperture IR telescope lens, OEM modules for the IR.**

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, pyrometry, thermography, gas analysis, spectroscopy as well as in defense and security e.g. image recognition and target acquisition. Contact: Dr. Marcus Serwazi, Sales Optics, marcus.serwazi@jenoptik.com; Sales Optics, optics@jenoptik.com.

## JENOPTIK Laser, Optik, Systeme GmbH - Sensor Systems Business Unit

#329

Goeschwitzer Strasse 25, Jena, Germany, 07745  
49 3641 65 3942; fax 49 3641 65 3494  
infraredtechnology@jenoptik.com; www.infraredtechnology.com

**New Product: VarioVIEW™ handheld IR viewer for surveillance & reconnaissance, IR-TCM Thermographic Camera Modules.**

The Sensor Systems Business Unit of JENOPTIK I Defense & Civil Systems develops and manufactures infrared cameras, camera modules and viewers for night vision, reconnaissance, thermography, R&D, non-destructive testing & inspection, quality control and predictive & preventive maintenance. Key features are: high spatial & thermal resolution, wide measuring range, flexible system integration & customization options, reproducibility, stability & long-time performance of radiometric calibration. Contact: Heiko Richter, International Sales Manager Infrared Technology, heiko.richter@jenoptik.com; Ray Watts, North America Sales Manager, ray.watts@coastalopt.com.

## JRM Technologies Inc.

#3400

150 Riverside Pkwy Ste 209, Fredericksburg, VA, 22406-1094  
540/371-6590; fax 540/479-6771  
hginn@jrmtech.com; www.jrmtech.com

## Kent Optronics, Inc.

#3418

40 Corporate Park Dr, Hopewell Junction, NY, 12533  
845/897-0138; fax 845/897-0603  
info@kentoptronics.com; www.kentoptronics.com

**New Product: High temperature Infrared Scene Projector. Automated Laser Protection Device. Switchable Mirror.**

Kent Optronics is specialized in advanced electro-optical product and technology development by leveraging on its world-class liquid crystal technologies, 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: Le Li, CEO, leli@kentoptronics.com; Eva Sun, Marketing Manager, ysun@kentoptronics.com.

## Kentek Corp.

#1239

SPIE Corporate Member

Laser Safety Division, 1 Elm St, Pittsfield, NH, 03263-3304  
603/435-5580; fax 603/435-7441  
info@kenteklaserstore.com; www.kenteklaserstore.com

KENTEK offers a wide range of laser safety products including over 500 types of laser eyewear and laser safety eye protection, laser curtains, laser barriers, laser safety warning signs, laser safety windows and acrylic. In addition, KENTEK is your source for industrial laser components, parts and services, including laser optics, mirrors, protection disks, laser rods, laser cavities, flow tubes, flash lamps, filter slides and laser cavity replating. Contact: Jim Bishop, Sales Manager, jbishop@kenteklaserstore.com.

## Kigre, Inc.

#1409

SPIE Corporate Member

100 Marshland Rd, Hilton Head Island, SC, 29926  
843/681-5800; fax 843/681-4559  
kigreinc@cs.com; www.kigre.com

**New Product: NEW MK-830 compact eye-safe 4mj 30Hz 1535nm laser suitable for range-finding, imaging and LIBS.**

MK-81, MK-88 & MK-830 High Efficiency Side Pump, (HESP) Diode Pumped Solid State Lasers (DPSS). Kigre manufactures laser transmitters and laser 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-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, COO, jeffmyers@hargray.com.

## Koheras A/S

#1129

SPIE Corporate Member

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

**New Product: KOHERAS BASIK™ - a single-frequency fiber laser with ultra low phase noise & vibration sensitivity.**

KOHERAS - a pioneer in single frequency fiber laser with ultra low noise and vibration sensitivity and White Light Laser (Supercontinuum). Both products are for use in remote sensing within security and defense. Contact: Chuong Tran, VP. Sales & Business Development, cht@koheras.com; Soren Loevgreen, Sales Manager, sl@koheras.com.

**Don't Miss the**



**Robotics+Unmanned Systems Displays**

Located in Palms Exhibition Hall

See p. 10 for details.



**Kopin Corp.****#623**

225 Technology Cir, Scotts Valley, CA, 95066  
831/430-0688  
ruggedolutions@kopin.com; www.kopin.com

**New Product: New Ultra Low Power SVGA Display & The Viper HMD a remote viewer for NTSC or PAL video.**

Kopin is the leader in ruggedized micro display applications. Kopin fabricates displays from VGA to SXGA resolutions and also provides expertise in design and fabrication of Higher Level Assembly display systems. In addition Kopin can utilize its Class 10 clean room environment for assembly to ensure the highest level of cleanliness. These assemblies range from complete eyepiece solutions with drivers to display and driver combinations. Contact: Tony Bacarella, Director of Business Development, tbacarella@kopin.com; Mike Presz, VP Government Programs and Special Products, mpresz@kopin.com.

**Kugler of America LTD****#1126**

**SPIE** Corporate Member

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 XYZC posi. accuracy up to 50 nm, Ra <1nm.**

We are a leading manufacturer of ultra-precision Machining Systems for Optical Surfaces, Optical 3D Structured Surfaces, Waver-thinning and Micromachining applications, as well as Laser Micro machining Eg: Fly-cutters, Drum -Turning machines, Micromachining Systems, Air Bearing Systems, Custom Metal Mirrors, Optical structured surfaces, CO<sub>2</sub>-Laser Beam Delivery Systems and Laser Mirrors for OEM and Scientific end users. Contact: Meinrad Schirmeister, General Manager, info@kuglerofamerica.com.

**L.A. Gauge Optics****#3405**

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

**L-3 Advanced Laser Systems Technology #703**

2500 N Orange Blossom Trail, Orlando, FL, 32804  
407/295-5878; fax 407/770-2984  
marketing.alst@l-3com.com; www.l-3com.com/alst

**New Product: Falcon III is a compact, high performance laser rangefinder for small, man-portable applications.**

L-3 ALST is an experienced ISO 9001:2000 certified manufacturer of custom and standard eyesafe laser rangefinders and laser designators rangefinders that meets the customer's demanding performance and packing requirements. L-3 ALST focuses on innovative development, cost-effective manufacturing of reliable LRFs and LDRFs. Contact: marketing.alst@l-3com.com; J. Brian Gillespie, VP Government Systems, Brian.Gillespie@l-3com.com; Norman Abramson, Dir Business Development, Norman.Abramson@l-3com.com; Sidney Wright, International Marketing Manager, Sidney.Wright@l-3com.com; Alisa Santiago-Pitre, Administrative Assistant, Alisa.Santiago-Pitre@l-3com.com.

**L-3 Communications****#703**

**SPIE** Corporate Member

600 Third Ave, New York, NY, 10016-1901  
212/697-1111; fax 212/682-9553  
sales@l-3communications.com; 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: sales@l-3com.com.

**L-3 Communications Cincinnati Electronics #703**

**SPIE** Corporate Member

7500 Innovation Way, Mason, OH, 45040-9699  
513/573-6744; fax 513/573-6290  
glenna.debo@l-3com.com; www.l-3com.com/CE

L-3 Cincinnati Electronics supplies mission critical infrared imaging technology for defense & homeland security. CE's advanced sensor technology provides the opportunity to detect targets thru obscurants, in adverse weather, under zero illumination. The inherent performance of our staring InSb MWIR sensors provides the strategic advantage reach to rapidly classify & engage emerging asymmetric threats offering smaller pixels on a tighter pitch for unmatched high-def reconnaissance, surveillance & target acquisition. Contact: Glenna Debo, Manager, Marketing Administration, Glenna.Debo@L-3Com.com.

**L-3 Communications Infrared Products #703**

13532 N Central Expwy MS 37, Dallas, TX, 75243  
972/528-1487; fax 972/528-1305  
ird.ssc@l-3com.com; www.thermal-eye.com

L-3 Communications Infrared Products is a Dallas-based division of L-3 Communications, a publicly traded company. It is a leading designer and manufacturer of commercial thermal imaging cameras and modules used by ground forces and urban tactical teams to support public safety and homeland security efforts. The Thermal-Eye line from L-3 Infrared Products allows the end-user to see in complete darkness, over water, through inclement weather, dust, and smoke with no illumination required. Contact: Kari Yeh, Strategic Marketing Manager, kari.yeh@l-3com.com.

**L-3 Communications Nova Engineering #703**

5 Circle Freeway Dr, Cincinnati, OH, 45246-1201  
513/642-3000; fax 513/642-3300  
sales.nova@nova-eng.com; www.l-3com.com/nova

**New Product: Miniature Network Sensor Radio: 500 kbps at 300 MHz - 2.4 GHz in only .5 cubic inches.**

L-3 Nova provides wireless data communication solutions such as remote imagery systems, mobile ad hoc wireless routers and a handheld DF unit, using RF Hybrid, Multi-Chip Module, and RF ASIC techniques to produce size/power/weight optimized products for specialized applications. An Engineering Design Services organization with unparalleled expertise in software-defined-radio (SCA) architecture design and advanced waveform development (JTRS WNW and SINCGARS) augments Nova's COTS products. Contact: Tanya Heid, Marketing & Sales Assistant, tanya.heid@l-3com.com; Kevin Bobier, VP, Advanced Programs, kevin.bobier@l-3com.com.

**L-3 Communications Sonoma EO #703**

428 Aviation Blvd, Santa Rosa, CA, 95403  
707/568-3000; fax 707/568-3300  
sales.sonomaeo@l-3com.com; www.L-3com.com/seo

**L-3 Communications, EOS Division #703**

3414 Herrmann Dr, Garland, TX, 75041  
972/840-56298; fax 972/271-2195  
janet.covert@l-3com.com

L-3 Electro-Optical Systems (L-3 EOS) is a leading supplier of Electro Optical and Applied Optics technologies ensuring the security and freedom of our nation and its allies. L-3 EOS' products encompass multiple EO/IR applications and environments demanding the most advanced and reliable technology available. Contact: Roy Lewis, Director, Business Development, Roy.Lewis@L-3Com.com; David Rediger, Director, Sales and Marketing, David.Rediger@L-3Com.com.

# Exhibitor Listing

## L-3 InfraredVision Technology Corp. #703

140 Industrial Way, PO Box 1727, Buellton, CA, 93427  
805/686-8848; fax 805/686-8858  
www.l-3com.com/itc

### New Product: L-3 ITC Shell Evaluation and Demonstration package.

L-3 ITC, a global supplier of cost-effective, high performance VOx microbolometer detectors, supports a wide range of customer specific solutions, from ROIC design thru delivery and support of VOx IR detectors. ITC has developed the world's leanest VOx microbolometer production facility including an impressive clean-room wafer fab, packaging lab and wafer/detector test facility. ITC's customer focus ensures that IR camera manufacturers and system integrators receive quality products on time. Contact: Marc Aldecoa, Sales Manager, marc.aldecoa@l-3com.com; Alexis Guerrier, Marketing, alexis.guerrier@l-3com.com.

## Labsphere, Inc. #716

SPIE Corporate Member

231 Shaker St, North Sutton, NH, 03104  
603/927-4266; fax 603/927-4694  
labsphere@labsphere.com; www.labsphere.com

### New Product: Labsphere's new MtrX-USS software offers desktop solutions for your Uniform Source system.

Labsphere has provided 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 Domestic Sales Manager, blai@labsphere.com; John Johansen, Domestic Business Development Director, jjohansen@labsphere.com.

## LaCroix Optical Co. #1042

SPIE Corporate Member

PO Box 2556, Batesville, AR, 72503  
870/698-1881; fax 870/698-1880  
karen@lacroixoptical.com; www.lacroixoptical.com

LaCroix Optical Co., a leading manufacturer of custom precision optics for more than 60 years, specializes in achromats, lenses, windows, prisms, wedges and mirrors. An ISO 9001:2000 registered company, LaCroix Optical Co. can supply your optical components in any volume. With a unique combination of modern and conventional production and testing equipment - plus an in-house coating facility - LaCroix Optical Co. is your source for custom precision optics. Contact: David Cossey, Manufacturing Engineer, david@lacroixoptical.com; Tom Cox, Manufacturing Engineer, tom@lacroixoptical.com.

## Lambda Research Optics Inc. #1222

SPIE Corporate Member

1695 W MacArthur Blvd, Costa Mesa, CA, 92626  
714/327-0600; fax 714/327-0610  
lambda@lambda.cc; www.lambda.cc

### New Product: Non-radioactive high transmission coatings on Ge windows, Total transmission > 97% @ 3-5 / 8-14 $\mu$ m.

Lambda is a premier manufacturer of optical components for the defense & security industries. From custom prisms, high power optics for 1064 nm, to thermal imaging optics, Lambda offers solutions for your most challenging optical problems. Also, Lambda offers custom manufacturing with complete in-house tests such as damage threshold (1064 nm), humidity, temperature, and salt-spray tests. Lambda will complete the ISO certification process by June 2009. Get solutions. Contact Lambda today. Contact: Jae Oh, Marketing Mgr., joh@lambda.cc; James Choi, Sales Mgr., jchoi@lambda.cc.

## Laser Components IG, Inc. #1131

SPIE Corporate Member

9 River Rd, Hudson, NH, 03051  
603/821-7040; fax 603/821-7041  
king@laser-components.com; www.lasercomponents.com

Laser Components IG, Inc. is a manufacturer of Avalanche Photodiodes and Pulsed Laser Diodes, high power laser optics (193nm -10.6 $\mu$ m). IR lead salt diode lasers (3-25 $\mu$ m) and SPECILAS diode lasers (750 to 2050nm), including VCSEL's and DFB's. Quantum Cascade Lasers and Flexpoint laser modules. Glass polarizing filters, fiberoptic assemblies and color sensors. Spectroscopic instrumentation: NIR Spectrometers & Echelle spectrum analyzers. Contact: Gary Hayes, General Manager, info@laser-components.com; Valerie King, Sales/Marketing, king@laser-components.com.

## Laser Focus World #300

SPIE Corporate Member

98 Spit Brook Rd, Nashua, NH, 03062-5737  
603/891-0123; fax 603/891-9290  
www.laserfocusworld.com

LASER FOCUS WORLD is a global resource for engineers, researchers, scientists and technical professionals providing comprehensive coverage of optoelectronics and photonics, technologies, applications and markets. LFW reports on and analyzes the latest developments and significant trends in both technology and business in the worldwide optoelectronics and photonics industry.

## Laser Optics, a PPGI company #422

SPIE Corporate Member

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 prismoid optics. Custom fabrication of mirrors, lenses, prisms, waveplates, and cavity optics. Specialists in coatings for high power lasers. Contact: Iris Friedman, Sales Manager, ifriedman@laseropticsinc.com.

## Laser Research Optics #939

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

Laser Research Optics supplies CO<sub>2</sub> 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". CO<sub>2</sub> 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, Sales, steve@melleroptics.com.



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# Exhibitor Listing

## Laserline Inc.

#3408



1800 Wyatt Dr Ste 9, Santa Clara, CA, 95054  
408/727-1496  
sp@laserline-inc.com; www.laserline-inc.com

### New Product: High power high brightness fiber coupled pump lasers at 9xx nm, up to 8 kW into Yb 940 nm pump band.

Laserline develops and produces diode lasers ranging in output power from up to 10 kW. Special patented optics reshape the beam emitted from the diode bars, leading to excellent brightness of special interest for pumping applications, both for DPSS and fiber lasers. The fiber-coupled OEM modules of the LDM series offer a cost competitive compact package up to 2 kW. The LDF series is used for high output power levels or better brightness. Contact: Silke Pflueger, Director Marketing & Sales, sp@laserline-inc.com; Klaus Kleine, GM North American Operations, kk@laserline-inc.com.

## Lasertel, Inc.

#1022



7775 N Casa Grande Hwy, Tucson, AZ, 85743  
520/744-5700; fax 520/744-5766  
sales@lasertel.com; www.lasertel.com

Lasertel is a vertically-integrated semiconductor laser manufacturer. In-house epitaxy, wafer processing, and packaging enables consistent delivery of a wide range of standard and customer-specific product solutions. Lasertel's chips, bars, array packages, and fiber-coupled devices are available with peak wavelengths from 770nm to 1000nm, and peak powers from 200mW to several kW.

### ROBOTICS+UNMANNED SYSTEMS DISPLAY

## Latitude Engineering LLC

 #3507

100 West Cushing St, Tucson, AZ, 85701  
520/792-2006; fax 520/792-2016  
contact1@latitudeengineering.com;  
www.latitudeengineering.com

Latitude Engineering will be displaying a real-time Aerostat Surveillance System (StatCam) above the SPIE convention floor. EO and IR video from the system will be displayed on a local ground station, and also placed onto the Internet for more expanded viewing. The system is wireless and uses a TASE Duo stabilized gimbal from Cloud Cap Technology, along with additional software image stabilization and target tracking. Applications are border security, harbor monitoring, refineries, construction sites, police tactical situations, military bases, environmental & wildlife monitoring, and urban/rural surveillance.

## Lattice Materials LLC

#309

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

### New Product: High-Purity Silicon and Germanium for Infrared Optics and Coating Sources.

Lattice Materials has provided custom machined parts for optical and thin film coating applications for nearly 20 years. We manufacture all manner of lens and window blanks, as well as beam splitter blanks, coating witness samples, mirror blanks, and thin film coating sources. Contact: Bob Spetz, Sales Engineer, bobs@latticematerials.com; Mike Foster, Sales Engineer, mikef@latticematerials.com.

## LE-Tehnika d.o.o., Kranj

#1402

Suceva 24, Kranj, Slovenia, 4000  
386 4 20 20 200; fax 386 4 204 21 22  
cryogenics@le-tehnika.si; www.le-tehnika.com

### New Product: Actively controlled JT cooler: operating temperature is not fixed, more reliable and stable operation.

We specialize in development and production of high technology cooling systems based on: Joule-Thomson effect (self-regulated, fixed, fast cool down, actively controlled) and on Stirling cycle (rotary or linear drive). We also produce pure air monitors. Specific advantages of Le-Tehnika should be stressed as follows: Elastic production (easily and quickly adapted for production of unique custom made coolers); better prices; and Quality. Contact: Janez Klančar, International Sales, janez.klančar@le-tehnika.si; Franc Megušar, Development Engineer, franc.megusar@le-tehnika.si.

## Leybold Optics

#3513



539 James Jackson Ave, Cary, NC, 27513  
919/657-7121; fax 919/657-7101  
info.usa@leyboldoptics.com; www.leyboldoptics.com

## Liebmann Optical Co.

#329

1 Industrial Pky, Easthampton, MA, 01027  
413/527-0079; fax 413 527 5132  
info@liebmann.com; www.liebmann.com

## LightPath Technologies, Inc.

#534



2603 Challenger Tech Ct Ste 100, Orlando, FL, 32826  
407/382-4003; fax 407/382-4007  
sales@lightpath.com; www.lightpath.com

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's aspheric optics and assemblies cover the spectral range from UV to long wave infrared (LWIR). Complete custom engineering and design support is available. Contact: Rob Myers, Director of Sales, rmyers@lightpath.com; Ray Pini, Director of Marketing, rpini@lightpath.com.

## LightWorks Optics, Inc.

#315



14242 Chambers Rd, Tustin, CA, 92780  
714/247-7100; fax 714/247-7101  
info@lwoptics.com; www.lwoptics.com

## LINOS

#1329

Isartalstr 43, Munich, Germany, 80469  
49 89 255458213; fax 49 89 255458 547  
www.linos.de

**Plan to Attend**

**FREE Exhibitor Product Demonstrations**

Refer to page 12 for complete time, schedule, and location



**Liteye Systems Inc.**

#3321

7060 S Tucson Way, Centennial, CO, 80112  
720/974-1766; fax 720/596-5219  
rsondag@liteye.com; www.liteye.com

**New Product: LE-600-541 tactical display with new LIMA rugged mouse controller. Battlefield utilized.**

Since 2000 Liteye Systems has designed and manufactured HMD's, view finders, tactical displays, rugged controllers, and other microdisplay devices. Our products are currently being utilized in the battlefield by individual soldiers and as well as HUDs in combat vehicles. Let Liteye handle your rugged display needs no matter what the mission. Contact: Rick Sondag, VP of Sales, rsondag@liteye.com; Sir Kenneth Geyer, VP of International Sales, kgeyer@liteye.com.

**Lockheed Martin Aculight**

#1130

**SPIE** Corporate Member

22121 20th Ave SE, Bothell, WA, 98021  
425/482-1100; fax 425/482-1101  
info.dp-ms2-bothell@lmco.com; www.aculight.com

Lockheed Martin Aculight provides quality, innovative & cost-effective laser system solutions for customers' needs in defense, aerospace & medical applications. Our products include lightweight, compact, high-performance fiber lasers for laser radar and sensing. We also provide custom laser solutions. Products include: Aculight® Perseus™ pulsed fiber lasers with eye-safe 1.5-μm output; Aculight Telesto™ pulsed fiber lasers with 1-μm output; Aculight Argos™ OPOs for spectroscopy & sensing. Contact: Rob Afzal, Vice President of Research & Development, robert.afzal@lmco.com.

**Lockheed Martin Santa Barbara Focalplane #911**

346 Bollay Dr, Goleta, CA, 93117  
805/571-2300  
www.sbfpc.com

**Luminit LLC**

#1139

20600 Gramercy Pl, Torrance, CA, 90501  
310/320-1066; fax 310/320-8067  
www.luminitco.com

**New Product: Luminit offers an ultra-thin LED backlight unit reference design using its light shaping diffusers.**

Luminit is a privately held, high technology company specializing in custom and standard holographic diffusers based on multiple technology patents. Luminit's commercial experience covers applications including bio-medical, semiconductor metrology, aerospace, automotive, architectural lighting and display applications. Contact: Suleyman Turgut, Director of Sales, sturgut@luminitco.com; Lisa Nakagawa, Inside Sales, lnakagawa@luminitco.com.

**Lumus Ltd.**

#3510

2 Bergman St, Rehovot, Israel, 76705  
972 8 947 3361; fax 972 8 947 3362  
info@lumusvision.com; www.lumusvision.com

**M<sup>3</sup> Measurement Solutions Inc.**

#3407

31315 Alisa Pl, Valley Center, CA, 92082  
760/749-7159  
sales@m3msi.com; www.m3msi.com

**The MathWorks**

#3315

3 Apple Hill Dr, Natick, MA, 01760  
508/647-7000; fax 508/647-7001  
info@mathworks.com;

Every major aerospace and defense organization in the world uses MathWorks products and services to develop air, naval, land, and space systems. Engineers and scientists rely on MathWorks tools for Model-Based Design and technical computing in programs such as the Airbus A380, F-35 Joint Strike Fighter, Mars Exploration Rover, as well as unmanned aerial vehicles and advanced wireless systems.

**Max Levy Autograph, Inc.**

#500

**SPIE** Corporate Member

2710 Commerce Way, Philadelphia, PA, 19154  
215/842-3675; fax 215/842-3637  
sales@maxlevy.com; www.maxlevy.com

Max Levy Autograph specializes in ultra-precision patterned components and windows for the photonic, mil-aerospace, semiconductor, and metrology industries. Applications range from the X-Ray out to RF. Major manufacturing process capabilities include: photolithography, electroforming, photochemical etching, film products, micro-contouring/machining, and NIST traceable calibration services. Contact: Tom Cinque, Sales Manager, tom@maxlevy.com; Mike Vinson, Vice President of Sales and Marketing, mvinson@maxlevy.com.

**McQ Inc.**

#628

**SPIE** Corporate Member

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

**New Product: iScout® detects people, vehicles and gunfire using two AA batteries and lasts for 2 weeks.**

McQ is recognized as the high technology leader in remote surveillance, security and environmental monitoring products. For over 20 years, McQ has earned a reputation for delivering rugged, state of the art surveillance and remote sensor systems that are networked and have very low false alarms. McQ has a varied client base with a wide range of commercial, industrial and government clients. McQ is located in Fredericksburg, Virginia with Engineering and Production facilities. Contact: Karen Lindsey, Director of Marketing and Sales, klindsey@mcqinc.com; Amy Slocum, Product Manager, aslocum@mcqinc.com.

**Meadowlark Optics**

#3014

5964 Iris Pky, Frederick, CO, 80530  
303/833-4333; fax 303/833-4335  
mlo@meadowlark.com; www.meadowlark.com

**New Product: Announcing our SWIFT nematic liquid crystal devices capable of switching faster than 150 microsec.**

Meadowlark Optics has been providing polarization components and systems for more than 30 years. We have a proven track record designing and fabricating nematic liquid crystal devices and systems, such as our Polarimeter, Tunable Optical Filter, and our SWIFT liquid crystal line and Selectable Bandwidth Tunable Optical Filter. If you require a custom or OEM polarization solution, Meadowlark Optics is your source. Visit Meadowlark.com or call our Engineers at 303-833-4333 for more information. Contact: Chris Toomey, Sales Engineer - East, ctoomey@meadowlark.com; William Barbarow, Sales Engineer - West, wbarbarow@meadowlark.com.

# Exhibitor Listing

## MegaWatt Lasers, Inc.

#3403

PO Box 24190, Hilton Head Island, SC, 29925-4190  
843/342-7221; fax 843/342-7223  
scott.hamlin@megawattlasers.com; www.megawattlasers.com

**New Product: Diffuse reflector pump chambers for high energy applications with pulse energies up to 100 Joules.**

MegaWatt Lasers manufactures application specific solid-state lasers and high-quality diffuse-reflector pump chambers for solid-state laser applications. Popular items include pump chambers, amplifiers, laser resonators, and ER-100 eyesafe Er:Glass transmitters. Packaged in a modified T0-3 housing, the ER100 miniature transmitter produces near diffraction limited, single longitudinal mode output with 50 kW of peak power in 2 ns pulses and is ideal for remote sensing applications. Contact: Scott J. Hamlin, President, scott.hamlin@megawattlasers.com.

## Meller Optics, Inc.

#939

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 ISO 9002 certified company. Contact: Craig Schweriner, Sales Mgr., craig@melleroptics.com; Steve Lydon, sales@melleroptics.com.

## MEMS Optical Inc.

#327

 SPIE Corporate Member

205 Import Cir, Huntsville, AL, 35806  
256/859-1886; fax 256/859-5890  
info@memsoptical.com; www.memsoptical.com

MEMS Optical, Inc. is a leading supplier and manufacturer of high performance refractive and diffractive microoptics and MEMS devices. MEMS Optical provides solutions to diverse markets such as Defense and Security, Information and Communications, Industrial and Semiconductor Equipment, General Illumination, and Healthcare and Life Sciences. MEMS Optical continues to develop and improve microoptics applications through the use of grayscale technology and other proprietary processes. Contact: info@memsoptical.com.

## Mentor Graphics

#125

 SPIE Corporate Member

8005 SW Boeckman Rd, Wilsonville, OR, 97070-7777  
800/592-2210  
systemvision\_info@mentor.com; www.mentor.com

**New Product: SystemVision is a virtual-prototyping environment that simulates and optimizes designs.**

Mentor Graphics is a technology leader in electronic design automation, providing SW and HW design solutions that enable companies to develop better electronic products faster and more cost-effectively. The company offers innovative products and solutions that help engineers overcome the design challenges they face in the increasingly complex worlds of board and chip design. Mentor Graphics has the broadest industry portfolio of best-in-class products. Contact: Bill Hargin, Marketing Manager, bill\_hargin@mentor.com; Darrell Teegarden, Product Line Manager, darrell\_teegarden@mentor.com.

## Michigan Aerospace Corp.

#104

1777 Highland Dr Ste B, Ann Arbor, MI, 48108  
734/975-8777; fax 734/975-0239  
www.michaero.com

**New Product: Compact wind LIDAR systems, including for siting and increased operation efficiency of wind farms.**

Michigan Aerospace Corp. provides innovative optical, opto-mechanical and mechanical systems and image processing, pattern recognition and machine learning software, from conceptual design through production and field implementation, including: LIDAR Systems to measure winds from the ground, air and space; Data Exploitation of 2D and 3D image and video data and anomaly detection in complex data streams; Optical Diagnostics for CBRN and Improvised Explosive Device (IED) detection systems. Contact: John Dodds, Business Development Coordinator, jdodds@michaero.com; Cliff Williams, Director of Product Development, cwilliams@michaero.com.

## MICOS USA, LLC

#1400

 SPIE Corporate Member

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

MICOS serves the high-precision positioning market including industry and research with an emphasis on laser and microwave technology, communications, semi-conductor technology and micro-manipulation. We offer a wide range of precision positioners and control electronics as well as complete system integration services. Additionally, MICOS is known as the premier supplier for vacuum, clean room and extreme temperature applications. Contact: Manfred Schneider, mschneider@micosusa.com.

## Micro Laser Systems, Inc.

#429

 SPIE Corporate Member

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

**New Product: 2µm Fiber Collimator and ZPol "Z" polarizer and Radial polarizer.**

We are presenting new diode lasers at 488nm, inexpensive 405nm, 705nm, 730nm lasers for greater tissue penetration, 1064nm laser for Raman spectroscopy and higher power 1550nm laser. Lasers are available as free space or fiber coupled and in an OEM or convenient Turnkey system. New optics includes ZPol, radial polarizer/ "Z" polarizer, very long working distance lens systems, and 2 micron Fiber collimators. Applications include plasmonics, optical trapping and optical micromanipulation. Contact: Norma Adachi, Marketing, norma@microlaser.com.

## Micro Precision, Inc.

#1136

1102 Windham Rd, PO Box 96, South Windham, CT, 06266  
860/423-4575; fax 860/450-0519  
joel@microprecisiongroup.com; www.microprecisiongroup.com

**New Product: Portable telescoping towers used for perimeter security.**

Micro Precision is an ISO 9001:2000 registered company which focuses on supplying goods for military applications. Micro currently supplies 20 foot telescoping towers for various military applications and has nearly 700 in service. The product line has expanded and now offers medium duty and light duty towers (65 lbs & 25 lbs) and a thirty foot version. Micro Precision also offers machining services and is a Level I supplier to the Navy. Micro Precision is a service disabled veteran owned small business. Contact: Joe Loffredo, General Manager, joel@microprecisiongroup.com; Stu Alexander, Sales, salexander@microprecisiongroup.com.

## Micromechatronics, Inc.

#1519

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

### **New Product: World's first piezoelectric-based compact high voltage DC-DC converter.**

Micromechatronics offers a large range of piezoelectric technologies including actuators, transformers, ultrasonic-motors, transducers and FEA software for design with smart materials. We are also the USA distributor of several key industry players, including: NOLIAC (DK) a global leader on multilayer-piezo-actuators, CEDRAT (FR), the expert on amplified-piezoactuators and positioning systems, NIHON-CERATEC (JP) a large volume manufacturer of multiple piezoelectric devices. Contact: Alfredo Vazquez Carazo, President & CEO, avc@mmech.com.

## MIDAC Corp.

#1438

130 McCormick Ave #111, Costa Mesa, CA, 92626  
714/546-4322; fax 714/546-4311  
www.midac.com

### **New Product: FTIR based spectroradiometer with integrated 3" telescope. Rugged, compact and light weight.**

MIDAC Corporation manufactures industrial FTIR gas analyzers for emissions monitoring, process gas purity/ end point determination, ambient air monitoring, and open path analysis. Systems range from compact single-line analyzers to NEMA enclosed, fully automated systems with up to 36 sample lines, integrated alarms and data communications for unattended, 24/7 operation. MIDAC has 30 years experience building rugged reliable FTIR spectrometers. Contact: Jane Browne, Assistant Marketing Director, jbrownne@midac.com; Nancy Burnett, Sales Administrator, nburnett@midac.com.

## Middleton Research

#3012

8505 University Green Ste 100, Middleton, WI, 53562  
608/831-2141; fax 608/831-3076  
info@middletonresearch.com; www.middletonresearch.com

### **New Product: LWIR Camera, Hyperspectral Prediction Engine, Spectroscopy Glovebox.**

An innovative spectroscopy applications and system development company, providing hyperspectral chemical imaging products, systems integration and applications development. We represent Spectral Imaging Ltd (Specim) of Finland. We offer NIR/FTIR contract analytical, laboratory and consulting services. Our products include a hyperspectral prediction computer, photoacoustic gas measurement and sampling devices for viscous, toxic or air-sensitive samples. www.middletonresearch.com. Contact: Gabor J. Kemeny, PhD, President, gabor@middletonresearch.com; info@middletonresearch.com.

## Military & Aerospace Electronics

#300

98 Spit Brook Rd, Nashua, NH, 03062  
603/891-0123; fax 603/891-9290  
www.mliaero.com

Military & Aerospace Electronics is the top choice for engineers, engineering managers, and program managers who need to understand the pivotal technologies, applications and opportunities concerning military transformation; mil-spec, rugged/high reliability, and commercial off-the-shelf (COTS) design; and military and commercial standards. It is the leading integrated media of international print magazines, websites, timely print supplements, electronic newsletters, and conference trade show.



### **Free Popcorn**

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001.559.651.1402



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# Exhibitor Listing

## Mindrum Precision, Inc.

#317



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

**New Product: MORE LASERS!! We now are building a hand held version of our laser module.**

53 Years in Business. Mindrum fabricates in hard materials, glass, quartz, ceramic, sapphire and exotics. We also build in metals and plastics, normally incorporating into an optics component. R&D to high production. High Quality with Customer needs in mind. Our laser modules can be incorporated into many applications, both commercial and military. Ask questions. We may have the answers. Contact: Dennis Winegarner, General Manager, sales@mindrum.com; Diane Mindrum, President, sales@mindrum.com.

## Mission Critical Electronic Systems Inc. #3216

116 Government Rd N #1293, Black Diamond, AB, Canada, T0L 0H0  
403/933-2880  
marketing@missionuav.com; www.missionuav.com

**New Product: Fire Eyes Extreme™, Shoulder Mount Digital Periscope Binocular Atmosphere Compensation Technology.**

Mission Critical Electronic Systems Inc specializes in the manufacturing of handheld data acquisition devices for a diverse customer base across the communications and securities industries. The advanced Atmosphere Compensation technologies of Mission Critical have effective applications in a wide range of markets, such as critical infrastructure, security, law enforcement, and aerospace. Contact: Sean Randle, CEO, sean.randle@spyglassstudio.ca; Lena Butler, Business Development, lena.butler@spyglassstudio.ca.

## Mitsubishi Heavy Industries America Inc. #3001

630 Fifth Ave Ste 2650, Marketing Planning Dept., New York, NY, 10111  
212/397-6128; fax 212/262-2113  
kazuhiro\_yasuda@mhihq.com; www.mitsubishitoday.com

**New Product: Laser Radar Surveillance System.**

Contact: Kazuhiro Yasuda, Vice President, kazuhiro\_yasuda@mhihq.com; Junji Mori, Manager, junji\_mori@mhihq.com.

## Molded Plastic Optics, LLC #107



7 Perimeter Rd, Manchester, NH, 03104  
603/669-7800; fax 603/669-7814  
sales@mpoptics.com; www.mpoptics.com

**New Product: High precision molded plastic aspheric doublets.**

Molded Plastic Optics, LLC (MPO) designs and produces the highest precision molded plastic optical components including asphere lenses and aspheric doublets. MPO offers one-stop shopping including optical design, rapid prototyping, high volume molding, custom sub-assembly and comprehensive testing of all parts. MPO's 10,000 sq ft facility includes state of the art injection compression molding machines, single point diamond turning machines and a comprehensive metrology lab. www.mpoptics.com. Contact: Paul Murphy, Director of Sales and Marketing, PMurphy@mpoptics.com.

## Moog-Quickset

#222

3650 Woodhead Dr, Northbrook, IL, 60062-1895  
847/498-0700; fax 847/498-1258  
www.quickset.com

QuickSet International, Inc. is the industry leader in rugged precision positioning systems. Founded in 1933, QuickSet established itself early on as the principal supplier of heavy-duty tripods and pan & tilt heads. Innovations such as smart positioning controls, web-enabled remote operation, extreme environments, sensor fusion and robust stabilization dominate current product development. Contact: Sherry Edecker, Director of Sales & Marketing, sedecker@moog.com; Taryn Bessent, Sales & Marketing Support, tbessent@moog.com.

## Moore Nanotechnology Systems LLC #226

426A Winchester St, Keene, NH, 03431-0605  
603/352-3030; fax 603/352-3363  
sales@nanotechsys.com; www.nanotechsys.com

Nanotech® Ultra-Precision Machining Systems are available in various models with 2 to 5 axes of CNC motion. Single point diamond turning or deterministic microgrinding of spherical, aspheric, freeform, linear diffractive, and prismatic optical structures yield form accuracies as fine as 50nm P-V and surface finishes < 2nm Ra. All Nanotech machines utilize a programming resolution of 1.0 nanometer, and an unprecedented system feedback resolution of only 0.034 nanometer. Contact: Bob Cassin, Sales Manager, cassin@nanotechsys.com; Jeff Perra, Sales Engineer, perra@nanotechsys.com.

## Moore Tool/Moore Manufacturing Technologies #226

800 Union Ave, Bridgeport, CT, 06607  
203/366-3224; fax 203/367-0418  
sales@mooretool.com; www.mooretool.com

## MRC a PPGI company #422

6455 Parkland Dr, Sarasota, FL, 34243  
947/743-8707; fax 947/751-4249  
mrcsales@mrcoptics.com; www.mrcoptics.com

Manufacturer and designer of precision metal and infrared optical components, systems and sub-assemblies. Full in-house aspheric diamond machining, plating, polishing and testing capability. Materials include all non-ferrous metals, crystals, beryllium and composites. Products include polygons, aspheric components, off-axis parabolics, large flat mirrors and multi-mirror systems. Contact: Tom Crafts, Director of Sales, tcrafts@mrcoptics.com.

## Multisorb Technologies #3002

325 Harlem Rd, Buffalo, NY, 14224  
716/824-8900  
info@multisorb.com; www.multisorb.com

Multisorb Technologies' sorbent solutions offer protection against moisture, contamination, and volatile chemicals present in electronic equipment. Our products can be found in a variety of electronics including organic light emitting diodes, mobile handhelds, disk drives, cameras, infrared sensors, circuit boards, and military/aerospace electronics. For over 45 years Multisorb has served the needs of the Electronics industry making us the expert in providing sorbent solutions today. Contact: Dan Casacci, Business Development Leader - Electronics Packaging, dcasacci@multisorb.com.



## Multiwave Photonics S.A.

#3901

Rua Eng Frederico Ulrich 2650, Moreira da Maia, Portugal, 4470-605  
351 22 940 8260; fax 351 22 9408 261  
swagner@multiwavephotonics.com;  
www.multiwavephotonics.com

**New Product: Pulsed fiber laser MOPA-L for LIDAR and remote sensing. 5kW pP, single frequency 3ns pulses @1550nm.**

Multiwave Photonics is a world-class supplier of next generation pulsed fiber lasers and other innovative optical sources based on fiber-optic technologies, focusing on materials processing, LIDAR, remote sensing and medical applications, predominantly through OEM business relationships. Contact: Steven D. Wagner, Director of Sales & Marketing, swagner@multiwavephotonics.com; Andrew Held, PhD, Director of Business Development & Strategy, aheld@multiwavephotonics.com.

## Naked Optics Corp.

#1019

**SPIE** Corporate Member

1090 Delacroix Circle, Nokomis, FL, 34275  
908/685-0352; fax 908/325-0250  
sales@nakedoptics.com; www.nakedoptics.com

Supplier of IR optics and diamond-turned components with aspheric, free-form, diffractive and hybrid surfaces in IR materials, plastics and metals; optical design services; IR materials including ZnSe, ZnS, CaF<sub>2</sub>, BaF<sub>2</sub> and optical glasses in finished and blank forms: raw strip glass, molded and CNC-machined blanks of all optical materials. Contact: Buzz Nesti, buzz@nakedoptics.com; Glen Dunn, Sales Mgr, glen@nakedoptics.com.

## Nasatka Barrier, Inc.

#3519

7702-B Old Alexandria Ferry Rd, Clinton, MD, 20735  
301/868-0302; fax 301/868-0524  
nasatka@hotmail.com; www.nbistop.com

## National Aperture, Inc.

#301

**SPIE** Corporate Member

16 Northwestern Dr, Salem, NH, 03079  
603/893-7393; fax 603/893-7857  
sales@nationalaperture.com; www.nationalaperture.com

## National Defense Industrial Association (NDIA)

#105

2111 Wilson Blvd #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, Dept. of Homeland Security, all branches of the US Military and industry. Individual and Corporate memberships are available. US Government and military are welcome to join free of charge. Visit our website at www.ndia.org. Contact: Michael Kibler, Director, Corporate Member Sales, mkibler@ndia.org.

## National Reconnaissance Office

#1437

14675 Lee Rd, Chantilly, VA, 20151-1715  
703/808-2769; fax 703/808-2646  
dii@nro.mil; www.dii.westfields.net

**New Product: DII & ISI Research Funding Programs.**

R&D Funding-The National Reconnaissance Office's Director's Innovation Initiative invests in advanced technologies, fosters innovation, and provides seed funding to push the boundaries of technology to dramatically improve our overhead reconnaissance capabilities. It presents an opportunity for developers not traditionally associated with the NRO to participate in building the National Reconnaissance Office of the 21st Century. Contact: Major John Mills, USAF, Program Manager, dii@mro.mil; Dr. Bill Harter, DII Technical Lead, dii@nro.mil.

## NAVAIR IBST

#1537

Bldg 2109 Ste N 220, 48150 Shaw Rd Unit 5, Patuxent River, MD, 20670-1970  
314/342-6008; fax 314/342-6014  
www.navair.navy.mil

## Naval Research Laboratory

#1515

4555 Overlook Ave SW, Washington, DC, 20375  
202/767-3678; fax 202/404-8681  
julia.wyant@nrl.navy.mil

**New Product: Prototype 0.4 meter CFRP Telescope with Adaptive Optics box built into the mount.**

The Naval Research Laboratory is the Department of the Navy's corporate laboratory. NRL conducts a broad program of scientific research, technology, and advanced development. The Laboratory, with a total complement of nearly 2,500 personnel, is located in southwest Washington, DC, with other major sites at the Stennis Space Center, MS; and Monterey, CA.

## Navitar Inc.

#538

200 Commerce Dr, Rochester, NY, 14623  
585/359-4000; fax 585/359-4999  
info@navitar.com; www.navitar.com

## NEC Avio Infrared Technologies Co., Ltd.

#3000

8-1-5 Nishi-gotanda, Shinagawa-ku, Tokyo, Japan, 141-8535  
81 3 5436 1614; fax 81 3 5436 1395  
osd@nec-avio.co.jp; www.nec-avio.co.jp/en

**New Product: IR camera H2640 with 640x480 high resolution & Thermo Shot F30 with small and light weight body**

NEC Avio provides total solution for various customers needs by providing products such as infrared camera, infrared detector, infrared module, industrial measuring instruments, and education, consulting and service. NEC Avio is also committed to the safety and security of society by providing these products and services. Contact: Masa Kuramoto, Senior General Manager, m-kuramoto@nec-avio.co.jp.

◆◆◆◆◆  
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## ◆◆◆◆◆ New England Optical Systems

#1530

**SPIE** Corporate Member

66C Brigham St, Marlboro, MA, 01752  
508/460-0019; fax 508/460-0098  
sales@neopticalsystems.com; www.neopticalsystems.com  
New England Optical Systems (NEOS) designs, builds, and tests custom infrared imagers and custom test equipment. Our engineers have over 60 years of combined experience designing systems for a wide variety of applications including: Single FOV/Multi-FOV/Continuous Zoom Systems, UAV/Gimbal Imagers, Interferometers/MTF 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, tstolberg@neopticalsystems.com.

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# Exhibitor Listing

## New Scale Technologies, Inc.

#413

**SPIE** Corporate Member

121 Victor Heights Pkwy, Victor, NY, 14564  
585/924-4450; fax 585/924-4468  
sales@newscaletech.com; www.newscaletech.com

**New Product: New TRACKER position sensor: smallest, highest-resolution mini encoder is robust and cost-effective.**

We create ingeniously small motion systems based on our patented piezoelectric SQUIGGLE® motor, the world's smallest linear motor, and TRACKER™ position sensor. SQUIGGLE motors are more compact, precise, robust and power-efficient than other micro motors. TRACKER sensors integrate magnetic sensing with on-chip digital encoding for smaller size, higher resolution than mini optical encoders. Our motors, encoders and modules inspire smaller products: optical systems, lasers, endoscopes and more. Contact: Bobbi Drew, Sales Administrator, sales@newscaletech.com; Fred Haas, Sales Manager, sales@newscaletech.com.



**INTERNET PAVILION SPONSOR**

## Newport Corp.

#922

**SPIE** Corporate Member

1791 Deere Ave, Irvine, CA, 92606-4814  
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: Randy Heyler, randy.heyler@newport.com; Magnus Bengtsson, magnus.bengtsson@newport.com.

## nLIGHT Corp.

#423

**SPIE** Corporate Member

5408 NE 88th St Bldg E, Vancouver, WA, 98665  
360/566-4460; fax 360/546-1960  
defense@nlight.net; www.nlightdefense.net

**New Product: Pearl fiber-coupled laser diodes deliver unparalleled brightness exceeding 80W into 105µm core fiber.**

nLIGHT DEFENSE, a strategic business unit within nLIGHT Corporation, is focused on supporting the Military and Aerospace industries. Our products include diode lasers, fiber lasers and fibers. Additionally, we offer photonic assembly manufacturing services to take your design from concept to production. Manufactured in our US-based, ITAR compliant and ISO-certified facilities; our products are tailored to meet the rugged and demanding needs of the warfighter today and tomorrow. Contact: Bryan Gelnett, bryan.gelnett@nlight.net.

## NoblePeak Vision Corp.

#641

**SPIE** Corporate Member

585 Edgewater Dr, Wakefield, MA, 01880  
781/224-9740; fax 781/224-9747  
info@noblepeak.com; www.noblepeak.com

**New Product: TriWave® is a germanium enhanced CMOS image sensor technology with sensitivity from 450nm to 1650nm.**

NoblePeak Vision develops visible to SWIR (400nm to 1650nm) video surveillance camera cores and components with breakthrough night vision performance and costs. At the heart is TriWave®, a revolutionary and proprietary, germanium enhanced monolithic CMOS image sensor technology. NoblePeak's NPV700M camera cores feature TriWave imagers with 10µ pixel sizes and resolutions of 744 x 576 pixels with monochromatic day and night operation. The NPV700C series will feature color capability during day time operation. Contact: Phil Davies, Vice President Sales and Marketing, phil.davies@noblepeak.com.

## NorPix, Inc.

#305

**SPIE** Corporate Member

1751 Richardson St Ste 2517, Montreal, QC, Canada, H3K 1G6  
514/846-0009; fax 514/846-0117  
sales@norpix.com; www.norpix.com

**New Product: StreamPix-4 digital video recording software supports a wide choice of frame grabbers and cameras.**

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, camera link, and usb2 cameras. NorPix also provides turnkey solutions including software, cameras, computers, synchronization and timing such as Irigb or GPS positioning.

## Northrop Grumman, Cutting Edge Optronics #1227

**SPIE** Corporate Member

20 Point W Blvd, St Charles, MO, 63301  
636/916-4900; fax 636/916-4994  
st-ceolaser-info@ngc.com;

www.st.northropgrumman.com/ceolaser

Northrop Grumman Cutting Edge Optronics is a leading supplier of advanced laser technology to the defense, aerospace, industrial and commercial sectors. As a vertically integrated company, CEO designs, develops and manufactures an extensive range of laser diodes, diode arrays, gain modules, electronics & complete DPSS laser systems. Applications include laser pumping, LIDAR, illumination, ranging, remote sensing and directed energy. We also specialize in custom diode arrays & DPSS lasers. Contact: Wade Collins, Sales Manager Military & Aerospace Lasers, wade.f.collins@ngc.com; Chris Alderton, Technical Sales Representative, chris.alderton@ngc.com.

## Novotech, Inc.

#204

**SPIE** Corporate Member

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

**New Product: Germanium Ingots manufactured at Novotech, Inc. Acton MA. N or P Type, 5-6 N Purity.**

Novotech, Inc. is an ISO 9001-2000 certified manufacturer & global supplier of Infrared Materials and Optics. These include Germanium, Silicon, Zinc Selenide and Cleartran Zinc Sulfide. From generated lens blanks to mid & longwave IR windows & substrates, we have the abilities to manufacture small R&D volumes to large production orders in record time. Contact: Peter Schwarzer, Account Manager; peters@Novotech.net; Michael Hulen, President; mhulen@Novotech.net; 978-929-9458.

## nPoint, Inc.

#1237

**SPIE** Corporate Member

1617 Sherman Ave, Madison, WI, 53704  
608/310-8770; fax 608/310-8774  
info@npoint.com; www.npoint.com

## Nu-Cast, Inc.

#640

29 Grenier Field Rd, Londonderry, NH, 03053  
603/432-1600; fax 603/432-0724  
jtb@nucast.net; www.nu-cast.com

**New Product: Aluminum Investment Castings, featuring "Nu-Truss" three dimensional truss structural components.**

Nu-Cast, is a privately owned American Small Business, founded in 1985, manufacturing precision aluminum investment castings. We are AS 9100 B Certified. Our castings are manufactured using hard tooling for production. Pre-production and R & D castings can be made using quick cast SLA patterns generated from electronic CAD data. We produce optical components, electronic/avionic chassis, aircraft displays and satellite components, supporting Military, Commercial, and NASA programs. Contact: John Bowkett, Sr. Vice President, jtb@nucast.net; Doug Veysey, Account Manager, dvz@nucast.net.

# Exhibitor Listing

## Nuferm

#622

**SPIE** Corporate Member

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

Nuferm is a leading U.S. manufacturer of Fiber Lasers, Fiber Laser/ Amplifier Sub-Assemblies and Optical Fibers serving diverse markets. With manufacturing facilities located at its headquarters in East Granby, Connecticut, USA, Nuferm has the experience, resources, and facilities required to design, manufacture, test and qualify highly-engineered optical fibers and fiber-based products for myriad applications in the global marketplace. Contact: Scott Christensen, Director of Government, Military & Aerospace, schristensen@nuferm.com.

## NuPhoton Technologies, Inc.

#3020

41610 Corning Pl, Murrieta, CA, 92562  
951/696-8366; fax 951/696-8394  
info@nuphoton.com; www.nuphoton.com

## OASYS Technology, LLC

#1228

**SPIE** Corporate Member

645 Harvey Rd Ste 9, Manchester, NH, 03103  
603/232-8221; fax 603/628-0222  
tfournier@oasys-technology.com; www.oasys-technology.com

**New Product: New Line of Miniature Hand Held Infrared Surveillance Systems. New Instant-On at -40C HMD.**

OASYS Technology specializes in providing rugged and reliable solutions for the complex and challenging electro-optical specifications of our customers. Products are segmented into 4 primary markets: Military Products and Accessories, Laboratory and Test Instrumentation, Optical Assemblies and Precision Optical Components. In-house optical fabrication includes over 10 diamond turning machines for quick-turn response to customer needs. An ISO 9001:2000 Certified Company. Contact: Brett Rosner, Chief Operating Officer, brosnier@oasys-technology.com; Craig Snee, Optical Products Business Development and Sales, csnee@oasys-technology.com.

## Obzerv Technologies Inc.

#3201

400 Blvd Jean Lesage Ste 201, Quebec, QC, Canada, G1K 8W1  
418/524-3522; fax 418/524-6745  
francois.bouchard@obzerv.com; www.obzerv.com

**New Product: Obzerv unveils its new ARG-750, the portable, multi-sensors range-gated night vision camera.**

Obzerv Technologies Inc. specializes in the design and manufacturing of night vision cameras for long-range applications based on active imaging. Thanks to its range-gating capability and DALIS™ illuminator, Obzerv's cameras operate in complete darkness, in degraded weather conditions and provide real time imagery. The needs to identify individuals, to read license plates or any registration marks and to see through glass are now essential for the success of surveillance operations. Contact: François Bouchard, Director, Sales and Business Development, Francois.Bouchard@obzerv.com; Sylviane Lelièvre, Director, Business Development and Marketing, Sylviane.Lelievre@obzerv.com.

## Ocean Optics, Inc.

#819

**SPIE** Corporate Member

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

Ocean Optics, the leader in optical sensing and spectroscopy solutions has applications in defense and environmental monitoring. Our line includes LIBS systems, Raman solutions and complementary technologies including sampling accessories and sensors. Ocean Thin Films has pioneered an optical coatings production methodology that combines modern optical thin film deposition techniques with the precision and mass-production capabilities of microlithographic procedures. Contact: Ocean Optics Systems, Application Scientist, info@oceanoptics.com; John Dougherty, Ocean Thin Films Application Engineer, john.dougherty@oceanoptics.com.

## OFS - Specialty Photonics Division

#3409

**SPIE** Corporate Member

55 Darling Dr, Avon, CT, 06001  
860/678-0371; fax 860/674-8818  
info@specialtyphotonics.com; www.specialtyphotonics.com

## Ohara Corp.

#3319

**SPIE** Corporate Member

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

**New Product: Full line of IR and UV materials such as CaF<sub>2</sub>, Fused Silica, Ge, Si, ZnS, ZnSe, BaF<sub>2</sub>, MgF<sub>2</sub>, etc.**

Ohara is a leading supplier of optical materials with over 150 different materials types including optical glass, crystal material and specialty products such as zero expansion ClearCeramZ. Other services include double-sided polishing services and index measurement services for optical glass and IR materials. Contact: Chris Ghio, Sales Manager, chrisghio@oharacorp.com; Robert Lee, Sales Engineer, robertlee@oharacorp.com.

## Ontar Corp.

#916

**SPIE** Corporate Member

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

**New Product: PcModWin/MODTRAN PcLnWin/FASCODE PcNvMod/ NvThermIP 2D3D graphical weather atmospheric VReality.**

Ontar Corporation is an R&D company founded in 1981. Ontar specializes in atmospheric science and in technical and advanced distributed learning software. The sky is no limit and we design our products to remain perpetually current; new models such as 2D3D weather atmospheric VR programs are currently being incorporated in to our software products. We provide online, onsite and offsite workshops. Contact: Alyssa Douglass, Sales & Marketing, adouglass@ontar.com.

## Onyx Optics Inc.

#3017

6551 Sierra Ln, Dublin, CA, 94568  
925/833-1969; fax 925/833-1759  
sales@onyxoptics.com; www.onyxoptics.com

Onyx Optics' product capabilities include Adhesive-Free Bonded (AFB®) crystal and glass laser components such as laser rods, slabs, disks, and waveguiding structures. We work with materials such as doped and undoped YAG, YLF, YVO<sub>4</sub>, sapphire, diamond, and spinel, as well as many others. Our patented composite technology enables higher efficiency, more compact and higher power solid state laser and photonic devices. Contact: Lesley Reo, Sales & Marketing Manager, lreo@onyxoptics.com.



## OPCO Laboratory, Inc.

#441

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

OPCO Laboratory, Inc. is your single source for your most demanding optical requirements. We provide design services, prototype, and high volume production solutions for Defense, Security, Analytical, Medical, Spectroscopy, Semiconductor, Machine Vision, and Imaging markets worldwide. Our state-of-the-art manufacturing, coating, replication, QC, assembly, and class 1000 clean room facilities, guarantee precise, repeatable, and cost effective solutions for your high performance systems. As a full service in-house manufacturer, we can provide a wide range of high precision lenses, coated and replicated mirrors, metallic and dielectric thin film coatings, diffraction gratings, and turn-key electro/optical, and mechanical/optical assemblies. Contact: Robert Moody, Director Sales & Marketing, at rmoody@opcolab.com.

### ◆◆◆◆◆ GENERAL REFRESHMENTS SPONSOR

## ◆◆◆◆◆ Opgal Ltd.

#734

Industrial Area, Karmiel, Israel, 20100  
972 4 995 3944; fax 972 4 995 3900  
dascalu@opgal.com; www.opgal.com

**New Product: COMPACT EYE320-ultra small size, based on a 384x288, Uncooled ASi 7-14 micron, 25 micron pitch detector.**

OPGAL Optronics Industries is a leading global manufacturer of innovative thermal imaging safety systems and infrared cameras. Its safety applications are used for detection of gas and hazardous material leaks and for areal remote fire detection. OPGAL offers the widest selection of infrared cooled and uncooled OEM cameras and engines for military, paramilitary, security and aviation applications. Contact: Sylvie Dascalu, V.P. Sales & Contracts, dascalu@opgal.com; Omer Yanai, V.P. Marketing, yanai@opgal.com.

## Ophir Optics, Inc.

#1216

**SPIE** Corporate Member

1600 Osgood St, N. Andover, MA, 01845  
978/296-1304; fax 978/657-6056  
www.ophiropticsinc.com

## Ophir-Spiricon

#543

**SPIE** Corporate Member

60 W 1000 N, Logan, UT, 84321  
435/753-3729; fax 435/753-5231  
sales@ophir-spiricon.com; www.ophir-spiricon.com

**New Product: BeamGage is a new from the ground up laser beam profiling application for Windows.**

Ophir-Spiricon is the world leader in laser test and measurement solutions. We provide laser power and energy meters, laser beam profilers and laser propagation analyzers to industry, medicine and military users. Contact: Kevin Kirkham, Beam Profiling Applications Engineer, kevin.kirkham@ophir-spiricon.com; Dick Reiley, Eastern Regional Sales Manager, dick.rieley@ophir-spiricon.com.

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Retired Chairman and Chief Executive Officer,  
Lockheed Martin Corp.

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Fitchburg, MA 01420  
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FAX: 978-345-5515  
www.opcolab.com

# Exhibitor Listing

## Opnext, Inc.

SPIE Corporate Member

1 Christopher Way, Eatontown, NJ, 07724  
732/544-3400; fax 732/544-3561  
info@opnext.com; www.opnext.com

**New Product: The Opnext HL6387TG laser diode is for use in miniature display applications.**

From the latest communications networks to new security systems, and to major advances in medical systems, Opnext laser technologies add the spark of innovation to a world of new applications. The company's industry expertise and commitment to R&D combine in bringing the next generation of laser-based products. Opnext has established its broad portfolio of solutions and solid reputation for excellence in service. Contact: Jim Brown, Director, North American Device Sales, jbrown@opnext.com; Bob Murphy, Director, Device Business Development, bmurphy@opnext.com.

#535

## Optical Support, Inc.

SPIE Corporate Member

11751 E Timrod St, Tucson, AZ, 85748  
520/546-0642; fax 520/203-0228  
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 optical and mechanical system design, drawings of optical elements as well as mechanical components and assemblies. This documentation package is ready for release, saving your team the time they may need to manage other efforts. We can even purchase, inspect, assemble and test optical systems before your team gets started. Contact: Michael Savard, President, msavard@opticalsupport.biz.

#3915

## OPOTEK, Inc.

2233 Faraday Ave Ste E, Carlsbad, CA, 92008  
760/929-0770; fax 760/929-8782  
sales@opotek.com; www.opotek.com

#1040

## Optical Filters USA LLC

13447 S Mosiertown Rd, Meadville, PA, 16335  
814/333-2222; fax 814/333-4338  
michael@opticalfiltersusa.com; www.opticalfiltersusa.com

#1429

**New Product: EmiClare MicroMesh offers superior emi-shielding and outstanding clarity for electronic displays.**

Design and manufacture of optical filters giving improved sunlight readability, privacy, impact resistance and emi shielding to electronic displays for aerospace, defense, test equipment and public information applications including touch screens and transparent heaters. Optical polycarbonates, acrylics and polarizer filters. Non-glare, anti-reflective, ITO-coated glass and chemical toughening. Full manufacturing capability in USA and Europe. Contact: Peter Fisher, Sales Director, peter@opticalfilters.co.uk; Michael Dent, Technical Director, michael@opticalfiltersusa.com.

## Optical Research Associates

SPIE Corporate Member

3280 E Foothill Blvd Ste 300, Pasadena, CA, 91107-3188  
626/795-9101; fax 626/795-9102  
info@opticalres.com; www.opticalres.com

#1037

**New Product: CODE V 10.0 Delivers Faster Optimization of Complex Optical Systems.**

Optical Research Associates will exhibit two optical design software products. LightTools® provides virtual prototyping, simulation, optimization and photorealistic renderings of illumination systems. CODE V® has state-of-the-art capabilities for lens optimization, analysis, tolerancing, beam propagation and coupling efficiency. Engineering services will also be exhibited. Contact: Stuart David, Director of Sales; James McGuire, Director of Optical Engineering Services, engr@opticalres.com.

## Optics 1, Inc.

SPIE Corporate Member

Defense Systems Div, 1050 Holt Ave Ste 12,  
Manchester, NH, 03109  
603/296-0469; fax 603/296-0473  
www.optics1.com

#935

**New Product: Specializing in Complex Multi-band Electro-Optical Payloads for Military Environments.**

Optics 1, Inc. is a global technology leader in design, engineering, & production of Integrated Electro-optical Systems for commercial & government sectors. Our Integrated E-O System expertise provides large system integrators w/ quick, lower cost solutions to their E-O Payload needs. Our expertise resides in our ability to work in a cooperative environment w/ our customers to provide the best possible Optical Systems solution & ultimate product for the end user community. Contact: Doug Harwood, VP of Business Development, dharwood@optics1.com.

## Optics Technology, Inc.

3800 Monroe Ave, Pittsford, NY, 14534  
585/586-0950; fax 585/248-2371  
sales@opticstechnology.com; www.opticstechnology.com

#409

Optics Technology, Inc. is a designer and manufacturer of precision micro-optical, opto-mechanical systems and assemblies for medical, industrial and defense applications. Our design capabilities span the UV through the far IR. We take pride in the expertise and attention to detail necessary to thoroughly understand your application and requirements. We can help you design, fabricate and assemble optical and mechanical systems that will set new standards of performance for your customers. Contact: Dominick Polizzi, Director of Sales & Marketing, sales@opticstechnology.com; Paul Powell, CTO, info@opticstechnology.com.

## Optikos Corp.

SPIE Corporate Member

107 Audubon Road, Bldg. 3, Wakefield, MA, 01880  
617/354-7557; fax 617/354-5946  
sales@optikos.com; www.optikos.com

#823

**New Product: The RAD-900 Infrared Radiometer provides an accurate means to perform a radiometric calibration.**

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.****#416**

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

Optimax is dedicated to small volume, high quality, and quick delivery of precision optical components. Specializing in aspheres, cylinders, plano-optics and spheres, manufactured to customer-supplied specifications. With more than 100 opticians, we enjoy a good challenge, call us! Tel: 877-396-7846, Fax: 585-286-1033, www.optimaxsi.com. Contact: Joe Pinto, Sales Engineer, sales@optimaxsi.com; Joseph Spilman, Sales Engineer, sales@optimaxsi.com.

**Optiphase, Inc.****#3003**

7652 Haskell Ave, Van Nuys, CA, 91406  
818/782-0997; fax 818/782-0999  
jbush@optiphase.com; www.optiphase.com

**New Product: PZ3 Fiber Stretcher. 600 - 1600 nm coverage SM and PM versions.**

Optiphase develops, manufactures and markets commercial and OEM instrumentation and devices specific to the fiber optic interferometric applications. Instruments: Interferometric Interrogators or Demodulators (single and multi-channel), White Light Interferometers (OCT), Coherent Rayleigh Interrogators, Dynamic Displacement Sensors, and FBG Interrogators (ac, high frequency). Devices: Fiber Stretchers; Fiber Interferometers and Polarization Diversity Receivers. Contact: Mike Weinstock, EVP, mweinstock@optiphase.com; Jeff Bush, President, jbush@optiphase.com.

**OptiPro Systems****#406**

6368 Dean Pky, Ontario, NY, 14519-8939  
585/265-0160  
sales@optipro.com; www.optipro.com

**New Product: OptiPro UltraForm Finishing (UFF) - Aspherical & Conformal 5-axis CNC Polishing machine.**

Fabrication products include CNC Optical Machining Centers and Cad/Cam software for 4/5 axis grinding & polishing of spherical, aspherical and conformal optics. Popular low-cost "eSX 150" is quickly becoming the industry standard for manufacturing complex optical components. Manufacturer and distributor of optical / surface metrology equipment- Electronic Spherometers, Zeiss Surface Profilometers, and STIL MicroMeasure non-contact surface measurement systems with resolution to 1 nm. Contact: Mike Bechtold, President, mike@optipro.com; David Mohring, Engineering, dmohring@optipro.com.

**OptiSwitch Technology Corp.****#3416**

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

**New Product: The new PLDD-75 is an ultra-miniature, pulsed laser diode driver optimized to drive a 9 bar stack.**

OptiSwitch Technology Corporation, located in San Diego, CA, specializes in ultra-compact, ultra-lightweight and highly reliable 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. These switches are an enabling technology for pulsed electric field systems with applications in the biofuels area. Contact: Rose Southall, Purchasing Manager and Program Coordinator, sales@optiswitch.com; David Giorgi, CEO/President, sales@optiswitch.com.

**Optiwave Systems Inc.****#439**

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

**Opto Diode Corp.****#1330**

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

**New Product: New, Blue/Green Enhanced Silicon Photodiode Preamp - Low Noise, High Sensitivity, Large Active Area.**

Opto Diode Corporation has been supplying the global market with reliable, high quality IR LEDs and custom LEDs in the visible range since 1981. Latest products include high performance photodetectors, both standard and custom devices, manufactured in Opto Diode's domestic, U.S. facility. Opto Diode's signature high standards and uncompromising attention to quality and detail inherent in the LEDs, are now incorporated in the new photodetectors product line. Contact: Russell Dahl, Director, Sales & Marketing, russdahl@optodiode.com.

**OptoElectronic Components****#238**

28 Des Lilas, Kirkland, QC, Canada, H9J 4A7  
514/694-0336; fax 514/694-8535  
sales@optoelectronics.com; www.optoelectronics.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@optoelectronics.com; Natalie Raymond, Marketing, natalie.raymond@optoelectronics.com.

**OptoGration Inc.****#3116**

175 New Boston St Ste H, Woburn, MA, 01801  
781/583-1175; fax 978/945-8947  
info@optogration.com; www.optogration.com

Optogration Inc., an ITAR registered company, manufactures and sells best-in-class low noise InP-based avalanche photodiodes in 1D, 2D, and discrete formats.

**Optonetic LLC****#536**

6901 TPC Dr Ste 500, Orlando, FL, 32822  
407/857-4410; fax 407/857-4409  
dcaso@optonetic.com; www.optonetic.com

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# Exhibitor Listing

## OptoSigma Corp.

#626



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

**New Product: EXTENDED CONTACT GONIOMETERS unique railed bearing ways for max stability and superior performance.**

OptoSigma Corporation, one of seven manufacturing facilities in the Sigma Koki family, offers prototype, catalog and custom optics, opto-mechanics, and motorized positioners. Santa Ana headquarters offers custom coatings in a class 1000 clean room arena. AR and HR 190nm - 3 microns. Application engineers are on hand for design, 3-D drawings, product info etc. The right product, the right price, right now. Call OptoSigma for a free 2009 catalog. 949-851-5881 www.optosigma.com. Contact: Clayton Summers, Sr. Mechanical Engineer, clayton@optosigma.com; Andrew Clawson, Sr. Optical Applications Engineer, Coating Manager, andrew@optosigma.com.

## Optronic Laboratories, Inc.

#527



4632 36th St, Orlando, FL, 32811  
407/422-3171; fax 407/658-5412  
info@olinet.com; www.olinet.com

**New Product: HSi-400 Hyperspectral Imaging System.**

Optronic Laboratories designs and manufactures industrial and research-grade light measurement instrumentation for science, industry, and the military. We specialize in LED test and measurement systems, scanning and multichannel spectroradiometers, radiometer/photometers, integrating sphere systems, and NIST-traceable calibration standards and services. Contact: Alex Fong, VP, Sales & Marketing, afong@olinet.com; Jim Dermody, Product Marketing Manager, jdermody@olinet.com.

## Optronics Co., Ltd. (The)

#S-17

Sanken Bldg, 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

Optronics is the leading photonics magazine in Japan, which provides the latest news and information on the photonics industry including fiber optics, lasers, optics, imaging and optoelectronics.



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## OZ Optics Ltd.

#1200



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

**New Product: Award Winning Sensor simultaneously measures strain and temperature using standard telecom fiber.**

Distributed Temperature and Strain Sensors, Fiber Length Meter, High Power Patchcords, Isolators, Collimators/Focusers, PM/SM/MM Fused Fiber Couplers, Polarization Maintaining Patchcords/Connectors/Splitters, Polarization Rotators/Controllers/Analyzers, Polarizers, Polarizing Splitters/Combiners, RGB Combiners, Tapered Fibers, Turnkey Laser Diode Sources, U-Bracket, V-Grooves, Vacuum Feedthroughs, Directional Taps/Power Monitors, Extinction Ratio Meter, Hermetically Sealable Patchcords. Contact: Omur Sezerman, CEO & President, sales@ozoptics.com.

## Pacer USA LLC

#3307

721 US Hwy 1 #113, North Palm Beach, FL, 33408  
866/375-6652; fax 215/689-3440  
usa.sales@pacer-usa.com; www.pacer-usa.com

**New Product: Compact, rugged class 1 eye safe laser Range Finding Modules for integration into OEM applications.**

Pacer offers an extensive range of high brightness LEDs including high CRI, LED panels and arrays, intelligent LED light engines, a wide selection of information displays including TFT LCD, OLED, sunlight readable panels and touchscreens, digital signage media players and monitors, laser range finding modules for distance metering, scanning laser modules, laser components, sensors, optics, linescan cameras, image sensors, collimators, tunable filters and spectrometers including portable Raman. Contact: David House, General Manager, david.house@pacer-usa.com; John Jones, Displays Manager, john.jones@pacer-usa.com.

## PerkinElmer Optoelectronics

#1431

35 Congress St, Salem, MA, 01960  
978/224-4100; fax 978/741-0894  
opto@perkinelmer.com; www.perkinelmer.com

PerkinElmer is a global company with 50 years of experience providing detection and illumination 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 and aerospace industry. All of our products, whether standard or customized to exact customer specifications, are engineered to meet stringent performance requirements and operate in extreme environments.

## PFG Precision Optics

#3828



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

PFG Optics is an ISO 9001:2000 certified manufacturer of precision optics, coatings, & assemblies from UV to Near-IR wavelengths. Our specialties include high index, high included angle, & truncated lenses using the latest CNC milling, shaping, polishing with MRF finishing & edging technology. Double sided & planetary polishing for windows, wedges, filters & prisms. Custom vacuum-deposited & Ion-assisted coatings. Assemblies include Telecentric, Eyepiece, and Scan & Imaging Lenses. Contact: Colin, VP Sales, cody@pfgoptics.com.

## Phillips Plastics Corp.

#539

1201 Hanley Rd, Hudson, WI, 54016  
877/508-0252; fax 715/381-3291  
info@phillipsplastics.com; www.phillipsplastics.com

**New Product: Ceramic Injection Molding (CIM); Multi-Shot Liquid Silicone Rubber (MS LSR); Micro Molding.**

Since 1964, Phillips Plastics Corporation® has been dedicated to the design, manufacture, and assembly of some of the most complex defense programs. By pairing talented individuals with state-of-the-art technology, Phillips has established itself as a premier source for custom plastic, metal, ceramic, and silicone injection molded components. Supporting both high and low volume programs, Phillips has developed an infrastructure of complete resources that provide cutting edge solutions. Contact: Tom Rothgery, Director of Sales, Defense, tom.rothgery@phillipsplastics.com; Bill Welch, Vice President of Sales and Engineering, bill.welch@phillipsplastics.com.



**Phoenix Infrared****#102**

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

**New Product: Phoenix Infrared has expanded its line of infrared optics made from Ge, ZnSe, & MS ZnS materials.**

Phoenix Infrared, Inc. is a US based producer and seller of a variety of Infrared Materials and Optics. Optics products made from ZnSe, Ge, ZnS, Multispectral ZnS (Cleartran equivalent), CaF<sub>2</sub>, BaF<sub>2</sub>, MgF<sub>2</sub>, Si, & BK7. Phoenix Infrared, Inc. is owned and operated by individuals with the longest continuous history of producing CVD ZnSe in the world. Contact: Stephen Allen, Vice President, Stephen.Allen@PhoenixInfrared.com.

**Photo Sciences, Inc.****#213**

2542 W 237th St, Torrance, CA, 90505  
310/634-1500; fax 310/784-3642  
info@photo-sciences.com; www.photo-sciences.com

**New Product: Advanced Patterning for digital gray scale masks.**

Photo Sciences' Advanced Patterning Group manufactures high quality Patterned Infrared Optics, Calibration Targets, Rifle Scope Reticles, Scene Generators and Diffractive Optics. Our Photomask Group manufactures high quality photomasks for the semiconductor and MEMs related industries. Contact: Wayne Henry, Sales Director - Photomask Group, wayneh@photo-sciences.com; Roger Horstman, Product Manager - Advanced Patterning Group, rogerh@photo-sciences.com.

**Photodigm, Inc.****#3417**

1155 E Collins Blvd Ste 200, Richardson, TX, 75081  
972/235-7584; fax 972/235-1609  
sales@photodigm.com; www.photodigm.com

**New Product: Single frequency 1064nm laser diode exceeding 600mW of reliable, stable output power.**

The Photodigm family of high-power edge-emitting Distributed Bragg Reflector (DBR) lasers is based on Photodigm's proprietary single epi growth, first-order DBR architecture. The DBR laser diode is uniquely suited for applications requiring high-power single-frequency performance and picosecond pulsing capabilities. Shipping from stock: 780nm, 852nm, 920nm, 976nm, 1064nm, and 1083nm. When performance matters, Photodigm delivers. Contact: Marty Edwards, Business Development Manager, medwards@photodigm.com; John Spencer, President and CEO, jspencer@photodigm.com.

**Photon Engineering, LLC****#112**

440 S Williams Blvd Ste 106, Tucson, AZ, 85711  
520/733-9557; fax 520/733-9609  
www.photonenr.com

**New Product: FRED 8.30 is the optical engineering software to solve defense and security problems.**

Photon Engineering, LLC sells the optical engineering software FRED and provides consulting services, FRED training and optical/illumination short courses to the optical community. Photon Engineering is one of the leaders in consulting services to the defense and security industry with over 100 years of optical engineering experience. Contact: Carolyn Johnson, Sales Manager, sales@photonenr.com.

**Photonic Cleaning Technologies****#100**

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

**Photonic Sense GmbH****#506**

Am Goldberg 3, Eisenach, Germany, 99817  
49 3691 73180; fax 49 3691 731879  
info@photonic-sense.com; www.photonic-sense.com

Photonic Sense is a world-class manufacturer of the highest quality Germanium and Silicon for infrared optics. We offer a wide range of sizes and specifications to meet standard and custom requirements for commercial or defense & security applications. Contact: Dawn Jennings, North American Sales & Marketing Mgr., dawn@photonic-sense.com.

**Photonics Industries International, Inc.****#3905**

390 Central Ave, Bohemia, NY, 11716-3147  
631/218-2240; fax 631/218-2275  
info@photonix.com; www.photonix.com

**Photonics Media****#1101**

Laurin Publishing, Berkshire Common, 2 South St, Pittsfield, MA, 01201-6109  
413/499-0514; fax 413/442-3180  
photonics@laurin.com; www.photonics.com

Photonics Media is Laurin Publishing Company's international suite of media and as such the pulse of the industry. More than 50 years as the leading publications. In print with the *Photonics Directory*, *Photonics Spectra*, *Biophotonics International*, *EuroPhotonics* and *Photonics Showcase* magazines and online at Photonics.com. Contact: Jason Camboni, District Manager, photonics@laurin.com; Charley Troy, Senior Editor, editorial@laurin.com.

**Photo-Sonics, Inc./IMC****#502**

820 S Mariposa St, Burbank, CA, 91506  
818/842-2141; fax 818/842-2610  
mestrada@photosonics.com; www.photosonics.com

**Photron****#438**

9520 Padgett St Ste 110, San Diego, CA, 92126-4446  
858/684-3555; fax 858/684-3558  
image@photron.com; www.photron.com

**New Product: Photron introduces the Fastcam SA5 - the world's fastest high speed video camera.**

Photron is a leading manufacturer and supplier of high speed cameras for slow motions analysis. From low cost PC based solutions, through specialized systems for microscopy and HDTV cameras for motion picture/broadcast work, through production faultfinding systems and the world's fastest high speed video cameras, to systems engineered to operate reliably under hostile conditions including heat and high-G environments. Contact: Andrew Bridges, Director, Sales & Marketing, abridges@photron.com.

**Physical Optics Corp.****#3106**

20600 Grammercy Pl #103, Torrance, CA, 90501-1821  
310/320-3088  
www.poc.com

**New Product: FAERITO® Complete Digital Video Audio flight recorder.**

Physical Optics Corporation is a "Small Systems Integrator" of advanced opto-electronic technology, which include FAERITO® digital data video, audio, data flight recorder; Portable X-ray usage device, LEXID™, OmniView 360° video monitoring system and OptiKey® Optical Authentication. POC will discuss new and emerging technology such as WPIC™ personal information carrier system for medical records; IED Detection; and WEARNET™ wearable personal network for future force warrior. Contact: Dave Silvestris, Director Business Development, dsilvestris@poc.com; Bill Kuhns, Director Business Development, wkuhns@poc.com.

# Exhibitor Listing

## Physics Today

#324

One Physics Ellipse, College Park, MD, 20740-3843  
301/209-3040; fax 301/209-0842  
alcolema@aip.org; www.physicstoday.com

Stop by and pick up your free copy of *Physics Today* - the world's premier physics magazine, and *The Industrial Physicist*. Form Lucent Technologies, IBM, Ford and GM to product - specific start-ups, *TIP* features articles from key innovators driving today's technology.

## Physimetrics, Inc.

#1138

5020 Old Ellis Point Ste 100, Roswell, GA, 30076  
770/642-6858; fax 770/642-0160  
sales@physimetrics.com; www.physimetrics.com

Physimetrics, Inc. provides a complete line of machine vision and image processing products including cameras, frame grabbers, cables, lenses, and software. We also offer systems integration services to provide custom solutions for customers' individual needs. Contact: Ruben Uribe, President, ruben@physimetrics.com; Van Phillips, Sales Mgr., vanp@physimetrics.com.

## Phytron Inc.

#1514

600 Blair Park Rd Ste 220, Williston, VT, 05495  
802/872-1600; fax 802/872-0311  
info@phytron.com; www.phytron.com

Established in 1947, we manufacture high-precision stepping motors and stepper controls. Complimenting our motor line, we offer precision linear, rotary and Goniometer positioning systems widely used in the optical and research industries. All our motors and stages can be vacuum rated. Contact: Wahid Lahmadi, Applications Engineer.

## PI (Physik Instrumente) LP

#518

 SPIE Corporate Member

16 Albert St, Auburn, MA, 01501  
508/832-3456; fax 508/832-0506  
info@pi-usa.us; www.pi-usa.us

**New Product: M-810 Hexapod: Miniature 6-axis Optics Alignment / Collimation System.**

Global Leader in Piezo Motion Control and Nanopositioning; ISO9001. New: Miniature 6-Axis Optics Alignment Hexapod. Products: Vacuum Compatible, Nonmagnetic Actuators, Linear Motors, Multi-Axis Alignment Systems. Ultrafast XY Piezo Scanners / Steering-Mirrors for Image Stabilization, Sensor Dithering, Bio-Imaging; Smart Actuators; Ultrasonic Linear Motors; High Force Piezo-Step Linear Motors; Multilayer Piezo Actuators; Highly Efficient Piezo Drivers (Energy Recovery); Nanometrology Sensors. Contact: Jim Gareau, VP of Sales and Business Development, jimg@pi-usa.us; David Steinberg, Director of Sales - Western Region, davids@pi-usa.us.

## Piezosystem Jena, Inc.

#3118

 SPIE Corporate Member

2 Rosenfeld Dr, Hopedale, MA, 01747  
508/634-6688; fax 508/634-6868  
usa@piezोजना.com; www.piezोजना.com

**New Product: High Power Actuators, Forces up to 50,000N, Generate shockwaves, Active vibration damping.**

Piezosystem Jena is a world leading company in the development, design and engineering of piezo, piezo electrical actuator based positioning systems for micro- and nanopositioning and nano-automation. In addition to the positioning stages the company also offers optical fiber switches and distance measuring interferometer equipment. Contact: Peter Viglas, Sales Engineer, peter@piezोजना.com.

## Pixon Imaging LLC

#103

4930 Longford St, San Diego, CA, 92117-2156  
619/227-2739; fax 858/408-1818  
info@pixonimaging.com; www.pixonimaging.com

**New Product: Smaller/low power version of real-time video image processors - PX40.**

PixonImaging develops leading-edge image processing solutions based on the patented Pixon Method. The powerful Pixon Method provides unparalleled increases in sensitivity and resolution. We offer software-based and real-time hardware solutions to long-distance imaging problems such as haze, blurring, and atmospheric warping. Contact: Chiyoko Lord, VP - Business Development, chiyoko.lord@pixonimaging.com; Skip Powers, VP, skip.powers@pixonimaging.com.

## Pleora Technologies

#328

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

**New Product: The innovative eDisplay allows users to monitor camera video signals over a GigE link without a PC.**

Pleora Technologies Inc. is a global supplier of Ethernet video connectivity products for the military, broadcast, medical, machine vision, and security/surveillance industries. Pleora's award-winning iPORT and EtherCast product families transport imaging and video data in real time over low-cost standard Ethernet connections with extremely high performance. Pleora, a Frost & Sullivan Product Innovation Award-winner, is headquartered in Ottawa, Canada. Contact: John Butler, North American Sales Manager, john.butler@pleora.com; Geoffrey MacGillivray, Product Manager, gmaccgillivray@pleora.com.

## PLX, Inc.

#1243

 SPIE Corporate Member

25 W Jefryn Blvd, Deer Park, NY, 11729  
631/586-4190; fax 631/586-4196  
info@plxinc.com; www.plxinc.com

PLX provides unique optical instruments, technologies and solutions to problems of achieving and maintaining state-of-the-art optical accuracy and stability under severe environmental conditions. Our M.O.S.T.™ technology integrates complex optical elements into compact monolithic structures to achieve these objectives. For more information contact: Zvi Bleier, Chief Technology Officer, zb@plxinc.com; Itai Vishnia, Chief Operating Officer, iv@plxinc.com.

## Poco Graphite, Inc. - see Entegris, Inc.

#201

 SPIE Corporate Member

## Polaris Electronics Corp.

#1036

630 S Rogers Rd, Olathe, KS, 66062  
913/764-5210; fax 913/764-5045  
sales@polariselectronics.com; www.polariselectronics.com

**New Product: Touch Screen Controller coming soon for our Accu-Weld Projection Welding Systems.**

Hermetic Sealing Equipment including AC or CD projection welders, parallel seam sealers, parallel gap welders, spot welder, lid tackers, atmosphere chambers and vacuum bake out ovens. We also offer Hermetic Sealing Services for low and high volume production runs. Contact: Cara Calligan, Sales Representative, cara@polariselectronics.com; Glenda James, Sales/Marketing Manager, glendajames@polariselectronics.com.

CREOL, The College of Optics and Photonics presents

# Industrial Affiliates Day 2009

High Power Optical Sources  
for the 21st Century

April 17, 2009 • 8:30 am - 6:00 pm



UCF Student Union & CREOL Building, Orlando, FL

## PROGRAM OUTLINE

Morning Program begins in the UCF Student Union

- 8:30 Continental Breakfast—Walk-in Registrations
- 9:00 Welcoming Remarks
- 9:20 Plenary Presentations
- 12:10 Lunch Served

Afternoon session in the CREOL Building

- 1:00 Walk to CREOL Building—Exhibits Open
- 1:15 Plenary Presentations
- 2:10 CREOL, The College of Optics & Photonics:  
Research Overview
- 2:50 Student of the Year—Research Presentation
- 3:20 Poster Sessions; Lab Tours (contiguous)  
Vendor exhibits
- 5:00 Reception & Award Presentations

## PLENARY SPEAKERS

Dr. MJ Soileau, UCF Vice-President for Research

CREOL, The College of Optics & Photonics  
Dr. Bahaa Saleh, Dean and Director  
Dr. Martin Richardson  
Dr. Leonid Glebov

Prof. Dr. Reinhart Poprawe,  
M.A. Fraunhofer—Institut für Lasertechnik (ILT),  
Aachen, Germany

Mr. Albert Ogloza, HEL/JTO—Albuquerque, NM

Mr. Bill Krupke, WFK Lasers—Pleasanton, CA

Dr. Peter Moulton, Q-Peak—Bedford, MA

For more information on CREOL's Industrial Affiliates Day, go to  
[www.optics.ucf.edu/partnerships/affiliates/AffiliatesDay2009](http://www.optics.ucf.edu/partnerships/affiliates/AffiliatesDay2009)

Attendees are invited to a party the next day: Spring Thing 2009!



# Exhibitor Listing

## PolarOnyx, Inc.

#514

**SPIE** Corporate Member

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

**New Product: Low cost MHz high energy ultrashort fiber laser, and arbitrary pulse shape pulsed fiber laser.**

World leading supplier in high energy/ power pulsed (fs, ps, ns) and narrow line width fiber laser for Scientific, Defense, and Industrial markets. The unique features are compactness, fiber delivery, superior stability, and maintenance free operation for material processing, micromachining, spectroscopy, microscopy, and optical sensing. Wavelength ranges cover from VIS to IR. Contact: Jian Liu, President, jianliu@polaronyx.com, Lihmei Yang, Director of Sales, lihmeiyang@polaronyx.com.

## POLLUTION EQUIPMENT NEWS/Rimbach Publishing Inc.

#S-13

8650 Babcock Blvd, Pittsburgh, PA, 15237  
412/364-5366; fax 412/369-9720  
karen@rimbach.com; www.rimbach.com

**POLLUTION EQUIPMENT NEWS** reaches over 90,000 professionals and provides information on products and services offered in the industrial and municipal environmental abatement and control field. **INDUSTRIAL HYGIENE NEWS** reaches over 68,000 professionals and features products and services for the occupational safety, industrial hygiene instrumentation, IAQ and emergency response industries. Contact: Karen Galante, karen@rimbach.com.

## Polymer Optics, LLC

#118

**SPIE** Corporate Member

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, dan@polyoptics.com.

## Polymicro Technologies, A Subsidiary of Molex Incorporated

#1043

**SPIE** Corporate Member

18019 N 25th Ave, Phoenix, AZ, 85023-1200  
602/375-4100; fax 602/375-4110  
polymicrosales@molex.com; www.polymicro.com

Polymicro manufactures multimode, step-index fused silica optical fibers with polyimide, acrylate, silicone and custom buffers; solarization-resistant optical fibers; IR hollow silica waveguides; broad spectrum fibers; fiber optic cables and assemblies; high strength, high temperature flexible fused silica capillaries; square capillaries; light guiding capillaries; custom precision silica, quartz rod and tubing pieces; custom shaped rod and tubing; multilumen tubing; ferrules and sleeves. Contact: Technical Sales Department, polymicrosales@molex.com.

### Plan to Attend

### FREE Exhibitor Product Demonstrations

Refer to page 12 for complete time, schedule, and location

## Pranalytica, Inc.

#3107

1101 Colorado Ave, Santa Monica, CA, 90401  
310/458-4493; fax 310/458-0171  
fxmcmguire@pranalytica.com; www.pranalytica.com

**New Product: Fully packaged high power QCL's (>2w RT, >5w@80K), Handheld Infrared Illuminators.**

Pranalytica has developed and is the only commercial manufacturer of fully packaged high power quantum cascade lasers producing >2w CW RT (>5w CW@ 80k). In addition, 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, fxmcmguire@pranalytica.com or visit our website: www.pranalytica.com.

## Precision Ferrites and Ceramics, Inc. (PFC, Inc.)

#3917

5432 Production Dr, Huntington Beach, CA, 92649  
714/901-7622; fax 714/901-2008  
sales@semiceramic.com; www.semiceramic.com

## Precision Optical

#200

869 W 17th St, Costa Mesa, CA, 92627-4336  
949/631-6800; fax 949/642-7501  
sales@precisionoptical.com; www.precisionoptical.com

Manufacturer of laser-quality precision optical assemblies and components (VUV to IR) including prisms, mirrors, windows, retroreflectors, filters, plate-type beamsplitters, alignment cubes, polarizing and nonpolarizing cube beamsplitters and coatings. Contact: Rod Randolph, President and C.O.O., rrandolph@precisionoptical.com; Jim Mc Clure, Sales Manager, jmccclure@precisionoptical.com.

## Precision Photonics Corp.

#425

3180 Sterling Circle, Boulder, CO, 80301  
303/444-9948; fax 303/444-9951  
info@precisionphotonics.com; www.precisionphotonics.com

**New Product: Ti:sapphire, sapphire, silicon and phosphate glass polishing to 10-5 quality surfaces.**

At PPC, we're making impossible optics possible, with the data to prove it! Whether testing reflectivity to 99.995%, verifying parallelism to less than 0.1 arc seconds or actually certifying the maximum energy thresholds of our coatings, we believe that the numbers don't lie. We view ourselves as your colleague and will partner with you to develop custom and OEM laser optics that work, at a price and lead time that meet your budgets and requirements. Contact: Emily Kubacki, sales@precisionphotonics.com.

## Precision Solutions (MBDA UK Ltd.)

#1334

Six Hills Way, Stevenage Herts, United Kingdom, SG1 2DA  
44 1438 754477; fax 44 1438 755198  
precision.solutions@mbda.co.uk; www.mbdaps.com

Precision Solutions is a business centre of MBDA UK that offers a wide range of defense and aerospace specialized engineering capabilities on a commercial basis. Test & Analytical, Sensor & Imaging and Manufacturing Solutions include Electro Optical Design & Manufacture, Enhanced Vision Systems, LADAR, IR Interferometry, HWIL RF & IR Countermeasures, Synthetic Environments, C-IED Technologies & Systems, High Power RF Test Sources, Radiation Effects, Human Factors and RF Innovations. Contact: Robin Addison, Sales & Marketing Manager, robin.addison@mbda-systems.com; Peter Gordge, Business Manager, peter.gordge@mbda-systems.com.



**Proxitronic Industries AG****#242**

Robert-Bosch-Str 32B, Bensheim, Germany, 64625  
49 6251 170310; fax 49 6251 170380  
info@proxitronic.com; www.proxitronic.com

**New Product: ProxiLine Corona detection system, x-ray cameras, UV imaging detectors, customized cameras.**

PROXITRONIC is the leading manufacturer of custom specified image intensifiers, intensified cameras and related products, for imaging and single photon counting. PROXITRONIC develops customized systems, upgrades of high speed cameras with image intensifier, produces power supplies and pulse generators for gating applications. PROXITRONIC offers phosphor coatings for electron microscopy, X-ray, UV and particle detection and develops custom specified CCD detectors with taper up to 190 mm diameter. Contact: Dr. Paul Ecker, Director Sales & Marketing, Paul.Ecker@Proxitronic.com; Dr. Bernd Kuznik, Sales & Marketing, Bernd.Kuznik@Proxitronic.com.

**Pulse Instruments****#1501**

1234 Francisco St, Torrance, CA, 90502  
310/515-5330; fax 310/515-0068  
sales@pulseinstruments.com; www.pulseinstruments.com

**New Product: Data Acquisition System with up to 32 channels of 14 bit 40MHz ADC in parallel.**

Pulse Instruments is a leading manufacturer of systems and equipment for characterization and production test of image sensors. In addition to high-profile science applications, our equipment and systems are also used to test visible and infrared imaging devices for defense, security, commercial and industrial automation, machine vision, and biomedical imaging applications. Our integrated test systems provide a flexible, expandable and cost effective solution to your testing requirements. Contact: Scott Williams, Director of Engineering, scott@pulseinstruments.com; Steven Kan, Vice President Sales, steven@pulseinstruments.com.

**PVP Advanced EO Systems, Inc.****#402**

**SPIE** Corporate Member

14312 Franklin Ave, Tustin, CA, 92867  
714/508-2740; fax 714/508-2136  
www.pvpaeo.com

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**METER BOARD SPONSOR**

**Qioptiq****#1329**

**SPIE** Corporate Member

Glascoed Rd, St Asaph Denbighshire, United Kingdom, LL17 0LL  
44 1745 588 000; fax 44 1745 584 258  
sales@uk.qioptiq.com; www.qioptiq.com

**New Product: DAGIR - Uncooled DFOV camera - marine and land platforms, for homeland and infrastructure security.**

Qioptiq Group, an international organization of world-leading optics companies with locations throughout Europe, Asia and the USA. With an enviable reputation spanning over 100 years providing advanced optical systems, equipment and components for a range of civilian, security and defense applications, including low power, uncooled Image Intensified NV and TI, weapon and surveillance sights. Qioptiq is committed to offering innovative products and a world-class service. Contact: Craig Taylor, Communications Manager, sales@uk.qioptiq.com; Wallace Latimer, Managing Director QDI, Wallace.Latimer@qdi.qioptiq.com.

**Qioptiq Defense Inc.****#1329**

**SPIE** Corporate Member

78 Schuyler Baldwin Dr, Fairport, NY, 14450  
585/627-4125; fax 585/662-8212  
www.qdi.qioptiq.com

**QmagiQ, LLC****#513**

22 Cotton Rd Unit H Ste 180, Nashua, NH, 03063  
603/821-3092; fax 603/821-3094  
info@qmagiq.com; www.qmagiq.com

**QPC Lasers, Inc.****#1127**

15632 Roxford St, Sylmar, CA, 91342  
818/986-0000; fax 818/833-1568  
info@qpclasers.com; www.qpclasers.com

**New Product: Brightlock™ Ultra-600: wavelength-stabilized fiber laser pump block delivers over 300W CW at 976nm.**

QPC Lasers, Inc. is a world leader in the commercialization of a new generation of high brightness high power semiconductor lasers for industrial, defense, and medical markets. Founded in 2000, QPC is vertically integrated from epitaxy through packaging and performs all critical fabrication processes at its facility in Sylmar, CA. Contact: Laurent Vaissie, Ph.D., Director, Marketing and Sales, lvaissie@qpclasers.com.

**Quality Thin Films, Inc.****#434**

141 Burbank Road, Oldsmar, FL, 34677  
813/855-1900; fax 813/855-5580  
sales@qtf.com; www.qtf.com

**New Product: Low loss, super high damage threshold mirrors for 1064nm. >50J, 20ns pulse has been qualified.**

Quality Thin Films, Inc. is a manufacturer of optics, laser crystals and thin film coatings. We specialize in ultra high damage threshold coatings on super polished crystals and optics. QTF has newly acquired state of the art equipment for substrate fabrication, substrate preparation and leading edge coating equipment. Upgrades to our clean rooms and metrology enable QTF to continuously improve on quality with emphasis on customer service. ISO 9001:2000 certified. Contact: Karl George Jr., Vice President, karljr@qtf.com; Sales, Sales@qtf.com.

**Quantel****#541**

**SPIE** Corporate Member

601 Haggerty Ln, Bozeman, MT, 59715  
406/586-0131; fax 406/568-2924  
info@quantelusa.com; www.quantel-laser.com

Quantel is a world leader in the design and manufacturing of fiber-lasers, diode and lamp pumped solid-state lasers, high power laser diodes, intense pulse light therapy and ultra-sound diagnostic products. Solutions include industrial, scientific, ophthalmologic, dermatologic, military and aerospace applications. Quantel offers laser damage testing services. The U.S. subsidiary of Quantel was previously named Big Sky Laser Technologies, is now Quantel USA. Contact: sales@quantelusa.com.

**Quantum Coating, Inc.****#1236**

1259 N Chruch St, Moorestown, NJ, 08057  
856/231-0706; fax 856/231-0709  
danp@quantumcoating.com; www.quantumcoating.com

# Exhibitor Listing

## QuickSet International - see Moog-Quickset #222

## QWIP Technologies Inc. #428

499 Nibus St Ste D, Brea, CA, 92821  
714/529-7947; fax 714/529-7946  
info@qwip.com; www.qwip.com

### New Product: QWIP-based sensor engines & QWIP-Chip™ Focal Plane Arrays.

QWIP Technologies uses Quantum Well Infrared Photodetectors to produce QWIP-Chip™ Focal Plane Arrays. These FPAs excel in both commercial and military applications requiring long wavelength operation, large formats, exceptional image quality and the utmost in thermal sensitivity. QWIP Technologies holds a worldwide exclusive license (granted by the California Institute of Technology) for the technology of bound-to-quasibound QWIP detectors. Contact: Kwor Keung Law, Executive Vice President, kklaw@qwip.com.

## R. Mathews Optical Works, Inc. #1517

26280 Twelve Trees Ln, Poulsbo, WA, 98370  
360/697-6160; fax 360/697-7417  
bob@mathewsoptical.com; www.mathewsoptical.com

Since 1978 Mathews Optical has been recognized as the source for precision glass aspheric lenses from 10mm to 300mm diameter for prototype and production quantities.

## RAFAEL Advanced Defense Systems Ltd. #3113

PO Box 2250, Haifa, Israel, 31021  
972 4 879 5199; fax 972 4 879 22517  
yaronse@rafael.co.il; www.rafael.co.il



GENERAL REFRESHMENTS SPONSOR

## Rainbow Research Optics, Inc. #635



6830 S Dawson Cir, Centennial, CO, 80112  
303/371-3000; fax 303/371-1333  
sales@rroptics.com; www.rainbowoptics.com

### New Product: 4mm Doublets, Optically contacted ZnS B.S. Cubes, Non-Thoriated Coatings available.

Rainbow Research Optics provides optical components, coatings and assemblies for laser and imaging markets. RROI primarily works with glass and IR components, offering single prototypes to mass production quantities. Our in house coatings range from 193nm to 16microns. Competitive Pricing, Fast Deliveries and Excellent Customer Service - Quote response in 24 hours! RROI is ISO certified and ITAR compliant. Contact: Hollie Marinecz, Sales Manager, h.marinecz@rroptics.com.

## Raptor Photonics Ltd. #1512

Willowbank Business Park, Millbrook Larnie, County Antrim, N Ireland UK, BT40 2SF  
44 28 2827 0141; fax 44 28 2827 5685  
info@raptorphotonics.com; www.raptorphotonics.com

Design and Manufacture of High Performance Cameras. Contact: Stephen Hamilton, Director, info@raptorphotonics.com; Olivier Bernard, Director, info@raptorphotonics.com.

## Raytheon Vision Systems #723



75 Coromar Dr, Bldg 32 MS 24, Goleta, CA, 93117  
805/562-7078; fax 805/562-7144  
mdweinberg@raytheon.com; http://www.raytheon.com/business/ncs/business/rvs/index.html

Raytheon Company, with 2008 sales of \$23.2 billion, is a technology leader specializing in defense, homeland security and other government markets throughout the world. Raytheon provides state-of-the-art electronics, mission systems integration and capabilities in the areas of sensing; effects; and command, control, communications and intelligence systems, as well as a broad range of mission support services. With headquarters in Waltham, Mass., Raytheon employs 73,000 people worldwide.

## RDECOM - AMREC/CERDEC #117

500 Fowler Rd, Redstone Arsenal, AL, 35898  
256/876-8108; fax 256/842-9565

### New Product: Distributed Simulation, Hardware in the Loop, Simulation, Systems Analysis, Virtual Simulators.

Agency conducts weapon systems research, advanced system engineering & scientific expertise in aeroballistics, flight dynamics, system performance analysis, system simulation, hardware-in-the-loop simulation technology, distributed real-time simulation, virtual environment simulation, verification & validation techniques, & real-time time-critical simulation technology. Assists in evaluation & analysis of new weapon systems, providing technical & simulation support to all US government agencies. Contact: Scott Mobley, Chief, HWIL Simulations Functional Area, scott.mobley@us.army.mil; James A. Buford, Jr., Chief, Strategic Defense Functional Area, jim.buford@us.army.mil.

## Research Electro-Optics, Inc. #1217



5505 Airport Blvd, Boulder, CO, 80301  
303/938-1960; fax 303/447-3279  
sales@reoinc.com; www.reoinc.com

REO is a precision optics manufacturing and laser company focused on applications where optical coatings, components and assemblies are needed to enable system performance. REO is the recognized leader in optical fabrication and coating technology from 193nm to 20micron. Our technical staff is ready to serve your needs from prototype design through production. REO offers new capabilities in diamond turning and IR optics, serving customers in the defense/aerospace, laser, and semiconductor markets Contact: Mark Damery, VP and General Manager of Worldwide Sales, markd@reoinc.com; Ed Yousse, National Sales Manager, edy@reoinc.com.

## Reynard Corp. #1531



1020 Calle Sombra, San Clemente, CA, 92673-6227  
949/366-8866; fax 949/498-9528  
sales@reynardcorp.com; www.reynardcorp.com

### New Product: Reynard Corp. designs & manufactures custom single & multiband infrared filters out to 50µm.

Reynard Corp. supplies custom optical components & thin film coatings from 0.2µm to 50µm (UV to far IR) to demanding specifications for military, aerospace, medical, telecommunication applications. In-house services include design support, optical & mech fab, photolithography, component sub-assembly, & MIL-Spec environmental testing. Research partnerships, commercial development programs, SBIR programs, & internal R&D enable us to stay on the leading edge of technological advancements. Contact: Beth Kinchyk, Sales Manager, beth@reynardcorp.com; George Murray, Senior Account Executive, gmurray@reynardcorp.com.

## **RICOR - Cryogenic & Vacuum Systems** #617

Ein-Harod Ihud, Ein-Harod Ihud, Israel, 18960  
972 4 6530 800; fax 972 4 6532 424  
info@ricor.com; www.ricor.com

**New Product: K562S-Integral Rotary Low Power Mini Microcooler, K527-Split Linear Low Power Mini Microcooler.**

RICOR is a world leader in the field of development and manufacturing miniature Stirling Cryocoolers, with primary focus at Infrared detectors of numerous Electro Optic applications. Our cryocoolers are renowned for their extreme reliability in critical aerial, naval and ground military missions along with space and civilian applications. Our Centre of Excellence in Dynamics provides solutions to acoustic, vibration and heat sinking problems for Electro Optic and Industrial application. Contact: Yoav Zur, Director of Marketing, marketing@ricor.com; Ramon Broyde, Marketing & Sales Project Manager, r@ricor.com.

## **Riegl USA, Inc.** #1018



7035 Grand National Dr Ste 100, Orlando, FL, 32819  
407/248-9927; fax 407/248-2636  
info@rieglusa.com; www.rieglusa.com

**New Product: LMS-Q680 a powerful airborne scanner that uses Riegl's proprietary online full waveform analysis.**

Riegl is the global leader in the innovation of LiDAR technology. The Riegl LMS-Q680 Airborne Laser Scanner has full waveform digitization technology and multiple-time-around processing. The LMS-Q680 operates at a laser pulse repetition frequency up to 240 kHz, 2 km range with accuracy within 20 mm. Riegl lead the industry with hybrid systems providing synergistic benefits to the users. Contact: Jim Van Rens, Vice President, info@rieglusa.com.

## **RIO, Inc. (Redfern Integrated Optics, Inc.)** #3007



3350 Scott Blvd Bldg 62, Santa Clara, CA, 95054  
408/970-3500; fax 408/970-3200  
sales@rio-inc.com; www.rio-inc.com

**New Product: RIO's ORION Module & PLANEX lasers - deployable for fiber sensing applications.**

Redfern Integrated Optics (RIO), Inc. develops and manufactures laser single frequency sources based on proprietary PLANEX™ (Planar External Cavity Laser) technology, which enables cost-effective high performance for fiber optic sensing and other applications. Contact: Tony Pisano, Anthony Pisano, tony.pisano@rio-inc.com; Lew Stolpner, Director of Marketing, lew.stolpner@rio-inc.com.

## **Rochester Precision Optics LLC** #408



850 John St, West Henrietta, NY, 14586  
585/292-5450; fax 585/292-5459  
sales@rpoptics.com; www.rpoptics.com

**New Product: Molded Infrared Aspheres utilizing Optir™ 3 infrared glasses. Precision Aspheres up to 60mm.**

Manufacturer and designer of precision molded glass and LWIR aspherical lenses and optical assemblies for Defense, Imaging, Industrial and Medical industries. Vertically integrated manufacturing for prototype and high volume. The latest automated optical manufacturing, diamond turning, advanced thin film coating and precision machine centers based on over 25 years of development and production experience at Kodak Optical Systems. Visible to Infrared molded aspheres from 1mm to 60mm diameters. Contact: Edward Patton, Director Sales and Marketing, epatton@rpoptics.com; Matt Pembroke, Sales Manager, mpembroke@rpoptics.com.

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## **Rocky Mountain Instrument Co.** #435



106 Laser Dr, Lafayette, CO, 80026  
303/664-5000; fax 303/664-5001  
sales@rmico.com; www.rmico.com

Rocky Mountain Instrument Company (RMI) is a leading manufacturer of custom optical components, high power thin film coatings & assemblies. RMI offers extensive design, fabrication and testing services in our 90,000 sq ft manufacturing facility in Lafayette, CO. RMI Laser, LLC manufactures turnkey laser marking systems. Our compact, energy efficient laser markers produce fast, permanent, non-impact marks. RMI is ISO 9001:2008 certified & ITAR compliant. RMI Laser LLC is GSA Certified. Contact: Account Manager, Sales@RMIco.com.

## **Rohm and Haas Company** #1427

185 New Boston St, Woburn, MA, 01801  
781/933-9243

Rohm and Haas Advanced Materials supplies high quality infrared optical materials for military IR systems. We have pioneered the development and manufacture of CVD Zn-based optical materials such as Multispectral ZnS (Cleartran®), Zinc Sulfide and Zinc Selenide. Rohm and Haas offer the best in class material solutions, as well as the fabrication capability to suit most design and format needs. Electrooptical windows, domes, imaging lenses and other components are all possible. Contact: Rosanna Gizzi, Business Manager, Infrared Materials, rgizzi@rohmmaas.com; Keith Waryold, Marketing Director, kwaryold@rohmmaas.com.

## **RoMack, Inc.** #3212



PO Box 615, Lightfoot, VA, 23090  
757/258-4805; fax 757/258-4694  
contact@romackfiberoptics.com; www.romackfiberoptics.com

RoMack, Inc., manufactures fiberoptic 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, cuvette 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, contact@romackfiberoptics.com.

## **Rotem Industries** #3113

Rotem Industrial Park, Crystals Division, Beer-Sheva, Israel, 84190  
972 8 6579781; fax 972 8 6573186  
crystal@rotemi.co.il; www.rotemo.co.il/crystals

Rotem Industries' Crystals Division is a world leading producer of sapphire crystals, especially domes & windows for Defense and Optics applications. Pioneered the development of sapphire single crystal domes more than 30 years ago, since then Rotem has been manufacturing and supplying sapphire domes and windows for IR supersonic missiles, anti-balistc missiles, tactical pods, missile warning systems and other electro-optical applications. Contact: Oren Leiberman, Marketing Manager - Crystals Division, oren@rotemi.co.il.

**Don't Miss the**



**Robotics+Unmanned Systems Displays**

Located in Palms Exhibition Hall  
See p. 10 for details.



# Exhibitor Listing

## RP Optical Lab.

#3919

133 HaRotem St, Rinatya, Israel, 73165  
972 54 9222553  
ran.carmeli@gmail.com;

### New Product: Continuous zoom lens for LWIR systems.

RP Optical Lab provides full turn key solutions for different imaging needs and requirements. RP Optical Lab designs and manufactures cutting edge optical lenses, from visible range up to the far IR band. Among its products: Continuous / Dual / Triple zoom lenses for the LWIR and MWIR; Super wide FOV lenses for LWIR / MWIR; Super high resolution zoom / fixed lenses (VIS range) for security and commercial applications; Special super high resolution pinhole lenses for security applications. Contact: Ran Carmeli, President, ran.carmeli@gmail.com; Pavel Reshidko, CTO, paredam@gmail.com.

## RPC Photonics, Inc.

#304

 SPIE Corporate Member

330 Clay Rd, Rochester, NY, 14623  
585/272-2840; fax 585/272-2845  
info@rpcphotonics.com; www.rpcphotonics.com

RPC Photonics, Inc. designs and manufactures micro-optical components for illumination, displays, LED and laser systems, medical, military, and space applications. Our products include Engineered Diffusers™, beam shapers, microlens arrays, and diffractive optical elements. RPC provides complete solutions from design to manufacturing both from low-volume specialty components to high-volume consumer optics in glass, IR materials, injection-compression molded polymers, polymer on glass, or films. Contact: Rose A. Peet, Contracts Manager, info@RPCphotonics.com.

## RPMC Lasers, Inc.

#843

 SPIE Corporate Member

203 Joseph St, O'Fallon, MO, 63366  
636/272-7227; fax 636/272-3909  
rpmc@rpmclasers.com; www.rpmclasers.com



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## RSoft Design Group

#1521

 SPIE Corporate Member

400 Executive Blvd Ste 100, Ossining, NY, 10562  
914/923-2164; fax 914/923-2169  
info@rsoftdesign.com; www.rsoftdesign.com

RSoft Design Group is the leader in photonics design software and serves several industries including optical communication, optoelectronics and semiconductor manufacturing. Within optical communications, RSoft is the only company to provide a full range of design, optimization and planning tools. RSoft also provides award-winning design tools for optoelectronics components and subsystems. Contact: Carl Klinges, info@rsoftdesign.com; LuAnn Scarmozzino, luann@rsoftdesign.com.

## Rubicon Technology, Inc.

#337

9931 Franklin Ave, Franklin Park, IL, 60131  
847/295-7000; fax 847/233-0177  
sales@rubicon-es2.com; www.rubitech.net

### New Product: 2" to 8" ES2-GSA Sapphire Cores and Blank Wafers 2" to 8" ES2-PSA Epi Ready Sapphire Wafers.

Rubicon Technology, Inc. is vertically-integrated and an advanced electronic materials provider that is engaged in developing, manufacturing and selling monocrystalline sapphire and other crystalline products. Rubicon applies its proprietary crystal growth technology to produce high-quality sapphire to allow volume production of various sizes and specifications. Contact: Miyuki Shimabukuro, Account Manager/Marketing Coordinator, mshimabukuro@rubicon-es2.com; Bill Polanski, Sales Manager, bpolanski@rubicon-es2.com.

## Saint-Gobain Crystals

#634

33 Powers St, Milford, NH, 03055  
603/673-5831; fax 603/673-1256  
Jeffrey.b.rioux@saint-gobain.com;  
www.photonic.saint-gobain.com

### New Product: Saint-Gobain Crystals home of Alpine Research Optics precision OEM laser optics and subassemblies.

Saint-Gobain Crystals is the premier supplier of CLASS®, the largest area sapphire in the world for UV - VIS - MWIR windows. Available 225mm or 300mm wide up to 660mm long. Saint-Gobain Crystals is home of Alpine Research Optics (ARO) offering precision OEM laser optics and subassemblies. Saint-Gobain Crystals offers optimum optical performance for the most demanding environments. Contact: Jeff Rioux, Market Manager, jeffrey.b.rioux@saint-gobain.com.

## Salvador Imaging, Inc.

#3303

 SPIE Corporate Member

5061 N 30th St, Colorado Springs, CO, 80919  
719/598-6006; fax 719/598-6556  
sales@salvadorimaging.com; www.salvadorimaging.com

### New Product: 1280 x 960 EMCCD camera running at 50 fps for your low-light applications.

Salvador Imaging has earned a reputation for supplying low-noise, high-speed CCD, EMCCD and CMOS imaging systems to the most technically demanding customers. For over 15 years, our staff has provided innovative camera solutions for a variety of high-performance imaging applications ranging from color night vision to semiconductor, printed circuit-board and flat-panel inspection to medical imaging, laser-beam profiling and ballistic imaging. Standard products and custom designs are available. Contact: David Gardner, President, dgardner@salvadorimaging.com.

## Sandia National Laboratories

#1231

1515 Eubank SE, Albuquerque, NM, 87125-1071  
800/417-2634  
www.sandia.gov

## Santa Barbara Infrared, Inc.

#811

30 S Calle Cesar Chavez, Santa Barbara, CA, 93117  
805/965-3669; fax 805/963-3858  
sales@sbir.com; www.sbir.com

### New Product: New Spectral Response Measurement Module utilizes a grating monochromator for MWIR and LWIR regions.

SBIR designs and manufactures the most innovative IR and E-O test instrumentation available. Our products offer the highest level of performance and are designed for laboratory, production, depot, and field testing environments. Products include: blackbody sources, visible sources, laser test sets, collimators, target projectors, spectral radiometer, test automation software, multi-spectral test sets, detector test sets and MIRAGE dynamic IR scene projectors. Contact: Steve White, Sales Manager, swhite@sbir.com; Greg Willis, Sales/Marketing, gwillis@sbir.com.

## Sarnoff Corp.

#1238

201 Washington Rd, Princeton, NJ, 08543  
609/734-2553  
info@sarnoff.com; www.sarnoff.com

Sarnoff delivers technology innovations that empower clients to see/sense, understand and control complex environments. We make continuous breakthroughs in real-time video processing for defense, security and surveillance. Sarnoff's C4ISR-enabling technologies provide real-time video enhancement and high-performance imaging to improve situational understanding. Contact: info@sarnoff.com.



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# Exhibitor Listing

## Scallop Imaging

#3101

27 Drydock Ave 5th Fl, Boston, MA, 02210  
617/443-4900  
akjones@tenebraex.com; www.scalloping.com

**New Product: 7 Megapixel IP video camera with full 180° field of view and simultaneous zoom window.**

Scallop Imaging is a division of Tenebraex Corp., an optical technology company based in Boston. Scallop Imaging develops technology and products using distributed imaging. Scallop Imaging delivers cameras with higher resolution, smaller size, reduced bandwidth needs, and lower cost than conventional security cameras. Tenebraex also produces eyePilot™ software for colorblind and data-intensive computer users, ColorPath™ color night vision, and ARDS anti-reflection devices. Contact: Allycia K. Jones, Project Manager, dev@scalloping.com.

## SCD USA

#829

SPIE Corporate Member

1901 S Harbor City Blvd Ste #806, Melbourne, FL, 32901  
321/724-6146; fax 321/724-6267  
contactus@scdusa.com; www.scdusa.com

**New Product: Hercules 1280x1024 15um Digital InSb, Bird 640E U-2, Bird 640E I-4, Bird 384E I-4.**

SCD-USA is the US subsidiary of SCD in Israel. Semi Conductor Devices (SCD) develops and manufactures cooled and uncooled infrared detectors (off-the-shelf and custom-designed configurations) and laser diodes. SCD-USA's products are applied in IR seekers, thermal imagers, smart munitions, night navigation systems, laser rangefinders and laser designators. Some of our products: InSb 2D arrays 320x256, 640x512 and 1280x1024; MCT 240x1, TDI 288x4 and 480x6, VOx Microbolometers 320x256 and 640x512. Contact: Robert Daly, President/CEO, rdaly@scdusa.com; Niels Jacksen, VP of Technology, njacksen@scdusa.com.

## Schneider Optics, Inc.

#210

SPIE Corporate Member

285 Oser Ave, Hauppauge, NY, 11788  
631/761-5000; fax 631/761-5090  
industrial@schneideroptics.com; www.schneideroptics.com

**New Product: Schneider's line of Compact C-Mount lenses is designed especially for high resolution 5MP cameras.**

Schneider Optics designs, develops, and manufactures high performance lenses for machine vision & other image processing applications. Standard products include Compact C-mount lenses, Bilateral Telecentric lenses, a modular Macro system, large format lenses (area & line scan), 3-CCD lenses and industrial filters. Custom lens solutions are also available. Key markets include Machine Vision, Document & Parcel Scanning, Industrial Inspection, 2D/3D Metrology, Surveillance, & Hyperspectral Imaging. Contact: Jim Sullivan, Director of Sales & Marketing, Industrial Optics, jsullivan@schneideroptics.com.

◆◆◆◆◆  
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## ◆ SCHOTT North America, Inc. - Defense

#929

SPIE Corporate Member

2451 Crystal Dr Ste 450, Arlington, VA, 22202  
703/418-1409; fax 703/418-4762  
defense@us.schott.com; www.us.schott.com/defense  
Contact: Katie MacIntyre, Marketing & PR Manager, katie.macintyre@us.schott.com.

## Scientific Solutions, Inc. (SSI)

#126

SPIE Corporate Member

55 Middlesex St Unit 210, North Chelmsford, MA, 01863  
978/251-4554; fax 978/251-8822  
info@sci-sol.com; www.sci-sol.com

**New Product: Our newest LCFP design allows for polarization adjustment and free-space or fiber-coupled use.**

Scientific Solutions, Inc. (SSI) specializes in the fabrication of both classic Air-Gap Fabry-Pérot Interferometers and next-generation Liquid Crystal Fabry-Pérot (LCFP) tunable optical filters. In 2003, SSI became the exclusive distributor of Avantes fiber optic spectrometers and related accessories to the northeastern USA. In addition to its award-winning products, SSI provides a range of photonics services including optical system design, spectroscopic consulting, and optical coating design. Contact: Michael Dorin, Director of Sales & Marketing / Applications Engineer, info@sci-sol.com; John Noto, President, noto@sci-sol.com.

## Scintec Corporation

#3008

SPIE Corporate Member

5950 Shiloh Rd E Ste S, Alpharetta, GA, 30005  
770/887-0557; fax 770/887-7849  
sales@scintec.com; www.scintec.com

Scintec is a developer and manufacturer of ground-based remote sensing systems using optical and acoustic technology. Innovative product design and outstanding quality has made Scintec a global leader in this field. Today Scintec produces the most advanced and comprehensive wind, temperature and turbulence profilers in SODAR, RASS and Scintillometer technology. Customers include research institutes and universities, the military, major airports and weather services worldwide. Contact: Todd Reed, todd.reed@scintec.com.

## SELEX Sensors and Airborne Systems

#3207

Christopher Martin Rd, Basildon Essex, United Kingdom, SS14 3EL  
44 1268 883203; fax 44 1268 885232  
Janet.Footer@selexgalleo.com

## Semrock, Inc.

#1504

SPIE Corporate Member

3625 Buffalo Rd, Rochester, NY, 14624  
585/594-7000; fax 585/594-3898  
filters@semrock.com; www.semrock.com

**New Product: New StopLine notch filters provide >OD 6 laser-line blocking and >93% transmission from UV to 1600nm.**

Semrock manufactures ion beam sputtered optical filters that set the standard for biotech & analytical instrumentation applications. These include high-performance filters for Raman spectroscopy and laser systems, as well as BrightLine® fluorescence filters. Semrock filters demonstrate superior performance, proven reliability and repeatable results. Founded in September 2000, Semrock is based in Rochester, New York, a well-known center of optics. Visit Semrock and our products at www.semrock.com. Contact: Customer Service, filters@semrock.com.



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# Exhibitor Listing

## Sensor Electronic Technology, Inc.

#1500

1195 Atlas Rd, Columbia, SC, 29209  
803/647-9757; fax 803/647-9770  
trae@s-et.com; www.s-et.com

Development, manufacturing and sales of Deep Ultraviolet (peak wavelengths 230-365nm) AlGaIn-based Light Emitting Diodes (LEDs) UVTOP® and UV/visible/IR LED-based Systems UVCLEAN® for bio-and chemical sensing and detection, data identification, sterilization and medicine, including unique digital fluorimeters-spectrophotometers. Customized solutions comprise multi-wavelength LED - based UV/VIS sources, sensors and its combinations with thermal, electrical and optical control. Ultra short pulse-CW LED operation modes range, photodetector feedback and complete digital monitoring are available as features of both standard and customized products. Various angular light field distributions, wide range of output powers and radiation delivery are offered using lenses and fiber optical components combined with arrays of independently controlled LED diodes.

## Sensors Unlimited, Inc., part of Goodrich Corporation

#3213



3490 US Route 1 - Building 12, Princeton, NJ, 08540  
609/520-0610; fax 609/520-1663  
sui\_info@goodrich.com; www.goodrich.com

Sensors Unlimited, Inc., part of Goodrich Corporation, manufactures a complete line of shortwave infrared (SWIR) imaging and detection products for defense and commercial applications. Our innovative InGaAs-based product offerings include fast framing and high resolution cameras, linescan imagers, focal plane arrays and more. Our imaging products feature easy-integration, use standard glass optics and require no cooling. Contact: Bob Struthers, Director, Sales & Marketing, Robert.Struthers@goodrich.com; Karen Jeffers, Marketing Communications Specialist, Karen.Jeffers@goodrich.com.

### ROBOTICS+UNMANNED SYSTEMS DISPLAY

## Sensors Unlimited, Inc., part of Goodrich Corporation

 #3219



3490 US Route 1 - Building 12, Princeton, NJ, 08540  
609/520-0610; fax 609/520-1663  
sui\_info@goodrich.com; www.goodrich.com

Sensors Unlimited, Inc., part of Goodrich Corporation is pleased to showcase military and defense platforms and applications for short wave infrared (SWIR) cameras. Compact and lightweight, our uncooled InGaAs cameras are ideal for use in applications where size and weight limitations are a factor. See how SWIR can be a great match for UAVs, robots & gimbals. Please stop by to see beyond with SWIR.

Our display includes:

- Model Predator B Reconnaissance Model with Goodrich DB-110 Digital Sensor Wing Pod from General Atomics
- ScanEagle Unmanned Aircraft System from The Boeing Company and Insitu (Poster)
- Model Global Hawk Block 40 from Northrop Grumman
- T2 Gimbal from Cloud Cap Technologies
- Laser Range Finder Binoculars from Vectronix
- IR Beacons from Diffraction Ltd.
- Robot from iRobot



= **Robotics and Unmanned Systems Displays in the  
Palms Exhibition Hall**  
See p. 10 for details.

## Shanghai Optics

#1529



148 Main St, Metuchen, NJ, 08840  
732/321-6915  
blewis@shanghai-optics.com; www.shanghai-optics.com

**New Product: Ge and ZnSe substrates; NLO-Crystals: BIBO, KDP, KTP/KTA, BBO; Laser Crystals: Nd:YVO<sub>4</sub>, ND:YAG, Er:YAG.**

Shanghai Optics is a make-to-order manufacturing company. We offer high end laser optics and components. Prism, lenses, cylindrical lenses, cubes, x-cubes, filters, windows, wave plates, micro optics, and custom applications. Shanghai Optics also offers full design and assembly services for our broad market base. Materials include: Fused Silica, BK7, CaF<sub>2</sub>, MgF<sub>2</sub>, ZnSe, Ge, Sapphire, filter glass, and many more not listed. Contact: Brad Lewis, Director of Business Development, blewis@shanghai-optics.com; Joanna Lee, VP of US Operations, jlee@shanghai-optics.com.

## Sheaumann Laser Inc.

#3114



140 Locke Dr, Marlborough, MA, 01752  
508/970-0600; fax 508/970-0610  
apinault@sheaumann.com; www.sheaumann.com

**New Product: 2.94µm DPSS laser producing 1 watt CW output power in a hermetically sealed package.**

Sheaumann offers a family of high power multimode fiber-coupled laser diode products with output powers up to 425 watts. These products are available with individually addressable wavelengths from 532nm to 1910nm all from a single output fiber. See our website at www.sheaumann.com. Contact: Ed. McIntyre, VP of North American Sales and Marketing, emcintyre@sheaumann.com; Jaclyn Smith, Inside Sales Associate, jsmith@sheaumann.com.

## Sierra Precision Optics

#3022

12830 Earhart Ave, Auburn, CA, 95602  
530/885-6979; fax 530/885-1037  
jstimpson@sierraoptics.com; www.sierraoptics.com

Fabricator of Custom Optical Components: Flatwork, Plano optics (Filters, Panels, Windows, Mirrors, Beam Splitters, Wedges & Prisms), Spherical & Cylindrical Lenses Specialties: Cylindrical optics, Excimer laser components, UV/VIS/NIR Resonator optics, Flow Tubes and Custom shaped optics, 1/20th wave optical grade metal polishing of Invar and stainless steel. Contact: Jim Stimpson, V.P. Sales & Marketing, jstimpson@sierraoptics.com; Steve Bennion, Engineering Manager, sbennion@sierraoptics.com.

## Snake Creek Lasers, LLC

#1328

RR2 Box 2753, 1 Technology Dr, Hallstead, PA, 18822  
570/879-4992; fax 570/879-0912  
info@snakecreeklasers.com; www.snakecreeklasers.com

Provides diode pumped solid-state lasers and laser modules to industrial and government organizations for numerous applications. Also conducts contract solid-state laser research and development in the areas of high-power cryogenic solid-state lasers, alexandrite lasers, near- and mid-infrared lasers, eye-safe lasers, ultrafast lasers, and in laser and optical materials. Contact: Sten Tornegard, Marketing Manager, stornegard@snakecreeklasers.com.

## SOFRADIR

#611, 616

43-47 rue Camille Pelletan, Chatenay-Malabry, France, F-92290  
33 1 41 13 45 35; fax 33 1 46 61 58 84  
sofradir@sofradir.com; www.sofradir.com

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**EuroPhotonics** covers news and technology updates on the growing market for photonics in Europe. It is published bimonthly with a guaranteed distribution of 30,000 to important buyers and users of photonics products and services in Europe. Featured sections include Euro News, Product Previews and EcoPhotonics. Circulation: 27,875 qualified recipients as of December 2008.

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**The Photonics Buyers' Guide** lists these companies in 2300 categories — over 600 pages of products and services.

Circulation: 25,000.

**PhotonicsDirectory.com and CD-ROM**

Redesigned and redeveloped in 2009, the online and CD editions include enhanced listings, intuitive searching, filtering features, and digital editions of the *Photonics Handbook* and *Photonics Dictionary*.

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# Exhibitor Listing

## Solid State Cooling Systems

#3112

20 Pleasant View Rd, New York, NY, 12569  
845/635-5500; fax 845/635-8081

kanderson@sscooling.com; www.sscooling.com

Since 1994, SSSC has manufactured solid state temperature control products which are energy-saving, compact, quiet, reliable and vibration-free. Our family of products (chillers, heat exchangers, power supplies and cold plates) provide precise temperature control for drone lasers, ground test support, diode lasers, IGBT cooling, guidance systems, analytical labs, SEM's, cool jackets and portable cooling. Our systems can also manage a variety of fluids: PAO, Water, Water/Glycol, Fluorinert, HFE Galden and others.

## Solid State Scientific Corp.

#511

12 Simon St, Nashua, NH, 03060  
603/598-1194; fax 603/598-1197  
www.solidstatescientific.com

Solid State Scientific Corporation designs and develops spectral-temporal sensors and high-throughput hyperspectral imagers from the visible through the LWIR infrared, including a real time MWIR 4 color multi-spectral imager and a real time VNIR 16 color multi-spectral imager on display at our booth number 511. SSSC combines target phenomenology and hardware/software engineering to develop spectral sensors from concept to prototype. Contact: James Murgula, President, jim@solidstatescientific.com; Linda Bouthillette, Contract Administrator, linda@solidstatescientific.com.

## Special Optics, Inc.

#538

 SPIE Corporate Member

315 Richard Mine Rd, Wharton, NJ, 07885-1659  
973/366-7289; fax 973/366-7407  
sales@specialoptics.com; www.specialoptics.com

### New Product: New high-precision Vision Correction Lens System for Femtosecond Laser.

Special Optics specializes in rapidly designing, prototyping, and manufacturing the most innovative and highest performing custom optical systems. We provide state-of-the-art optical solutions that are typically found in applications that demand the finest optical surfaces, highest accuracy and tightest tolerances. In addition to our custom solutions, we carry a complete line of standard "off-the-shelf" products, like Scan Lenses and Beam Expanders all available for quick delivery. Contact: Steven Morales, Sales Manager, smorales@specialoptics.com; Craig Fitzgerald, Vice President, c\_fitzgerald@navitar.com.

## Spectral Systems

#212

35 Corporate Park Dr., Hopewell Junction, NY, 12522  
845/896-2200  
cguajardo@spectral-systems.com; www.spectral-systems.com

### New Product: Assembly Services, complete opto-mechanical and electronic integration to your custom design.

Historically an optics manufacturer, added coating capability in 1990. The company has now moved to building sub-systems for our clients. FTIR modulators, HeNe laser modules and Opto-mechanical sub-assembly specialties. Contact: Carlos Guajardo, Sales Manager, cguajardo@spectral-systems.com; Frank Wesley, Head of Engineering, fwesley@spectral-systems.com.

## Spectrogon US Inc.

#1134

 SPIE Corporate Member

24B Hill Rd, Parsippany, NJ, 07054  
973/331-1191; fax 973/331-1373  
sales.us@spectrogon.com; www.spectrogon.com

SPECTROGON specializes in the design & manufacture of optical filters, thin film coatings and components, for analytical, medical, and scientific instruments. Spectrogon is the world leader in the manufacture and design of Holographic Diffractions Gratings for laser Compression/Stretcher applications, tuning and spectroscopic instruments. Spectrogon offers a huge inventory of stock filters that can be shipped within two weeks. Contact: Sam Ponzio, Mkt. Mgr., sales.us@spectrogon.com; Kelly Nieb, Sales Adm.

## Spectrolab, Inc., A Boeing Company

#3909

12500 Gladstone Ave, Sylmar, CA, 91342

## Spectroscopy Magazine

#207

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732/596-0276; fax 732/596-0003  
spectroscopyedit@advanstar.com; www.spectroscopyonline.com

Using a variety of media vehicles, Spectroscopy provides peer-reviewed technical and applications-oriented information to the largest audited circulation of influential spectroscopists in the United States. Our focus is on cutting-edge techniques such as Raman, X-Ray, MS, lasers and optics, ICP-MS, FT-IR, and the multitude of other hyphenated techniques that continue to grow in popularity. Contact: Ed Fantuzzi, Publisher, efantuzzi@advanstar.com.

## Spectrum Detector Inc.

#1342

 SPIE Corporate Member

5825 Jean Rd, Lake Oswego, OR, 97035  
503/697-1870; fax 503/697-0633  
info@spectrumdetector.com; www.spectrumdetector.com

### New Product: Fast, accurate, mach 5, 100 kHz Digital Joulemeter.

Design and manufacture Optical Power Meters, Laser Energy Meters, Pyroelectric Radiometers, Pyroelectric Hybrid Detectors, THz Sensors and Optical TRAP Detector Standards. Leading supplier of custom detectors, electronics and optical instruments. Measure from pW to W, fJ to J, 1 to 100,000 pps and from DUV to Far IR and THz. Stop by our booth for demo of mach 5! Contact: Don Dooley, President, dond@spectrumdetector.com.

## SphereOptics LLC

#1137

 SPIE Corporate Member

One Horse Shoe Pind Ln, Concord, NH, 03301  
603/715-3000; fax 603/225-3089  
sales@sphereoptics.com; www.sphereoptics.com

### New Product: Water-cooled Uniform Calibration Sources.

SphereOptics designs, produces and sells precision radiometric and photometric test and measurement products addressing the specific needs of the aerospace, electronic imaging, LED, lighting, medical imaging and optics industries. The company offers a broad line of integrating sphere systems, specializing in custom design and manufacturing services. SphereOptics has sales and service centers located in France, Germany and the United States, and a network of qualified representatives worldwide. Contact: Chris Durell, VP Sales, cdurell@sphereoptics.com; Sid Rane, Eastern Regional Sales Manager, srane@sphereoptics.com.

**Spica Technologies, Inc.**

#1533

18 Clinton Dr #3, Hollis, NH, 03049  
603/882-8233; fax 603/882-8614  
sales@spicatech.com; www.spicatech.com

Spica Technologies provides a variety of test and measurement services to the manufacturers and end users of optical components. In addition to our laser damage test capabilities, Spica also maintains a broad range of optical test services including optical density measurements, laser based reflection measurements, environmental exposure, surface roughness and flatness.

**SPIE Industry Resources**

#S-1

PO Box 10, Bellingham, WA, 98227  
360/676-3290; fax 360/647-1445  
courtneyp@spie.org; http://spie.org

SPIE provides valuable resources to industry that support your marketing, R&D, training and recruiting efforts. For example, exhibitions, advertising and sponsorships increase visibility of your organization and help you educate the market about your offerings. Access to scientific and engineering information published in the SPIE Digital Library and on the SPIE Newsroom help your R&D team to discover the innovations and breakthroughs that lead to successful new products. Leadership in this fast-evolving, knowledge-driven environment requires continuous learning and education of technical staff to retain your competitive advantage, making SPIE In-Company Training invaluable. And when growth drives demand for new skilled employees, the SPIEWorks job site is the place to find the specialized talent you want to hire.

**Spire Semiconductor, LLC**

#512

25 Sagamore Park Dr, Hudson, NH, 03051  
603/595-8900; fax 603/595-0975  
sales@spiresemi.com; www.spiresemi.com

**New Product: Two junction GaAs Solar Cells with custom packaging. Epi growth and fabrication available.**

Spire Semiconductor is a pure-play III-V compound semiconductor foundry. We offer design, development & manufacturing services for the concentrated photovoltaic, defense, telecommunication & biomedical markets. With over 30 years experience in epitaxial growth and device processing, we offer our clients a shorter time to market, an ability to rapidly ramp to high-volume manufacturing and an overall edge in the marketplace. Contact: Paul Lamarche, Product Manager, Plamarche@spiresemi.com; Ed Gagnon, General Manager, egagnon@spiresemi.com.

**SRI Hermetics**

#3404

3950 Dow Rd, Melbourne, FL, 32934  
321/254-4067; fax 321/752-9221  
info@srihermetics.com; www.srihermetics.com

SRI Hermetics is a custom hermetic connector and packaging manufacturer. We specialize in the design and fabrication of electronic and electro-optic enclosures for customers who demand the ultimate reliability in the most hostile environments. Superior performance is achieved through the use of non-standard materials such as ceramic seals, copper contacts, and aluminum or titanium connector shells and chassis assemblies. Contact: Fred Williams, Sales Manager, williamsf@srihermetics.com; Ed Taylor, Operations Manager, taylore@srihermetics.com.

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**StellarNet, Inc.**

#3420

**SPIE** Corporate Member

14390 Carlson Cir, Tampa, FL, 33626  
813/855-8687  
dpersell@stellarnet.us; www.stellarnet-inc.com

**New Product: Super Small BLUE-Wave Spectrometers with 15 models; 190-1150nm using 16 bit digitizer via USB2.**

StellarNet makes extremely rugged UV-VIS and NIR spectroradiometers for measurements in the Lab or Field. Since 1995 we've made portable instrumentation delivering high S/N performance at a surprisingly low cost. Super Small BLUE-Wave Spectrometers with 15 models; 190-1150nm using 16 bit digitizer via USB2. The SpectraWiz<sup>®</sup> software is included with each instrument to enable comprehensive LED and light measurements via NIST traceable calibrations performed at our factory in Tampa. Contact: Ryan Flaherty, Principal Scientist, ryan@stellarnet.us; Will Pierce, Chief Scientist, wpierce@stellarnet.us.

**StingRay Optics, LLC**

#307

310 Marlboro St, Keene, NH, 03431  
603/358-5577; fax 603/358-5579  
www.stingrayoptics.com

Offering optical & opto-mechanical design, product development & prototyping services for optical systems including UV, VIS, NIR, SWIR, MWIR & LWIR operating wavebands our experienced designers & engineers have developed solutions for a variety of applications. Solutions include but are not limited to laboratory environments, field use, airborne & space based applications, specialized packages for weight & space constrained UAV lenses, cryogenic, motorized, zooms & one-of-a-kind scene projectors. Contact: Jennifer Myers, Sales & Marketing Manager, jmyers@stingrayoptics.com.

**Sumitomo Electric USA**

#3104

21221 S Western Ave Ste 200, Torrance, CA, 90501  
919/779-7212; fax 919/772-3144  
rshaw@sumitomo.com; www.sumitomoelectricusa.com

**New Product: Far-Infrared lens with low cost and good optical characteristics using zinc sulfide technology.**

Sumitomo Electric Industries, designs, manufactures and sells far-infrared lenses for automotive image sensing, night vision, thermal image sensing and surveillance applications. These lenses offer low cost and high performance based on advanced manufacturing technologies. Contact: Yoshi Kawabata, Hybrid Products Group - Business Development Mgr, yoshi.kawabata@sumitomo.com; Yoshiaki Shikata, Manager, Tokyo Hybrid Group, yo-shikata@sei.co.jp.

**Sydor Optics, Inc.**

#407

**SPIE** Corporate Member

31 Jet View Dr, Rochester, NY, 14624  
585/271-7300; fax 585/271-7309  
sales@sydor.com; www.sydor.com

Manufacturing precision, flat-surfaced, parallel and wedged optics and specializing in double-sided grinding and polishing. Sydor has been offering custom optical components with consistent delivery, quality and service for over 40 years. Sydor Optics offers prototype, to high volume OEM production. Products include: beam splitters, color filters, debris shields, glass wafers, grating substrates, light pipes, light-weighted substrates, mirrors, optical flats, wedges, and windows. Contact: Michael Naselaris, General Manager, sales@sydor.com; James Sydor, President, sales@sydor.com.

# Exhibitor Listing

## Symphotic TII Corp.

#3515

880 Calle Plano Unit K, Camarillo, CA, 93012  
805/484-6639; fax 805/484-9012  
supplier.support@symphotic.com; www.symphotic.com

**New Product: Falcon DR underwater ROV with sonar and position locating instrumentation for military and LE.**

Symphotic TII Corporation, in partnership with Saab Seaeye, provides electric remotely operated vehicles for search, inspection, and deep water applications. We also offer a full line of underwater sensors for use with ROVs or alone. Contact: Jack Roberts, President, info@symphotic.com.

## Syntec Optics

#418

**SPIE** Corporate Member

7100 Junction Rd, Pavilion, NY, 14525  
585/768-2513; fax 585/768-6099  
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 fixture tooling; single-point diamond turning, including HRDT™ for high refraction, high thermal optics and also plano polishing. Fully integrated custom metrology and assembly services. Contact: Paul Tolley, Vice President/General Manager, ptolley@syntecoptics.com.

## Tadiran Batteries

#3004

2 Seaview Blvd Ste 102, Port Washington, NY, 11050  
516/621-4980; fax 516/621-4517  
sales@tadiran.com; www.tadiran.com

## Taylor & Francis

#S-15

325 Chestnut St Ste 800, Philadelphia, PA, 19106  
800/354-1420; fax 215/625-2940  
julie.sikora@taylorandfrancis.com; www.taylorandfrancis.com

## Technopôle Defence and Security

#3201

Bldg 200 Office 107, 2459 blvd Pie-XI N, Québec, QC, Canada, G3J 1X5  
418/844-0250; fax 418/844-2739  
info@technopoleds.org; www.technopoleds.org

**New Product: For information on Technopôle Defense and Security and its services visit [www.technopoleds.org](http://www.technopoleds.org).**

Delivering results...through strategic teaming. Technopôle Defense & Security (TDS) is a Canadian business network gathering integrators, innovative companies, R&D labs and universities. In response to market needs, TDS spearheads collaborative efforts to develop and implement cutting-edge technologies and solutions. TDS aims at bringing forward innovative solutions in the defense and security markets by forging strategic partnerships between its members, partners and operational users. Contact: Sonia Lebel, Director - Communications and Administration, sonia.lebel@technopoleds.org; Claude Lévesque, Director - Business Development, claude.levésque@technopoleds.org.



### Free Popcorn

Popcorn carts will be located in the Exhibition Halls, back of 1500 Aisle and 3600 Aisle. Open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

## Tecomet

#3202

115 Eames St, Wilmington, MA, 01887  
978/642-2468; fax 978/658-4334  
robert.lynch@tecomet.com; www.tecomet.com

Tecomet has unparalleled expertise in metals processing and the ability to solve challenging manufacturing problems. Precision Machining, Vacuum Brazing, Laser Weld 4 Axis, E-Beam Weld 3, Axis, EDM 4 Axis, Net shape forging, Lathe-up to 8 Axis, Milling-up to 5 Axis, Cellular Machining, Photo Chemical Machining 3D. Critical applications: Propulsion, Traveling wave tubes, High precision assemblies. Contact: Pat O'Neill, Vice President National Sales, pat.oneill@tecomet.com; sales@tecomet.com, 888-287-0400, 978-642-2400.

## Tecport Optics, Inc.

#525

**SPIE** Corporate Member

6901 TPC Dr Ste 450, Orlando, FL, 32822  
407/855-1212; fax 407/855-1213  
tamle@tecportoptics.com; www.tecportoptics.com

## Teledyne Imaging Sensors

#1301

5212 Verdugo Way, Camarillo, CA, 93012  
805/373-4880; fax 805/373-4764  
wweissbard@teledyne.com; www.teledyne-si.com

Teledyne Imaging Sensors (TIS) provides high performance infrared and visible sensors, visible CMOS detectors and sensor subsystems for; civil space, ground based astronomy, persistent surveillance and tactical applications. TIS' key customers include; NASA programs such as JWST, HST, MRO and OCO and US Army "third generation" 2-Color IR tactical imaging systems (to be fielded later this decade). TIS also has developed and is manufacturing laser eye protection spectacles for military pilots. Contact: Robert KoeGLE, Program Manager, rkoeGLE@teledyne.com.

## Teledyne Judson Technologies

#1301

**SPIE** Corporate Member

221 Commerce Dr, Montgomeryville, PA, 18936  
215/368-6900; fax 215/362-6107  
tinformation@judsontechnologies.com; www.teledynejudson.com

**New Product: Teledyne Judson Technologies introduces its Polarimetric Imaging Camera.**

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: George Gasparian, Sales/Applications Engineer, ggasprian@teledynejudson.com; Mark Sediva, Sales Engineer, msediva@teledynejudson.com.

## Teledyne Microelectronics

#1301

12964 Panama St, Los Angeles, CA, 90066  
310/574-2082; fax 310/574-2045  
microelectronics@teledyne.com; www.teledynemicro.com

For more than 40 years Teledyne Microelectronic Technologies has served the Defense and Aerospace markets with products, packaging and manufacturing services. TMT's Lighting & 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 & Space applications. Contact: Shannon Giddens, Business Development Manager, sgiddens@teledyne.com; Sam Calvillo, Vice President, Business Development, scalvillo@teledyne.com.








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**Teledyne Scientific Company**

**#1301**

1049 Camino Dos Dios, Thousand Oaks, CA, 91360  
 805/373-4084; fax 805/373-4105  
[tchang@teledyne.com](mailto:tchang@teledyne.com); [www.teledyne-si.com](http://www.teledyne-si.com)

Teledyne Scientific Company carries out R&D and product development in the areas of wavefront control, optical tracking and targeting, image processing, microoptics, MEMS sensors and actuators, high speed compound semiconductor electronics, mixed signal electronic components, energy generation, thermal management and materials for harsh environments. TSC's customers include US Defense agencies and their contractors, other Teledyne business units, and commercial businesses. Contact: Paula Ross, Manager, Communications, [pross@teledyne.com](mailto:pross@teledyne.com).

**Telops Inc.**

**#1122**

**SPIE** Corporate Member

100 - 2600 St-Jean-Baptiste Ave, Quebec, QC, Canada, G2E 6J5  
 418/864-7808; fax 418/864-7843  
[contact@telops.com](mailto:contact@telops.com); [www.telops.com](http://www.telops.com)

Telops specializes in the design and production of sophisticated opto-electronic systems for the defence, aerospace and telecommunications industries. In addition to providing specialized opto-electronic engineering services, Telops has also developed the Hyper-Cam, an infrared hyperspectral imaging camera which allows standoff chemical detection at a distance of up to five kilometers. Our technical experts understand your business and will turn your high expectations into success. Contact: Vincent Farley, Business Development Manager, [vincent.farley@telops.com](mailto:vincent.farley@telops.com); Philippe Lagueux, Business Development Manager, [philippe.lagueux@telops.com](mailto:philippe.lagueux@telops.com).

**Temmek Optics Ltd.**

**#1322**

PO Box 159, Yavne, Israel, 81101  
 972 8 943 8408; fax 972 8 943 8390  
[temmek@temmek.com](mailto:temmek@temmek.com); [www.temmek.com](http://www.temmek.com)

Temmek Infrared Zoom Lenses: [IRZoom.com/Computer Optics, Inc](http://IRZoom.com/Computer Optics, Inc) (Booth #1322) is the exclusive technical representative and distributor for Temmek's high quality IR zoom lenses in the US. Come see the Temmek's newest MWIR and LWIR infrared zoom lenses, now offered, stock, at [IRZoom.com](http://IRZoom.com). In-booth demos are available. Contact: Jon Kane, Business Unit Manager, [IRZoom.com](http://IRZoom.com), [jon@irzoom.com](mailto:jon@irzoom.com); Gordon Kane, CEO, [gordon@computeroptics.com](mailto:gordon@computeroptics.com).

**Teraxion Inc.**

**#1234**

2716 Einstein, Quebec, QC, Canada, G1P 4S8  
 418/658-9500; fax 418/658-9595  
[info@teraxion.com](mailto:info@teraxion.com); [www.teraxion.com](http://www.teraxion.com)

**New Product: PureSpectrum narrow linewidth, frequency stabilized and compact semiconductor laser modules.**

TeraXion designs and manufactures high end semiconductor laser modules and fiber optic components for applications in the Aerospace/Defense, Telecommunications and Industrial markets. TeraXion's product lines enable significant system level improvements in remote sensing, optical communications and directed energy applications. TeraXion's product lines are well complemented by its customizing capabilities as TeraXion shows a track record of Aerospace and Defense related program accomplishments. Contact: Ghislain Lafrance, VP Defense and Aerospace, [glafrance@teraxion.com](mailto:glafrance@teraxion.com); Christine Simard, Program Manager, [csimard@teraxion.com](mailto:csimard@teraxion.com).

# Exhibitor Listing

## Tessera Inc.

#1141

SPIE Corporate Member

3099 Orchard Dr, San Jose, CA, 95066  
408/952-4363; fax 408/894-0710  
mbiskup@tessera.com; www.tessera.com

Tessera's DigitalOptics™ technologies meet the demand for smaller, feature-rich micro-optic solutions. The company offers industry-leading capabilities including design, development and fabrication of diffractive, refractive and integrated micro-optic subassemblies at the wafer-level; its innovative micro-optic products are used in a variety of highly-specialized applications including photonics, photolithography, telecommunications, aerospace/defense, vision and data storage. Contact: Jessica Neely, Senior Sales Engineer, jneely@tessera.com; Robert Hutchins, Senior Optical Engineer, rhutchins@tessera.com.

## Thales

#1339

40G Commerce Way, Totowa, NJ, 07512  
973/812-3858; fax 973/812-9049  
eparyzka@tccus.com; www.thalesgroup.com

Thales will be represented by three divisions: Angenieux - exhibiting a variety of night vision equipment such as Elvir uncooled IR camera, Lucie, Monie, and Minie NV goggles. Optronics - showing Celt laser transceiver and Sophie cooled IR camera. Cryogenics - exhibiting stirling, rotary, linear and pulse tube coolers for variety of applications.

## Thermoteknix Systems Ltd.

#1117

Teknix House, 2 Pembroke Ave, Waterbeach Cambridge,  
United Kingdom, CB5 9QR  
44 1223 204 000; fax 44 1223 201 010  
sales@thermoteknix.com; www.thermoteknix.com

**New Product: VisIR 640-S high resolution thermal imaging camera with ThermoGRAM real time thermal analysis software.**

With over 25 years of technical breakthroughs in thermal imaging, Thermoteknix launch the groundbreaking VisIR 640-S high resolution thermal imaging camera. VisIR 640-S for scientific and industrial applications works with ThermoGRAM thermal image analysis package for real-time data streams. Also showing is the range of MIRICLE miniature high resolution thermal cameras, cores and engines available in 384x288 or 640x480 resolution versions and range from hermetically sealed space qualified units, ultra-lightweight UAV and XTi shutterless models.

## Thorlabs, Inc.

#1401

SPIE Corporate Member

435 Rt 206, Newton, NJ, 07511  
973/300-3000; fax 973/300-3642  
sales@thorlabs.com; www.thorlabs.com

Thorlabs is a leading designer and manufacturer of photonics equipment for research, manufacturing, and biomedical applications. Founded in 1989, Thorlabs is headquartered in Newton, New Jersey with over 500 employees at manufacturing and sales offices throughout the United States, United Kingdom, Germany, France, Sweden, Japan, and China. For more information, visit www.thorlabs.com. Contact: Sales at Thorlabs, Sales, sales@thorlabs.com; Tim Villeneuve, Sales Representative, tvilleneuve@thorlabs.com.

## ThruVision Ltd.

#1542

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

**New Product: Terahertz Imaging Systems for passive, stand-off, radiation-free screening for concealed objects.**

ThruVision is the World leader in Terahertz imaging products for passive, stand-off, radiation-free screening of people for customs, police and corporate security. Products include the T4000, T4400, T5000 and T8000 which can be operated in a variety of environments. Contact: Ronald D. Frye, Regional Manager for the Americas, ron.frye@thruvision.com.

## Tower Optical Corp.

#206

SPIE Corporate Member

3600 S Congress Ave Unit J, Boynton Beach, FL, 33426  
561/740-2525; fax 561/740-2518  
www.toweroptical.com

## Translume, Inc.

#1336

SPIE Corporate Member

655 Phoenix Dr, Ann Arbor, MI, 48108  
734/528-6371; fax 734/528-6334  
ericjacobson@translume.com; www.translume.com

**New Product: Advanced micromachining of glass for channels, through-holes, flexures and embedded waveguides.**

Translume is a leader in femtosecond micromachining of fused silica glass and offers a variety of fabrication and integration services for custom applications. Using proprietary laser writing and etching techniques, Translume creates devices that combine optical waveguides, microfluidic components, and glass micromechanical (glass MEMS) elements. Available for aerospace, industrial and bio applications. Contact: Eric Jacobson, Vice President, ericjacobson@translume.com.

## Trioptics GmbH

#1128

Hafenstr 35-39, Wedel, Germany, 22880  
49 4103 18006 0; fax 49 4103 18006 20  
info@trioptics.com; www.trioptics.com

Leading manufacturer of accurate & fully PC controlled optical test equipment for industrial & scientific use: Manufacturer stock/custom Optical Test Equipment: OptiCentric®-automated alignment, centering, cementing & bonding, centration error measurement; OptiSpheric®-Industry's standard for complete optical characterization (EFL, BFL, MTF, radius); ImageMaster®-Leading MTF-characterization-UV-VIS-IR, mobile phone and wafer level lens testing; WaveMaster®-Real time wave front analysis; PrismMaster®-Prism measurement; SpectroMaster®-Refractive Index measurement; Wafer level technology, Electronic and visual autocollimators.

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**Norman R. Augustine**

Retired Chairman and Chief Executive Officer,  
Lockheed Martin Corp.

**Future Direction in U.S. Government Funding, p. 6**

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**UAVs, p. 6**

## Triple Play Communications

#3806

250 East Dr Ste F, Melbourne, FL, 32904  
321/243-2671; fax 866/571-8320  
sales@3playcomm.com; www.3playcomm.com

**New Product: DiamondLight™ is an 18 slot optical platform utilizing highly configurable optical amplifier modules.**

Triple Play Communications (TPC) performs engineering design services and product manufacturing targeting innovative optical and electronic technology applications. The TPC engineering team's background combines many years of defense communications systems design with high volume fiber optic telecommunications module development experience. TPC is committed to providing high quality opto-electronic designs and products meeting the customer's specific performance and cost requirements. Contact: Keith Riffée, President, keith.riffée@3playcomm.com; Jim Wernlund, VP Engineering, jim.wernlund@3playcomm.com.

## TwinStar Optics & Coatings, Inc.

#1409

6741 Commerce Ave, Port Richey, FL, 34668  
727/847-2300; fax 727/847-2304  
sales@twinstaroptics.com; www.twinstaroptics.com

**New Product: Low loss, super high damage threshold mirrors for 1064nm >55 J, 5ns pulse has been certified.**

TwinStar is an ISO 9001:2000 certified company and a global leader in the fabrication and coating of precision optics and crystals. TwinStar fabricates waveplates, etalons, lens ducts, laser slabs/rods, prisms, mirrors, and provides bonding and optical assembly services. TwinStar also works with linear and non-linear laser crystals including YAG, KTP, LBO, laser glasses. TwinStar's coating lab produces high damage coatings from the UV thru the FAR IR including solderable edge metallizations. Contact: Peter Thomas, Director of Sales & Marketing, petert@twinstaroptics.com; Mark Gruttadauria, General Manager, Markg@twinstaroptics.com.

## ULIS

#610

PO Box 27 Zone Industrielle, Veurey Voroize, France, F-38113  
33 4 76 5374 70; fax 33 4 76 5374 80  
ulis@ulis-ir.com; www.ulis-ir.com

**New Product: UL 03 16 2 (384x288 - 25µm) is well adapted to large volume applications.**

ULIS develops and manufactures infrared detectors based on amorphous silicon technology, a semiconductor material that can be produced cost-effectively, thus making infrared vision affordable for all applications such as night vision, security, safety, fire-fighting, predictive maintenance, and medical imaging. Contact: Elodie Lhabitant, Sales Department Secretary, ulis@ulis-ir.com.



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## Umicore

#711

Watertorenstraat 33, Olen, Belgium, 2250  
32 14 24 57 00; fax 32 14 24 55 34  
optics@umicore.com; www.optics.umicore.com

**New Product: GASIR®1 & GASIR®3, blanks, wafers, finished lenses, mounted optics, coatings, lens assemblies.**

Umicore offers infrared materials, thin-film optical coatings 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: Henri Chomette, Senior Manager Marketing & Sales, henri.chomette@umicore.com; Jeff Koch, Sales Germanium, jeff.koch@umicore.com.

## United Lens Co., Inc.

#1142

259 Worcester St, Southbridge, MA, 01550  
508/765-5421; fax 508/765-0500  
www.unitedlens.com

**ROBOTICS+UNMANNED SYSTEMS DISPLAY**

## Univ. of Central Florida, College of Eng & Computer Science

 #3606

400 Central Florida Blvd., Orlando, FL, 32816  
407/683-9913

We will display "Knight Rider", the autonomous car that participated in the DARPA Urban Challenge 2007 and was one of 11 robot cars that took part in the final race. "Knight Rider" and the engineers that made its success possible will be present at the convention and answer questions of participants. The developed technology will be showcased.

## Univ. of Massachusetts/Lowell

#925

Submillimeter-Wave Tech Lab, 175 Cabot St, Lowell, MA, 01854  
978/934-1300; fax 978/452-3333  
robert\_giles@uml.edu; http://stl.uml.edu

## Universal Photonics, Inc.

#1235

**SPIE** Corporation  
Member

495 W John St, Hicksville, NY, 11801-1014  
516/935-4000; fax 516/935-4144  
info@universalphotonics.com; www.universalphotonics.com

**New Product: LP UNALON - Microcellular foam elastomer designed for high precision polishing.**

Source for advanced surfacing products & technology. Lapping/polishing consumables for glass, infrared materials, plastics, semiconductors, electro, laser, and fiber optics. Including polish pads, diamond slurries, sub-angstrom polishes, ultra pure alumina, colloidal silica, thermoplastic adhesives, cleaners, compounds, lapping film, precision pitch, lens bonding material, Advantage & DAMA machinery, HKS centrifuges, MegaVap Liquid Elimination System, double-sided, polishing/lapping machines. Contact: Jerry Hammock, Sales Rep, jerryh@universalphotonics.com; Justin Mahanna, Sales Rep, justinm@universalphotonics.com.

## Vacuum Process Technology, Inc.

#1510

70 Industrial Park Rd, Plymouth, MA, 02360  
508/732-7200; fax 508/732-0317  
sales@vpotec.com; www.vpotec.com

## Valde Systems, Inc.

#3309

26 Iron Works Ln, Brookline, NH, 03033  
603/465-2515; fax 603/465-2413  
contact1@valdesystems.com; www.valdesystems.com

**New Product: Valde Systems introduces its VS151 camera for outdoor autonomous vehicles or security applications.**

Valde Systems designs and builds image processing systems for autonomous vehicles or surveillance applications. We provide our customers a path to transition their research programs to production. We assist them by providing expertise and a stable, low cost, compliant production ready hardware platform. Our embedded vision processors and cameras are high performance, rugged, small size, low cost and low power. They are the preferred alternative to embedded PCs for image processing applications. Contact: Matthew Linder, President & CEO, mlinder@valdesystems.com.



= **Robotics and Unmanned Systems Displays in the Palms Exhibition Hall**  
See p. 10 for details.



# Exhibitor Listing

## Vectronix Inc.

#742

801 Sycolin Rd SE Ste 206, Leesburg, VA, 20175  
703/777-3900  
natalie.moreno@vectronix.com; www.vectronix.com

**New Product: Digital magnetic compass, laser range finder, OEM modules.**

Vectronix Inc. offers Swiss quality electro-optic and night vision equipment by integrating state-of-the-art imaging sensors into best-in-class light-weight, man-portable target acquisition systems and ruggedized weapon mounted sights. Specialties also include OEM modules. Once a division of Leica Geosystems, Vectronix Inc. has earned a reputation for quality, precision, and durability. Research, development, and manufacturing capabilities continue to expand in the U.S. Contact: Jos van Seeters, OEM Modules Business Development Manager, jos.vanseeters@vectronix.com.

## Vigo Systems S.A.

#1116

129/133 Poznańska St  
Ożarów Mazowiecki 05-850 Poland  
48 22 666 14 06  
info@vigo.com.pl; www.vigo.com.pl

**New Product: Near-BLIP MCT on TE-coolers at wavelengths up to 6 microns.**

MCT (HgCdTe) IR detectors for 2 to 16 microns operating at room temperature or on TE-coolers (without LN2) with high sensitivity and fast response times. Contact: Andrzej Maciak, Marketing Manager, info@vigo.com.pl; Fred Perry, fsp@boselec.com.

## Vincent Associates

#412

803 Linden Ave, Rochester, NY, 14625  
585/385-5930; fax 585/385-6004  
vincentassociates@uniblitz.com; www.uniblitz.com

**New Product: The NS Series are compact, durable, reliable and offered in 15, 25 & 45mm apertures. Patent Pending.**

Vincent Associates is the manufacturer of UNIBLITZ and UNIBLITZ II electronically programmed shutters & shutter drive systems, with standard devices (including the LS, VS and the CS series of high reliability shutter systems), the XRS (for X-ray use) series and the new N-CAS series. Standard aperture sizes ranging from 1mm - 90mm with many types of microscope and video mounting systems offered for specific shutter mounting applications. Custom configurations and OEM systems are also available. Contact: Stephen Pasquarella, Senior VP, spsq@uniblitz.com; Adam J. Lamb, VP Manufacturing, alamb@uniblitz.com.

## Vision Systems Design

#300

98 Spit Brook Rd, Nashua, NH, 03062  
603/891-0123; fax 603/891-9290  
www.vision-systems.com

## Vision4ce LLC

#1526

 SPIE Corporate Member

550 M Ritchie Hwy Ste 135, Severna Park, MD, 21146  
410/384-9191; fax 410/510-1170  
info@vision4ce.com; www.vision4ce.com

## VLOC

#3100

7826 Photonics Dr, New Port Richey, FL, 34655  
727/372-4425; fax 727/375-5300  
mbryson@vloc.com; www.vloc.com

## Voltage Multipliers Inc.

#123

8711 W Roosevelt, Visalia, CA, 93291  
559/651-1402; fax 559/651-0740  
mfulley@voltage-multipliers.com; www.voltage-multipliers.com

**New Product: XRS portable X-ray power supply delivers 50kV and 10W. It is compact, light-weight, & reliable.**

Voltage Multipliers is a leading manufacturer of OEM power supplies. We specialize in custom power supply solutions. We manufacture other high voltage product lines including opto-couplers, image enhancing multipliers, high voltage diode and assemblies. VMI is ISO9001:2000, and lab suitable in accordance with Mil-Std-750. Contact: Karen Spano, Sales Administration Manager, kspano@voltage-multipliers.com; Karen Holland, Senior Engineer, kholland@voltage-multipliers.com.

## Voxtel, Inc.

#3415

12725 SW Millikan Way, Beaverton, OR, 97005  
971/223-5646; fax 971/327-7241  
info@voxtel-inc.com; www.voxtel-inc.com

## Wafer Technology Ltd.

#637

34 Maryland Rd, Tongwell, Milton Keynes, United Kingdom, MK15 8HJ  
44 1908 210444; fax 44 1908 210443  
sales@wafertech.co.uk; www.wafertech.co.uk.

**New Product: Ultra-flat, epitaxy-ready 4" InSb and GaSb.**

Wafer Technology is the leading supplier of single crystal 2"-4" InSb and GaSb wafers and a wide range of other materials including InP, InAs and GaAs. The company's U.K. manufacturing facility (ISO 9001/14001) delivers materials to a world-wide base of customers active in advanced infrared markets. Local sales and technical support is offered from offices in Europe, USA and Asia. Please contact us to discuss your requirements for advanced infrared materials. Contact: Mark J. Furlong, Sales and Marketing Director, mfurlong@wafertech.co.uk; Tom Taylor, Sales Manager (USA), mfurlong@wafertech.co.uk.

## WAMCO Inc.

#3200

11555 Coley River Cir, Fountain Valley, CA, 92608  
714/545-5560; fax 714/545-6093  
info@wamcoinc.com; www.wamcoinc.com

**New Product: NVIS LCD display filters used for laptops and handheld devices-compatible with resistive touch screens.**

Wamco designs, develops and produces glass and polymeric optical filter solutions for Night Vision Compatibility, contrast enhancement, EMI shielding and filtering in the visible and near IR (380 to 1100nm). We offer customized solutions to overcome the most challenging applications as well as standard in-stock products to meet urgent delivery demands. Stop by our booth to discuss your visible, near IR and NVG optical filter applications and to see our latest advances in polymeric filters. Contact: Pete Frazier, Technical Sales, pfrazier@wamcoinc.com; Claude Gaudette, Vice President of Engineering, cgwamco@wamcoinc.com.

*Don't Miss the*



**Robotics+Unmanned Systems Displays**

Located in Palms Exhibition Hall  
See p. 10 for details.

Don't miss the Florida Pavilion on the 500 aisle!

"Secret capital of small business"  
—Fortune Magazine

"Ranked as one of the top places to live"  
—CNN Money

# F L O R I D A I N N O V A T I O N H U B O F T H E A M E R I C A S

Visit the Florida Pavilion on the 500 aisle

UCF, the 6th largest U.S. university and home of CREOL—the first college of optics and photonics in the Americas, is partnering with 11 state universities and over 150 companies to offer innovative R&D collaborations.

Aggressive support system for technology commercialization • State-supported financial advantages and incentives • Booming high-tech sectors • Exceptionally strong optics and photonics knowledge and industry base • Nationally-ranked pro-business climate



# Exhibitor Listing

## Wells Research and Development

15 A Lewis St, Lincoln, MA, 01773  
781/259-8667  
wellsresearch@gmail.com; www.wellsresearch.com

#3903

## Western Photonics Technology

SPIE Corporate Member

626 S Sierra Vista Ave Ste 101, Alhambra, CA, 91801  
626/289-1686; fax 626/289-1048  
info@wpotec.com; www.wpotec.com

#202

**New Product: Featured Products: Sapphire and Germanium window, 0.8mm lens.**

Headquarter in USA and factories in China. Develops and manufactures miniature optics (lens, prism, window), optics (window, lens, prism; filter), IR, visible, UV optics (Sapphire, Germanium, ZnSe, CaF<sub>2</sub>), laser and optical crystals (Nd:YAG, BBO), coatings, optical system, fiber optics (fiber pigtail), borescopes (IR, visible, UV rigid / flexible borescope, high temperature borescope, endoscope), lasers (CTH:YAG laser, Nd:YAG laser, CO<sub>2</sub>), laser, hologram (hologram label). Contact: Roger Xie, North American Manager; Alison, alison@wpotec.com.

## WIBE

2095 Indian Summer Ln, Vero Beach, FL, 32963  
772/539-9517  
randy.catts@wibe-usa.com;

#1435

WIBE is the world's leading manufacturer of telescoping mast systems. We feature manual and powered telescopic masts up to 100 feet for sensor and communications payloads. WIBE offers unguyed on-the-move or quick relocation masts, and guyed lightweight and heavy duty masts designed to meet the demanding conditions of today's military, civil and domestic environments. WIBE also provides multiple sensor aiming devices and vehicle mounting accessories. WIBE is an approved supplier to the DOD. Contact: Randy Catts, US Sales Representative, randy.catts@wibe-usa.com.

## Wideband Systems, Inc.

22682 Sandalwood, Mission Viejo, CA, 92692  
949/420-0474; fax 949/420-0476  
mike@wideband-sys.com; www.wideband-sys.com

#516

**New Product: Please visit our booth and see our next generation recorder.**

Wideband Systems designs and manufactures sophisticated Wideband recording instruments for the aerospace, communications and intelligence marketplace. Our versatile disk and solid-state recording systems are designed with analog and digital instrumentation interfaces and flexible control features. Each recorder employs its own internal mux, eliminating the need for an external mux. Typical applications include telemetry, RADAR, video, voice and data comm, imagery, COMINT, SIGINT and ELINT. Contact: Mike Fitter, VP Sales and Marketing, mike@wideband-sys.com.

## Williams Advanced Materials/ Thin Film Technology

SPIE Corporate Member

2978 Main St, Buffalo, NY, 14214  
716/446-2238  
kimberly\_schoen@beminc.com; www.williams-adv.com

#1404

**New Product: Long Wave Infrared coatings and assemblies for Night Vision Applications.**

A provider of custom thin film coatings, precision optical coatings and thin film hybrid circuits & interconnects. Industry leading provider of long and mid-wave coatings for night vision optics, including Anti-reflective, long wave pass and complex filter coatings. Fully integrated facilities for manufacturing optical sub-assemblies and focal array package windows. Long known for innovation, quality and customer service, we strive for excellence in providing value to our customers. Contact: Michael Zasowski, Director of Marketing, Zasowski@beminc.com; Tom Ives, Director of Sales and Technology, Tom\_Ives@beminc.com.

## Wordingham Technologies

SPIE Corporate Member

580 Fisher Station Dr, Victor, NY, 14564  
585/924-2294; fax 585/924-7660  
borcutt@wordingham.com; www.wordingham.com

#414

Wordingham Technologies provides full-service, dock to dock metal machining, including: multi-axis milling, multi axis turning, honing, screw machine technology, advanced metrology, finishing and mechanical sub-assembly. Though serving many markets, we focus on custom parts for Optics and Photonics, illumination, medical/biometric, and defense, security and sensing; and for Precision Instrumentation, including measurement, data collection/transfer and nano positioning. Contact: Robert W. Orcutt, General Manager/VP-Sales, borcutt@wordingham.com; Mike Jackson, Inside Sales, mjackson@wordingham.com.

## World Star Technologies

SPIE Corporate Member

321 Lesmill Rd, Toronto, ON, Canada, M3B 2V1  
416/363-3332; fax 416/363-3112  
info@worldstartech.com; www.worldstartech.com

#3005

**New Product: Mini Laser Projector, Micro-Laser Laser module, Visible and Infrared Laser.**

World Star Tech is a leading manufacturer and designer of laser modules and laser sensors. Our products have been successfully used in a wide range of diversified applications from machine vision, alignment, security, defense, process control to biomedical technology. Our product line includes an extensive range of laser modules and systems with wavelengths ranging from 405 nm to 1064 nm with various power range. Contact: Cetin Karakus, CTO, cetin@worldstartech.com.

## wzw-optics AG

SPIE Corporate Member

Wegenstr 18, Balgach, Switzerland, 9436  
41 71 722 12 14; fax 41 71 722 12 40  
optics@wzw.ch; www.wzw.ch

#1507

At WZW we have been producing high-end optics and precision optical components for customers all over the world for more than 40 years. Our aim is to strengthen our position even further, so it is vital that we act as a full-service provider of our customers. We place the most rigorous demands on our employees in every way, from product design, product development, quality assurance procedures to prototyping and series production. Contact: David Varrie, Sales and Marketing Director, david@wzw.ch.





## Xcitex Inc.

#3505

25 First St Ste 105, Cambridge, MA, 02141  
617/225-0080; fax 617/225-2529  
info@xcitex.com; www.xcitex.com

## XenICs

#217

**SPIE** Corporate Member

Ambachtenlaan 44, Leuven, Belgium, 3001  
32 16 38 99 00; fax 32 16 38 99 01  
sales@xenics.com; www.xenics.com

### New Product: Flexible Vision: Gobi, the Smart Thermal Camera.

XenICs is the leading developer of innovative infrared detection solutions for a wide range of applications. XenICs designs, manufactures and sells infrared detectors and cameras, both line-scan and 2-D, covering the infrared wavelength ranges from 0.4 to 14 micrometers. In addition, XenICs delivers custom products according to the agreed specification and planning. Contact: Sales Department, sales@xenics.com; Myriam Gillisjans, mgs@xenics.com.

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

#427

**SPIE** Corporate Member

No 13 4th Section Renmin Nan Lu, Chengdu, Sichuan, China, 610041  
86 28 8521 6229; fax 86 28 8525 5889  
sales@zzoptic.com; www.zzoptic.com

### New Product: High precision ZnSe product with S-D 10-5.

Z&Z is specialized in high precision plano IR and visible optical components. By years experience and efforts, Z&Z has achieved a high tech level in the fields of IR optical components and laser application components. We are outstanding both in super polish and super thin wafer. We can meet Roughness 0.07nm for Si, surface quality as 10-5 for ZnSe. Contact: Cynthia Qi, Business Manager, zz\_optic@vip.163.com.

## Zygo Corporation

#517

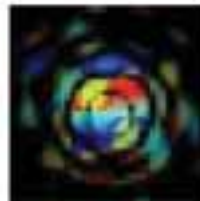
**SPIE** Corporate Member

Laurel Brook Rd, Middlefield, CT, 06455-1291  
860/347-8506; fax 860/347-3968  
inquire@zygo.com; www.zygo.com

The VeriFire products from ZYGO, the industry leader in interferometric metrology, include a high accuracy non-contact aspheric metrology workstation and Fizeau interferometers operating from DUV to IR wavelengths. ZYGO Optical Systems Division provides high precision optical components, IR windows, and electro-optic devices for surveillance, reconnaissance, and fire control systems, advanced helmet mounted displays, telescopes, high energy laser optics, lightweighted structures, and coatings. Contact: George Neale, Director Sales & Support, gneale@zygo.com; Matthew Giza, Director Sales & Marketing Optical Systems, mgiza@zygo.com.

# SPIE Newsroom

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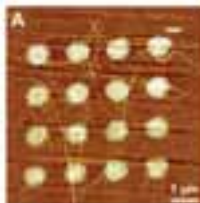
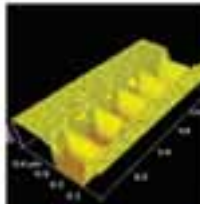


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### Free Popcorn

Popcorn carts will be located in the Exhibition Halls, back of 1500 Aisle and 3600 Aisle. Open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.



**SPIE**

Connecting minds. Advancing light.

# SPIE Defense, Security & Sensing

## Abrasives, Chemicals & Process Materials

Advanced Diamond Technologies, Inc.  
Equipment Acquisition Resources, Inc.  
Multisorb Technologies  
Universal Photonics, Inc.

## Astronomy

4D Technology Corp.  
AdTech Ceramics  
Angstrom Precision Optics Inc.  
Ariel Optics, Inc.  
CeramOptec Industries, Inc.  
Chengdu Ultra Pure Applied Materials Co., Ltd.  
CoorsTek Technical Ceramics  
Corning Inc.  
e2v  
Epner Technology, Inc.  
Glass Fab Inc.  
Goodrich Corp.  
Hofstadter Analytical Services  
Infinite Optics Inc.  
Meadowlark Optics  
Mindrum Precision, Inc.  
Naval Research Laboratory  
Ohara Corp.  
Ontar Corp.  
Photon Engineering, LLC  
PI (Physik Instrumente) LP  
Rohm and Haas Company  
Scientific Solutions, Inc. (SSI)  
StingRay Optics, LLC  
Teledyne Imaging Sensors  
Teraxion Inc.  
Universal Photonics, Inc.  
Vincent Associates

## Cameras and CCD Components

Active Silicon Ltd.  
Adimec  
AdTech Ceramics  
AGM Container Controls, Inc.  
AIM Infrarot-Module GmbH  
Ampex Data Systems Corp.  
Aphotik  
Atlantic Positioning Systems  
Axsys Technologies  
BAE Systems  
BaySpec, Inc.  
Boulder Imaging Inc.  
Cantronic Sytems, Inc.  
Cases by Source Inc.  
Coastal Optical Systems, Inc.  
Cohu Electronics  
Cyclone, CRI  
DenseLight Semiconductors Pte Ltd.  
Devitech ApS  
Directed Perception, Inc.  
Docter Optics, Inc.  
Drytech Inc.  
e2v  
Edmund Optics  
Electro-Optical Imaging, Inc.  
Epix, Inc.  
FLIR Systems, Inc. - Thermography Division  
Fotofab  
General Atomics Aeronautical Systems, Inc.  
Gentec Electro-Optics Inc.  
Hamamatsu Corp.  
Hitachi Kokusai Electric America, Ltd.  
Hofstadter Analytical Services  
ImmerVision  
Imperx, Inc.  
Intevac Photonics, Inc.  
JAI, Inc.

JENOPTIK Laser, Optik, Systeme GmbH - Sensor Systems Business Unit  
L-3 Communications Cincinnati Electronics  
Micro Precision, Inc.  
Middleton Research  
Mission Critical Electronic Systems Inc.  
NorPix, Inc.  
Obzerv Technologies Inc.  
Ophir-Spiricon  
Optics Technology, Inc.  
OptoElectronic Components  
Physical Optics Corp.  
Physimetrics, Inc.  
Pleora Technologies  
Proxitronic Industries AG  
Qioptiq  
Raptor Photonics Ltd.  
RICOR - Cryogenic & Vacuum Systems  
Sarnoff Corp.  
Scallop Imaging  
Sensors Unlimited, Inc., part of Goodrich Corporation  
Sensors Unlimited, Inc., part of Goodrich Corporation - Robotics+Unmanned Systems Display  
Solid State Scientific Corp.  
SRI Hermetics  
Sumitomo Electric USA  
Symphotic TII Corp.  
Teledyne Imaging Sensors  
Teledyne Judson Technologies  
ThruVision Ltd.  
Valde Systems, Inc.  
Vincent Associates  
XenICs

## Chemical & Biological Sensing

Applied Quantum Technologies  
BaySpec, Inc.  
Big Sky Laser Technologies - see Quantel  
Boston Electronics Corp.  
Brimrose Corp. of America  
Daylight Solutions  
Digital Light Innovations  
Drytech Inc.  
Georgia Tech Research Institute/SENSIAC

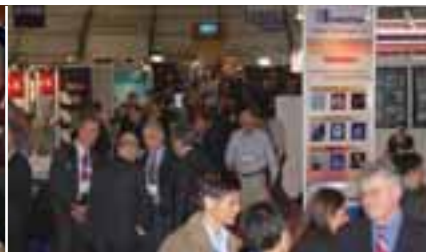
Goodrich Corp.  
Headwall Photonics, Inc.  
High Tech Photonics  
Idaho Technology, Inc.  
INO (National Optics Institute)  
Intevac Photonics, Inc.  
ITC  
ITT Visual Information Solutions  
Meadowlark Optics  
Michigan Aerospace Corp.  
MIDAC Corp.  
Middleton Research  
Ontar Corp.  
Optronic Laboratories, Inc.  
Photron  
Physical Optics Corp.  
POLLUTION EQUIPMENT NEWS/ Rimbach Publishing Inc.  
Polymer Optics, LLC  
RoMack, Inc.  
Scientific Solutions, Inc. (SSI)  
Scintec Corporation  
Shanghai Optics  
Telops Inc.  
Translume, Inc.

## Clinical, Chemical and Biological Instrumentation

BaySpec, Inc.  
Big Sky Laser Technologies - see Quantel  
Cases by Source Inc.  
GE Security - Homeland Protection  
Headwall Photonics, Inc.  
Idaho Technology, Inc.  
International Light Technologies  
MIDAC Corp.  
Middleton Research  
Optiphase, Inc.  
Optronic Laboratories, Inc.  
Photodigm, Inc.  
POLLUTION EQUIPMENT NEWS/ Rimbach Publishing Inc.  
Quantel  
Semrock, Inc.  
Translume, Inc.

## Communications

AdTech Ceramics  
CPS Technologies Corp.  
DenseLight Semiconductors Pte Ltd.



Harris Corp.  
 Jazz Semiconductor  
 L-3 Communications  
 Micro Precision, Inc.  
 Mission Critical Electronic Systems Inc.  
 Sheumann Laser Inc.  
 Teledyne Microelectronics  
 Teraxion Inc.  
 Tessera Inc.  
 Triple Play Communications  
 WIBE

## Displays

Apollo Optical Systems, Inc.  
 Boulder Nonlinear Systems, Inc.  
 Cases by Source Inc.  
 CMC Electronics Inc.  
 CREOL, The College of Optics & Photonics  
 Cyclone, CRI  
 Deposition Sciences, Inc  
 Digital Light Innovations  
 Dontech Inc.  
 eMagin Corp.  
 HOLOEYE Systems, Inc.  
 Intense Ltd.  
 Intevac Photonics, Inc.  
 ITT Visual Information Solutions  
 Kent Optronics, Inc.  
 Kopin Corp.  
 Liteye Systems Inc.  
 Luminit LLC  
 Nu-Cast, Inc.  
 Optical Filters USA LLC  
 Optical Research Associates  
 Pacer USA LLC  
 Photon Engineering, LLC  
 Pleora Technologies  
 QPC Lasers, Inc.  
 Rubicon Technology, Inc.  
 SCHOTT North America, Inc. - Defense  
 WAMCO Inc.  
 World Star Technologies

## Distributor or Reseller

Big Sky Laser Technologies - see Quantel  
 Equipment Acquisition Resources, Inc.  
 Physimetrics, Inc.  
 Symphotic TII Corp.

## Electronic Imaging Components, Equipment, Systems

A.J. Tuck Co.  
 Active Silicon Ltd.  
 Advanced Cooling Technologies, Inc.  
 AGM Container Controls, Inc.  
 AIM Infrarot-Module GmbH  
 Aphotik  
 Applied Quantum Technologies  
 Atlantic Positioning Systems  
 BAE Systems  
 Brimrose Corp. of America  
 Cantronic Sytems, Inc.  
 Clear Align  
 Coastal Optical Systems, Inc.  
 Cyclone, CRI  
 Devitech ApS  
 Dexter Research Center, Inc.  
 DRS Technologies, Inc.  
 Elbit Systems of America  
 Epix, Inc.  
 Fotofab  
 GE Fanuc Intelligent Platforms  
 General Atomics Aeronautical Systems, Inc.  
 Hitachi Kokusai Electric America, Ltd.  
 HOLOEYE Systems, Inc.  
 Hoppe Tool, Inc.  
 Imperx, Inc.  
 IMT Masken und Teilungen AG  
 Infrared Systems Development Corp  
 IRnova AB  
 IRphotonics  
 Jazz Semiconductor  
 JENOPTIK Laser, Optik, Systeme GmbH - Sensor Systems Business Unit  
 Kent Optronics, Inc.  
 Kopin Corp.  
 L-3 Communications, EOS Division  
 Liteye Systems Inc.  
 Micro Precision, Inc.  
 Middleton Research  
 Mission Critical Electronic Systems Inc.  
 New England Optical Systems  
 NoblePeak Vision Corp.  
 NorPix, Inc.  
 Novotech, Inc.  
 OASYS Technology, LLC

Optical Support, Inc.  
 Optics 1, Inc.  
 Optron Laboratories, Inc.  
 Photron  
 Physimetrics, Inc.  
 Pleora Technologies  
 Proxitronic Industries AG  
 Pulse Instruments  
 Qioptiq  
 QWIP Technologies Inc.  
 Raptor Photonics Ltd.  
 RICOR - Cryogenic & Vacuum Systems  
 SCD USA  
 Sensors Unlimited, Inc., part of Goodrich Corporation  
 Solid State Scientific Corp.  
 Special Optics, Inc.  
 Sumitomo Electric USA  
 Symphotic TII Corp.  
 Tecomet  
 ThruVision Ltd.  
 Valde Systems, Inc.  
 Vectronix Inc.  
 Voltage Multipliers Inc.  
 WIBE  
 Wideband Systems, Inc.  
 Wordingham Technologies

## Electronics, Signal Analysis Equipment

Advanced Cooling Technologies, Inc.  
 Ametek HCC Industries  
 Boston Electronics Corp.  
 Cases by Source Inc.  
 Electro-Optical Imaging, Inc.  
 GE Fanuc Intelligent Platforms  
 Infrared Systems Development Corp  
 Laser Optics, a PPGI company  
 Pulse Instruments  
 Teledyne Scientific Company  
 The MathWorks  
 Voltage Multipliers Inc.  
 Wideband Systems, Inc.

## Fiber Optic Components, Equipment, Systems

Ametek HCC Industries  
 Ampex Data Systems Corp.  
 Avo Photonics, Inc.  
 BaySpec, Inc.

Bookham Inc.  
 Brimrose Corp. of America  
 CASIX VITROCOM  
 CeramOptec Industries, Inc.  
 CiDRA Precision Services  
 Clear Align  
 CMC Electronics Inc.  
 CPS Technologies Corp.  
 Denselight Semiconductors Pte Ltd.  
 Denton Vacuum, LLC  
 Drytech Inc.  
 eMagin Corp.  
 Epitaxial Technologies, LLC  
 ET Precision Optics Inc.  
 Evaporated Coatings, Inc.  
 Fiberguide Industries, Inc.  
 Fotofab  
 Gooch & Housego (UK) Ltd.  
 High Tech Photonics  
 INO (National Optics Institute)  
 Intense Ltd.  
 IPG Photonics Corp.  
 IRphotonics  
 Isorad Ltd.  
 iXfiber SAS  
 LightPath Technologies, Inc.  
 MEMS Optical Inc.  
 Micro Laser Systems, Inc.  
 Opnext, Inc.  
 Optical Filters USA LLC  
 Optiphase, Inc.  
 OZ Optics Ltd.  
 Piezosystem Jena, Inc.  
 Polaris Electronics Corp.  
 PolarOnyx, Inc.  
 Polymicro Technologies, A Subsidiary of Molex Incorporated  
 QPC Lasers, Inc.  
 RoMack, Inc.  
 SCHOTT North America, Inc. - Defense  
 StellarNet, Inc.  
 Teledyne Judson Technologies  
 Teledyne Microelectronics  
 Teraxion Inc.  
 Thorlabs, Inc.  
 Triple Play Communications  
 Wordingham Technologies





# Product Index

## Finished Optics, Filters, & Coatings, Optical Fabrication Equipment

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Acktar Ltd.  
Advanced Diamond Technologies, Inc.  
Aerotech, Inc.  
Andover Corp.  
Angstrom Precision Optics Inc.  
Ariel Optics, Inc.  
ASML Optics  
Axsys Technologies  
Barr Associates Inc.  
Battelle  
Carl Zeiss MicroImaging, Inc.  
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Boulder Nonlinear Systems, Inc.  
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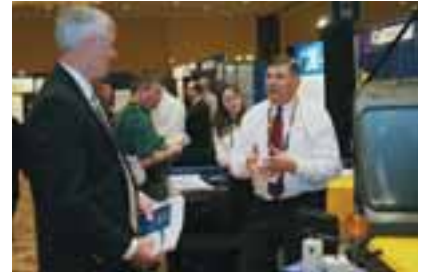
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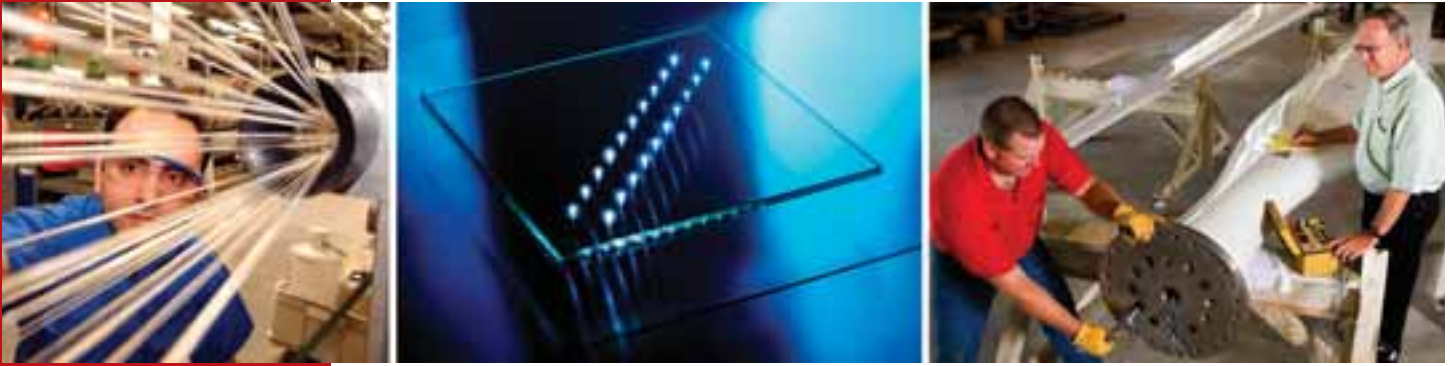
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Chances are you encounter SCHOTT technology every day – perhaps even a few times a day. In fact, we're the number one fiber optics component supplier in the world for night vision technology. Our superior lightweight glass and glass-ceramics offer enhanced ballistic performance and survivability across a wide range of force protection products. In addition, our advanced materials solutions span the full UV to IR spectrum and are found in satellites, missile domes, lasers and more. Our hermetically sealed electronic packaging is the building block for the world's state of the art sensors, radars and communication systems. By land, by air or by sea, the future of defense starts with SCHOTT today.



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