



SPIE®

2013 Defense Security+ Sensing

Exhibition Guide

Moving Technology to Market™

30 April to 2 May 2013

Baltimore Convention Center, Baltimore, Maryland, USA

www.spie.org/dss



See EDT at SPIE DSS – Booth 1135

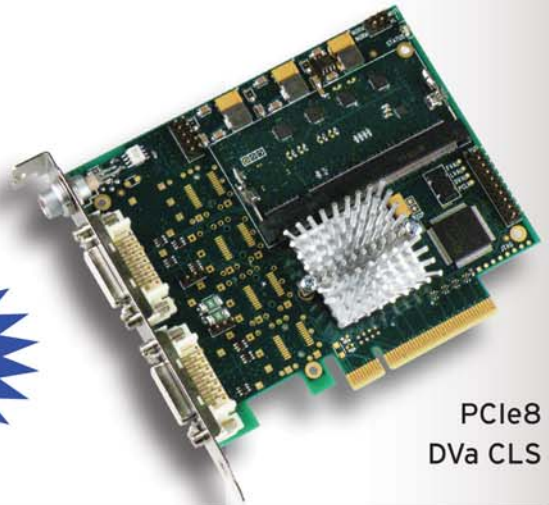


acquisition + simulation BOTH IN ONE BOARD

PCIe x8 simulator + framegrabber

- Simulator converts easily to a fully-functioning framegrabber
- Base through extended full mode
- Data rates up to 1.2 GB/s
- Optional 1 GB DDR2 memory, external triggering, timecode input

Two
in one!



PCIe8
DVa CLS



framegrabber is economical

PCIe x4 framegrabber

- Base through extended full mode
- Data rates up to 680 MB/s
- Optional 1 GB DDR2 memory, external triggering, timecode input

Low
cost!



PCIe4
DVa C-Link



fiber extender for up to 100 km

Long-distance extender over fiber

- Extends Camera Link up to 100 km
- Base through full mode
- Data rates up to 750 MB/s in full mode (240 MB/s in base mode)
- Provides electrical isolation from the host

Long
range!



RCX C-Link

edt

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interfaces + systems



www.edt.com

2013 Defense Security+ Sensing

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Baltimore Convention Center
Baltimore, Maryland, USA



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SPIE Conference App
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Create your schedule—search and browse
the technical program and special events,
participants, and exhibitors.



SPIE is the international society for optics and photonics, a not-for-profit organization founded in 1955 to advance light-based technologies. The Society serves nearly 225,000 constituents from approximately 150 countries, offering conferences, continuing education, books, journals, and a digital library in support of interdisciplinary information exchange, professional growth, and patent precedent. SPIE provided \$3.2 million in support of education and outreach programs in 2012.

General Information



Headquarters Hotel

Hilton Baltimore

401 West Pratt Street

Phone: +1 443 573 8700 · www.hilton.com

Exhibition Hours

(Level 100)

Tuesday, 30 April 10:00 am to 5:00 pm

Wednesday, 1 May 10:00 am to 5:00 pm

Thursday, 2 May 10:00 am to 2:00 pm

Registration

Onsite Registration and Badge Pick-Up Hours

Pratt St. Lobby (Level 300)

Sunday, 28 April 4:00 pm to 7:00 pm

Monday, 29 April 7:00 am to 5:00 pm

Tuesday, 30 April 7:30 am to 5:00 pm

Wednesday, 1 May 7:30 am to 5:00 pm

Thursday, 2 May 7:30 am to 5:00 pm

Friday, 3 May 7:30 am to 12:00 pm

Food and Beverage Services

Coffee Breaks

Sharp St. Lobby (Level 200) & Camden Lobby (Level 300)

Monday, Thursday afternoon, and Friday

Hall D and Hall G (Level 100)

Tuesday through Thursday morning

Complimentary coffee will be served twice daily, at 10:00 am and 3:00 pm. Check individual conference listings for exact times and locations.

Food & Refreshments for Purchase

Market Fresh Café – Main Terrace (Level 300)

Starbucks – Pratt St Lobby (Level 300)

Coffee Stand – Camden Lobby (Level 300)

Monday through Friday - hours posted

Exhibition Halls (Level 100)

Tuesday through Thursday during exhibition hours

Hot and cold snacks, hot entrees, deli sandwiches, salads, and pastries are available for purchase including espresso & beverages. Cash and credit cards accepted.

Course and Workshop Registration

Courses and workshops are priced separately. Course-only registration includes your selected course(s), course notes, coffee breaks, and admittance to the exhibition. Course prices include applicable taxes. Onsite, please go to Course Materials Pickup after you pick up your badge.

Multiple facilities may be used for courses; allow yourself enough time to register, pick up your materials and possibly walk to a nearby facility before your course begins.

SPIE Cashier

Registration Area

Open during registration hours

Registration Payments

If you are paying by cash or check as part of your onsite registration, wish to add a course, workshop, or special event requiring payment, or have questions regarding your registration, visit the SPIE Cashier.

Receipts and Certificate of Attendance

Preregistered attendees who did not receive a receipt or attendees who need a Certificate of Attendance may obtain those from the SPIE Cashier at Badge Corrections and Receipts.

Badge Corrections

Badge corrections can be made by the SPIE Cashier at the Badge Corrections station. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

Lunch Voucher

Exhibition Hall Food Outlets

11:00 am through 1:00 pm

Vouchers are redeemable on Tuesday through Thursday at any of the food outlets in the exhibition hall. No change returned if purchase is less. No cash value

Desserts

Complimentary tickets for dessert snacks are included in course and conference attendee registration packets.

Free Popcorn

Exhibition Hall

Sponsored by **GENERAL DYNAMICS**
Global Imaging Technologies

Popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

The Clear Choice



For more than 30 years, Dow Electronic Materials has been The Clear Choice for high-performance infrared optical materials. From our large-scale CVD furnaces we produce best-in-class, high-purity, high-density zinc materials that we precisely fabricate into a wide range of format options to your specifications.

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Electronic Materials

www.dow.com

Visit us at booth #1641

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General Information

SPIE Onsite Services

Internet Access

Wired

Pratt St. Lobby (Level 300) – near SPIE Bookstore

Complimentary wired internet access is available; attendees can hook up their laptops or use provided workstations.

Wireless

Pratt St. Lobby (Level 300)
Hall D (Level 100)

Complimentary wireless access is also available; instructions will be posted onsite.

Sponsored by:



SPIE Conference App

Pratt St. Lobby (Level 300)

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

Sponsored by:



SPIE Exhibitor Directory

Pratt St. Lower Lobby (Level 100)
Camden Lobby (Level 300)

Search exhibitors by name or booth numbers, browse products, and search technologies.

**3rd Annual
Imaging Gallery Showcase**

SPIE and StingRay Optics are once again teaming up at SPIE Defense, Security, and Sensing to display the finest examples of today's imaging technology...with an artistic flair!

On the exhibition floor during show hours

StingRay

SPIE

SPIE Bookstore

Pratt St. Lobby (Level 300)

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

SPIE Education Services

Pratt St. Lobby (Level 300)

Browse course offerings and the other education services available: SPIE courses, videos, and CDs as well as customized in-company courses.

SPIE Press Room

Pratt St. East Show Office (Level 200)
Open during Registration hours

For Registered Press only. The Press Room provides meeting space, refreshments, access to exhibitor press releases, and Internet connections. Press are urged to register before the meeting by emailing name, contact information, and name of publication to media@spie.org. Preregistration closes approximately 10 days before the start of the event.

SPIE Luggage + Coat Check

Pratt St. Lobby (Level 300) Room 338
Monday through Friday

Complimentary luggage, package, and coat storage are available. Please note hours; no late pickup available.

Baltimore Convention Center Business Center

Pratt St. Lobby (Level 300)
Monday through Friday

The Business Center provides full service business needs for your convenience. They provide photocopying, faxing, computer workstations and printing services. Shipping is provided through FedEx. Office supplies are also available. Phone 410-649-7194 for more details.

Restaurant & City Information

Pratt St. Lobby (Level 300)

The information kiosk near the SPIE Bookstore will have printed information for those that would like to know more restaurant and city information.

Child Care Services

- Elizabeth Cooney Agency Inc., Toll Free: 888-353-1700, Phone: 410-323-1700, Fax: 410-377-4722
- Note: SPIE does not imply an endorsement nor recommendation of these services. They are provided on an "information only" basis for your further analysis and decision. Other services may be available.

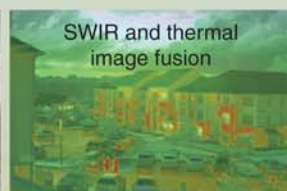
Urgent Message Line

An urgent message line is available during registration hours:
410-649-6102.

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Sensors Unlimited products

- Image through smoke, dust, fog and haze - in daylight or starlight
- Achieve facial recognition
- Compact, uncooled, & low power
- Our 1280 x 1024, 1.3 Mpixel camera & low power, ultra-compact (< 1 in.³) & 640 x 512 C-camera are ideal for UAS, UGS, maritime intelligence, hand-held, and mobile surveillance systems



General Information

Policies

Acceptance of Policies and Registration Conditions

The following Policies and Conditions apply to all SPIE Events. As a condition of registration, you will be required to acknowledge and accept the SPIE Registration Policies and Conditions contained herein.

Attendee Registration and Admission

SPIE, or their officially designated event management, in their sole discretion, reserves the right to accept or decline an individual's registration for an event. Further, SPIE, or event management, reserves the right to prohibit entry or remove any individual whether registered or not, be they attendees, exhibitors, representatives, or vendors, who in their sole opinion are not, or whose conduct is not, in keeping with the character and purpose of the event. Without limiting the foregoing, SPIE and event management reserve the right to remove or refuse entry to any attendee, exhibitor, representative, or vendor who has registered or gained access under false pretenses, provided false information, or for any other reason whatsoever that they deem is cause under the circumstances.

Misconduct Policy

SPIE is a professional, not-for-profit society committed to providing valuable conference and exhibition experiences. SPIE is dedicated to equal opportunity and treatment for all its members and meeting attendees. Attendees are expected to be respectful to other attendees, SPIE staff, and contractors. Harassment and other misconduct will not be tolerated; violators will be asked to leave the event.

Identification

To verify registered participants and provide a measure of security, SPIE will ask attendees to present a government-issued Photo ID at registration to collect registration materials.

Individuals are not allowed to pick up badges for attendees other than themselves. Further, attendees may not have some other person participate in their place at any conference-related activity. Such other individuals will be required to register on their own behalf to participate.

Capture and Use of a Person's Image

By registering for this event, I grant full permission to SPIE to capture, store, use, and/or reproduce my image or likeness by any audio and/or visual recording technique (including electronic/digital photographs or videos), and create derivative works of these images and recordings in any SPIE media now known or later developed, for any legitimate SPIE marketing or promotional purpose.

By registering for this event, I waive any right to inspect or approve the use of the images or recordings or of any written copy. I also waive any right to royalties or other compensation arising from or related to the use of the images, recordings, or materials. By registering, I release, defend, indemnify and hold harmless SPIE from and against any claims, damages or liability arising from or related to the use of the images, recordings or materials, including but not limited to claims of defamation, invasion of privacy, or rights of publicity or copyright infringement, or any misuse, distortion, blurring, alteration, optical illusion or use in composite form that may occur or be produced in taking, processing, reduction or production of the finished product, its publication or distribution.

Payment Method

Registrants for paid elements of the event, who do not provide a method of payment, will not be able to complete their registration. Individuals with incomplete registrations will not be able to attend the conference until payment has been made. SPIE accepts VISA, MasterCard, American Express, Discover, Diner's Club, checks and wire transfers. Onsite registrations can also pay with Cash.

Audio, Video, Digital Recording Policy

Conferences, courses, and poster sessions: For copyright reasons, recordings of any kind are prohibited without prior written consent of the presenter or instructor. Attendees may not capture or use the materials presented in any meeting/course room, or in course notes on display without written permission. Consent forms for material presented in meeting rooms are available at Speaker Check-In. Individuals not complying with this policy will be asked to leave a given session and/or asked to surrender their recording media.

Exhibition Hall: For security and courtesy reasons, recordings of any kind are prohibited unless one has explicit permission from on-site company representatives. Individuals not complying with this policy will be asked to surrender their recording media and to leave the exhibition hall.

Your registration signifies your agreement to be photographed or videotaped by SPIE in the course of normal business. Such photos and video may be used in SPIE marketing materials or other SPIE promotional items.

Laser Pointer Safety Information/Policy

SPIE supplies tested and safety-approved laser pointers for all conference meeting rooms. For safety reasons, SPIE requests that presenters use provided laser pointers.

Use of a personal laser pointer represents user's acceptance of liability for use of a non-SPIE-supplied laser pointer. If you choose to use your own laser pointer, it must be tested to ensure <5 mW power output. Laser pointers in Class II and IIIa (<5 mW) are eye safe if power output is correct, but output must be verified because manufacturer labeling may not match actual output. Come to Speaker Check-In and test your laser pointer on our power meter. You are required to sign a waiver releasing SPIE of any liability for use of potentially non-safe, personal laser pointers. Misuse of any laser pointer can lead to eye damage.

Underage Persons on Exhibition Floor Policy

For safety and insurance reasons, no one 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 Policy

Unauthorized solicitation in the Exhibition Hall is prohibited. Any non-exhibiting manufacturer or supplier observed to be distributing information or soliciting business in the aisles, or in another company's booth, will be asked to leave immediately.

Unsecured Items Policy

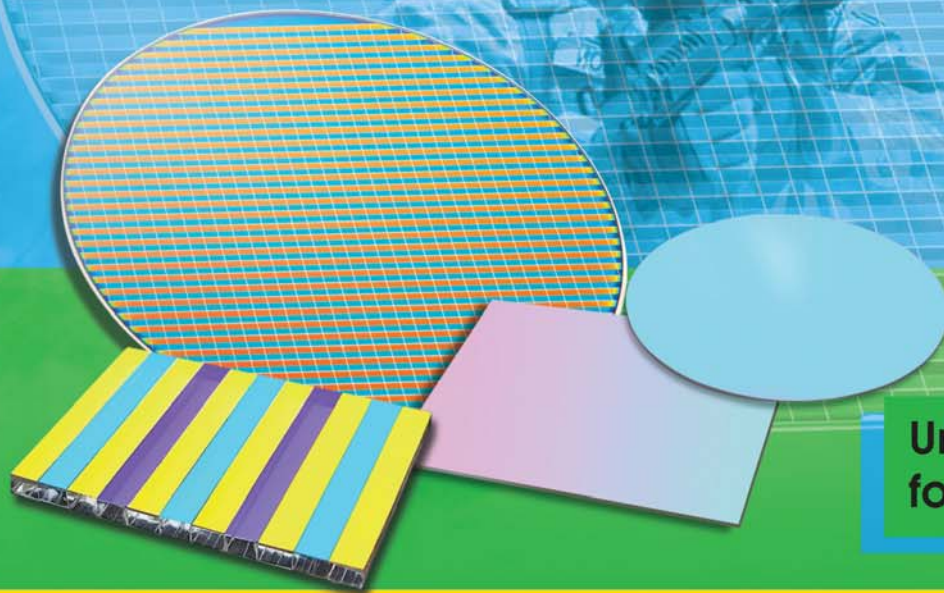
Personal belongings should not be left unattended in meeting rooms or public areas. Unattended items are subject to removal by security. SPIE is not responsible for items left unattended.

Wireless Internet Service Policy

At SPIE events where wireless is included with your registration, SPIE provides wireless access for attendees during the conference and exhibition but cannot guarantee full coverage in all locations, all of the time. Please be respectful of your time and usage so that all attendees are able to access the internet.

Excessive usage (e.g., streaming video, gaming, multiple devices) reduces bandwidth and increases cost for all attendees. No routers may be attached to the network. Properly secure your computer before accessing the public wireless network. Failure to do so may allow unauthorized access to your laptop as well as potentially introduce viruses to your computer and/or presentation. SPIE is not responsible for computer viruses or other computer damage.

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General Information

Policies

Mobile Phones and Related Devices Policy

Mobile phones, tablets, laptops, pagers, and any similar electronic devices should be silenced during conference sessions. Please exit the conference room before answering or beginning a phone conversation.

Smoking

For the health and consideration of all attendees, smoking is not permitted at any event elements, such as but not limited to: plenaries, conferences, workshops, courses, poster sessions, hosted meal functions, receptions, and in the exhibit hall. Most facilities also prohibit smoking in all or specific areas. Attendees should obey any signs preventing or authorizing smoking in specified locations.

Hold Harmless

Attendee agrees to release and hold harmless SPIE from any and all claims, demands, and causes of action arising out of or relating to your participation in the event you are registering to participate in and use of any associated facilities or hotels.

Event Cancellation

If for some unforeseen reason SPIE should have to cancel the event, registration fees processed will be refunded to registrants. Registrants will be responsible for cancellation of travel arrangements or housing reservations and the applicable fees.

Confidential Reporting of Unethical or Inappropriate Behavior

SPIE is an organization with strong values of responsibility and integrity. Our Ethics Statement and Code of Professional Conduct contain general guidelines for conducting business with the highest standards of ethics. SPIE has established a confidential reporting system for staff & other stakeholders to raise concerns about possible unethical or inappropriate behavior within our community. Complaints may be fi

SPIE Apps for iPhone® and Android™



The image shows a person in a dark suit and white shirt using a smartphone. The phone screen displays the SPIE app interface, which lists several free applications: SPIE Conference Program, SPIE Profiles, SPIE Geometrical Optics, SPIE Geometrical Optics Light, and SPIE Newsroom. The SPIE logo is visible in the bottom left corner of the image. Below the phone, there are logos for Google play and the App Store, along with a note that iPhone and iTunes are registered trademarks of Apple Inc.

Google play

Available on the App Store

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- maximum frame rate **100 frames / s**

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**SPIE Defense Security+Sensing
Booth #2054**

**April 30 – May 2, 2013
Baltimore Convention Center**

www.pco-tech.com

In Europe contact: www.pco.de

pco.

Don't Miss the New Technology Demos and Displays

Exhibition Hall, adjacent to the demo area

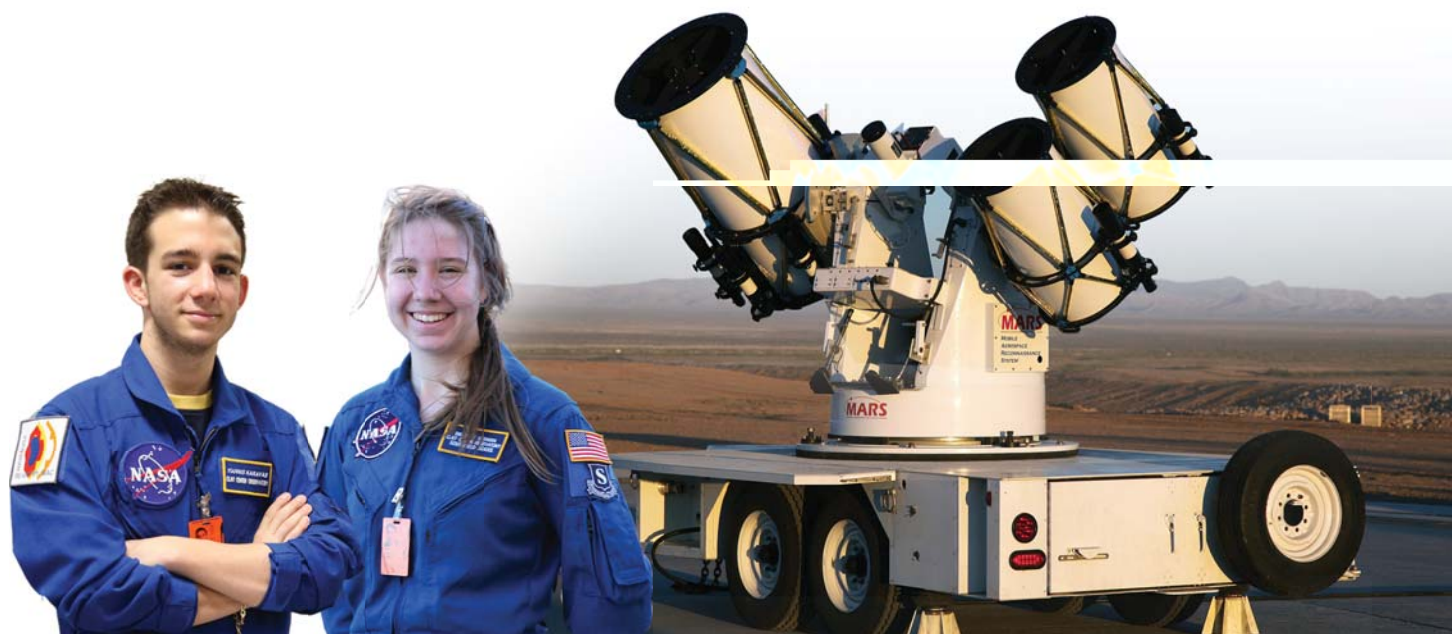
The Exhibition includes hands-on demos of some amazing new technologies. Get an up-close look at the latest in technologies like laser propulsion, high-performance imaging, SEMs, flight simulators, UAVs, and more.

Featured Products



The MARS system has several Kineto Tracking Mounts (KTM) used to telescopically track and image aircraft, rockets, orbiting spacecraft, and hypersonic test vehicles. MARS' telescopes provide high-resolution visible, infrared, and spectral imaging, and can be configured for manned or unmanned operation.

The demonstration is also a showcase of sorts for inspiring young people to consider careers in science, technology, engineering and math (STEM). At the exhibition, two students, former members of a high-school photonics research program, will demonstrate a fully powered MARS KTM.



Yiannis Karavas and Brigitte Berman will demonstrate the Mobile Aerospace Reconnaissance System at DSS.



The Virtusphere is a new simulation platform for safety training of practical skills of users preparing for dangerous environments. The new method and system provides infinite space for the most immersive virtual experience with a full body motion. Inside the 10-foot hollow sphere, a user wears a wireless, head-mounted display and can walk, jump, roll, crawl, or run over virtually unlimited distances without encountering real-world obstacles. The Virtusphere can be a most effective tool for military and law enforcement, fire safety, and counter terrorism training. The main applications of the Virtusphere technology are individual training, team training and mission rehearsal. It is compatible with variety of 3D engines including VBS2. The full body motion during the simulation training process adds useful muscle memories to brain skills that could be critical on the future actions on a battlefield.



Tethered VTOL powered by laser power over fiber

The platform can be used for ISR or communications relay. Applications include military force protection; civilian and industrial security; incident response; convoy protection; elevated over-the-horizon communications relay; broadcast media aerial video; temporary cellular network enhancement; and more.



200W Fiber-coupled diode laser



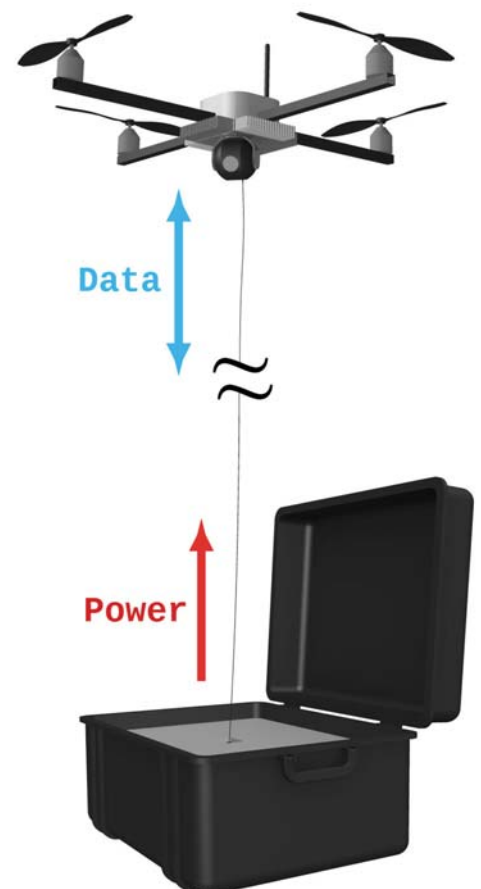
Fiber optic cable



Photovoltaic cells



Laser cooling system





Special Events

Symposium-Wide Plenary Session

Monday 29 April • 5:00 to 6:00 pm • Convention Center Ballroom 1-2

Open to All Attendees

exhibition visitors,
exhibitors, and technical
conference attendees



DARPA: Driving Technological Surprise

Arati Prabhakar

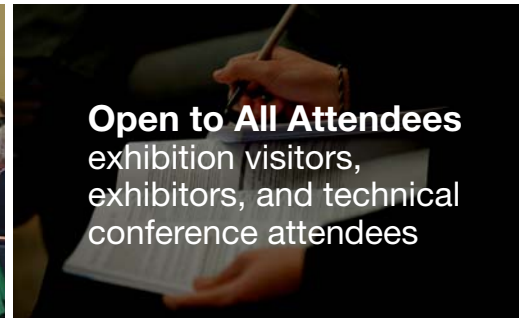
Director of the Defense Advanced Research Projects Agency (DARPA)

Dr. Prabhakar has spent her career investing in world-class engineers and scientists to create new technologies and businesses. Her first service to national security started in 1986 when she joined DARPA as a program manager. She initiated and managed programs in advanced semiconductor technology and flexible manufacturing, as well as demonstration projects to insert new semiconductor technologies into military systems. As the founding director of DARPA's Microelectronics Technology Office, she led a team of program managers whose efforts spanned these areas, as well as optoelectronics, infrared imaging and nanoelectronics.

In 1993, President William Clinton appointed Dr. Prabhakar director of the National Institute of Standards and Technology, where she led the 3,000-person organization in its work with companies across multiple industries. Dr. Prabhakar moved to Silicon Valley in 1997, first as chief technology officer and senior vice president at Raychem, and later vice president and then president of Interval Research. From 2001 to 2011, she was a partner with U.S. Venture Partners, an early-stage venture capital firm. Dr. Prabhakar identified and served as a director for startup companies with the promise of significant growth. She worked with entrepreneurs in energy and efficiency technologies, components for consumer electronics, and semiconductor process and design technology.

Dr. Prabhakar received her Doctor of Philosophy in applied physics and Master of Science in electrical engineering from the California Institute of Technology. She received her Bachelor of Science in electrical engineering from Texas Tech University. She began her career as a Congressional Fellow at the Office of Technology Assessment.

Dr. Prabhakar has served in recent years on the National Academies' Science Technology and Economic Policy Board, the College of Engineering Advisory Board at the University of California, Berkeley, and the red team of DARPA's Defense Sciences Research Council. In addition, she chaired the Efficiency and Renewables Advisory Committee for the U.S. Department of Energy. Dr. Prabhakar is a Fellow of the Institute of Electrical and Electronics Engineers, a Texas Tech Distinguished Engineer, and a Caltech Distinguished Alumna.



Open to All Attendees
exhibition visitors,
exhibitors, and technical
conference attendees

WORKSHOP

Early Stage Technology Commercialization

Wednesday 1 May · 8:00 to 10:00 am
Convention Center, Room 315

Panelists from U.S. government laboratories, venture capital community, and industry discuss ways to speed the commercialization and deployment of early-stage Defense and Homeland Security applications focused on mid-infrared technologies. Listen and interact with the leaders in the IR community, and come to share your ideas.



Moderator: **Joseph X. Montemarano**,
Executive Director, MIRTH, Princeton Univ. (USA)

Joseph X. Montemarano has been involved in state-of-the-art research and commercialization efforts related to health-care, defense and homeland security, advanced materials, computer science and photonic applications throughout his career. Mr. Montemarano has helped large and small companies, and government researchers access emerging technologies, faculty and other university resources resulting in a significant increase in sponsored research, the launch of several spin-off companies, and successful technology commercialization and fielded applications.

He joined Princeton University in July 1994, and currently serves as Executive Director for the NSF-Engineering Research Center on Mid-Infrared Technologies for Health and Environment (MIRTH) led by Princeton University, and Director for Industrial Enterprise for the Princeton Institute for Science and Technology of Materials (PRISM).

Panelists will include:

Thomas A. Cellucci, Executive Vice-President, ICS Nett, Inc.

David Pustai, Senior Program Manager for Innovation and Advanced Research and Development for Lockheed Martin

Ralph E. Taylor-Smith, General Partner, Battelle Ventures

Kevin Lascola, Maxion Technologies/Thorlabs

TECHNOLOGY SHOWCASE

Start-ups and small companies will showcase their latest technologies ready and available for commercialization.

Companies will include:

Sentinel Photonics, Inc. www.sentinelphotonics.com

ABOUT MIRTH

MIRTH is an Engineering Research Center for Mid-Infrared Technologies for Health and the Environment sponsored by National Science Foundation. MIRTH invents, develops and commercializes high-performance, cost-effective and market-ready mid-infrared trace gas sensor systems based on new technologies such as quantum cascade lasers in close collaboration with industry, practitioners, academic institutions and government laboratories for applications in health, environment and homeland security. To learn more go to www.mirthecenter.org

SPECIAL SESSION

National Security Sensor Challenges

Wednesday 1 May · 3:30 to 5:30 pm
Convention Center, Room 317

The Government National Security Leadership Panel Discussion



Session Moderator: **Dr. David Whelan**, Boeing Defense, Space, and Security

This Government National Security Leadership Panel will discuss the emerging sensor needs and challenge that must be overcome to provide security in the 21st century. Both long term breakthrough sensing challenges as well as nearer term cost, size and weight improvements to enable new mission capabilities will be addressed.

Presenters:



Stefanie Tompkins,
Deputy Director of Strategic Technology Office, DARPA

Dr. Stefanie Tompkins is the Deputy Director of the Strategic Technology Office. In this position, she leads Program Managers in the development of promising and potentially disruptive technologies related to command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). Dr. Tompkins also served as a DARPA Program manager from 2007-2012, where her program portfolios focus on adaptable navigation systems and the design and manufacture of optical systems.

Prior to joining DARPA, Dr. Tompkins spent 10 years in industry, most recently at Science Applications International Corporation, where she managed a portfolio of technology development programs, primarily related to remote sensing. As a NASA Principal Investigator, she conducted research in solar system spectroscopy. She has also served as a military intelligence officer in the U.S. Army.



Peter Highnam, Director, IARPA

Dr. Peter Highnam was named IARPA Director on 30 August 2012. Dr. Highnam joined IARPA in February 2009 as the Office Director for Incisive Analysis. Prior to IARPA, he was a senior advisor in the National Institutes of Health (NIH) and then in the Biomedical Advanced Research and Development Authority (BARDA). From 1999 to 2003, Dr. Highnam was a DARPA program manager with programs in electronic warfare and airborne communications. Before joining DARPA, he worked for more than a decade in applied research in industry. Dr. Highnam holds a Department of Health and Human Services Secretary's Distinguished Service Award and a Department of Defense Civilian Exceptional Service Award. He is a co-inventor on three patents in commercial seismic exploration and holds a doctorate in computer science from Carnegie Mellon University.



Walter F. Jones, Director, Office of Naval Research

Dr. Walter F. Jones joined the Office of Naval Research in September 2007, as Executive Director. Dr. Jones is the senior civilian manager at ONR, and provides executive, technical, and scientific direction in the performance of ONR's mission of planning and managing science and technology research for the Department of the Navy. He works closely with ONR's Directorate leads in the identification, prioritization, and support of specific areas of science and technology development.

Dr. Jones most recently was Director, Plans and Programs, Air Force Research Laboratory (AFRL), Wright-Patterson Air Force Base, Ohio. He was responsible for developing and managing the processes that defined AFRL's \$3-billion annual investment in technologies for future Air Force systems. These systems include space, weapons, aeronautics, and command, control, communications, computers, intelligence, surveillance and reconnaissance.



Professional Development

Spend some time focusing on your career development while you're at SPIE Defense, Security, and Sensing. These workshops and presentations will help you be more successful.

Complying with the ITAR: A Case Study

WS933 · Course Level: Introductory
CEU: 0.35 \$345 Members | \$395 Non-Members USD
Wednesday 1:30 pm 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** Kerry Scarlott is a Director at the law firm of Goulston & Storrs. With an office in Boston, MA and Washington, D.C., Kerry focuses his practice on business law and international trade law, with particular expertise in assisting technology-based companies.

Essential Skills for Engineering Project Leaders

WS846 · Course Level: Introductory
CEU: 0.35 \$345 Members | \$395 Non-Members USD
Thursday 1:30 pm to 5:30 pm

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

Instructor: **Gary Hinkle** is President and founder of Auxilium, Inc. His experience includes a broad variety of management and staff assignments with small, medium, and large companies involved in the development and manufacturing of high-tech products.

Leading Successful Product Innovation

WS951 · Course Level: Intermediate
CEU: 0.35 \$345 Members | \$395 Non-Members USD
Wednesday 8:30 am to 12:30 pm

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

Instructor: **John Carrano** is President of Carrano Consulting. Previously, he was the Vice President, Research & Development, Corporate Executive Officer, and Chairman of the Scientific Advisory Board for Luminex Corp.

**Registration required
for courses and
workshops**

See SPIE Cashier
 Pratt St. Lobby (Level 300)



Basic Optics for Non-Optics Personnel

WS609 • Course Level: Introductory

CEU: 0.2 \$150 Members | \$200 Non-Members USD

Tuesday 1:30 pm to 4:00 pm

This course will provide the technical manager, sales engineering, marketing staff, or other non-optics personnel with a basic, non-mathematical introduction to the terms, specifications, and concepts used in optical technology to facilitate effective communication with optics professionals on a functional level. Topics to be covered include basic concepts such as imaging, interference, diffraction, polarization and aberrations, definitions relating to color and optical quality, and an overview of the basic measures of optical performance such as MTF and wavefront error. The material will be presented with a minimal amount of math, rather emphasizing working concepts, definitions, rules of thumb, and visual interpretation of specifications. Specific applications will include defining basic imaging needs such as magnification, depth-of-field, and MTF as well as the definitions of radiometric terms.

Instructor: **Kevin Harding** has been active in the optics industry for over 30 years, and has taught machine vision and optical methods for over 25 years in over 70 workshops and tutorials, including engineering workshops on machine vision, metrology, NDT, and interferometry used by vendors and system houses to train their own engineers.

Basic Laser Technology

SC972 • Course Level: Introductory

CEU: 0.35 \$345 Members | \$395 Non-Members USD

Friday 8:30 am to 12:30 pm

New

If you are uncomfortable working with lasers as “black boxes” and would like to have a basic understanding of their inner workings, this introductory course will be of benefit to you. The workshop will cover the basic principles common to the operation of any laser/laser system. Next, we will discuss laser components and their functionality. Components covered will include laser pumps/energy sources, mirrors, active media, nonlinear crystals, and Q-switches. The properties of laser beams will be described in terms of some of their common performance specifications such as longitudinal modes and monochromaticity, transverse electromagnetic (TEM) modes and focusability, continuous wave (CW) power, peak power and power stability. Laser slope and wall-plug efficiencies will also be discussed.

Instructor: **Sydney Sukuta** is currently a Laser Technology professor at San Jose City College. He also has industry experience working for the some of the world's leading laser manufacturers in Silicon Valley where he saw first-hand the issues they encounter on a daily basis.

Just Outgoing Enough: Public Speaking, Networking, and Getting What You Want for Scientists and Engineers

New

WS1108 • Course Level: Introductory

CEU: 0.3 \$100 Members | \$150 Non-Members USD

Wednesday 1:30 pm to 5:00 pm

A scientist or engineer needs to be able to make individual connections with other people to communicate ideas, get access to resources, and gain opportunities for advancement. Yet many of us who go into science would never be called “a people person”, and a good proportion of us are not particularly interested in becoming one.

This workshop will focus on how to acquire the skills necessary for public speaking, networking, and presenting yourself to others. You don't have to become the life of the party to be successful in science. The trick is to learn to be just outgoing enough to make connections—whether with individuals or with an audience— and keep them open enough to achieve what you want to get done. This lively and interactive session will help attendees develop strategies for finding their own comfort zones.

Instructor: **Victoria McGovern** Ph.D. is a biochemist interested in how organisms bring in information from the environment and use nucleic acid shape to act on that information, is a Senior Program Officer at the Burroughs Wellcome Fund, a foundation that supports basic research in the health sciences in the United States and Canada. She runs the Fund's infectious disease program area and population science program area.

This course is free to SPIE Student Members, but **you must register to attend.**

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Course Daily Schedule



Get Professional Development with SPIE Courses

Relevant training · Proven instructors · Education you need to stay competitive in today's job market

- More than 50 courses and workshops on fundamental and current topics on lasers and applications, sensors, imaging, IR systems, optical & optomechanical engineering, and more
- Course attendees receive CEUs to fulfill continuing education requirements.

Monday	Tuesday	Wednesday	Thursday	Friday
IR Sensors and Systems				
SC713 Engineering Approach to Imaging System Design (Holst) 8:30 am to 5:30 pm, \$615 / \$710	SC180 Imaging Polarimetry (Dereniak, Miles, Sabatke) 8:30 am to 12:30 pm, \$345 / \$395	SC1076 Analog-to-Digital Converters for Digital ROICs (Veeder) 8:30 am to 12:30 pm, \$345 / \$395	SC755 Infrared Optics and Zoom Lenses (Mann) 8:30 am to 12:30 pm, \$345 / \$395	SC154 Electro-Optical Imaging System Performance (Holst) 8:30 am to 5:30 pm, \$645 / \$740
SC278 Infrared Detectors (Dereniak) 8:30 am to 12:30 pm, \$545 / \$595	SC950 Infrared Imaging Radiometry (Richards) 8:30 am to 5:30 pm, \$565 / \$660	SC835 Infrared Systems - Technology & Design (Daniels) 8:30 am to 5:30 pm, \$925 / \$1,195		
SC1107 IR Atmospheric Propagation for Sensor Systems (Thomas) 8:30 am to 5:30 pm, \$650 / \$745	SC214 Infrared Window and Dome Materials (Harris) 8:30 am to 5:30 pm, \$630 / \$730	SC1000 Introduction to Infrared and Ultraviolet Imaging Technology (Richards) 8:30 am to 12:30 pm, \$380 / \$430	SC067 Testing and Evaluation of E-O Imaging Systems (Holst) 8:30 am to 5:30 pm, \$645 / \$740	
SC1073 Radiometry and its Practical Applications (Grant) 8:30 am to 5:30 pm, \$675 / \$770	SC900 Uncooled Thermal Imaging Detectors and Systems (Hanson) 8:30 am to 5:30 pm, \$605 / \$700	SC789 Introduction to Optical and Infrared Sensor Systems (Shaw) 8:30 am to 5:30 pm, \$565 / \$670		
SC1071 Understanding Diffractive Optics (Soskind) 8:30 am to 5:30 pm, \$600 / \$695	SC194 Multispectral and Hyperspectral Image Sensors (Lomheim) 1:30 pm to 5:30 pm, \$425 / \$475	SC181 Predicting Target Acquisition Performance of Electro-Optical Imagers (Vollmerhausen) 8:30 am to 5:30 pm, \$620 / \$715		
SC152 Infrared Focal Plane Arrays (Dereniak, Hubbs) 1:30 pm to 5:30 pm, \$345 / \$395		SC1012 Coherent Mid-Infrared Sources and Applications (Vodopyanov) 1:30 pm to 5:30 pm, \$345 / \$395		
SC1068 Introduction to Night Vision (Browne) 1:30 pm to 5:30 pm, \$345 / \$395		SC1109 Infrared Radiometric Calibration (Yoon, Eppeldauer, Kaplan, Gibson) 1:30 to 5:30 pm, \$345 / \$395		

Registration required for courses and workshops

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Continuing Education Units

SPIE has been approved as an authorized provider of CEUs by IACET, The International Association for Continuing Education and Training (Provider #1002091). In obtaining this approval, SPIE has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice.

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

SPIE reserves the right to cancel a course due to insufficient advance registration.

Monday	Tuesday	Wednesday	Thursday	Friday
Optical and Optomechanical Engineering				
SC156 Basic Optics for Engineers (Boreman) 8:30 am to 5:30 pm, \$605 / \$700	SC950 Infrared Imaging Radiometry (Richards) 8:30 am to 5:30 pm, \$565 / \$660	SC254 Integrated Opto-Mechanical Analysis (Genberg, Doyle) 8:30 am to 5:30 pm, \$615 / \$710	SC755 Infrared Optics and Zoom Lenses (Mann) 8:30 am to 12:30 pm, \$345 / \$395	
SC1073 Radiometry and its Practical Applications (Grant) 8:30 am to 5:30 pm, \$675 / \$770	SC214 Infrared Window and Dome Materials (Harris) 8:30 am to 5:30 pm, \$630 / \$730	SC1000 Introduction to Infrared and Ultraviolet Imaging Technology (Richards) 8:30 am to 12:30 pm, \$380 / \$430	SC1052 Optical Systems Engineering (Kasunic) 8:30 am to 5:30 pm, \$565 / \$660	
SC1071 Understanding Diffractive Optics (Soskind) 8:30 am to 5:30 pm, \$600 / \$695	SC1019 Mounting of Optical Components (Kasunic) 8:30 am to 5:30 pm, \$645 / \$740	SC014 Introduction to Optomechanical Design (Vukobratovich) 8:30 am to 5:30 pm, \$890 / \$1,160		
	WS609 Basic Optics for Non-Optics Personnel (Harding) 1:30 pm to 4:00 pm, \$150 / \$200	SC1109 Infrared Radiometric Calibration (Yoon, Eppeldauer, Kaplan, Gibson) Wed 1:30 to 5:30 pm, \$345 / \$395	SC781 Optomechanical Analysis (Hatheway) 8:30 am to 5:30 pm, \$565 / \$660	
Defense, Homeland Security, and Law Enforcement				
SC1107 IR Atmospheric Propagation for Sensor Systems (Thomas) 8:30 am to 5:30 pm, \$650 / \$745	SC952 Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, \$565 / \$660	SC789 Introduction to Optical and Infrared Sensor Systems (Shaw) 8:30 am to 5:30 pm, \$565 / \$660	SC995 Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi) 8:30 am to 5:30 pm, \$565 / \$660	
SC1068 Introduction to Night Vision (Browne) 1:30 pm to 5:30 pm, \$345 / \$395		SC1075 Methods of Energy Harvesting for Low-Power Sensors (Erturk) 8:30 am to 12:30 pm, \$345 / \$395	SC547 Terahertz Wave Technology and Applications (Zhang) 1:30 pm to 5:30 pm, \$345 / \$395	
		SC1012 Coherent Mid-Infrared Sources and Applications (Vodopyanov) 1:30 pm to 5:30 pm, \$345 / \$395		

Course Daily Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Imaging and Sensing				
SC713 Engineering Approach to Imaging System Design (Holst) 8:30 am to 5:30 pm, \$615 / \$710	SC952 Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, \$565 / \$660	SC1076 Analog-to-Digital Converters for Digital ROICs (Veeder) 8:30 am to 12:30 pm, \$345 / \$395	SC995 Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi) 8:30 am to 5:30 pm, \$565 / \$660	SC154 Electro-Optical Imaging System Performance (Holst) 8:30 am to 5:30 pm, \$645 / \$740
SC1107 IR Atmospheric Propagation for Sensor Systems (Thomas) 8:30 am to 5:30 pm, \$650 / \$745	SC180 Imaging Polarimetry (Dereniak, Miles, Sabatke) 8:30 am to 12:30 pm, \$345 / \$395	SC1069 GPU for Defense Applications (Humphrey) 8:30 am to 12:30 pm, \$345 / \$395	SC067 Testing and Evaluation of E-O Imaging Systems (Holst) 8:30 am to 5:30 pm, \$645 / \$740	
SC1077 Ocean Sensing and Monitoring (Hou) 8:30 am to 12:30 pm, \$345 / \$395	SC950 Infrared Imaging Radiometry (Richards) 8:30 am to 5:30 pm, \$565 / \$660	SC967 High Dynamic Range Imaging: Sensors and Architectures (Darmont) 8:30 am to 5:30 pm, \$610 / \$705	SC547 Terahertz Wave Technology and Applications (Zhang) 1:30 pm to 5:30 pm, \$345 / \$395	
SC1073 Radiometry and its Practical Applications (Grant) 8:30 am to 5:30 pm, \$675 / \$770	SC157 MTF in Optical and Electro-Optical Systems (Boreman) 8:30 am to 5:30 pm, \$605 / \$700	SC1000 Introduction to Infrared and Ultraviolet Imaging Technology (Richards) 8:30 am to 12:30 pm, \$380 / \$430	<div>Registration required for courses and workshops</div> <div>See SPIE Cashier</div> <div>Pratt St. Lobby (Level 300)</div>	
SC1071 Understanding Diffractive Optics (Soskind) 8:30 am to 5:30 pm, \$600 / \$695	SC194 Multispectral and Hyperspectral Image Sensors (Lomheim) 1:30 pm to 5:30 pm, \$425 / \$475	SC789 Introduction to Optical and Infrared Sensor Systems (Shaw) 8:30 am to 5:30 pm, \$565 / \$660		
		SC1109 Infrared Radiometric Calibration (Yoon, Eppeldauer, Kaplan, Gibson) Wed 1:30 to 5:30 pm, \$345 / \$395		
Sensing for Industry, Environment, and Health				
SC1107 IR Atmospheric Propagation for Sensor Systems (Thomas) 8:30 am to 5:30 pm, \$650 / \$745	SC952 Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, \$565 / \$660	SC789 Introduction to Optical and Infrared Sensor Systems (Shaw) 8:30 am to 5:30 pm, \$565 / \$660	SC1105 Fiber Lasers and their Applications (Samson, Dong) 8:30 am to 5:30 pm, \$565 / \$660	SC972 Basic Laser Technology (Sukuta) 8:30 am to 12:30 pm, \$295 / \$345
SC1077 Ocean Sensing and Monitoring (Hou) 8:30 am to 12:30 pm, \$345 / \$395	SC180 Imaging Polarimetry (Dereniak, Miles, Sabatke) 8:30 am to 12:30 pm, \$345 / \$395	SC1075 Methods of Energy Harvesting for Low-Power Sensors (Erturk) 8:30 am to 12:30 pm, \$345 / \$395	SC995 Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi) 8:30 am to 5:30 pm, \$565 / \$660	
SC1106 Laser Lab Design - Laser Safety and Practicality (Barat) 1:30 pm to 5:30 pm, \$345 / \$395		SC1109 Infrared Radiometric Calibration (Yoon, Eppeldauer, Kaplan, Gibson) Wed 1:30 to 5:30 pm, \$345 / \$395	SC547 Terahertz Wave Technology and Applications (Zhang) 1:30 pm to 5:30 pm, \$345 / \$395	

Monday	Tuesday	Wednesday	Thursday	Friday
Emerging Technologies				
SC1071 Understanding Diffractive Optics (Soskind) 8:30 am to 5:30 pm, \$660 / \$745		SC1076 Analog-to-Digital Converters for Digital ROICs (Veeder) 8:30 am to 12:30 pm, \$345 / \$395	SC547 Terahertz Wave Technology and Applications (Zhang) 1:30 pm to 5:30 pm, \$345 / \$395	
		SC1075 Methods of Energy Harvesting for Low-Power Sensors (Erturk) 8:30 am to 12:30 pm, \$345 / \$395		
Laser Sensors and Systems				
SC1104 Applications and Performance of High Power Lasers in the Battlefield (Kalisky) 8:30 am to 12:30 pm, \$345 / \$395		SC789 Introduction to Optical and Infrared Sensor Systems (Shaw) 8:30 am to 5:30 pm, \$565 / \$660	SC1105 Fiber Lasers and their Applications (Samson, Dong) 8:30 am to 5:30 pm, \$565 / \$660	SC972 Basic Laser Technology (Sukuta) 8:30 am to 12:30 pm, \$345 / \$395
SC1032 Direct Detection Laser Radar Systems for Imaging Applications (Richmond) 8:30 am to 5:30 pm, \$605 / \$700		SC1012 Coherent Mid-Infrared Sources and Applications (Vodopyanov) 1:30 pm to 5:30 pm, \$345 / \$395	SC997 High Power Laser Beam Quality (Ross) 8:30 am to 12:30 pm, \$390 / \$440	
SC1107 IR Atmospheric Propagation for Sensor Systems (Thomas) 8:30 am to 5:30 pm, \$650 / \$745				
SC160 Precision Stabilized Pointing and Tracking Systems (Hilkert) 8:30 am to 5:30 pm, \$565 / \$660				
SC1071 Understanding Diffractive Optics (Soskind) 8:30 am to 5:30 pm, \$600 / \$695				
SC1103 3D Imaging Laser Radar (Kamerman) 1:30 pm to 5:30 pm, \$345 / \$395				
SC1106 Laser Lab Design - Laser Safety and Practicality (Barat) 1:30 pm to 5:30 pm, \$345 / \$395				
				
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Course Daily Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Displays for Innovative Applications				
SC1071 Understanding Diffractive Optics (<i>Soskind</i>) 8:30 am to 5:30 pm, \$600 / \$695	SC159 Head-Mounted Displays: Design and Applications (<i>Melzer, Browne</i>) 8:30 am to 5:30 pm, \$600 / \$695	SC979 Fundamentals of Three-Dimensional Optical Microscopy (<i>Javidi, Martinez-Corral</i>) 8:30 am to 5:30 pm, \$565 / \$660		
SC1068 Introduction to Night Vision (<i>Browne</i>) 1:30 pm to 5:30 pm, \$345 / \$395		SC1069 GPU for Defense Applications (<i>Humphrey</i>) 8:30 am to 12:30 pm, \$345 / \$395		
		SC967 High Dynamic Range Imaging: Sensors and Architectures (<i>Darmont</i>) 8:30 am to 5:30 pm, \$610 / \$715		
Unmanned, Robotic, and Layered Systems				
SC1077 Ocean Sensing and Monitoring (<i>Hou</i>) 8:30 am to 12:30 pm, \$345 / \$395	SC952 Applications of Detection Theory (<i>Carrano</i>) 8:30 am to 5:30 pm, \$565 / \$660	SC1075 Methods of Energy Harvesting for Low-Power Sensors (<i>Erturk</i>) 8:30 am to 12:30 pm, \$345 / \$395		
SC1068 Introduction to Night Vision (<i>Browne</i>) 1:30 pm to 5:30 pm, \$345 / \$395				
Sensor Data and Information Exploitation				
SC160 Precision Stabilized Pointing and Tracking Systems (<i>Hilkert</i>) 8:30 am to 5:30 pm, \$565 / \$660	SC994 Multisensor Data Fusion for Object Detection, Classification and Identification (<i>Klein</i>) 8:30 am to 5:30 pm, \$635 / \$730	SC1076 Analog-to-Digital Converters for Digital ROICs (<i>Veeder</i>) 8:30 am to 12:30 pm, \$345 / \$395	SC995 Target Detection Algorithms for Hyperspectral Imagery (<i>Nasrabadi</i>) 8:30 am to 5:30 pm, \$565 / \$660	SC972 Basic Laser Technology (<i>Sukuta</i>) 8:30 am to 12:30 pm, \$345 / \$395
SC1106 Laser Lab Design - Laser Safety and Practicality (<i>Barat</i>) 1:30 pm to 5:30 pm, \$345 / \$395	SC194 Multispectral and Hyperspectral Image Sensors (<i>Lomheim</i>) 1:30 pm to 5:30 pm, \$425 / \$475	SC1069 GPU for Defense Applications (<i>Humphrey</i>) 8:30 am to 12:30 pm, \$345 / \$395		
		SC181 Predicting Target Acquisition Performance of Electro-Optical Imagers (<i>Vollmerhausen</i>) 8:30 am to 5:30 pm, \$620 / \$715		

Monday	Tuesday	Wednesday	Thursday	Friday
Signal, Image, and Neural Net Processing				
SC066 Fundamentals of Electronic Image Processing (Weeks) 8:30 am to 5:30 pm, \$635 / \$730	SC952 Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, \$565 / \$660	SC1076 Analog-to-Digital Converters for Digital ROICs (Veeder) 8:30 am to 12:30 pm, \$345 / \$395	SC995 Target Detection Algorithms for Hyperspectral Imagery (Nasrabadi) 8:30 am to 5:30 pm, \$565 / \$660	
	SC994 Multisensor Data Fusion for Object Detection, Classification and Identification (Klein) 8:30 am to 5:30 pm, \$635 / \$730	SC1069 GPU for Defense Applications (Humphrey) 8:30 am to 12:30 pm, \$345 / \$395		
Information Systems and Networks: Processing, Fusion, and Knowledge Generation				
	SC952 Applications of Detection Theory (Carrano) 8:30 am to 5:30 pm, \$565 / \$660	SC1069 GPU for Defense Applications (Humphrey) 8:30 am to 12:30 pm, \$345 / \$395		
	SC994 Multisensor Data Fusion for Object Detection, Classification and Identification (Klein) 8:30 am to 5:30 pm, \$635 / \$730			
Business + Professional Development Workshops				
	WS609 Basic Optics for Non-Optics Personnel (Harding) 1:30 pm to 4:00 pm, \$150 / \$200	WS951 Leading Successful Product Innovation (Carrano) 8:30 am to 12:30 pm, \$345 / \$395	WS846 Essential Skills for Engineering Project Leaders (Hinkle) 1:30 pm to 5:30 pm, \$345 / \$395	SC972 Basic Laser Technology (Sukuta) 8:30 am to 12:30 pm, \$345 / \$395
		WS933 Complying with the ITAR: A Case Study (Scarlott) 1:30 pm to 5:30 pm, \$345 / \$395		
		WS1108 Just Outgoing Enough: Public Speaking, Networking, and Getting What You Want for Scientists and Engineers (McGovern) 1:30 pm to 5:00 pm, \$100 / \$150		

**Registration required
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workshops**

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Product Demos

Free Product Demonstrations are open to all attendees. Exhibiting companies will showcase products in half-hour demonstrations.



	Tuesday 30 April	Wednesday 1 May	Thursday 2 May
10:00 am			
10:30 am	<p>Why multispectral? Multi-band Snapshot SWIR Imaging</p> <p>Steve Smith, PhD, PIXELTEQ</p> <p>See examples of how multispectral SWIR and VIS/NIR cameras and sensors empower a variety of defense & security applications - with the same form factor, frame rate, and SWaP as monochrome cameras.</p>	<p>Export Controls Highlights and Best Practices – An Open Forum</p> <p>Kerry T. Scarlott, Esq., Goulston & Storrs, P.C.</p> <p>Is your business at risk? Join us for a forum on critical ITAR/export control issues for the optics industry. This will be an open discussion with the opportunity for audience input and questions.</p>	<p>Eye Safe Laser Glass</p> <p>Dr. Simi George, SCHOTT</p> <p>SCHOTT will demonstrate “eye-safe” laser glass components. Glasses are ideal for defense applications that can be tailored to customer specifications and supplied as fully finished components.</p>
11:30 am	<p>Laser Glass Components for the Defense Industry</p> <p>Todd Jaeger, SCHOTT and Ed Yousse, Research Electro-Optics, Inc.</p> <p>SCHOTT and REO will introduce products ranging from lenses, prisms, windows, and other coated precision optical components to custom integrated optical assemblies, for the defense market.</p>	<p>Software for Multisensor-Multitarget Tracking, Fusion, Track Analytics and Performance Evaluation</p> <p>Dr. Thia Kirubarajan, TrackGen Solutions</p> <p>We present our high-performance software products & APIs for real-world large-scale multisensor-multitarget tracking using radar, sonar, GMTI, ESA, video, EO/IR, AIS, ADS-B, PCL and multistatic data.</p>	<p>Free Space Optical</p> <p>Ann Kutsch, SCHOTT Defense</p> <p>Introduction of SCHOTT’s new covert free space optical laser communications system.</p>
12:30 pm	<p>Measuring structural and chemical components of CBNRE materials with THz-Raman™</p> <p>James Carriere, Ondax</p> <p>Extend the range of Raman spectroscopy into the terahertz regime (0.3-6THz or 10–200cm⁻¹) and measure structural information of CBNRE materials with the Ondax TeraRaman™ spectroscopy system.</p>	<p>GASIR: World's best selling chalcogenide glass</p> <p>Tom Krekels, Umicore GASIR</p>	<p>Embracing Open Innovation - How to expand and enhance your R&D pipeline</p> <p>Jason Eichenholz, Open Photonics Inc.</p> <p>We will describe our new open innovation development model that can identify new growth opportunities and bring hundreds of researchers from around the world on board to supplement your R&D activities.</p>
1:30 pm	<p>Thermal imagers using innovative technologies: low cost microbolometer, shutterless operation, image enhancement, etc</p> <p>Chongfei Shen, Shanghai Magnity Electronics</p> <p>We'll demonstrate a series of new thermal imager products that employ our proprietary technologies, including low cost microbolometer, shutterless operation, image enhancement, etc. Booth #1238</p>	<p>A bright future for night vision and image fusion operations with compact OEM modules</p> <p>Stuart Cohen, Xenics</p> <p>InGaAs SWIR cameras are well suited to make an image of the night scene illuminated by the nightglow. By fusing uncooled SWIR and thermal images, the detection levels can be increased significantly.</p>	



	Tuesday 30 April	Wednesday 1 May	Thursday 2 May
2:30 pm	LensCheck™ LWIR Lens Measurement Instrument Daniel Orband, Optikos LensCheck™ LWIR lens measurement instrument is a unique, cost-effective solution to your infrared production and prototype lens qualification needs. Features real-time Infrared MTF testing.	Demonstration of interoperability between cameras with differing interfaces John Phillips, Pleora Technologies A system including analog and Camera Link cameras all operating using GigE Vision over 1 and 10 GigE interfaces into a single SDK.	EXHIBITION CLOSED
3:30 pm	Demonstration of Advanced IR Materials Dr. Nathan Carlie, SCHOTT Defense Demonstrating advanced IR glass capabilities that offer excellent transmission in the SWIR, MWIR, and WIR range, as well as glass technologies in FLIR and CLEAR for defense applications.	Filter Glass Matt Roth, SCHOTT Defense SCHOTT will discuss its broadest portfolio, optical filter glasses, which have defense applications such as laser safety, infrared lighting technology, (night) surveillance systems, and periscopes.	
4:30 pm	CONTURAN DARO Matt Roth, SCHOTT Defense SCHOTT has developed a new coating that combines durable anti-reflective and oleophobic characteristics – a breakthrough for any touch application.	Shuttle Reentries, Virgin Galactic and Imaging ISS Windows from the Ground: Unique Long-Range Imaging Ron Dantowitz, MARS Scientific Demonstration of innovative tracking systems for superior long-range vehicle imaging. Examples of our high SNR spatial, hyperspectral, and calibrated thermal imaging from Land, Sea, and Air.	

Tune in to the optics and photonics community

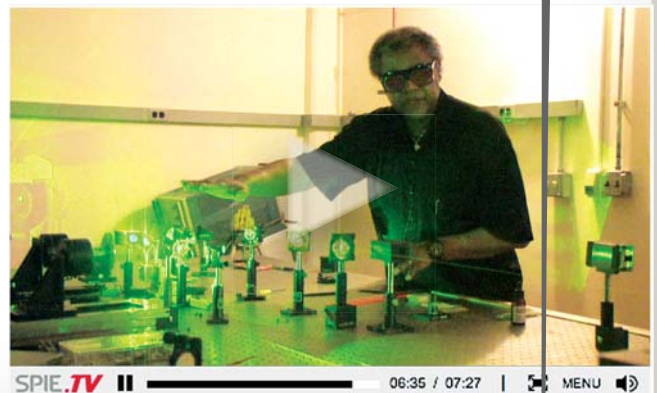


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Tuesday 30 April, 10:00 am to 5:00 pm

Wednesday 1 May, 10:00 am to 5:00 pm

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How to use this directory

SPIE Defense, Security, and Sensing exhibitors are indexed by booth number on pages 28–32, then listed in alphabetical order with details about products or services each is exhibiting. Booth numbers may be cross-referenced with the maps on pp. 26–27.

Companies are additionally cross-indexed by technology areas in the Product Category Index on pages 108–121 to allow you to quickly shop for products for your engineering and business needs, making this Exhibition Guide an excellent reference tool.

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Tuesday 30 April · 10:00 am to 5:00 pm
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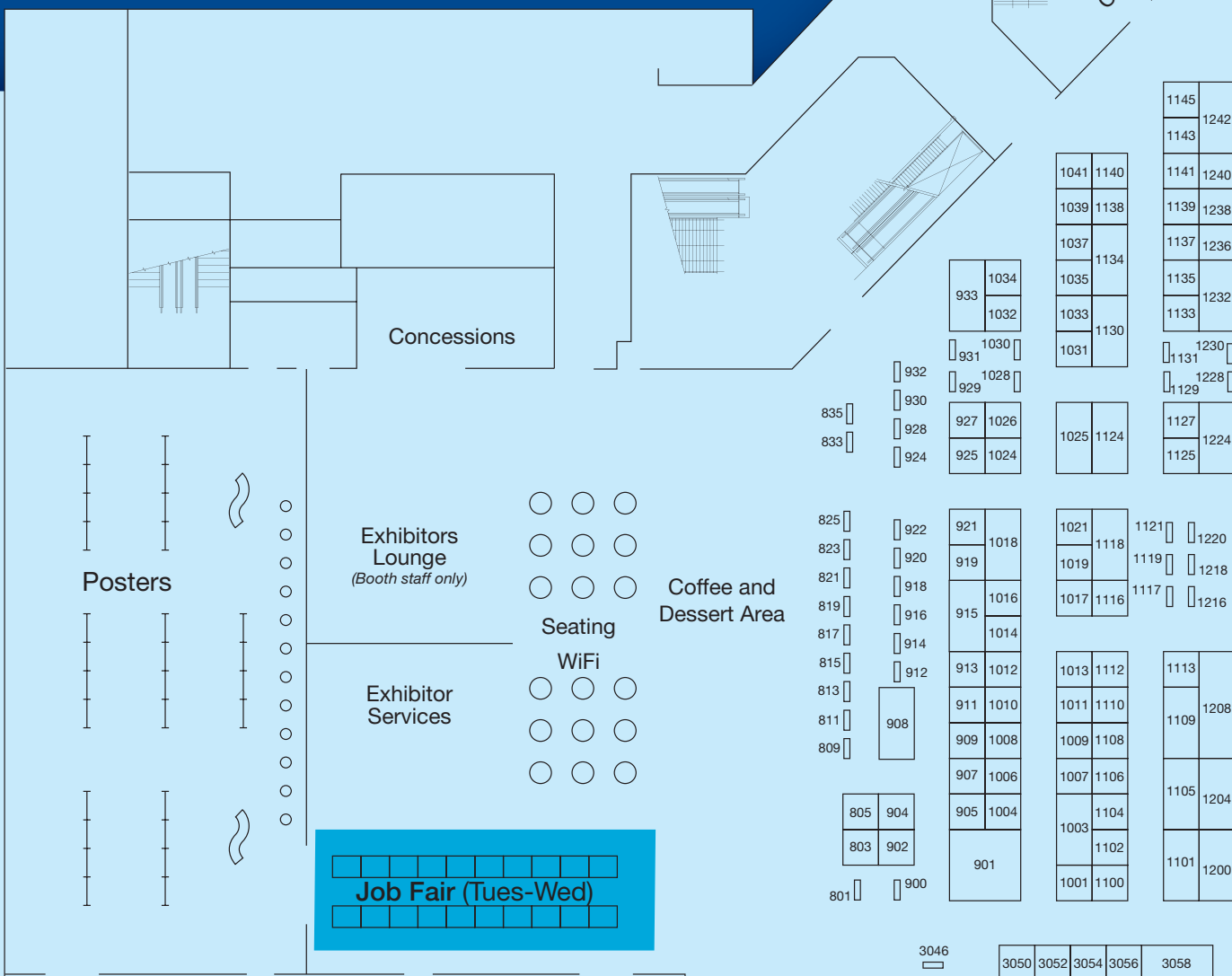
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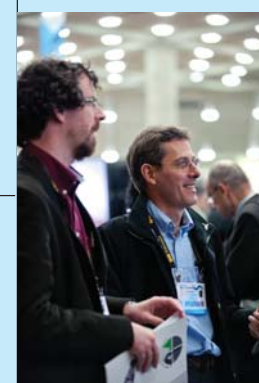
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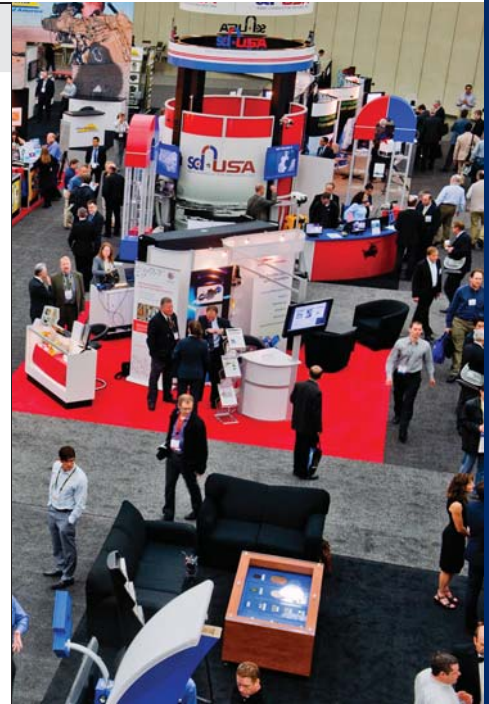
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4DSP, LLC #2005

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Active Silicon, Inc. #1024

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+1 412 926 1200; fax +1 412 697 8111
aus@acutronic.com; www.acutronic.com

Adimec Electronic Imaging, Inc. #1931

SPIE Corporate Member

245 North St, Stoneham, MA, 02180 USA
+1 781 279 0770; fax +1 781 279 0571
salesus@adimec.com; www.adimec.com
Adimec is the leading supplier of high-end cameras for machine vision, medical and outdoor imaging applications. Its patented Adimec True Accurate Imaging® technology forms the foundation for its broad range of camera products, and brings new levels of precision and accuracy to vision systems. Adimec supports its products with customized and expert service to systems developers around the world. Contact: Christian Trinidad, OEM Account Representative, salesus@adimec.com; David Northup, Business Director, dnorthup@adimec.com

ADIT Electron Tubes #815

300 Crane St, Sweetwater, TX, 79556 USA
+1 325 235 1418; fax +1 325 235 2872
paul@electrontubes.com;
www.electrontubes.com

Adsys Controls, Inc.

#2073

SPIE Corporate Member

16 Technology Drive Suite 148, Irvine, CA, 92618 USA
+1 949 682 5430
contact_adsys@adsyscontrols.com;
www.adsyscontrols.com

Featured Product: Come see our latest release, our low SWaP 5" class EO/IR HD Payload with onboard video processing.

Adsys Controls provides advanced imaging solutions for ISR, laser and scientific applications. Our product line includes small low-SWaP inertially stabilized gimbals; video processing modules for multi-target tracking, video stabilization and H.264 encoding; laser UAV recovery systems; and laser warning systems. Contact us for innovative solutions in payload development, sensor exploitation, video processing, sense and avoid, and laser beam control. Contact: Brian Goldberg, President, sales@adsyscontrols.com; Mark Krebs, Vice President, sales@adsyscontrols.com

AdTech Ceramics

#1229

SPIE Corporate Member

511 Manufacturers Road, Chattanooga, TN, 37405 USA
+1 423 755 5400; fax +1 423 755 5438
sales@adtechceramics.com;
www.adtechceramics.com

Featured Product: Custom multilayer ceramic and metal packages.

AdTech Ceramics produces custom multilayer co-fire ceramic and metal packages utilizing HTCC and AlN. HD alumina is also available with 0.12µm surface for thin film applications. Applications include Medical, Aerospace, Optoelectronic and High Frequency. Capabilities include Design Assistance and Microwave Modeling for high frequency performance to 30 GHz. Ceramic Injection Molded and Etched Metal products are also available. Contact: Brian Bukovitz, Sales Manager, brian.bukovitz@adtechceramics.com; Matt McKee, Sales Engineer, matt.mckee@adtechceramics.com

Advance Reproductions Corp.

#1009

100 Flagship Dr, North Andover, MA, 01845 USA
+1 978 685 2911; fax +1 978 685 1771
sales@advancerepro.com;
www.advancerepro.com

Featured Product: Photolithography and Photomasks.

Advance Reproductions Corp. offers Full-Service Photolithography Services, including photomasks on Glass or Quartz substrates coated with chrome or iron oxide. The plates can range from very small plates up to 32" square with features resolvable down to 1µm. Complete CAD Services and Photoplotting on mylar available. Contact: Don Robinson, Technical Sales, d.robinson@advancerepro.com

Advanced Cooling Technologies, Inc.

#1231

1046 New Holland Ave, Lancaster, PA, 17601 USA
+1 717 295 6061; fax +1 717 295 6064
info@1-act.com; www.1-act.com

Advanced Cooling Technologies, Inc. (ACT) is a premier thermal management solutions company. Under our ISO9001 and AS9100 certifications, we design and manufacture products for diverse applications including satellite thermal control, commercial/military electronics cooling and temperature calibration. In addition, our responsive, customer-focused team provides innovative engineering and advanced research and development services for clients worldwide.

Advanced Laser Diode Systems A.L.S. GmbH

#1645

Schwarzschildstr 6, Photonic Ctr, Berlin, 12489 Germany
+49 30 6392 6522; fax +49 30 6392 65 21
info@alsgmbh.de; www.alsgmbh.de

Advanced Reconnaissance Corp.

#2118

1401 Route 52, Suite 101, Fishkill, NY, 12524 USA
+1 845 896 0880; fax +1 845 790 7640
sales@advrecon.com;
www.advrecon.com

Featured Product: Multispectral and hyperspectral sensor systems with automatic target recognition.

Advanced Reconnaissance Corp. is a leader in advanced multispectral and hyperspectral sensor systems with automatic recognition for surveillance and reconnaissance missions. ARC's systems automatically detect hard-to-see objects and concealed threats, for applications including IED detection, hostile-fire indication, border security, agricultural analysis, and environmental monitoring. ARC provides solutions to defense and commercial customers through its offices in Fishkill NY and Annapolis MD. Contact: Albert Schindler, Engineering and Marketing Associate, aschindler@advrecon.com; Sean Westfield, Director of Information Technology, swestfield@advrecon.com



Free Popcorn

Exhibition Hall

A popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

Featured Product Launches

4D Technology Corp.1100
Product: PolarCam Micropolarizer Cameras



Polarization cameras for image enhancement, polarimetry, stress measurement and more.

4DSP, LLC.2005
Product: RTS150



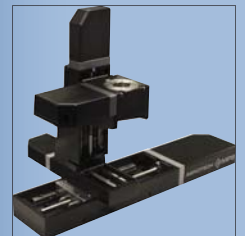
The RTS150 can sense strain and temperature using fiber optics.

Active Silicon, Inc.1024
Product: Camera Interface Modules



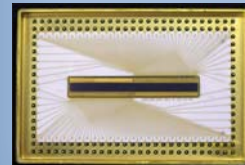
HD-SDI and CoaXPress interface modules for Sony blockcams.

Aerotech, Inc.1330
Product: MPS Miniature Stages



Compact miniature stages for the lab and production.

Agiltron, Inc.1912
Product: 128 Lead Sulfide Infrared Detector Array



128 lead sulfide infrared detector array (0.5 ~3µm)

Advanced Research Corporation

#1243

SPIE Corporate Member

4459 White Bear Pkwy, White Bear Lake, MN, 55110-7626 USA
+1 651 789 9000

sellison@arcnano.com; www.arcnano.com

Featured Product: Contract R&D and Manufacturing, Hybridization Services, Precision Machining and Thin Film Deposition

At ARC, we provide, develop, and manufacture extremely high technology parts, critical components, tooling and subsystems. ARC has a state-of-the-art manufacturing facility with capabilities spanning from precision machining to wafer scale fabrication, thin films, advanced packaging, flip chip hybridization, to electronics and instrumentation. ARC can take your project from concept to production. Contact: Matt Dugas, CEO, mdugas@arcnano.com; Rich Jewett, Project Manager, rjewett@arcnano.com

Advantest Corp.

#2010

508 Carnegie Center #102, Princeton, NJ, 08540 USA
+1 609 897 7320; fax +1 609 799 7396
info@advantest.com; www.advantest.com

Featured Product: TAS7500 Series Terahertz Spectroscopic/Imaging Analysis Systems.

Advantest is a global leader in test & measurement equipment. The company also focuses on R&D for emerging markets that benefit from advancements in nanotech and terahertz technologies, and has recently introduced multi-vision metrology scanning electron microscopes essential to photomask manufacturing, and 3D imaging analysis tools to the pharmaceutical, defense and transportation industries. Founded in Tokyo in 1954, Advantest now has subsidiaries worldwide. www.advantest.co.jp Contact: Anthony Petrolonis, Sales Leader, anthony.petrolonis@advantest.com; Amy Gold, Dir. Corp. Communications, amy.gold@advantest.com

Plan to Attend FREE Exhibitor Product Demonstrations

Refer to pages 22-23 for complete times, schedules, and locations.

Aerotech, Inc.

#1330

SPIE Corporate Member

101 Zeta Dr, Pittsburgh, PA, 15238 USA
+1 412 963 7470; fax +1 412 963 7459
sales@aerotech.com; www.aerotech.com

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

Aerotech manufactures motion simulators, multi-axis gimbals, single- and multi-axis positioning systems, and advanced controls. These include systems for angular testing and calibration of satellite sensors, missile seeker gimbals, inertial navigation guidance units, optical pointing and target tracking, and those for high vacuum/cleanroom environments. Components include linear/rotary/lift stages; gimbals; gantries; nanopositioners; goniometers; motion controllers; drives; linear/rotary motors. Contact: Tom Markel, Precision Positioning Product Manager, tmarkel@aerotech.com

Agilent Technologies

#2065

3750 Bookside Parkway, Alpharetta, GA, 30022 USA
+1 678 566 6012
lenora_brown-scott@agilent.com;
www.agilent.com

Agiltron, Inc.

#1912

15 Presidential Way, Woburn, MA, 01801 USA
+1 781 935 1200; fax +1 781 935 2040
sales@agiltron.com; www.agiltron.com

AGM Container Controls, Inc.

#1016

3526 E. Ft. Lowell Rd., Tucson, AZ, 85716 USA
+1 520 881 2130; fax +1 520 881 4983
sales@agmcontainer.com;
www.agmcontainer.com

Featured Product: NEPS Advantage provides dry gas purge equipment w/automatic operation & dewpoint temperature display.

AGM Container Controls leads in the design and fabrication of products that control and monitor moisture (dry gas purge systems, 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, jmccorry@agmcontainer.com; Blake Koormar, Sales Manager, bkoormar@agmcontainer.com

AIM INFRAROT-MODULE GmbH

#1731

Theresienstr 2, Heilbronn, 74072 Germany
+1 49 7131 6212 0; fax +1 49 7131 6212 939
info@aim-ir.de; www.aim-ir.com

Featured Product: SL 384x288x2 MW/MW, MCT 640x512 MWIR for HOT applications, MBE-grown MCT 640x512 MW or LW modules.

AIM is a leading supplier of advanced IR-detectors and Stirling cryocoolers. Modules with outstanding E/O performance, stable NUC coefficients and minimum size, weight and power meet the requirements of most challenging military and space applications. AIM provides cooled detectors from VIS-NIR to VLWIR based on MCT- and T2SL-technology. MBE-technology is introduced for 3rd Gen or cost reduction by alternative substrates. Highly efficient coolers are available for HOT and 3rd Gen applications. Contact: Rolf Muentner, Head of Business Development, rolf.muentner@aim-ir.de; Rainer Breiter, Head of Program Division, rainer.breiter@aim-ir.de

A.J. Tuck Company

#1626

P.O. Box 215, 32 Tuck Rd, Brookfield, CT, 06804 USA
+1 203 775 1234; fax +1 203 775 4705
www.ajtuckco.com

For over 90 years, A.J. Tuck has been both a leader and a pioneer in the design and manufacture of precision, close tolerance custom electroformed components. Today, we are the country's oldest and most established full service electroforming operation. At our innovative facility we electroform a full range of products to your specifications including cold shields, radiation shields, IR shields, microwave components and decorative designs. Backed by our highly skilled engineering, machining and electroforming staff, and employing state-of-the-art applied machining and electroforming technologies, A.J. Tuck offers a single source for all your electroforming needs.

Alakai Defense Systems, Inc.

#1956

7935 114th Avenue N. Suite 2800, Largo, FL, 33773 USA
+1 727 541 1600; fax +1 727 521 8724
www.alakai.us

Featured Product: Alakai personnel will be discussing the latest advances to their Standoff Trace Detection Systems.

Alakai Defense Systems (ADS) provides next generation sensor and technology solutions to challenges facing the Defense & Security market place. ADS has a particular specialty in laser and electro-optic remote sensing and systems integration to detect trace molecules of military significance, such as found in IEDs, and CBRNE threats. Our key application areas are protection of vehicles, light infantry, maritime craft, and key infrastructure from explosives & IEDs used by insurgents & terrorists. Contact: Ed Dottery, President, dottery@alakai.us; Ken Pohl, Chief Scientist, pohl@alakai.us



CONFERENCE BAG INSERT SPONSOR

Alliance Corporation

#821

402 Brookletts Ave, Easton,
MD, 21601 USA

+1 410 770 8494; fax +1 410 770 8495
welleralliance@goeaston.net

We custom make soft pouches that are perfect for protecting optics. Pouches are made from nonwoven spunbond polypropylene material which is inherently soft and breathable. Ideal at protecting parts from scratches and more cost effective than hand wrapping. Perfect for items that have been coated, polished, painted, or otherwise needs surface protection. Our pouches made from spunbond polyester provides surface protection and allows item to be sterilized in the pouch. Made in the U.S. A. Contact: Michael Weller, President, welleralliance@goeaston.net

Allied Vision Technologies Inc.

#1239

38 Washington Street, Newburyport,
MA, 01950 USA

+1 978 225 2030; fax +1 978 225 2029
info@alliedvisiontec.com; www.alliedvisiontec.com

Featured Product: Mako: compact machine vision camera with excellent price/performance ratio. GigE and USB3 interface.

Founded in 1989, AVT designs, produces and sells cameras and components for image processing in industrial and life science applications. With innovative products, superior manufacturing quality and a service-driven organization, Allied Vision Technologies is well established as a premier provider of digital camera solutions for machine vision worldwide. AVT cameras are used in a variety of applications including security and defense, scientific research, traffic imaging, and many more. Contact: Laurette Perrard, Marketing Communications Manager, Americas, laurette.perrard@alliedvisiontec.com

Alpes Lasers SA

#2001

1-3 Max-de-Meuron, Neuchâtel, 2001
Switzerland

+41 32 729 95 10; fax +41 32 721 36 19
info@alpeslasers.ch; www.alpeslasers.ch

Altos Photonics, Inc.

#2036

SPIE Corporate Member

201 S. Wallace, Ste. B2C, Bozeman,
MT, 59715 USA

+1 866 658 5404

sales@altosphotonics.com;

www.altosphotonics.com

Altos Photonics offers femtosecond, mode locked, and Q-switched lasers and tunable systems for research and industrial customers. Additional products include non-linear crystals (BBO, KTP, ZGP, KYW, KGW, etc), optical mounts, USB-controlled stages, and other related products. Altos Photonics sells and services products from EKSPLA, Eksma Optics, Light Conversion & Standa. Contact: Emily Bates, Customer Support, emily@altosphotonics.com; Lucian Hand, President, lucian@altosphotonics.com

AMETEK HCC Electronic Packaging

#1017

50 Welby Rd, New Bedford,

MA, 02745 USA

+1 508 998 3141; fax +1 508 998 7315

HCC.EPG@ametek.com;

www.hccelectronicpackaging.com

Leader in the design/manufacture of high reliability hermetic micro-electronic packages, headers & lids. Sealing/Insulation technology can be either Glass to Metal or Ceramic to Metal. Packages support many applications: Infrared, Hybrid Microprocessor & Optical Networking Components. Lids & Lids with Windows (metallized & A/R coated) are also offered. Capabilities: Custom design engineering, prototyping & high volume production. Businesses: HCC Aegis, Glassteel Products & General Ceramics. Contact: Keith Barclay, VP of Sales & Marketing, keith.barclay@ametek.com; Michael Bristol, Business Development Manager, michael.bristol@ametek.com

Ampex

#1141

SPIE Corporate Member

500 Broadway, Redwood City,
CA, 94063 USA

+1 619 701 0476; fax +1 760 788 1291

john_hardy@ampexdata.com;

www.ampex.com

Featured Product: miniR700 Ruggedized Solid-State Recorder System, TuffServ Ruggedized Network File Servers.

Ampex Data Systems designs, develops and manufactures airborne and ground based high-performance data acquisition systems used in flight test, instrumentation and sensor collection applications. Our product line features a variety of harsh environment solid state recorders that incorporate multi-channel high-definition video and data format interfaces, as well as the family of TuffServ ruggedized Network File Servers. Ampex products are designed and manufactured in the U.S.A. Contact: John Hardy, Business Development Mgr., jhardy@ampex.com; Don Downing, Business Development Mgr., ddowning@ampex.com

Featured Product Launches

Altos Photonics Inc.2036

Product: PCD, Pockels cell drivers



Pockels cell drivers providing up to 3.5 MHz repetition rate for OEM and R&D.

AMETEK HCC Electronic Packaging1017

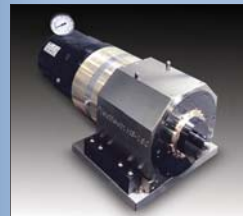
Product: High Temperature Cofired Ceramics HTCC



World class hermetic packaging solutions for your harsh environmental applications.

AMETEK Precitech1717

Product: HS150 Workholding Spindle



Increase your Productivity and Yield with the HS150 work-holding spindle.

Analog Modules, Inc..1533

Product: High Current Pulsed Laser Diode Driver, Model 773



Low-cost, compact, 100A Diode Driver for Ranging Applications.

Amuneal Mfg Corp #1945

4737 Darrah Street, Philadelphia, PA, 19124 USA
+1 215 535 3000
mikea@amuneal.com; www.amuneal.com
Since 1965, Amuneal has been serving highly technical markets, working with leaders in aerospace, electronics, cryogenics, healthcare, and research to develop cost-effective magnetic shielding strategies and products that outperform the most demanding requirements. We offer a number of standard component shields to our clients, however, our culture and capabilities allow us to manufacture and install unique custom shields ranging from prototypes and models to full-scale assemblies.

Analog Modules, Inc. #1533

126 Baywood Avenue, Longwood, FL, 32750 USA
+1 407 339 4355; fax +1 407 834 3806
ami@analogmodules.com;
www.analogmodules.com
Analog Modules, Inc. (certified to ISO 9001:2008) designs and manufactures a wide range of analog electronic products for the laser and electro-optics industries. Products include capacitor charging power supplies, simmer supplies, Pockels cell drivers, CW arc lamp drivers, pulsed flashlamp drivers, laser diode drivers, hybrid laser rangefinder receivers, laser spot trackers, linear and logarithmic amplifiers, pulse stretchers, fiber optic links and photodetector-amplifier modules. Contact: Kelly Pacy, V.P. Sales, kpacy@analogmodules.com; Tim Cable, Product Manager, tcable@analogmodules.com

Andover Corporation #1750

SPIE Corporate Member
4 Commercial Drive, Salem, NH, 03079 USA
+1 603 893 6888; fax +1 603 893 6508
info@andovercorp.com;
www.andovercorp.com

Featured Product: High quality infrared filters and coatings from 2-14μ, including narrowband filters at 10.6μ.

Andover manufactures high-quality custom optical coatings in the UV to Mid IR range. Substrate materials include Germanium, Silicon, Zinc Selenide, Zinc Sulfide, Sapphire, Fused Silica and Calcium Fluoride. We are US owned, ITAR and AS9100 registered. Contact: Rob Pursel, Sr. Optical Coating Engineer, rpursel@andovercorp.com; Ed Caron, Technical Sales, ed.caron@andovercorp.com

Angstrom Precision Optics Inc. #809

1321 Emerson St, Rochester, NY, 14606 USA
+1 585 663 7230; fax +1 585 663 7236
info@apoptics.com; www.apoptics.com
Manufacturer of plano components. Windows, wedges, filters, mirrors and post fabrication of coated optics. UV, VIS and IR materials. Capabilities: CP, DSP and OD polishing to <.5 arc sec wedge, <10-5 SD and 1/20 wave flatness. CNC dicing. Materials include optical glass, fused quartz/silica, filter glass, silicon, germanium, Borofloat and float glass. APO provides quality optics with our expedited 2-3 day delivery.

Aperture Optical Sciences Inc. #1138

SPIE Corporate Member
27 Parson Ln Unit G, Durham, CT, 06422 USA
+1 860 316 2589; fax +1 860 760 6564
info@apertureos.com;
www.apertureos.com

Featured Product: Silicon Carbide Aspheric Mirrors.

AOS provides some of the most unique custom precision optics and systems made in the world today. We develop and employ advanced technology for making aspheric mirrors and lenses, SiC optics, optics for high energy lasers and engage in developmental processes of advanced materials. Our customers are located around the world and consist of research laboratories, defense contractors, astronomical observatories and industrial companies making semiconductor electronics, and ultra-intense lasers. Contact: Flemming Tinker, President, ftinker@apertureos.com; Kai Xin, CTO, kxin@apertureos.com

Applied Image Inc. #2033

SPIE Corporate Member
1653 E Main St, Rochester, NY, 14609-7090 USA
+1 585 482 0300; fax +1 585 288 5989
info@appliedimage.com;
www.appliedimage.com

Featured Product: 3 NEW product lines: custom ball lenses manufacturing; ImagingGauge software & target; & Mask Making.

"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 image analysis software with Applied Image targets packages. APPLIED IMAGE, where image concepts become reality. Contact: Luke Hobson, Sales & Marketing Manager, Lhobson@appliedimage.com; Dave Doubledee, President, Ddoubledee@appliedimage.com

Applied Multilayers LLC #1041

1801 SE Commerce Avenue, Vancouver, WA, 98604 USA
+1 307 222 0660; fax +1 360 723 5368
sales@applied-multilayers.com;
www.applied-multilayers.com

Featured Product: Precision Optical Thin Film Coating Systems.

AML offers patented precision optical coating machines with closed field magnetron sputtering technology. Low coating temperatures allow optical or metal coating onto plastics. Technology offers high deposition energy with extremely low stress in the films. Precision and reliability of the coaters allow scalability of throughput. Five system sizes available with three times load capacities of conventional coating technologies. A SDVOSB company. Contact: Jerry Martin, President, jmartin@applied-multilayers.com; Des Gibson, Technical Consultant, desgibson@applied-multilayers.com

Applied Technology Associates #1736

SPIE Corporate Member
1300 Britt St SE, Albuquerque, NM, 87123 USA
+1 505 767 1200; fax +1 505 768 1379
contactata@atacorp.com;
www.atacorp.com

Featured Product: ATA's ERAD - Rapid Non-Magnetic Azimuth for Far Target Location Solutions.

ATA is a precision measurement, sensing and controls company that offers engineering services, integration and testing capabilities, and custom solutions to government, aerospace and commercial customers. ATA develops solutions for aerospace controls, inertial navigation, platform stabilization, far target location, vibration and motion measurements, and line-of-sight imaging systems including angular rate sensors, space-qualified actuators, non-magnetic azimuth sensors, and inertial subsystems.

Arete Associates #1033

9301 Corbin Ave, Northridge, CA, 91324 USA
+1 303 651 6756
info@arete.com; www.arete.com
Arete Associates is a small business that serves the defense and intelligence communities through the performance of advanced science and engineering R&D. The company is particularly skilled in remote sensing, algorithm and software development, and sensor development. Arete prides itself on transitioning its technology to operational use. Contact: Brianna Marshall, Office Management Specialist, bmarshall@arete.com

Arrow Thin Films, Inc.

#914

SPIE Corporate Member

465 W Main St. Ste 2, Wyckoff,
NJ, 07481 USA
+1 201 977 1073

jon.herringer@arrow-otf.com;
www.arrow-otf.com

Arrow Thin Films is a leading manufacturer of optical coatings on glass and laser materials. Arrow Thin Films partners with our customers, from design feasibility and development through high volume production. We deposit high performance thin films from the deep UV through the far IR on a virtually all inclusive list of optical and crystalline substrate materials in diameters to 15". Arrow Thin Films routinely processes customer supplied substrates or provides high quality finished components. Contact: Jon Herringer, President, Jon.Herringer@arrow-otf.com; Paul Szczepanski, Vice President, pauls@arrow-otf.com

ASD Inc.

#1820

SPIE Corporate Member

2555 55th Street Suite 100, Boulder,
CO, 80301 USA
+1 303 444 6522; fax +1 303 444 6825
sales@asdi.com; www.asdi.com

Featured Product: Industry-standard FieldSpec 4 Spectroradiometer for Remote Sensing and Ground Truthing Applications.

ASD Inc., a PANalytical company, is a recognized world leader in reflectance spectroscopy for remote sensing. Researchers across the globe trust our instruments because they are portable, easy to use, and rugged – and, most importantly, provide research-critical measurements in the field. For freedom to rapidly collect spectra in the field, choose ASD. Our extensive line of FieldSpec® instruments and accessories are easily adapted for your unique field research needs. Learn more at asdi.com. Contact: David Hatchell, Remote Sensing Manager, sales@asdi.com; Richard Hansen, Sales Associate, sales@asdi.com

ASE Optics, LLC

#2071

850 John Street, West Henrietta,
NY, 14586 USA
+1 585 303 1574
chrisc@aseoptics.com;
www.aseoptics.com

Auréa Technology

#819

18 rue Alain Savary, Besancon, 25000
France
info@aureatechnology.com;
aureatechnology.com

Featured Product: Latest generation of high-performance NIR PHOTON COUNTING and TCSPC modules.

AUREA Technology provides the latest generation of stand-alone near-infrared Photon Counting Modules and also Time-Correlated Single Photon Counting modules, which perform ultra low noise, high photon detection efficiency, and very fast timing resolution. A compact DUAL version with two independent APDs and TCSPC option is available. Based on Geiger-mode InGaAs avalanche photodiodes, the SPD_A and LynXea series offer the most valuable low-level-of-light solutions in the 900-1,700 nm range. Contact: Jerome Prieur, President, info@aureatechnology.com

Avo Photonics, Inc.

#1439

PIE

Featured Product Launches

Andover Corp.1750

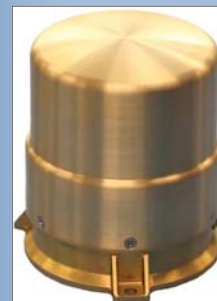


High-performance optical filters, light sources, and motorized filter wheels.

Applied Technology

Associates1736

Product: Earth Referenced Attitude Determination (ERAD)



ATA's ERAD - Rapid Non-Magnetic Azimuth for Far Target Location Solutions.

ASD Inc.1820

Product: FieldSpec 4 Spectroradiometer



Portable, rugged, FieldSpec spectroradiometers - the gold standard for remote sensing.

BEI Precision Systems & Space Co., Inc. #1746

1100 Murphy Drive, Maumelle,
AR, 72113 USA
+1 501 851 4000; fax +1 501 851 5476
sales@beiprecision.com; www.
beiprecision.com

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

BEIPSSC has been a designer & producer of highly accurate (26+ bits) optical encoders for aerospace, military & commercial applications for over 50 years. We provide standard & custom components & value-added engineering designs including completely unique servo control systems. Gimbal systems & actuators where ultra-high accuracy, resolution, reliability & extreme environments are required. Over 90% of all optical encoders currently in space were produced by BEI. Contact us for the hard ones! Contact: Mark Madsen, Business Development Manager, mmadsen@beiprecision.com; Marvin Kansky, Director, Sales & Marketing, mkansky@beiprecision.com

Bertin Corp #1139

155 Gibbs Street, Suite #533, Rockville,
MD, 20850 USA
+1 240 428 1048
info@bertin-corp.com;
www.bertin-corp.com

**Featured Product: Bertin Corp, American
Bertin Technologies subsidiary, provides
CBRN threats detection solutions.**

Bertin Corp especially covers in Defense sector the control and detection of chemical and bacteriological threats - CBRN Surveillance & identification. Discover the only efficient real time gas detection up to 5km - SECOND SIGHT CAMERA. www.secondsight-gasdetection.com. International prestigious references: French Army, DGA, NASA, EADS, Airbus... More information on www.bertin-corp.com. Contact: DUVAL ANTONIN, Bertin Corp C.O.O & Global Bio and CBRN Sales Manager, info@bertincorp.com

BitFlow, Inc. #813

400 W Cummings Park, Suite 5050,
Woburn, MA, 01801 USA
+1 781 932 2900
sales@bitflow.com; www.bitflow.com

**Featured Product: Cyton CXP4, a PCIe
x8 25Gb/s frame grabber for CoaXPress**



ELECTRO-OPTICAL IMAGING, INC.

VIDEO TRACKERS AND TRACKING SYSTEMS



SPIE
Defense,
Security & Sensing

VISIT US AT BOOTH 1113

Engineering High Performance Tracking Solutions

4300 FORTUNE PLACE, SUITE C • WEST MELBOURNE, FL 32904 • 321.435.8722 • EOIMAGING.COM

Brandywine Photonics LLC

#1949

SPIE Corporate Member

748 Springdale Dr Ste 125, Exton, PA, 19341 USA
+1 484 459 9589; fax +1 484 879 6568
jfisher@brandywinephotonics.com;
www.brandywinephotonics.com

Featured Product: Fully-depleted, Backside Illuminated, eXtra-wide dynamic range (FBX) CMOS Image Sensors.

Brandywine Photonics LLC designs and builds turn-key hyperspectral instruments and components for Earth Sciences and ISR. Services include: optical design, opto-mechanical design, system engineering, detector fabrication and algorithms development. Brandywine Photonics' core technologies include: diffraction gratings, science CMOS image sensors and all-reflective telescopes. Contact: John Fisher, Program Mgr. Earth Sciences & ISR Systems, jfisher@brandywinephotonics.com; John Fisher, Marketing consultant, jfisher@brandywinephotonics.com

Brimrose Technology Corporation

#1855

PO Box 616 - 19 Loveton Circle, Sparks, MD, 21152-9201 USA
+1 410 472 2600; fax +1 410 472 7950
office@brimrosetechnology.com;
www.brimrosetechnology.com

Featured Product: Silhouette Profiling Optical Tripwire (SPOT) and AOTF SWIR Hyperspectral Imager.

Brimrose Technology a Baltimore based Electro-Optics Company specializes in ruggedized, small, low power, military imaging equipment. Two major products will be demonstrated on site: (a) Low Cost, Low Power, Text Picture Message Capable, Passive IR UGS: SPOT (Silhouette Profiling Optical Tripwire) and (b) Hand Held, Light Weight, Low Power, AOTF SWIR Hyperspectral Imager. Contact: Jolanta Soos, CTO, jsoos@brimrosetechnology.com; Carla Green, Sales/Marketing, cgreen@brimrose.com

Brolis Semiconductors, Inc.

#2051

SPIE Corporate Member

Moletu pl 73, Vilnius, Vilniaus, 14259 Lithuania
+370 655 20322
info@brolis-semicon.com;
www.brolis-semicon.com

Featured Product: Room-temperature Mid-IR laser diodes; MBE epi-foundry service for antimonides and arsenides.

Brolis Semiconductors Ltd. offers high-throughput molecular beam epitaxy service of arsenides and antimonides on GaAs, GaSb and InP substrates. Our key technology lies in: Growth of mixed group-V antimonides; Growth of quaternary heterostructures; Control of mixed anion interfaces; Long-wavelength infrared semiconductor lasers on GaSb. Our high-capacity multi-wafer MBE capabilities offer extreme competitiveness in terms of volume, uniformity and cost-effectiveness. Contact: Augustinas Vizbaras, COO, augustinas.vizbaras@brolis-semicon.com; Dominykas Vizbaras, CEO, dominykas.vizbaras@brolis-semicon.com

Bruker Optics Inc.

#1007

19 Fortune Drive, Billerica, MA, 01821 USA
+1 978 439 9899
info@brukeroptics.com; www.bruker.com

Featured Product: HI 90 Hyperspectral Imaging system for automatic gas detection and identification from remote sites.

Bruker is a performance leader in research, analytical and life science systems. For over 50 years, Bruker has been driven by a single idea: to provide the best technological solution for each analytical task. Key application areas include remote chemical detection for homeland security, life science research, pharmaceutical analysis, applied analytical chemistry applications, materials research, nanotechnology, clinical research, molecular diagnostics and atmospheric studies. Contact: Dick Merk, Business Development, dick.merk@brukeroptics.com

CALCULEX, Inc.

#1831

132 W Las Cruces Ave., Las Cruces, NM, 88001 USA
+1 575 525 0131; fax +1 575 524 4744
info@calculex.com; www.calculex.com

CALCULEX designs and manufactures the MONSSTR family of solid state recorders feature a wide range of built-in multiplexer options that are compliant with IRIG 106 Chapter 10 standards. Interfaces include Standard Resolution video, High Definition video, Fibre Channel, GigE, PCM, and MIL-STD-1553. Customers for MONSSTR include the 46th Test Wing at Eglin AFB, FL; Lockheed Martin, Orlando, FL; Boeing, St. Louis, MO, Edwards AFB, CA; US Navy, Patuxent River, MD, and many others.

CalRamic Technologies, LLC

#1130

5462 Louie Lane, Reno, NV, 89511 USA
+1 775 851 3580; fax +1 775 851 3582
jday@calramic.com; www.calramic.com

Featured Product: HIGH VOLTAGE CERAMIC CAPACITORS.

CalRamic Technologies LLC in Reno, Nevada USA, ISO Cert. lean manufactures of High Voltage Ceramic Capacitors, 500VDC to 20,000VDC in a variety of configurations, styles & dielectrics. HV Multilayer, Radial Leaded, Disc, & Surface Mount for full application spectrum. Applications include, but limited to Commercial, Industrial, Analytical Sciences, Military Airborne & Ground based systems & High Reliability NonRepairable Space Applications. Custom, large to small quantities & quick lead times. Contact: Jeff Day, President/Owner, jday@calramic.com

CalSensors Inc.

#1548

5460 Skylane Blvd, Santa Rosa, CA, 95403 USA
+1 707 545 4181; fax +1 707 545 5113
info@calsensors.com

Cal Sensors, an ITW company, is a leading manufacturer of standard and customized photoconductive infrared detectors, arrays, and broadband emitters. For over 20 years, these detectors have provided superior sensitivity over 1-5.5 microns. Cal Sensors emitters support steady-state or high-pulse rates, offering high emissivity, reliability and long life. Applications include spectroscopy, imaging, medical, gas detection, moisture analysis, non-contact temperature measurement and flame detection.

Canon U.S.A.

#2068

1 Canon Park, Melville, NY, 11747-3336 USA
+1 516 328 5000; fax +1 516 328 4601
info@usa.canon.com;
www.usa.canon.com

Featured Product: GM Series and Scan Head Devices.

Canon USA is a provider of High Resolution Digital Optical Scanners and Scan Head Devices, Rotary and Linear Encoders, Non Contact Doppler Sensors, and other Encoder Products. The GM series and Scan Head Devices are used for Laser Marking, Welding, Cutting, Medical and Rapid Prototyping. Contact: Ron Travis, Sales Manager, rtravis@usa.canon.com



Free Popcorn

Exhibition Hall

A popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

Cantronic Systems (Canada) Inc.

#1638

67A Clipper St, Coquitlam, BC, V3K 6X2
Canada
+1 604 516 6667; fax +1 604 516 6618
info@cantronics.com;
www.cantronics.com

**Featured Product: Quality miniature
VE2.0 module for cooled thermal
cameras with up to a 1024x1024 detector
resolution.**

Cantronic Systems (Canada) Inc. is a global technology leader in infrared thermal imaging and night 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, and industrial applications. Contact: Frank Fei, Regional Sales Manager, ffei@cantronics.com

PROMOTIONAL PARTNER

Carl Hanser Verlag

#3046

Kolbergerstr. 22, Muenchen, 81679
Germany
+49 89 99830 0; fax +49 89 98480 9
info@hanser.de; www.hanser.de

LASER+PHOTONICS features articles and information on lasers, on optical and optoelectronic materials and devices, on components and assemblies, as well as on measurement technology. The target audience comprises developers of optical, optoelectronic and laser systems and complementary components, as well as decision-makers for equipment purchasing.

Carl Zeiss Microscopy, LLC

#1903

One Zeiss Drive, Thornwood,
NY, 10594 USA
+1 800 233 2343
micro@zeiss.com;
www.zeiss.com/microscopy

**Featured Product: Axio Imager 2
features brilliant optics and homogenous
illumination.**

The extensive product line of Carl Zeiss Microscopy offers innovative industrial solutions. We recognize our customers' unique applications, and offer limitless customization options. Our products include light, electron, and ion microscopes, digital cameras, confocal systems and software solutions. Nanofabrication and particle analysis are just some of the solutions we provide. Contact: Karin Salerno, Marketing Events Manager, microscopy@zeiss.com

CeramOptec Ind. Inc.

#3052

SPIE Corporate
Member

515 Shaker Road, East Longmeadow,
MA, 01028 USA
+1 413 525 0600; fax +1 413 525 1112
salesengineering@ceramoptec.com;
www.ceramoptec.com

CeramTec North America #1762

One Technology Place, Laurens, SC,
29360 USA
+1 864 682 3215
sales@ceramtec.com; www.ceramtec.us

**Featured Product: Ceramaseal®
feedthroughs, multi-pin and coaxial
connectors, thermocouples, isolators,
and viewports.**

CeramTec North America Corporation is an important part of a successful global organization. We are a leading manufacturer of high-tech, custom-engineered ceramic solutions, including Ceramaseal® hermetic components. Clients in a broad array of industries rely on us to bring their visions to life or to help them develop products and assemblies to support optical, gas, liquid, power, instrumentation, sensing and other applications. ISO 9001:2008 Contact: sales@ceramtec.com



EXHIBITION MAP/RESTAURANT GUIDE SPONSOR

ChemImage Sensor Systems

#1838

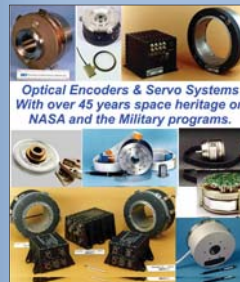
7301 Penn Ave, Pittsburgh, PA, 15208 USA
+1 412 241 7335; fax +1 412 241 7311
info@chemimage.com;
www.chemimage.com

**Featured Product: The Aperio &
LightGuard Standoff SWIR HSI imaging
sensors for wide-area screening of CBE
materials.**

ChemImage Sensor Systems (CISS) develops innovative products that utilize proprietary chemical imaging technologies to address the challenges associated with chemical, biological, and explosive (CBE) threat detection. CISS has developed a portfolio of chemical imaging sensors for proximity, remote, and standoff detection in fixed site, on-the-move and handheld sensor configurations. Contact: Steve Mitts, Director of Business Development, mitts@chemimage.com

Featured Product Launches

**BEI Precision Systems &
Space Co., Inc.1746**
Product: Space Qualified Optical
Encoders



Bertin Corp.1139
Product: Second Sight



Ruggedized infrared gas cloud
detector for real-time chemical area
surveillance.

Block Engineering, LLC . .1140
Product: PHORTHOS™



Portable, Rugged, FTIR, Highly
Sensitive Chemical Identification
System

**Bodkin Design &
Engineering, LLC1647**
Product: VNIR-90



New VNIR-90 Video Rate
Hyperspectral Imager with Patented
HPA™ Technology.

Bruker Optics Inc.1007



SIGIS2 chemical imaging system ideal
for first responders & stadium security.

CI Systems, Inc.

#1805

SPIE[®] Corporate Member

759 Cochran St #A, Simi Valley, CA, 93065 USA
+1 805 520 2233; fax +1 805 520 2234
info@cisystemsinc.com;
www.ci-systems.com

CI Systems' turnkey test stations leverage our expertise in infrared and visible sources, collimators, range simulators, laser measurement, motion control, software, and unit-under-test fixturing to deliver reliable, highly accurate systems that are backed by knowledgeable and responsive service professionals. Contact: Garrick Matheson, Director, gmatheson@cisystemsinc.com; Ilya Koshkin, Technology & Business Dev., ikoshkin@cisystemsinc.com

METER BOARD AND EXHIBITION MAP SPONSOR

Clear Align

#1225

SPIE[®] Corporate Member

2550 Boulevard of the Generals Suite 280, Eagleville, PA, 19403 USA
+1 484 956 0510; fax +1 484 956 0511
ales@clearalign.com; www.clearalign.com
Clear Align, designs, prototypes and manufactures custom imaging and laser systems. Imaging expertise spans the infrared, visible and UV portions of the spectrum, delivering narrow- to wide-field-of-view systems and micro-optic solutions for unique challenges. Laser and fiber optic expertise includes sensing, illumination and targeting. Our IR-Zoom division provides thermal and night vision zoom systems with a history of military ruggedization and in-house lens fabrication for quick-turn programs.

Cobham

#1755

2734 Hickory Grove Road, Life Support, Davenport, IA, 52804 USA
+1 563 383 6000; fax +1 563 383 6221
cms.iainfo@cobham.com;
www.cobham.com

Featured Product: Cryogenic Coolers and Controllers.

Cobham Life Support, Davenport IA, is a world leading manufacturer of air separation technology for aviation applications, underwater military rebreathers, and miniature stirling cycle cryogenic coolers. Contact: Asif Ahmed, Business Development, Asif.Ahmed@cobham.com; Lane Dicken, Engineering, lane.dicken@cobham.com

Cobolt AB

#918

Vretenvägen 13, Solna, 171 54 Sweden
+46 85453 1230; fax +46 85459 1231
info@cobolt.se; www.coboltinc.com

Featured Product: Compact All-in-One tunable mid-IR laser 2-5 μm , up to 100mW average power; 10kHz prf, <5ns pulse width.

Located in Stockholm, Sweden, Cobolt AB has, since the year 2000, been committed to development and supply of innovative laser products that meet or exceed the market's expectations concerning performance, quality and robustness. Through continuous technology development, customer orientation and an ISO-certified quality management system, Cobolt has become a preferred supplier of lasers to major manufacturers of analytical instrumentation equipment and leading research labs. Contact: Elizabeth Illy, Director of Marketing & Sales, info@cobolt.se

Coherent, Inc.

#1125

SPIE[®] Corporate Member

5100 Patrick Henry Dr, Santa Clara, CA, 95054 USA
+1 408 764 4000; fax +1 408 764 4825
tech.sales@coherent.com;
www.coherent.com

Coherent will showcase its broad portfolio of lasers for scientific research, instrumentation, microelectronics and material processing. The emphasis continues to be on superior performance and reliability. Prime examples of this leadership are the ultrafast product lines, the all-new Vitara family of broadband hands-free oscillators, the Chameleon and its Compact OPO, the well-established Genesis product families, the new OBIS family of lasers, the Talisker Ultra DPSS, and the HighLight 1000 FL.

Connecticut Coining, Inc. #801

10 Towbridge Drive, Bethel, CT, 06801 USA
+1 203 743 3861; fax +1 203 744 6797
contact@ctcoining.com;
www.ctcoining.com

Connecticut Coining Inc. is a leading manufacturer of deep-drawn metal parts used in a variety of commercial, aerospace, medical, and defense applications. We meet extremely tight tolerances and specialize in short-runs (5 to 20,000 pieces) and prototypes, using a variety of metals including stainless steel, titanium, Kovar®, Inconel®, and assorted nickel-based alloys. Our products include stand-alone parts and component parts that often are bonded to ceramic or glass at customer sites. Contact: Marlene Gaberel, International Sales Representative, Marlene.Gaberel@ctcoining.com; Dorothea Williams, Business Development Manager, Dorothea.Williams@ctcoining.com

CorActive High-Tech Inc. #1536

SPIE[®] Corporate Member

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

CorActive manufactures Specialty Optical Fibers, for applications in the industrial, telecom, defense, sensing and medical markets, and fiber laser sub-assemblies at 1 μm , 1.5 μm and 2 μm operating in CW (up to 2kW) and pulsed regime. CorActive also has the know-how and expertise to produce customized fibers in the mid IR (2-9 μm) as well as a unique fiber laser operating at 3 μm in CW mode (up to 20W).

Corning Incorporated #2016

1 Riverfront Plaza, Corning, NY, 14831 USA
+1 607 974 9000
inquiries@corning.com; www.corning.com

Corning Incorporated is a world leader in glass and materials science. Our Advanced Optics business specializes in designing and manufacturing precision optical solutions for use from the deep ultraviolet through the infrared. Our products range from optical glasses, glass ceramics and fluoride crystals to complex optical systems and assemblies. Target markets include aerospace and defense, astronomy, bio-medical, semiconductor, display, telecommunications and optical data storage. Contact: Kevan Taylor, taylorkp@corning.com; Dave Young, youngdj@corning.com

Cosmo Optics

#930

SPIE[®] Corporate Member

238 Watkins Avenue, Middletown, NY, 10940 USA
+1 845 343 2105; fax +1 845 343 9831
info@cosmooptics.com;
www.cosmooptics.com

Featured Product: Custom Optical Components and Assemblies.

Cosmo Optics is a custom manufacturer of optical components and assemblies from .040" to 60" in diameter. Our capabilities include producing plano, spherical, cylindrical, wedge, and prism components. We work with materials such as N-BK-7, Low CTE, GaAs, ZnSe and more. Cosmo Optics has been servicing the aerospace and defense markets for more than 55 years. Our team of master opticians and staff ensure the highest quality components. From prototype to volume runs, let us be your supplier. Contact: Brian Sebastian, President, brians@cosmooptics.com

CRC Press - Taylor & Francis #2018

6000 Broken Sound Parkway NW
Suite 300, Boca Raton, FL, 33487 USA
+1 561 994 0555; fax +1 561 361 6018
orders@crcpress.com;
www.crcpress.com

Featured Product: CRC Press-Taylor & Francis Group Professional Reference and Academic Books.

CRC Press—Taylor & Francis is a premier publisher of scientific and technical works, in the field of Sensors, Optics, and Robotics. Written by the best scientists and experts in their respective fields, CRC Press is at the forefront of promoting knowledge with the most useful and comprehensive content. For the latest books on Defense, Security, and Sensing, visit booth #2018 and take advantage of savings from 15-50% off. Or visit us now at: www.crcpress.com Contact: Marc Gutierrez, Marketing Manager, marc.gutierrez@taylorandfrancis.com

Creaform #2044

5825, St-Georges, Lévis, QC, G6V 4L2 Canada
+1 418 833 4446; fax +1 418 833 9588
info@creaform3d.com;
www.creaform3d.com

Creaform specializes in portable 3D measurement technologies and engineering services. Its services include 3D scanning, reverse engineering, QC, NDT, product development and simulation. Creaform sells the Handyscan 3D laser scanners, the HandyPROBE arm-free portable CMM and the MetraSCAN 3D optical CMM scanners. The company also offers the MaxSHOT 3D optical coordinate measuring system when photogrammetry is needed. Its head office and Quebec-based offices are 9001: 2008 ISO certified.

CREOL/UCF #1535

SPIE Corporate Member

4000 Central Florida Blvd #53, Orlando, FL, 32816-2700 USA
+1 407 823 6800; fax +1 407 823 6880
creol@creol.ucf.edu; www.creol.ucf.edu

Criterion Instrument #2029

5349 West 161st Street, Brook Park, OH, 44142 USA
+1 216 267 1733; fax +1 216 267 4542
office@criteriontool.com;
www.criteriontool.com

Featured Product: Precision Machined Parts/Contract Manufacturing.

Criterion Instrument, a Female Owned, ISO 9001:2008 certified manufacturer, has been providing custom precision machined parts for 60 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. Contact: Tanya DiSalvo, President, tdisalvo@criteriontool.com; Dennis Ondercin, Sales Engineer, dondercin@criteriontool.com

D&P Instruments #1102

1280 Hopmeadow Street, Simsbury, CT, 06070 USA
+1 860 658 0458; fax +1 860 651 0698
microfts@aol.com;
www.dpinstruments.com

Featured Product: Model 102F Portable Remote Sensing FTIR Spectrometer.

D&P Instruments specializes in small, hand-portable, battery-operated remote sensing FTIR spectrometers. We currently have two different interferometer designs, the Micro FT and Turbo FT. The Micro FT is a standard 1-2 scan per second device. It is used in our Model 102 spectrometer. The Turbo FT operates at higher scan rates of 25-100 scans per second. Both have a maximum spectral resolution of 4 cm⁻¹. The software supplied supports measurements of absolute radiance and emissivity. Contact: Winthrop Wadsworth, President, microfts@aol.com

DataRay Inc. #2024

SPIE Corpor

Featured Product Launches

CALCULEX, Inc.1831
Product: MONSSTR® 2300(V2)



Product: Compact Ruggedized IRIG 106 Chapter, 10 Flexible Digital Video/date Recorder.

Cantronic Systems (Canada) Inc.1638
Product: VE2.0 Video Engine



Quality Miniature Video Engine for High End Thermal Imaging Cameras.

Connecticut Coining, Inc. . . .801
Product: Deep drawn metal – traditional to exotic



Precision deep drawing is combined with high precision secondary machining.

DataRay Inc.2024
Product: WinCamD-FIR2-16-HR



High resolution IR Beam Profiling Camera 2-16 µm.

SPIE Defense, Security, and Sensing Directory

Davidson Optronics

#1749

SPIE[®] Corporate Member

2223 W San Bernardino Rd, West
Covina, CA, 91790 USA
+1 626 962 5181; fax +1 626 962 5188
sales@davidsonoptronics.com;
www.davidsonoptronics.com

Daylight Solutions, Inc. #1018

SPIE[®] Corporate Member

15378 Avenue of Science, San Diego,
CA, 92128 USA
+1 858 432 7500; fax +1 858 432 5737
info@daylightsolutions.com;
www.daylightsolutions.com

Leveraging our experience and unique IP in mid-infrared technology (3-14 μm), we deliver advanced molecular detection and imaging solutions for a variety of applications. We are experts in providing quantum cascade and external cavity quantum cascade lasers for scientific research, as well as incorporating this technology in mid-IR sensors, spectrometers and imaging systems in diverse applications including: medical diagnostics; defense; industrial process control; and environmental monitoring. Contact: Leigh Bromley, Director of Scientific Products, leighbromley@daylightsolutions.com; Bob Shine, Manager of Sales, Scientific, rshine@daylightsolutions.com

Defence Vision Systems #1220

Millham Mountfield, Robertsbridge East
Sussex, TN32 5JU United Kingdom
+44 1580 881199; fax +44 1580 880910
kelly@photonic-science.co.uk;
www.dvsmil.com

Featured Product: laser range finder - 24 hour multi spectral system.

Defence Vision Systems (DVS) formed in the early 90's, manufactures ruggedized night vision camera systems with daylight capability for the Defence Market. Our dedicated team of experts has a long experience in designing customized, ruggedized cameras for a broad range of defence surveillance applications. DVS provides compact, light weight cameras which are designed for gimbals from 20 inch down to 10 inch with sensors including Intensified, sCMOS, SWIR. Contact: John Staples, Sales Director, johns@dvsmil.com; Diane Brau, Marketing Manager, diane@photonic-science.com

PROMOTIONAL PARTNER

Defense Tech Briefs #1031

261 5th Avenue, Suite 1901, New York,
NY, 10016 USA
+1 212 490 3999
joe@techbriefs.com; www.techbriefs.com

Featured Product: Defense Tech Briefs.

Join over 103,000 design engineers and managers who read

Dow Electronic Materials #1641

455 Forest Street, Marlborough,
MA, 01752 USA
+1 508 481 7950
rgizzi@dow.com;
www.dowelectronicmaterials.com

Featured Product: Infrared optics for military IR systems: CLEARTRAN™ ZnS, CVD ZINC SULFIDE™ and CVD ZINC SELENIDE™.

Dow Electronic 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 CLEARTRAN™ (Multispectral ZnS), CVD ZINC SULFIDE™ and CVD ZINC SELENIDE™. Dow offers the best in class material solutions, as well as the fabrication capability to suit most design and format needs. Electro-optical windows, domes, subassemblies, imaging lenses and other components are all possible. Contact: Rosanna Gizzi, Business Manager, IR Materials, rgizzi@dow.com

DRS Technologies, Inc. #1609

SPIE Corporate Member

100 N Babcock St., Network and Imaging Systems (NIS), Melbourne, FL, 32935 USA
+1 321 622 1126; fax +1 321 622 1820
marketing@drs.com; www.drs.com

Featured Product: Surveillance / Infrared Camera Systems.

DRS Technologies, headquartered in Arlington, VA is a leading supplier of integrated products, services and support to military forces, intelligence agencies and prime contractors worldwide. DRS Network and Imaging Solutions business group develops, manufactures and supports electro-optical technologies, including advanced cooled and uncooled thermal imaging solutions for military applications, as well as for industrial, security, public safety and perimeter surveillance requirements. Contact: Todd Brown, Sr. Dir. Sales & Marketing, TABrown@drs-rsta.com; Ben Cargill, Marketing Specialist, BCargill@drs-rsta.com

DST Control AB #1955

SPIE Corporate Member

Åkerbogatán 10, Linköping, 582 54
Sweden
+46 13 211080; fax +46 13 211081
info@dst.se; www.dst.se

The "OTUS" gyro-stabilized electro-optical micro-gimbal is one of the smallest and lightest gimbals on the market, yet providing performance & functions found only in much larger units. It comes with a day-light camera and/or an un-cooled infrared camera combined with a laser range finder. OTUS provides unique optional functions such as geo-localization, automatic video tracking, video recording, everything integrated within the gimbal. The OTUS gimbals have no export restrictions, nor ITAR.

e2v Aerospace and Defense, Inc. #1026

SPIE Corporate Member

765 Sycamore Drive, Milpitas,
CA, 95035 USA
+1 408 737 0992

enquiries@e2v.com; www.e2v.com

e2v has over 30 years of experience in the design and manufacture of CMOS, CCD, EMCCD and line scan high performance image sensors for a variety of markets. Capabilities include 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 and Defense Imaging, peter.fochi@e2v-us.com

EDT #1135

1400 NW Compton Drive, Suite 315,
Beaverton, OR, 97006 USA
+1 503 690 1234; fax +1 503 690 1243
info@edt.com; www.edt.com

Featured Product: 2-in-1 frame grabber / simulator for Camera Link PCI Express 8-lane, base through extended full mode.

EDT, Inc. (Beaverton, OR) designs and manufactures high-performance Camera Link frame grabbers, simulators, and extenders (fiber or coax) for multiple modes (base through extended full), form factors (PCIe, PCI, PMC, cPCI), operating systems (Windows, Linux, Mac), and environments (desktops, workstations, embedded systems). Common API, full SDK, and generous engineer-to-engineer support are included free. Contact: Cliff Hayes, Field Application Engineer, info@edt.com

EGIDE USA Inc. #2020

4 Washington St, Cambridge,
MD, 21613-2802 USA
+1 410 901 6100; fax +1 410 901 6250
sales@egideusa.com;
www.egideusa.com

Featured Product: Glass-to-Metal Seal (GTMS), Ceramic-to-Metal Seal (CTMS) and full ceramic packages.

Egide was founded in 1986, with manufacturing plants in France and USA. The company designs, manufactures and sells hermetic Glass-to-Metal Seal (GTMS), Ceramic-to-Metal Seal (CTMS) and full ceramic packages for Telecommunications, Military, Security, Aeronautic, Space, Industrial and Medical applications. Contact: Kirk Williamson, Sales Manager, kirk.williamson@egideusa.com

Featured Product Launches

Daylight Solutions, Inc. . . . 1018
Product: MIRcat™



The new MIRcat™: >800cm⁻¹ tuning provides new standoff detection capabilities.

Delta Digital Video. 1540
Product: Models 6021R/6840R



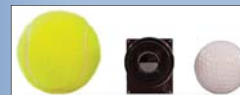
Mission-qualified video compression for real-time ISR applications.

Deposition Sciences, Inc. . . 921
Product: Ultra-broadband Uniform Optical Coatings



Ultra-broadband uniform coatings on complex substrate geometries-transmissive, reflective, conductive.

DRS Technologies, Inc. . . . 1609
Product: Tamarisk®640 camera



Introducing the Next-Gen, Feature Rich Tamarisk®640 Thermal Camera.

DST Control AB 1955
Product: SAITIS-640



SAITIS-640, a small sized and lightweight Thermal Imager.

Eksma Optics

#2036

c/o Optolita UAB, Mokslininku str. 11,
Vilnius, LT-08412 Lithuania
+370 5272 9900; fax +370 5272 9299
info@eksmaoptics.com;
www.eksmaoptics.com

Featured Product: High contrast BBO and DKDP Pockels cells for Q-switching, cavity dumping, and other applications.

EKSMA OPTICS is a manufacturer and global supplier of optical components for lasers and other photonics instruments. Product range includes optics, BBO, KD*P, KTP Pockels cells, Pulse picking kits, nonlinear LBO, BBO, KTP, KD*P, LiNbO₃, AgGaSe₂, AgGaS₂, ZnGeP₂, GaSe crystals, Yb:KYW/KGW, Nd:KGW, Nd:YLF laser crystals and ZnTe, GaSe terahertz generation crystals. EKSMA OPTICS is ISO 9001:2008 certified and has proven experience delivering custom solutions for OEM partners and R&D customers. Contact: Lucian Hand, President, Altos Photonics Inc, lucian@altosphotonics.com; Emily Bates, Customer Support, Altos Photonics Inc, emily@altosphotonics.com

EKSPLA

#2036

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LT-02300 Lithuania
+370 5 264 9629; fax +370 5 264 1809
sales@ekspla.com; www.ekspla.com

Featured Product: NT200 series nanosecond tunable DPSS lasers.

Manufacturer of solid state pulsed lasers, laser systems, DPSS lasers, optoelectronics and power supplies for basic research and industrial applications. Products include mode-locked, q-switched, custom-designed lasers, OPG/OPA/OPO systems and complete solutions for spectroscopy, material research as well as industrial diode pumped solid state lasers for material processing. Design and manufacturing of optoelectronics components and flash-lamp drivers for OEM customers. Contact: Lucian Hand, President, Altos Photonics, lucian@altosphotonics.com; Emily Bates, Sales & Support, emily@altosphotonics.com

Electro Optical Components, Inc.

#1034

SPIE Corporate Member

5460 Skylane Blvd, Santa Rosa,
CA, 95403 USA
+1 707 568 1642; fax +1 707 568 1652
sales@eoc-inc.com; www.eoc-inc.com

Featured Product: Micro-Hybrid Pyroelectric Detectors & IR Sources; IMM Laser Diode Modules; IR Filters & Windows.

Electro Optical Components (EOC) provides technologically advanced systems and components for laser and optoelectronic systems from the UV to the far IR including signal recovery amplifiers & photoreceivers; thermopile and pyroelectric detectors; MID IR photodiodes; UV detectors; IR and visible laser diode modules; broadband & LED mid-IR sources; optics and coatings including low refractive index coatings; IR interference filters; E-O modulators; beam shapers; spectral imaging systems. Contact: Mauricio Gutierrez, Sales, mauriciog@eoc-inc.com

Electro Optical Industries #1525

SPIE Corporate Member

859 Ward Drive, Santa Barbara,
CA, 93111 USA
+1 805 964 6701
eoi@electro-optical.com;
www.electro-optical.com

PROMOTIONAL PARTNER

Electro Optics Magazine #1030

Unit 9, Clifton Court, Cambridge, CB1
7BN United Kingdom
+44 1223 211170; fax +44 1223 213385
sales@europascience.com;
www.electrooptics.com

Featured Product: Free digital editions available worldwide.

Electro Optics magazine, published by Europa Science, is Europe's leading magazine for the photonics industry, covering business, technology and applications. Essential reading for engineers and entrepreneurs alike, it covers business trends, new technologies and the latest applications in photonics. Also available are two monthly email newsletters and a regularly updated website. To subscribe for free visit www.electrooptics.com/subscribe Contact: Warren Clark, Publishing Director, warren.clark@europascience.com; Jon Hunt, Advertising Sales Manager, jon.hunt@europascience.com

Electro-Optical Imaging, Inc.

#1113

SPIE Corporate Member

4300 Fortune Place, Suite C, West
Melbourne, FL, 32904 USA
+1 321 435 8722; fax +1 321 435 8723
info@eoimaging.com; www.eoimaging.com

Featured Product: The Model 8200-HD Standalone Miniature Automatic Video Tracker for surveillance and UAV applications.

Electro-Optical Imaging, Inc. is a recognized leader in the design, development and manufacture of a diverse line of high performance Automatic Video Trackers and Tracking Systems adaptable to the most complex and demanding test range, tactical and surveillance applications. Trackers are available for VMEbus, PCI and PCI Express platforms, as well as custom, standalone form factors interfacing with various standard and nonstandard video formats, including Camera Link and High Definition. Contact: George Downey, President, gdowney@eoimaging.com; Nathan Harris, Vice President, nharris@eoimaging.com

Element Six

#1660

2075 Lindero Drive, Santa Clara, CA 95054 USA
+1 408 986 2400
www.e6.com

E6 fabricates and sells precision industrial diamond products. Products are made from engineered synthetic 14.2(c)P7s(e)-22.29 -.342 .543 0 0 0 c

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EM Photonics Inc.

#1021

51 E Main St. Ste 203, Newark,
DE, 19711 USA
+1 302 456 9003; fax +1 302 456 9004
info@emphotonics.com

Featured Product: ATCOM Long-Range Image Enhancement.

EM Photonics develops high-performance computing and embedded systems solutions for the image processing and scientific computing fields. We solve our customers' problems and optimize performance, size, weight, and/or power. Whether CPU, GPU, FPGA, or supercomputer, we maximize any platform to create novel solutions for our commercial, research, and defense clients. Contact: Eric Kelmelis, CEO, kelmelis@emphotonics.com; Kyle Spagnoli, Senior Engineer, spagnoli@emphotonics.com

eMagin Corporation

#1958

3006 Northup Way Ste 103,
Bellevue, WA, 98004 USA
+1 425 284 5200; fax +1 425 284 5201
info@emagin.com; www.emagin.com

EMCORE Corporation

#915

2015 Chestnut Street, Alhambra, CA,
91803 USA
1-626-293-3400; fax 1-626-293-3428
specialty-sales@emcore.com;
www.emcore.com

Featured Product: Terahertz (THz) Systems, Fiber Optic Gyros, RF/Video Fiber Optic Links, LIDAR, Tactical Solar Power.

EMCORE Corporation is a leading provider of optical technology for the defense and homeland security markets. Our solutions include Portable Terahertz Spectrometers for material analysis and threat detection, and compact, low-power Fiber Optic Gyroscopes and IMUs for UAVs, robotics, navigation and aeronautics. In addition, EMCORE provides Fiber Optic links for Satellite/Microwave Communications to 40 GHz, plus Video Transport, LIDAR and Fiber Optic Delay-Lines for RADAR testing and calibration. Contact: Frank Weiss, Vice President, frank_weiss@emcore.com; Richard Lutz, Director of Programs, Richard_Lutz@Emcore.com

Energetiq Technology, Inc.

#1916

SPIE[®] Corporate Member

7 Constitution Way, Woburn, MA, 01801 USA
+1 781 939 0763
info@energetiq.com; www.energetiq.com

Energetiq Technology, Inc. is a developer and manufacturer of ultrahigh-brightness light sources for use in analytical instrumentation. Energetiq's unique Laser-Driven Light Source (LDLS[™]) technology features broadband output from 170nm in the deep UV, through visible and into the infrared. The LDLS products offer more than 10X brightness and 10X lifetime of conventional Xe and D2 lamps.

EPIR Technologies Inc.

#3050

SPIE[®] Corporate Member

590 Territorial Dr Ste B, Bolingbrook,
IL, 60440-4881 USA
+1 630 771 0203; fax +1 630 771 0207
www.epir.com

EPIR Technologies, Inc. (EPIR) is a provider of high performance II-VI material for the Infrared (IR) industry; concentrating on the MBE growth of single-crystal materials such as mercury cadmium telluride (MCT) and cadmium telluride (CdTe). EPIR provides various services in material growth, characterization and detector array fabrication. Leveraging its expertise in many disciplines EPIR also provides cutting-edge research for the IR community. Contact: Andrew Bauman, Customer Relations, abautman@epir.com; Fikri Aqariden, Vice President, faqariden@epir.com

EPIX, Inc.

#900

SPIE[®] Corporate Member

381 Lexington Dr, Buffalo Grove,
IL, 60089-6934 USA
+1 847 465 1818; fax +1 847 465 1919
epix@epixinc.com; www.epixinc.com

EPIX, Inc. manufactures cameras, frame grabbers, image capture and processing software, computer imaging systems, and customized versions of these products. Our products are used in manufacturing, medical, inspection, machine vision, and research applications by individuals as well as original equipment manufacturers. We sell directly and via international distributors. We design our cameras, hardware, and software in Buffalo Grove, Illinois with the majority of our manufacturing performed locally. We provide excellent customer support from camera selection, optics, computer software, and computer hardware to software and system operation. We have been providing off the shelf and customized imaging solutions since 1983.

Epner Technology Inc.

#1529

SPIE[®] Corporate Member

78 Kingsland Avenue, Brooklyn,
NY, 11222 USA
+1 718 782 5948; fax +1 718 963 2930
info@epner.com; www.epner.com

ER Precision Optical

#805

SPIE[®] Corporate Member

805 W. Central Blvd., Orlando,
FL, 32805 USA
+1 407 292 5395; fax +1 407 292 7984
sales@eroptics.com; www.eroptics.com

Featured Product: Custom optics, lenses, windows, filters, prisms in all mat'ls. US producer of IR materials, Ge & Si.

ER Precision Optical (ERPOC), is a diverse materials and precision optics manufacturing company located in Orlando's downtown district. ERPOC grows critical infrared materials; germanium and silicon crystals and manufactures precision optical components from all materials; visual through IR, for the defense & aerospace, semiconductor, solar, electronics and medical markets. We are a ISO certified, ITAR compliant, Small Business / HUBZone classified to benefit government supplier requirements. Contact: Kevin Ward, Business Development, kward@eroptics.com; Jason Hess, VP of Operations, jhess@eroptics.com

ET Precision Optics, Inc.

#1137

SPIE[®] Corporate Member

33 Curlew St, Rochester,
NY, 14606-2535 USA
+1 585 254 2560; fax +1 585 254 2966
teckler@etprecision.com;
www.etprecision.com

Featured Product: Super Precision Machined rotational and prismatic mechanical components.

A Precision Parts Manufacturer that specializes in the machining of components that require exacting standards similar to those in the optics industry. Components for industries like optical, medical, firearms, and aerospace where Quality is judged not only by precise tolerances but also attention to aesthetic attributes and excellence in customer service. ISO 9001-2008 Certified, ITAR Registered. For more information see us at www.etprecision.com Contact: Tom Eckler, President, teckler@etprecision.com; Dave Kolczynski, Chief Operating Officer, dkolczynski@etprecision.com

Eutecus Inc.

#2105

SPIE[®] Corporate Member

1936 University Ave, Suite 360, Berkeley,
CA, 94704 USA
+1 703 625 4223
pkoskey@eutecus.com;
www.eutecus.com



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Excelitas Technologies #1842

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+1 855 382 2677; fax +1 781 290 4702
generalinquiries@excelitas.com;
www.excelitas.com

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the illumination, detection and other high-performance technology needs of OEM customers. From analytical instrumentation, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success. Excelitas Technologies has approximately 3,000 employees across the world.

Fairfield Crystal Technology #912

SPIE Corporate Member

8 South End Plaza, New Milford, CT, 06776 USA
+1 860 354 2111; fax +1 860 354 3093
atimmerman@fairfieldcrystal.com;
www.fairfieldcrystal.com

Featured Product: Growth & fabrication of optical and semiconductor crystals - CaF_2 , BaF_2 , MgF_2 , LiF, Ge, Si, ZnS, AlN.

Fairfield Crystal has developed proprietary crystal growth techniques and other proprietary source purification technology, to grow high-purity single crystals that can be fabricated into high performance optical components suitable for commercial, industrial and military applications. Additionally we have expertise in polishing crystals for a variety of optical components such as prisms, lenses, waveplates, and a variety of other specialized components. Contact: Andy Timmerman, VP of Sales, atimmerman@fairfieldcrystal.com

PROMOTIONAL PARTNER

Federal Laboratory Consortium #2114

950 N Kings Hwy, Cherry Hill, NJ, 08034 USA
+1 856 667 7727; fax +1 856 667 8009
flemso@federallabs.org;
www.federallabs.org

FJW Optical Systems, Inc. #1963

SPIE Corporate Member

322 N. Woodwork Lane, Palatine, IL, 60067 USA
+1 847 358 2500; fax +1 847 358 2533
irsales@findrscope.com;
www.findrscope.com

Featured Product: Electronic Find-R-Scope Infrared Viewer with video output.

FJW Optical Systems, world-leading manufacturer of self-contained, high-res. Find-R-Scope® Infrared Viewers, Ultraviolet Viewers, IR Cameras & Radiometric Thermal Imagers. IR Viewers sensitive from 350-1550nm, UV Viewer from 180-1550nm. Vidicon NIR/SWIR/Camera from 400-2200nm. Thermal Camera 8-14 m. Use to inspect IR diodes, align/profile laser systems, biotech, forensics & document analysis. View sources which cannot be seen with the naked eye. Accessories available to extend capability. Contact: Barry Durr, General Manager, bdurr@findrscope.com; Mary Scarlata, customer Service, irsales@findrscope.com

Flex Interconnect #1655

1603 Watson Ct, Milpitas, CA, 95035 USA
+1 408 635 3450; fax +1 408 956 8278
sales@fit4flex.com; www.fit4flex.com

The premier solutions provider for flex and rigid-flex boards manufacturing. We are ITAR, Mil-P-50884 & AS9100C certified. Boards are built to IPC Class 3 standards. Quickturn specialists and can do Design, Fab, Assembly & Testing in 10 days or less. Also included are excellent continuity and program management solutions for the next phase - High Volume Low Cost Production. We also carry a full line of standard products like the Samtec high speed DataLink Cables.

Flexible Optical B.V. #1531

SPIE Corporate Member

Polakweg 10-11, Rijswijk, 2288 GG Netherlands
+31 70 262 9420; fax +31 70 710 1400
oko@xs4all.nl; www.okotech.com

FLIR Systems Inc. #1508

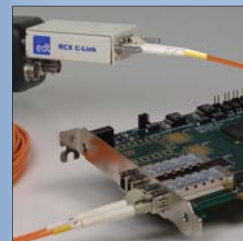
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27700 SW Parkway Ave, Wilsonville, OR, 97070 USA
+1 877 773 3547; fax +1 503 498 3153
sales@flir.com; www.flir.com

FLIR Systems offers a full line of uncooled and cooled infrared sensors, component products, and high-resolution thermal imaging systems. FLIR's volume detector fabrication capability, ROIC development, OEM packaging and program management give you the highest quality sensors at the lowest cost.

Featured Product Launches

EDT1135
Product: Camera Link extender - RCX C-Link



EDT extenders send Camera Link 100+ km over fiber!

EGIDE USA Inc.2020



Innovative Hermetic Packaging Solutions.

EKSMA Optics2036
Product: Low Voltage KTP Pockels



Low Voltage KTP Pockels cell for high repetition rate lasers.

EKSPLA2036
Product: PL2230 Series Nd:YAG lasers



PL2230 series high energy full DPSS picosecond Nd: YAG Laser.

Electro Optical Components, Inc.1034
Product: Micro-Hybrid TS2x80-HT



Micro-Hybrid High Temperature NDIR Gas Sensing Module.

Florida Photonics Cluster #1535

12424 Research Pkwy, Ste 100, Orlando,
FL, 32826 USA
+1 407 882 2104
jpearson@creol.ucf.edu;
www.floridaphotonicscluster.com

Featured Product: Membership in the Florida Photonics Cluster trade association.

The Florida Photonics Cluster (FPC) brings together the knowledge, expertise, and service of its members to accomplish the following goals: Foster the growth of Florida's optics and photonics industry to make Florida the place to go for photonics solutions; Market Florida's optics and photonics companies worldwide; Facilitate and provide a means of communication and networking within the business community; and Partner with the education community to develop the optics and photonics workforce. Contact: James Pearson, Executive Director, jpearson@creol.ucf.edu; Alexandre Fong, President, afong@gooch&housego.com

FluxData Inc.

#1240

SPIE[®] Corporate
Member

125 Tappan St, Suite 1.7, Laval, QC, H7V 8T8 (traci) 1 450 680 3401; fax Tj546.75 c33918(traci)sales geniaphotoni144.9(.fl8(traci)
NY, 14623 USA
+1 585 820 8730
tracie@fluxdata.com; www.fluxdata.com

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GlobalSensing Technologies

#1143

23 rue paul Bert, Boulogne Billancourt,
92100 France

+00 33 1 46 03 26 60

xavier.bruneau@globalsensing.eu;

www.globalsensing.eu

GlobalSensing Technologies (GST), pattern recognition and embedded electronic system specialist, designs and markets new micro-electronic systems using artificial intelligence. These new systems, dedicated to real time pattern recognition applications, are based on a neural network architecture technology (« imitating » the human brain) which should be coupled with sensors of perception (camera, microphone,...).

GLsun Science and Tech Co., Ltd.

#3056

No 8 High-tech Industry Park Chaoyang Rd, Guanglong S&T Zone, Guilin Guangxi, Guangxi Zhuang, 541004 China
+86 0773 3116098; fax +49 0773 3116066
gloriawang@glsun.com; www.glsun.com

Featured Product: Micro Optical Switch.

GLsun Science And Tech Co., Ltd, founded in 2001, as a national high-tech corporation, specializes in the research, development and manufacturing of optical passive components, fiber test instruments and Optical protection equipment. GLsun also provides technical services for fiber-network project. After over 11 years efforts, GLsun has supplied hundreds of thousand high quality fiber optic components for domestic and overseas applications. Contact: Gloria Wang, International Sales Manager, gloriawang@glsun.com; Kathy Liu, International Sales, sales020@glsun.com

Gooch and Housego

#2102

7 Oak Park Dr, Bedford, MA, 01730
United States

+1 781 275 7501 x257; fax +1 781 275 7659

wgateway@goochandhousego.com

Manufacturer of high reliability, hermetically packaged, fiber pigtailed and free space optoelectronic components and subsystems for harsh environments: terrestrial, marine and aerospace. Featuring: 100 mW DFB lasers (C and L band, 5 GHz direct mod); 10W multimode pump s(780nm-980nm); 800mW SM pumps (915nm-1064nm); <10 ns rise/fall time AOM's (530nm, 1060nm & 1550nm); 20 GHz detectors; HP fiber coupled isolators.

Gould Fiber Optics

#1669

SPIE Corporate Member

1121 Benfield Blvd, Millersville,
MD, 21108 USA

+1 410 987 5600; fax +1 410 987 1201

info@gouldfo.com; www.gouldfo.com

Featured Product: 1st in the Industry- NEW product line of Damp Heat and Harsh Environment Resistant PM Couplers.

Designs, develops, manufactures and distributes passive fiber optic components for telecom, government, military, aerospace, medical, gyroscope, and sensor market applications. Specializes in volume production of customized optical assemblies. Products include planar, PM products, single and multimode couplers/splitters, high temperature couplers, RGBV/multimode/pump combiners, WDMs, DWDMs, CWDMs, and more. Gould's products are manufactured in the USA, ISO 9001 certified, RoHS & ITAR compliant. Contact: Peter Smiley, Sales Manager, psmiley@gouldfo.com

GPD Optoelectronics Corp.

#1743

SPIE Corporate Member

7 Manor Pkwy, Salem, NH, 03079-2842 USA

+1 603 894 6865; fax +1 603 894 6866

sales@gpd-ir.com; www.gpd-ir.com

Great River Technology

#1968

6121 Indian School Rd NE, Albuquerque,
NM, 87110-4140 USA

+1 505 881 6262; fax +1 505 883 1375

pgrunwald@greatrivertech.com;

www.greatrivertech.com

Featured Product: ARINC 818 and Hotlink Frame Grabbers, Emulators, Analyzers, and IP Cores.

Great River is the global leader in ARINC 818 and HOTLink II™ systems. Aerospace engineers worldwide tap our expertise to simplify design, implementation, and testing of mission-critical video and data transmission systems: cockpit displays, HUDs, graphics generators, mission processors, flight recorders, video switches, infrared and optical sensors, and flight simulators. Contact: Paul Grunwald, Director of Business Development, pgrunwald@greatrivertech.com; Tim Keller, Director of Marketing, tkeller@greatrivertech.com

Featured Product Launches

Electro-Optical Imaging, Inc.1113
Product: Model 8200-HD Standalone Miniature Automatic Video Tracker



Model 8200-HD Miniature Video Tracker for surveillance and UAV applications.

EPIX, Inc.900
Product: SILICON VIDEO 1C45 & 1M45



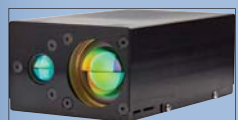
1280 x 980 x 12 bit camera 45 fps global shutter.

Epner Technology Inc....1529
Product: Laser Black/Laser Gold coated cold shields



Improved Laser Black coating for electroformed cold shields.

FLIR Systems Inc.1508



Solid state 10km laser range finder optimized for SWAP+C platforms

Greenpak Development, Inc. (GDI) #1559

SPIE Corporate Member

1624 Staunton Ave Suite 101,
Parkersburg, WV, 26101 USA
+1 304 420 1027
carnold@gdi.us.com; www.gdi.us.com

Featured Product: Technical & Engineering Services.

Design, Develop, Prototype, Test, Integrate, Manufacture, Operate and/or Manage - Technical & Engineering Services, Projects, and Facilities. Affiliations: NCMS, DSS Academy, AFE, IOPP, SME, ASQ, SPIE, & SENSIAC. Contact: Wm. Craig Arnold, President & Sr. Contracts Official, carnold@gdi.us.com

G-S Plastic Optics #1759

SPIE Corporate Member

408 St. Paul Street, Rochester,
NY, 14605 USA
+1 585 295 0200; fax +1 585 232 2314
info@gs optics.com; www.gs optics.com

Featured Product: Precision Polymer Optics.

G-SPO specializes in the custom design and manufacture of precision polymer optics for use in imaging, scanning, illumination, and detection applications worldwide. We have in-house capability to provide diamond turned and injection molded prototypes, production injection molding, thin film and reflective coatings, and integrated optical solutions to meet a wide range of military, medical, commercial, and consumer markets. Contact: Will Beich, Director of Sales and Marketing, wbeich@gs optics.com; Chuck Synborski, Vice President Sales, Marketing and Business Dev., csynborski@gs optics.com

Gurley Precision Instruments #1342

514 Fulton Street, Troy, NY, 12180 USA
+1 518 272 7200; fax +1 518 274 0336
info@gurley.com; www.gurley.com

Featured Product: Optical Encoders and Components.

GPI manufactures high-end optical encoders, components and assemblies to the optics, medical, aerospace and defense industries. From design phase to volume runs, we manufacture custom and catalogued components that are designed to meet your specific requirements. Our product line includes; linear and rotary encoders, lenses, windows, mirrors, prisms, reticles, and full coating services for most types of substrates. For more information, stop by our booth or visit our website at www.gurley.com Contact: Brian Sebastian, Director of Optic Sales, b.sebastian@gurley.com; Martin Gordinier, COO, m.gordinier@gurley.com

Hamamatsu Corporation #1918

SPIE Corporate Member

360 Foothill Rd, Bridgewater,
NJ, 08807 USA
+1 908 231 0960; fax +1 908 231 1539
usa@hamamatsu.com;
www.sales.hamamatsu.com
Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, UV light and x-rays. These devices include photomultiplier tubes, photodiodes, image sensors, cameras, and light sources. Hamamatsu Photonics also offers specialized systems for select applications.

Hardin Optical #1839

SPIE Corporate Member

87679 Kehl Road, Bandon, OR, 97411 USA
+1 541 347 9467
optics@hardinoptical.com

Hardin Optical manufactures precision optical components for commercial and defense applications. We fabricate custom optical elements used in UV, Visible, and IR applications. Our manufacturing facility includes conventional grinding and polishing, diamond turning, and thin film coating capabilities. We take pride in our record of on-time delivery of quality products. Hardin Optical Company was founded in 1976. www.hardinoptical.com Contact: Adam Henkel, optics@hardinoptical.com

HawkEye Technologies #2001

181 Research Drive, Unit #8, Milford,
CT, 06460 USA
+1 203 878 6892; fax +1 203 878 7462
info@hawk eyetechnologies.com;
www.hawk eyetechnologies.com

Featured Product: The HawkEye IR-5x, IR-6x and (about to be released) IR-7x are state-of-the art pulsable emitters.

We have state-of-the-art pulsable emitters. Our MEMS technology product lines have set the standard for the past 5+ years. They can be pulsed at 100 cycles per second. Our steady state, coil wound emitters are rugged and have demonstrated stable output and long lifetime. We are your source for infrared. Contact: John Gaglione, Engineering Manager, info@hawk eyetechnologies.com; Tom Farina, Operations Manager, info@hawk eyetechnologies.com

Headwall Photonics, Inc. #1830

SPIE Corporate Member

601 River Street, Fitchburg, MA, 01420 USA
+1 978 353 4100; fax +1 978 342 1864
information@headwallphotonics.com;
www.headwallphotonics.com

Featured Product: High-Efficiency Micro Hyperspec; Raman Explorer; handheld Hyperspec RECON.

Headwall manufactures imaging systems that provide high efficiency, low stray light, a wide field of view, and outstanding spatial and spectral resolution. Headwall's diffractive optics' technology comprises high-efficiency gratings and OEM spectrometers meeting precise customer specifications. Hyperspectral applications: airborne, tactical, ground-based, and handheld mission objectives. Raman: chemical and biological threat assessment and material identification at airport checkpoints. Contact: Kirk Grim, Director of Sales, kgrim@headwallphotonics.com; Christopher Van Veen, Marketing, cvanveen@headwallphotonics.com

HEL Joint Technology Office #1563

801 University Blvd SE, Suite 209,
Albuquerque, NM, 87106 USA
+1 505 248 8200; fax +1 505 245 2185
hel-jto@jto.hpc.mil

The High-Energy Laser Joint Technology Office (HEL-JTO) located in Albuquerque, NM, supports basic and applied research for future DoD HEL force protection systems. The JTO funded research provides HEL technology that makes systems effective, lighter, smaller, cheaper, and more easily supportable. The organization supports technology advances in gas, solid-state, free-electron and advanced lasers; beam control; modeling and simulation; and lethality.

Helioworks, Inc. #2001

1275 4th Street, Santa Rosa,
CA, 95404 USA
+1 707 578 7200; fax +1 707 578 7200
info@helioworks.com;
www.helioworks.com

Hellma Materials GmbH #1010

Moritz von Rohr Str. 1, Jena, 07745
Germany
+0049 3641 2877 234
www.hellma-materials.com

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Boston Electronics



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#1901

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sales.hqs.optics.us@heraeus.com;
http://optics.heraeus-quarzglas.com

Featured Product: Spectrosil synthetic fused silica for deep UV applications and high power NIR lasers.

Heraeus is a leader in the manufacturing of high purity quartz materials and components, and produces various types of high purity fused silica for use in semiconductor manufacturing, telecommunications, optical, chemical, lamps and a variety of other advanced applications. Contact: David Gritz, Director of Sales, david.gritz@heraeus.com; Robert Sawyer, Account Manager, robert.sawyer@heraeus.com

HGH Infrared Systems #2034

One Broadway 14th Fl, Cambridge, MA, 02142 USA
+1 617 401 2196
briana.shea@hgh-infrared.com;
www.infrared360.com

Hitachi High Technologies America, Inc. #2008

SPIE Corporate Member

1375 North 28th Avenue, Dallas, TX, 75261 USA
+1 800 548 9001; fax +1 301 990 0472
sales-us@hitachi-hita.com;
www.hitachi-hita.com

Featured Product: The SU3500 VP-SEM employs an Ultra Variable Pressure Detector, live 3D Imaging and ease of use.

The Nanotechnology Systems Division (NSD) provides technologically advanced solutions to meet the diverse and complex challenges of materials science, biological research, and industrial manufacturing. We support our satisfied customers with a wide range of reliability-proven instrumentation, including scanning electron microscopy (SEM), analytical and biological transmission electron microscopy (TEM), dedicated STEM, Focused Ion Beam (FIB), tabletop microscopes, and sample prep systems. Contact: Roger Teppert, National Sales Manager, emdwebsite@hitachi-hita.com

PROMOTIONAL PARTNER

Homeland Security Today

#2107

6800 Fleetwood Road, Suite 1114, McLean, VA, 22101 USA
+1 540 854 0910; fax +1 540 854 0911

Hoppe Technologies, Inc. #1849

107 First Ave, Chicopee, MA, 01020 USA
+1 413 592 9213; fax +1 413 592 4688
dwalker@hoppetech.com;
www.hoppetech.com

Featured Product: Precision Machined Components. Optical Assemblies. Metal Optics. Optical Components. Housings.

Hoppe Technologies is a world-class, responsible provider of precision machined components and assemblies. Along with the strength of our group of companies which includes Maine Machine Products Co., Trimaster and HPG, we have the resources and unique capabilities for a total customer satisfaction experience. With the very latest precision manufacturing technology available today, combined with unparalleled pride of workmanship and dedication to quality and delivery, we succeed where others fail. Contact: Dan Walker, Vice President, Business Development, dwalker@hoppetech.com; Steve Delude, Sales & Marketing Manager, sdelude@mmpco.com

HySpex, Norsk Elektro Optikk AS #2103

Solheimveien 62 A, Lørenskog, N-1471 Norway
+47 67 97 47 00; fax +47 67 97 4900
hyspexsales@neo.no; www.hyspex.no

IBC Engineered Materials Corp. #1858

55 Jonspin Rd, Wilmington, MA, 01887 USA
+1 978 284 8900; fax 1 978 284-8955
emsales@ibcadvancedalloys.com;
www.ibcadvancedalloys.com

Featured Product: Investment castings of beryllium and aluminum for lightweight, high-modulus applications.

IBC Engineered Materials Corp, a wholly-owned subsidiary of the International Beryllium Corporation provides high-precision investment castings of beryllium and aluminum using a proprietary near-net-shape technology. Engineered Materials has a long heritage of providing castings to customers in the aerospace and defense industries and has a customer base that includes most of the major defense contractors in the United States that have requirements for lightweight, high-modulus castings. Contact: Ray White, President, IBC Engineered Materials, rwhite@ibcadvancedalloys.com; David Hinds, Mgr, Aerospace & Defense Sales, dhinds@ibcadvancedalloys.com

IBM

#1559

310 State Route 956, Rocket Center, WV, 26726-9222 USA
+1 304 726 4457

Ibsen Photonics #1019

Ryttermarken 17, Farum, 3520 Denmark
+45 4434 7000; fax +45 4434 7001
info@ibsen.dk; www.ibsenphotonics.com

Featured Product: High power fused silica transmission gratings.

Ibsen Photonics is the global leader in transmission gratings and OEM spectrometer modules for UV, VIS, and NIR spectral ranges. Fused silica transmission gratings offer an order of magnitude higher power handling capability than any other grating technology including conventional Au-coated reflection gratings. All Ibsen gratings are based on fused silica with excellent transmission characteristics in all wavelength regions - from below 200 nm to above 2000 nm - ideal for high power applications. Contact: Kristian Buchwald, VP - Grating Business Unit, kristian.buchwald@ibsen.dk; Bjarke Rose, VP - Spectrometers, bjarke.rose@ibsen.dk

ICA Corporation #1657

12130 Brockton Lane, Maple Grove, MN, 55369 USA
+1 800 345 2801; fax +1 763 428 4230
info@icacorp.com; www.icacorp.com

Featured Product: Close tolerance machining; custom electronic enclosures and chassis.

ICA is an ISO 9001:2008 certified and ITAR registered company providing build-to-print component parts and assemblies to OEMs in the optics and imaging, analytical instrumentation, medical, aerospace industries. Capabilities include: CNC machining (milling and turning); opto-mechanical components and assembly; custom electronic enclosures and cabinets; sheet metal fabrication and laser cutting; mechanical and electro-mechanical assembly. Contact: Susan Goran, National Sales Manager, sgoran@icacorp.com

ID Quantique SA #2001

Chemin de la Marbrerie 3, Carouge Geneva, 1227 Switzerland
+41 22 301 83 71; fax +41 22 301 83 79
info@idquantique.com;
www.idquantique.com

Featured Product: id220: Free-running photon counter with very low dark count rate at telecom wavelength, SMF or MMF.

IDQ offers photon-counters based on avalanche photodiodes (Geiger mode) for the visible and infrared regions. It also includes Telecom short-pulse laser sources (id300) and the id800 Time to Digital Converter with 81ps bin size! The id100 is a photon counter based on silicon APD. The InGaAs/InP id210 has a 100MHz max. trigger rate and can also operate in free running. The id220 InGaAs/InP offers the lowest dark count rate in free-running mode. The id400 is optimized for 1064nm. Contact: Michael Desert, Sales Engineer, info@idquantique.com.

Ideal Aerosmith, Inc. #1844

3001 S. Washington St., Grand Forks,
ND, 58201 USA
+1 701 757 3400; fax +1 701 757 3459
sales@idealaero.com;
www.ideal-aerosmith.com

Featured Product: The Series 2445 Five-axis flight motion simulator for testing IR seekers with a simulated IR target.

Ideal Aerosmith, Inc. innovatively engineers, manufactures & sustains world-class motion and electronic test solutions & services. Its cutting-edge products and services comprise precision inertial guidance test systems, rotational tables, centrifuges, high dynamic Hardware-in-the-Loop flight motion simulators, test services including ATE system engineering and quality contract manufacturing. Ideal Aerosmith, Inc. Providing solutions for mil-aero applications worldwide for more than 70 years. Contact: Dennis Whitehead, Sr. Business Development Manager, dwhitehead@idealaero.com; Robert Mitchell, Business Development Manager, mitchell@idealaero.com

IDEX Optics & Photonics #1325

SPIE Corporate Member

200 Dorado Pl SE, Albuquerque,
NM, 87123-3605 USA
+1 505 296 9541; fax +1 505 298 9908
http://www.idexcorp.com

Featured Product: Optics, Lasers, Filters.

We provide cutting-edge solutions for the most demanding applications for life sciences, scientific & medical technologies, industry, defense & aerospace, semiconductors and consumer products. Our IBS-coating facilities with proprietary monitoring produce consistent high-quality volume products. Our large combined engineering staff has expertise in all areas of optical, mechanical and systems design to build or customize our customer's every need.

II-VI Infrared #902

375 Saxonburg Blvd, Saxonburg,
PA, 16056 USA
+1 724 352 1504; fax +1 724 352 4980
info@iiviiinfrared.com; www.iiviiinfrared.com

II-VI INFRARED, the world leader in CO₂ 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, Regional Manager, tneff@ii-vi.com

Imaging Solutions Group #1565

SPIE Corporate Member

1387 Fairport Road, Suite 890, Fairport,
NY, 14450 USA
+1 585 388 5220
kerry@isgchips.com; www.isgchips.com

Featured Product: ISG LightWise IQ Smart Camera Family.

ISG is a contract engineering services firm in the field of digital imaging and we provide OEM product delivery. In essence, we design custom digital cameras and video systems, manufacture them and sell them to OEM customers who either rebrand them for resale or integrate them into a larger product or system. We also have a line of intelligent camera proM62-15.6(i)-13.8(.8(t)1.8Da)4.6(l)3.2(r).3.9(e (t)17.015

Featured Product Launches

G5 Infrared2031
Product: Hard carbon exterior coating



G5 Now provides diamond like coatings for lens elements and window flat surfaces.

Gavish, Inc.17015
Product: Sapphire imaging and detector optics



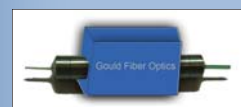
Expanded range of sapphire imaging and detector optics.

Glsun Science and Tech Co., Ltd.3056
Product: Optical Switch



Features: Low Insertion Loss Wide Wavelength Range Low Crosstalk High Stability.

Gould Fiber Optics1669
Product: Gould's PM/SM Low Wavelength, High Power in-line Isolator



High isolation and low loss. Ideal for fiber laser & Sensor applications.

G-S Plastic Optics1759
Product: Precision Polymer Optics



Custom design/manufacturing for imaging, scanning, illumination, and detection applications.

Infinite Graphics

#1741

4611 E Lake St, Minneapolis,
MN, 55406 USA
+1 612 721 6283; fax +1 612 721 3802
sales@igi.com

Featured Product: Photomask services, 3D Micro Structures, Mico Lens Arrays, Shim and Molds, CAD software editor.

Infinite Graphics Incorporated (www.IGI.com) is redefining precision quality imaging by solving phototooling challenges where size, substrate and dimension are unique. Stop by our booth to discuss your projects requiring incomparable quality photomasks, photolithography, 3D sculptured microstructures and sophisticated software editing, just to name a few. Contact: Peter Maitland, Sales Manager, pmaitland@igi.com; Clifford Stritch, CTO, cstritch@igi.com

Infinite Optics Inc.

#1008

SPIE[®] Corporate Member

1712-F Newport Circle, Santa Ana,
CA, 92705 USA
+1 714 557 2299; fax +1 714 557 2170
info@infiniteoptics.com;
www.infiniteoptics.com

Featured Product: Optical Thin-Film Coatings ranging from 193nm's to 20 microns.

Infinite Optics specializes in optical thin-film coatings ranging from 193nm's to 20 microns. We support astronomical, industrial, medical and military markets by fabricating and coating optics required for telescopes, lasers and optoelectronic devices. Our services include special applications, development, production runs and quality control. We are DDTC registered and ITAR compliant. Contact: Stan King, stan@infiniteoptics.com; Geza Keller, geza@infiniteoptics.com

Infrared Associates, Inc. #1127

2851 SE Monroe Street, Stuart,
FL, 34997 USA
+1 772 223 6670; fax +1 772 223 6671
irassoc@gate.net; www.irassociates.com

Featured Product: Room Temperature PC MCT Detectors!

Manufacturer of PV InSb, PV MCT and PC MCT detectors. Multielement PC MCT arrays, up to 128 elements, are available. Matching electronics and cooling options; including LN2 Stirling and TE coolers, can be provided! Contact: Irwin Kudman, Director Sales & Marketing, irassoc@gate.net; Fred Rothe, President, irassoc@gate.net

Infrared Systems Development Corp.

#1845

SPIE[®] Corporate Member

7319 Sandscove Ct Ste 4, Winter Park,
FL, 32792-6979 USA
+1 407 679 5101; fax +1 407 679 5520
sales@infraredsystems.com;
www.infraredsystems.com

Featured Product: Ultra Fast Pulse Spectrometer. Turn-Key Solution for Femto-Second Pump-Probe 2-D IR Spectroscopy.

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 System, 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: Kimberly Darrah, Sales/Marketing Manager, kimberly@infraredsystems.com; Andrew Duran, President, sales@infraredsystems.com

InfraTec GmbH

#803

Gostritzer Str. 61 - 63, Dresden, 01217
Germany
+49 351 8718620; fax +49 351 8718727
thermo@infatec.de; www.infatec.de

Featured Product: ImageIR[®] 9300 Megapixel Thermal Camera.

Since 1991 InfraTec is successfully growing into the thermal camera market. Still owner-managed InfraTec offers a wide range of high-quality, innovative products related to precision thermal measurements. With modern production facilities located in Dresden (D) we can provide cooled thermal cameras featuring excellent thermal resolution, high frame rates and a modular design for individual system expansion. The outstanding camera characteristics are also supported by customized infrared lenses. Contact: Stefan Korth, s.korth@infatec.de

Get an up-close look at some amazing new technologies at the New Technology Demos and Displays

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INO

#2043

SPIE[®] Corporate Member

2740 Einstein St, Quebec City, QC, G1P
4S4 Canada
+1 418 657 7006; fax +1 418 657 7009
www.ino.ca

Featured Product: HRXCAM-2048 High Resolution Microscanned Infrared Camera Module (LWIR).

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

Inrad Optics, Inc.

#1204

SPIE[®] Corporate Member

181 Legrand Avenue, Northvale,
NJ, 07647 USA
+1 201 767 1910; fax +1 201 767 9644
sales@inradoptics.com;
www.inradoptics.com

Inrad Optics specializes in precision optics for imaging and sensing applications from the UV to the far IR. Inrad's products include optically contacted beamsplitters, large windows and transmission flats, lightweighted Aluminum and Beryllium mirrors, UV solar blind filters, LiNbO₃ Q-Switches and MWIR materials like ZGP. Inrad's new plasma assisted coating chamber handles parts over 1 meter in diameter. Contact: Jeff Brunner, Sales Manager, Eastern US, jbrunner@inradoptics.com; George Murray, West Coast Sales Manager, gmurray@inradoptics.com

Insaco, Inc.

#907

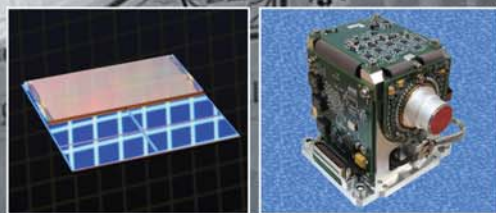
1365 Canary Rd, Quakertown,
PA, 18951 USA
+1 215 536 3500; fax +1 215 536 7750
sales@insaco.com; www.insaco.com

Featured Product: Sapphire Parts; Custom machined ceramics.

Precision machining services to fabricate and polish custom parts from ultra hard sapphire and quartz for over sixty years. Engineers are available to discuss your design for manufacturability. Exceptionally tight Total Thickness Variation on sapphire wafer carriers for compound semiconductor applications. Insaco also fabricates tooling and fixtures from alumina, CVD SiC and other ceramics. Contact: Scott Mittl, Sales Engineer, sales@insaco.com; Klaus Burckhardt, Sales Engineer, sales@insaco.com

High speed, high temperature, high resolution MCT detectors

PLEASE COME
AND SEE US AT SPIE,
BOOTH NO. 1349.



Selex ES infrared detectors and modules offer solutions across short, mid, long and dual wavebands.

Selex ES manufacture a full range of infrared detectors, modules and cameras including a new high frame rate thermal imaging module built with a compact footprint suitable for both defence and commercial applications.

In addition, our low power consumption, High Operating Temperature (HOT) MOVPE technology enables the development of cooled thermal imaging cameras that are smaller, lighter, lower power with reduced through life costs.

Selex ES. The power of one.

Defence. Security. Smart systems.

selex-es.com



Selex ES

A Finmeccanica Company

Inspired Energy, LLC #1032

25440 NW 8th Place, Newberry,
FL, 32669 USA
+1 352 472 4855; fax +1 352 472 4859
www.inspiredenergy.com

Featured Product: The highest capacity rechargeable batteries in the smallest size/weight. Available in standard sizes.

Inspired Energy specializes in creating smart SMBus rechargeable battery packs and chargers. Clients can pick from more than 80 standard battery designs, customize one of these standards, or commission a custom pack. With design & assembly in Florida our successful business model of ON-shore IN-sourcing bucks the trend towards offshore outsourcing. Contact: David Baggaley, Sales & Marketing Director, webquery1010@inspired-energy.com

Intellemetrics Global Ltd #2108

Suite 1014 Mile End Mill, Paisley, PA1 1JS
United Kingdom
+0044 141 889 0700
simon.hicks@intellemetrics.com;
www.intellemetrics.com

Intevac Photonics #1637

SPIE Corporate Member

3560 Bassett Street, Santa Clara,
CA, 95054 USA
+1 408 986 9888; fax +1 408 988 9145
sales@intevac.com; www.intevac.com

IO Industries Inc. #1134

SPIE Corporate Member

1510 Woodcock St Unit 12, London, ON,
N6H 5S1 Canada
+1 519 663 9570; fax +1 519 663 9571
sales@ioindustries.com;
www.ioindustries.com

Featured Product: New DVR Express Core video recorders and Flare high-speed cameras using CoaXPress and 3G/HD-SDI.

IO Industries Inc. (London, ON, Canada) designs digital video recorders and digital video cameras for use in military/aerospace, surveillance, scientific and medical research applications. Our rugged DVR Express Core records uncompressed SSD-direct video from Camera Link, CoaXPress, 3G/HD-SDI, GigE Vision, or NTSC/PAL cameras, with precision IRIG-B or GPS timing. Our Flare CMOS video cameras offer high-speed 2MP & 4MP mono/color/NIR images with Camera Link, CoaXPress or 3G/HD-SDI outputs. Contact: Andrew Searle, Global Sales Manager, sales@ioindustries.com

IPG Photonics #2050

SPIE Corporate Member

50 Old Webster Road, Oxford,
MA, 01540 USA
+1 508 373 1100; fax +1 508 373 1103
sales.us@ipgphotonics.com;
www.ipgphotonics.com

IPG Photonics is the world leader in fiber lasers, fiber amplifiers, hybrid fiber/solid-state lasers & diode lasers. IPG manufactures fiber lasers operating at 0.5 - 5 µm with 1 - 1.5 µm fiber lasers and amplifiers in single-frequency and linearly-polarized variants; providing products having the best combination of performance, reliability & price. IPG's newly developed mid-IR lasers, operating at 2-5 microns, offer solutions for sensing, spectroscopy, material processing & medical applications. Contact: Mike O'Connor, Director of Advance Applications, moconnor@ipgphotonics.com

IQE plc #1109

Pascal Close, St Mellons Cardiff, CF3
OLW United Kingdom
+44 2920 839 400
info@iqep.com; www.iqep.com

IQE is the leading global supplier of advanced III-V and Si wafer products that cover a diverse range of applications. The Group offers the industry's broadest product portfolio, with a choice of technology platforms from multiple, global manufacturing facilities across Europe, Asia and the USA. Our infrared products includes 2"-5" InSb, GaSb, InAs substrates and epitaxial device structures grown by MBE and MOCVD for SWIR to VLWIR imaging applications.

IRCAM GmbH #1817

SPIE Corporate Member

Nürnberg Str. 71, Erlangen, D-91052
Germany
+0049 9131 970098 0; fax +0049 9131 970098 99
info@ircam.de; www.ircam.de

Featured Product: "IRCAM Millenium 327k SM pro" - Ultra fast high resolution IR camera with integrated visible camera.

IRCAM is a German manufacturer of advanced IR cameras and systems for IR imaging and thermography. IRCAM offers the ultra fast high resolution IR camera with integrated visible camera "IRCAM Millenium 327k SM pro". Other camera series are the dual-band IR camera series IRCAM GEMINIS for synchronous, pixel-registered acquisition in two bands (MW&LW), the high-speed IRCAM VELOX, the scientific IRCAM EQUUS, the IRCAM TAURUS, the uncooled IRCAM CALEO and the security IRCAM AQUILA. Contact: Dr. Monica Lopez Saenz, Managing director, info@ircam.de; Dr. Oliver Schreier, Managing director, info@ircam.de

IRCameras #1209

SPIE Corporate Member

30 S. Calle Cesar Chavez, Suite D,
Santa Barbara, CA, 93103 USA
+1 508 668 5650; fax +1 805 936 3858
sales@ircameras.com;
www.ircameras.com

Featured Product: IRC900 and IRC800 series cameras and OEM Cores.

IRCameras (IRC) manufactures and distributes custom high performance infrared imaging systems for exceptionally demanding scientific, industrial and military applications. As a full service provider IRC offers commercial and customizable infrared cameras and Integrated Dewar Cooler Assemblies (IDCAs) that utilize the most sophisticated digital focal plane infrared technologies, providing superior performance, the highest sensitivity and fastest frame rates. Contact: Eric Lovette, Marketing & Sales, eric.lovette@ircameras.com; Elliott Rittenberg, Sales & Marketing, elliottr@ircameras.com

IRD Glass #2100

SPIE Corporate Member

810 E St. Paul St, Litchfield, MN, 55355 USA
+1 320 693 7217
ird@irdglass.com; www.irdglass.com

Featured Product: Silicon Mirrors, Custom Laser Optics, Precision Pressure Tubes, Sapphire & Spinel Windows.

IRD Glass—Your glass experts for over 30 years! IRD does things that virtually no one else in the world does with glass. Count on IRD to build your custom glass or ceramic components to your specifications, and deliver it on time. IRD Glass provides a full spectrum of custom manufacturing capabilities, including laser reflectors, mirrors, precision tubes, cylinder & spherical lenses, prisms, wedges, windows, assemblies & thin film coatings, and they have the metrology to verify their processes. Contact: Todd Anderson, VP Sales & Marketing, todd@irdglass.com; Dirk Kvale, President, dirk@irdglass.com

IRflex Corp. #1643

SPIE Corporate Member

300 Ringgold Industrial Pkwy, Danville,
VA, 24540 USA
+1 434 483 4304; fax +1 434 793 9200
irflex@irflex.com; www.irflex.com

Featured Product: Nonlinear mid-IR fiber to generate and guide mid-IR source, transmission cable, switches.

IRflex produces leading-edge fiber-optic devices that perform key functions in mid-infrared (2-10 µm): transmission cable, fiber switch, fiber bundle imager, fiber combiner, and source. Our innovative nonlinear mid-infrared fiber is specifically designed and manufactured to generate and guide mid-infrared sources over long distances with minimum loss and very high power damage threshold for aircraft missile defense, chemical sensing, biomedical and environmental applications. Contact: Helen Gu, Sales Manager, helen.gu@irflex.com

Iridian Spectral Technologies Ltd.

#2057

SPIE Corporate Member

2700 Swansea Crescent, Ottawa, ON,
K1G 8R6 Canada

+1 613 741 4513; fax +1 613 741 9986

sales@iridian.ca; www.iridian.ca

Featured Product: New! MWIR bandpass filters, LaseReflect glasses, Multi-zone optical filters, AntddHeadwa scn(Hea120)2034

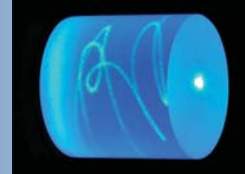
Featured Product Launches

Headwall Photonics, Inc. .1830
Product: High Efficiency Micro Hyperspec II



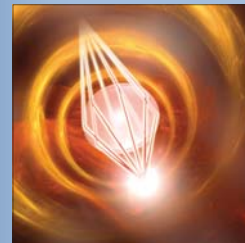
Small payload hyperspectral sensor with high spectral & spatial resolution.

Hellma Materials GmbH .1010
Product: Scintillation Crystals (CeBr3)



Scintillation crystals for radiation detection: low background, high light yield.

Heraeus Quartz America LLC .1901
Product: Suprasil 3001 / 3002



High purity fused silica for high-power NIR lasers and SWIR detectors.

HGH Infrared Systems .2034
Product: IR Revolution 360



Automatic and real-time detection of simultaneous and unlimited targets with panoramic image.

JAI Inc. #1133

625 River Oaks Parkway, San Jose,
CA, 95134 USA
+1 408 383 0300; fax +1 408 383 0301
camerasales.americas@jai.com;
www.jai.com

**Featured Product: SP-20000-PMCL
camera, providing high quality
20-megapixel resolution at 30 fps.**

JAI's camera technology includes compact, feature-rich interlaced cameras for traditional analog applications, high performance digital cameras with multi-megapixel resolution, and specialized Gen III Ultra night vision cameras. JAI-brand and PULNiX-brand cameras feature enhanced resistance to harsh environments and are widely used for demanding defense, aerospace, and homeland security applications including high-end surveillance, situational awareness, weapons aiming, and many others. Contact: Vicki Stuart, Director of Programs, vls@jai.com; Rich Dickerson, Macom Manager, rdi@jaic.om

Janos Technology, LLC #1463

PIE

Keopsys Inc.

#909

1541 Alta Drive - Suite 205, Whitehall, PA, 18052 USA
+1 610 758 8428; fax +1 610 758 8426
websales@keopsys.com;
www.keopsys.com

Featured Product: PGFL-KULT: compact pulsed fiber laser generates 10kW peak @ 532 nm.

Keopsys designs and manufactures a full line of high performance fiber amplifiers and fiber lasers since 1997. We strive to extract brightness at 2µm, 1.5µm, 1µm or 532nm from a compact, reliable and lightweight OEM. ISO 9001 certified, we are a leading supplier of pulsed fiber laser solutions for the LIDAR / LADAR industry as our products are being integrated in range finders, 3-D imaging systems and coherent detection systems such as wind Doppler profilers. Contact: Alexandre Amavigan, Sales Director - East Coast, aamavigan@keopsys.com; Yves Deiss, General Manager, ydeiss@keopsys.com

KEYENCE Corporation

#2019

1100 N Arlington Heights Rd, Suite 210, Itasca, IL, 60143 USA
+1 888 539 3623
microscopes@keyence.com;
www.digitalmicroscope.com

Featured Product: VHX-2000 Digital Microscope and VK-X200 3D Laser Scanning Microscope.

KEYENCE Corporation has pioneered the development of digital microscopy for over the past twenty years, specializing in fully-integrated digital microscopes, 3D laser scanning microscopes, high-speed microscopes, and fluorescence microscopes. From materials imaging to advanced surface characterization, KEYENCE Corporation has the microscope products to meet nearly any requirement. Contact: Andrew Kominek, Sr. Marketing Specialist, microscopes@keyence.com; Francisco Hernandez, Sr. Marketing Associate, marketing@keyence.com

Kigre, Inc.

#1801

SPIE Corporate Member

100 Marshland Road, Hilton Head, SC, 29926 USA
+1 843 681 5800; fax +1 843 681 4559
info@kigre.com; www.kigre.com

Featured Product: NEW Short Wave Infrared Eye-safe Lasers! AO-610 & AO-1010 Eye-Safe Laser, 6 & 10mJ, SS-1-10Hz.

NEW Short Wave Infrared Eye-safe Lasers! Kigre AO-610 & AO-1010 Eye-Safe Laser, 6 & 10mJ, SS-1-10Hz, 1535nm for Imaging, Remote Sensing, Laser Range-Finding & Range Gated Imaging applications. Contact: Michael Myers, President, kigreinc@cs.com; Jeffrey Myers, VP, COO, jeffmyers@hargray.com

KiloLambda Technologies, Ltd.

#2021

SPIE Corporate Member

22a Raoul Wallenberg St, 2nd Fl Zamir House Ramat-Hachayal Industrial Park, Tel-Aviv, 69719 Israel
+972 3 649 7662; fax +972 3 649 7665
info@kilolambda.com; www.kilolambda.com

Featured Product: A single filter against all laser wavelengths, provides protection against lasers.

Developed unique optical layers, based on its proprietary nano-technology, controls optical power for all wavelengths in a totally passive manner, as opposed to conventional solutions. The technology protects the human eye and optical equipment against damage by destructive light sources, from sunlight to lasers. It is used in optical sensors, high-end communications devices and other light conducting applications, for industries such as defense, security, digital imaging, surfaces and eye wear. Contact: Karin Golding, VP Marketing & Business Development, karin@kilolambda.com; Keren Dahan, Business Development Assistant, kdahan@kilolambda.com

Kopin Corporation

#1868

225 Technology Circle, Scotts Valley, CA, 95066 USA
+1 831 430 0688
ruggedolutions@kopin.com;
www.kopin.com

Featured Product: Fully integrated SXGA Ruby Module.

Kopin is the leading U.S. manufacturer of ruggedized micro-displays for military applications with over 250,000 display systems fielded. Kopin's battlefield proven expertise in electro-optical design and development combined with our high volume production capabilities are a winning combination. All higher level assemblies are manufactured in a class 10 clean room environment providing superior products. Contact: Jason Dingle, Director of Business Development, jdingle@kopin.com

Kowa Optimed, Inc.

#1950

20001 S. Vermont Ave., Torrance, CA, 90502 USA
+1 310 327 1913; fax +1 310 327 4177
kowa-usa-info@kowa.com;
www.kowa-usa.com

Featured Product: LMZ16160 Series Zoom Lens: 1", 16-160mm, 5MP, Day/Night, DC Auto-Iris or 3 Motor Version Available.

Kowa is a manufacturer of high quality CCTV and Machine Vision lenses for applications that require the highest standards. With over 60 years of technical experience, Kowa continues in its tradition of providing innovative products that leave the competition behind. New products include a 10 megapixel lens series, a megapixel varifocal IR-corrected lens series, and a megapixel long range zoom lens series. Contact: Andrew Kam, Sales Manager, andrew@kowa.com

Featured Product Launches

Ibsen Photonics1019
Product: Fused Silica Transmission Gratings



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Ideal Aerosmith, Inc.1844
Product: The Series 2445



Five-axis fight motion simulator for testing IR seekers with a simulated IR target.

Imaging Solutions Group .1565
Product: ISG LightWise IQ Smart Camera Family



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Imperx Inc.1431
Product: Bobcat 29 Megapixel CCD Camera



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Infrared Systems Development Corp.1845
Product: Turnkey 50KHz IR Array Integrator System



Kreischer Optics, Ltd. #932

1729 Oak Drive, McHenry, IL, 60050 USA
+1 815 344 4220; fax +1 815 344 4221
optics@kreischer.com; www.kreischer.com

Featured Product: Transmission Spheres with extended ranges.

Kreischer Optics has utilized the technological advances in the optics industry to increase productivity while decreasing cost. Aspheres, cylindrical lenses, mirrors, prisms, spherical lenses and master test glasses are among some of the components produced. Kreischer Optics manufactures and markets its own line of transmission spheres. These transmission spheres are designed to fill in the gaps and have an extended range from the traditional spheres. Contact us for more details. Contact: Cody Kreischer, President/Optical engineer, cody@kreischer.com; Daniel Charland, sales, daniel@kreischer.com

Kurt J. Lesker Company #2026

1925 Route 51, Jefferson Hills, PA, 15025 USA
+1 412 387 9200; fax +1 412 384 2745
salesus@lesker.com; www.lesker.com

Featured Product: Isoflux—Inverted Cylindrical Magnetron Sputtering Source for uniform coating of unusual substrates.

KJLC® produces and sells deposition systems, components, chambers, and consumables for vacuum applications. KJLC is diverse, offering over 14,000 off-the-shelf catalog items such as: materials for thin film deposition, pumps, flanges, feedthroughs, gauges, and hardware. We also offer chambers manufactured in our 30,000 square foot machine shop. KJLC also has an intense focus on the design and fabrication of standard and custom thin film deposition systems utilizing PVD and ALD techniques. Contact: Joe Becker, Sales Mgr, joeb@lesker.com

KVH Industries, Inc. #3054

50 Enterprise Center, Middletown, RI, 02842 USA
+1 401 847 3327; fax +1 401 849 0045
info@kvh.com; www.kvh.com

Featured Product: 1750 IMU - Small, light, reliable. Designed for ease of integration in challenging applications.

KVH makes precision sensors & integrated inertial systems for commercial & defense guidance, navigation & stabilization applications; TACNAV® tactical navigation systems; and mobile global satellite communications systems. Based in Middletown, RI, with facilities around the world, KVH's fiber optic gyros & sensors are integrated into such applications as high-speed gimbals, antennas, optical systems, platform stabilization, autonomous vehicles, guidance & navigation systems for unmanned systems. Contact: Sean McCormack, National Sales Manager, smccormack@kvh.com; Jay Napoli, VP FOG & OEM Sales, jnapoli@kvh.com

Kyocera America, Inc. #1758

8611 Balboa Ave, San Diego, CA, 92123 USA
+1 858 576 2600; fax +1 858 569 9412
kaicorp@kyocera.com;
americas.kyocera.com

Kyocera America, Inc. (KAI) offers an extensive array of image sensor and infrared packages as well as high frequency complex modules including mmW, RF, T/R modules, BGAs, SiPs, and High Power GaN packages in a variety of ceramic and organic material sets. KAI has state-of-the-art electrical design, modeling / simulation capability in-house to maximize package and circuit performance in your application. KAI's Assembly Technology Division has an advanced technology image sensor assembly line and accepts prototype to medium volume production orders for flip chip, wirebond, wafer dicing / bumping, vacuum soldering, test and

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Lambda Research Corporation

#1108

SPIE[®] Corporate Member

25 Porter Road, Littleton, MA, 01460-1434 USA
+1 978 486 0766; fax +1 978 486 0755
sales@lambdaresearch.com;
www.lambdaresearch.com

Featured Product: TracePro 7.3 with new Solar Utility, candela reporting and Photorealistic Rendering capability.

Lambda Research Corporation sets itself apart as a cost effective, single source solution for optical/illumination design and analysis software. Lambda sells TracePro[®], our opto-mechanical software differentiated by its ease-of-use, CAD interface and accuracy, OSLO[®], renowned for its power and flexibility in lens design and the TracePro Bridge[®], a full integrated seamless add-in for Solidworks. We also sell metrology equipment for source and surface measurement, and our consulting services. Contact: Michael Gauvin, VP Sales & Marketing, mgauvin@lambdaresearch.com; David Jacobsen, Senior Application Engineer, djacobsen@lambdaresearch.com

Lambda Research Optics, Inc.

#1437

SPIE[®] Corporate Member

1695 W MacArthur Blvd, Costa Mesa, CA, 92626-1440 USA
+1 714 327 0600; fax +1 714 327 0610
lambda@lambda.cc; www.lambda.cc

Featured Product: BaF₂ and CaF₂ spherical lenses with up to 7" diameter, FLIR coating @ 3-5µm and 8-12µm regions

Lambda Research Optics is a leading manufacturer of optics for the aerospace and defense industries. We offer custom prisms, custom coatings for the thermal imaging optics, custom lenses and high power optics for 1064nm and 10.6µm. Lambda is committed to delivering high quality optics on time with full satisfaction. Contact: James Choi, Sales Manager, jchoi@lambda.cc

Laser Components USA, Inc.

#1237

SPIE[®] Corporate Member

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

Featured Product: Photon Counting - record breaking dark count rates and highest quantum efficiency.

Provides high power laser optics from the 193nm to 10.6µm, customer-made lenses, Flexpoint miniature laser modules, Glass polarizing filters, and fiberoptic assemblies, Photon Counting Modules, Avalanche Photodiodes (APD) and Pulsed Laser Diodes (PLD) in stock as well as drive electronics, hybrids, and complete modules. Laser power supplies and low cost laser diodes complete the product range. Contact: Gary Hayes, General Manager, hayes@laser-components.com. Contact: Matt Robinson, Sales Engineer, robinson@laser-components.com; Kevin King, Sales Engineer, kking@laser-components.com

PROMOTIONAL PARTNER

Laser Focus World

#908

SPIE[®] Corporate Member

98 Spit Brook Rd, Nashua, NH, 03062 USA
+1 603 891 0123; fax +1 603 891 0574
info@laserfocus.com;
www.laserfocusworld.com

Published since 1965, *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. Each month, *Laser Focus World* reports on and analyzes the latest developments and significant trends in both technology and business in the worldwide optoelectronics and photonics industry. Contact: Jeff Nichols, Sales, jeffn@pennwell.com

LaserMotive

#1970; T2

19645 70th Ave S, Kent, WA, 98032 USA
+1 253 872 3300
info@lasermotive.com; lasermotive.com

LaserMotive's wireless power via laser technology can keep an electric aircraft flying forever. Our products distribute power via laser for use in robots (aerial, ground, and underwater), remote sensors, high voltage environments, and more. Find out how we can solve your remote power problems!

Laser Quantum Inc

#1837

SPIE[®] Corporate Member

2033 Gateway Place, Suite 500, San Jose, CA, 95110 USA
+1 408 467 3885; fax +1 408 467 3886
sales@laserquantum.com;
www.laserquantum.com

Featured Product: The taccor is a maintenance free, hermetically sealed turnkey femtosecond laser with 1GHz rep rate.

Laser Quantum are a world-class manufacturer of high quality solid-state and ultrafast laser sources. Our products are known for their rugged, compact designs with high spec, high power output and industry leading lifetimes. Borne out of aerospace design projects, our CW range are found in HUDs in civil and military vehicles and in portable Raman systems for anti-counterfeiting and homeland security. Our turnkey GHz Femtosecond lasers are used extensively for precision optical metrology. Contact: Barney Mitchell, VP Sales & Marketing, bmitchell@laserquantum.com; Daniel Jones, Sales & Service Engineer, djones@laserquantum.com

Laser Research Optics

#1737

120 Corliss St., Providence, RI, 02904 USA
+1 888 239 5545; fax +1 401 331 4004
sales@laserresearch.net;
www.laserresearch.net

Laser Research Optics supplies CO₂ laser optics for 25 to 200 watt lasers, factory direct and optimized for 10.6 micron. Featured are ZnSe positive focusing lenses in plano-convex, plano-concave, and meniscus configurations in ½" to 2" dia., focal length 1" to 20". CO₂ laser turning mirrors offered are made from molybdenum for harsh environments; other mirrors include copper, dual band, silicon and phase retardation. These OEM quality replacement optics ship from stock within 12 hours. Contact: Scott Rouillard, Sales, scott@melleroptics.com

Laser Technology, Inc.

#1834

6912 South Quentin Street, Centennial, CO, 80112 USA
+1 303 649 1000; fax +1 303 649 9710
info@lasertech.com; www.lasertech.com

Featured Product: TruSense S200 - Powerful, Compact & Affordable. Variety of targeting modes to customize detection.

Laser Technology, Inc. (LTI) sensors produce non-contact measurements as far out as 2 km and with centimeter accuracy. These powerful, yet compact and affordable sensors can perform target assessment and vehicle guidance with a constant, rapid-fire readout. They are capable of acquiring measurements through harsh weather and ambient conditions including fog and dust and can even be used for beam-break applications such as triggering cameras or other equipment. Contact: Ray Boyd, Field Application Engineer, rboyd@lasertech.com; Tom Girmann, Product Manager, tgirmann@lasertech.com

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#1632

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sales@lasertel.com; www.lasertel.com

Featured Product: VCSEL diodes in single and array formats in multiple product configurations.

Lasertel is a vertically-integrated high power semiconductor laser manufacturer. In-house epitaxy, wafer processing and packaging enables delivery of standard and custom product solutions. Lasertel provides edge emitting and vertical cavity surface emitting laser (VCSEL) diodes in single and array formats in multiple product configurations with peak wavelengths from 770nm to 1000nm, and peak powers from 200mW to several kW. Contact: Robert Walker, Director of Sales & Marketing, rwalker@lasertel.com; John Goings, Account Manager, jgoings@lasertel.com

Laservision USA

#1654

SPIE Corporate Member

595 Phalen Blvd, Saint Paul, MN, 55130-5303 USA
+1 651 357 1800; fax +1 651 357 1830
info@lasersafety.com; www.laservision-usa.com

Featured Product: Laservision USA - Your Best Partner for Laser Safety: Eyewear • Barriers & Windows • Training.

Laservision is your worldwide laser safety expert for more than thirty years. We specialize in cutting edge design, research, development and manufacture of laser protective technologies for the Safe Use of Lasers. Laser users rely on Laservision for the most advanced safety solutions and technical support. Including: Eyewear, Barriers, Windows, Training & Audits. Contact: Tom Poole, Sales Manager, t.poole@lasersafety.com; Abdalla Sammaneh, Sales, a.sammaneh@lasersafety.com

Lattice Materials LLC

#1541

516 E Tamarack St, Bozeman, MT, 59715-3050 USA
+1 406 586 2122; fax +1 406 587 9055
marketing@laticematerials.com; www.laticematerials.com

Featured Product: Silicon and Germanium Wedged Witness Samples.

Lattice Materials has been the premier manufacturer of silicon and germanium parts for over 23 years. The company's consistent growth in that time has been fueled by attention to detail and an impeccable customer experience. Lattice Materials has the ability to grow custom silicon and germanium in-house. The company has significant expertise in the slicing, cnc machining, polishing and shipping of those materials. Contact: Ken Fichtler, Marketing Specialist, kenf@laticematerials.com; Peter Brown, Sales Manager, peterb@laticematerials.com

LEONI Fiber Optics, Inc #1444

SPIE Corporate Member

209 Bulifants Blvd., Williamsburg, VA, 23188 USA
+1 757 258 4805; fax +1 757 258 4694
contact@leonifo.com; www.leonifo.com

Integrated global manufacturer of fiber optic preforms, fiber optics, cables, assemblies, components, devices, class II medical probes, switches (MM and SM), planar light light channels (PLC) and Fiber Bragg Grating sensors. Concept to product, prototype to OEM, for all laser, sensor, spectroscopic test, validation, datacom, systems, or device level interconnects, from Factory Automation, Petrochem, Pharmaceutical to Wind and Solar, with manufacturing sites in the USA, Germany and China. Contact: Lisa Young, Sales Manager Industrial, contact@leonifo.com

Le-Tehnika, d.o.o., Kranj #919

Suceva 27, Cryogenic division, Kranj, Gorenjska, 4000 Slovenia
+00 386 4 20 20 200;
fax +00 386 4 20 42 122
info@le-tehnika.si; www.le-tehnika.com

Featured Product: Joule -Thomson and Stirling cryocoolers.

With almost 30 years of experience we have become experts in the miniature cryogenic coolers development, their production, testing and verification and their integration into the higher level systems of our customers. The main products of our program include specialized miniature coolers based on the Joule -Thomson effect (self-controlled, fixed orifice, actively controlled, fast cool down, nonstandard) and coolers based on Stirling effect (rotary drive - integral or split). Contact: Franc Megusar, Head of cryogenic department, franc.megusar@le-tehnika.si; Renata Adlesic, Young researcher, renata.adlesic@le-tehnika.si

Leybold Optics USA, Inc. #925

SPIE Corporate Member

539 James Jackson Ave., Cary, NC, 27513 USA
+1 919 657 7100; fax +1 919 657 7101
us.sales@leyboldoptics.com; www.leyboldoptics.com

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Featured Product Launches

InfraTec GmbH803
Product: InfraTec ImageIR Thermal Camera



High-speed thermal camera with up to 1,280 x 1,024 pixel.

Inspired Energy, LLC1032
Product: CR12



12-Bay Smart Charger for Inspired Energy Battery Packs

IO Industries Inc.1134
Product: DVR Express Core CoaXPress and Flare CoaXPress Cameras.



New CoaXPress CMOS cameras and portable uncompressed digital video recorder.

IRCAM GmbH.1817
Product: "IRCAM Millenium 327k SM pro"



Ultra fast high resolution IR camera with integrated visible camera.

IRZoom.1935
Product: MirZ 4029



MWIR 40-1000mm (x29) F/5.5 Continuous Zoom Lens.

Light Conversion #2036

PO Box 1485, Sauletekio av. 10, Vilnius,
LT-10223 Lithuania
+370 5249 1830; fax +370 5269 8723
sales@lightcon.com; www.lightcon.com

Featured Product: Light Conversion PHAROS femtosecond 10 W industrial laser system.

Light Conversion is the world-leader for tunable ultrafast OPA systems with the worldwide recognized TOPAS series products. Light conversion is also an established manufacturer of Ytterbium laser PHAROS (180 fs, up to 15W, 1.5mJ, 1MHz), harmonics generators, parametric amplifier "ORPHEUS". Together the portfolio forms a, 'best-in-class' set of devices for femtoseconds applications in industry, medicine, and fundamental research. Contact: Lucian Hand, President, Altos Photonics, lucian@altosphotonics.com; Emily Bates, Sales & Support, Altos Photonics, emily@altosphotonics.com

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LightPath Technologies, Inc. #1451

SPIE Corporate Member

2603 Challenger Tech Ct Ste 100,
Orlando, FL, 32826-2716 USA
+1 407 382 4003; fax +1 407 382 4007
sales@lightpath.com; www.lightpath.com

Featured Product: Molded aspheric optics and assemblies for thermal imaging.

LightPath provides optics and photonics solutions for the industrial, defense, telecommunications, testing and measurement, and medical industries. LightPath designs, manufactures, and distributes optical and infrared components including molded glass aspheric lenses and assemblies, infrared lenses and thermal imaging assemblies, fused fiber collimators, and gradient index GRADIUM® lenses. LightPath also offers custom optical assemblies, including full engineering design support. Contact: Rob Myers, Director of Sales, rmyers@lightpath.com

Lightworks Optical Systems #901

36570 Briggs Rd, Murrieta, CA, 92563 USA
+1 951 926 2994; fax +1 951 926 1984
sales@exotic-eo.com;
www.exotic-eo.com

LightWorks Optical Systems is a leading supplier of infrared optics, coatings and assemblies, and is well known for high precision integrated optical systems that consistently exceed expectations. Our combined operation of expertise results from a recent merger of Exotic Electro-Optics and LightWorks Optics, Inc. Products include components used in infrared military fire control, missile seeker, reconnaissance, navigation, surveillance, and thermal imaging systems. We are a II-VI Subsidiary. Contact: Katherine Mansfield, Marketing Manager, kmansfield@lwoptics.com; Janice Roewer, Inside Sales Administrator, jroewer@exotic-eo.com

Liteye Systems #1854

7060 S. Tucson Way, Centennial,
CO, 80112 USA
+1 720 974 1766
www.liteye.com

Liteye Systems is an ISO Certified Designer and Manufacturer of Rugged, High-Resolution Helmet Mounted Displays (HMD) and Thermal Imaging Products for Security and Defense Industries. With the advantages of speed and flexibility, Liteye can help you with your unique requirements and thermal needs. Headquartered in the USA, with offices in the UK and representatives around the world, Liteye promises to provide you with innovative products, first class quality and on time delivery.

Lockheed Martin - Santa Barbara Focalplane #1709

346 Bollay Dr, Goleta, CA, 93117-5550 USA
+1 805 571 2300
sbfp@sbfp.com; www.sbfp.com

Santa Barbara Focalplane, a Lockheed Martin Missiles & Fire Control Business, is a world leader in the design, custom development and manufacture of multi-spectral infrared focal plane array detectors, and state of the art infrared sensor imaging systems.

Lumus Ltd. #811

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info@lumusvision.com;
www.lumusvision.com

Lumus is the market leader in the world of see-through wearable displays, based its disruptive and patented LOE technology. Lumus' LOE enables two game-changing capabilities: 1. Hi-res, Large Virtual Screen to small portable devices while maintaining a small, wearable form factor; 2. See-through Info Overlay / Augmented Reality. Field proven in combat avionics, Lumus is now taking its see-through displays to the ground soldier.

M Squared Lasers Ltd. #2061

1 Kelvin Campus, West of Scotland
Science Park, Glasgow,
G20 OSP United Kingdom
+44 141 945 0500; fax +44 141 945 0505
yvette@m2lasers.com;
www.m2lasers.com

M3 Measurement Solutions, Inc. #2049

SPIE Corporate Member

2048 Aldergrove 'Suite D', Escondido,
CA, 92029 USA
+1 760 561 1400; fax +1 760 561 1400
sales@m3msi.com; www.m3msi.com

Magnity Electronics Co. Ltd. #1238

418 Guipinglu, Room 1506, Shanghai City
Shanghai, 200233 China
+ 86 21 3126 1201; fax +86 21 3126 1202
support@magnity.com.cn;
www.magnity.com.cn

Featured Product: A variety of thermal Imagers for all applications.

Magnity Electronics develops novel microbolometers and thermal imagers for industrial, security, automotive and consumer applications. Magnity is the only vertically integrated thermal imager company in China. Our cutting edge technology offers products with competitive price and uncompromised quality. The Magnity team comprises talents from world famous universities and research institutes, as well as high-tech veterans. Contact: Chongfei Shen, CEO, cshen@magnity.com.cn

MARS Scientific #T3

2424 Louisiana Boulevard NE, Suite 200
Albuquerque, NM 87110 USA
+1 617 959 9945
RDantowitz@MarsScientific.com;
www.MarsScientific.com

Marktech Optoelectronics #2017

SPIE Corporate Member

3 Northway Lane N, Latham,
NY, 12019 USA
+1 518 956 2980
s.hubert@marktechopto.com;
www.marktechopto.com

Featured Product: InP/InGaAs Epitaxial Wafers, Point Source LEDs, High Power LED Emitters, Multichip and COB LEDs.

Marktech Optoelectronics is one of the premier LED technology leaders in the industry providing the most comprehensive wavelength portfolios from UV to superlong wavelengths up to 2600 nm. Recent developments of InP/InGaAs on 2"-4" wafers target long wavelength applications such as imaging, PD arrays, APD, HEMT and HBT. Our extensive LED line also includes High Speed PIN photodiodes, Point Source LEDs, Multichip and COB solutions, High Power Emitters, and precision optoelectronic packaging. Contact: Steve Hubert, Product Marketing Director, s.hubert@marktechopto.com; Vince Forte, Chief Technical Officer, v.forte@marktechopto.com

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Materion Corporation #1825

SPIE Corporate Member

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+1 716 837 1000

BarrOptics@materion.com;
www.materion.com

Materion is a diverse and technologically advanced thin film coating company. We custom manufacture and supply precision optical filters and coating services from the UV through the Far IR for commercial, medical, defense, space, and scientific applications. We manufacture custom Rugate Notch, Filter Arrays, Ultra-Narrow Bandpass, Linear Variable, High Reflector, Patterned Coatings, ITO, Metalized Solderable coatings, as well as hybrid circuits and flexible interconnects. Contact: Michael Zasowski, Sr. Director of Marketing, Michael.Zasowski@materion.com; Jack Bosch, Project Line Manager, Jack.Bosch@materion.com

Max Levy Autograph #901

SPIE Corporate Member

2710 Commerce Way, Philadelphia, PA, 19154 USA

+1 215 842 3675; fax +1 215 842 3637
sales@maxlevy.com; www.maxlevy.com

Featured Product: Interior and exterior 3D pattern generation on domes and curved surfaces.

Max Levy Autograph specializes in ultra-precision patterned components and 3D structures for the photonic, biomedical, mil-aerospace, semiconductor, and metrology industries. Applications range on substrate sizes up to 6' x 10' from the X-Ray out to Infrared. Major manufacturing process capabilities include: photolithography, electroforming, photochemical etching, film products, micro-contouring/machining, and NIST traceable calibration services. ISO 17025 certified for calibration. Contact: Thomas Cinque, Sales Manager, tcinque@maxlevy.com; Scott Riedinger, Business Development Manager, sriedinger@maxlevy.com

McQ Inc. #1735

1551 Forbes St., Fredericksburg, VA, 22405 USA

+1 540 373 2374; fax +1 540 371 1358
info@mcqinc.com; www.mcqinc.com

Featured Product: iScout®, OmniWatch®, rScene® and OmniSense®

McQ is recognized as the high technology leader in remote surveillance, security and environmental monitoring. Sensors are wireless, networked, have low power consumption and are easily emplaced. Our sensor products are used in perimeter or remote surveillance detecting and classifying activity with four transducers: seismic, acoustic, magnetic and passive infrared. Our imagers can capture still photos or video once activity is detected to send images/video anywhere in the world in real time. Contact: Karen Lindsey, Director of Marketing, klindsey@mcqinc.com; Monica Dirom, Business Development, mdirom@mcqinc.com

Meadowlark Optics #1628

SPIE Corporate Member

5964 Iris Parkway, PO Box 1000, Frederick, CO, 80530 USA

+1 303 833 4333; fax +1 303 833 4335
sales@meadowlark.com;
www.meadowlark.com

Featured Product: Liquid Crystal devices and systems as well as other polarization solutions. UV to MIR metrology.

Providing Polarization Solutions for over 30 years, Meadowlark Optics is your source for Liquid Crystal devices, Polarizers and Waveplates. We also provides cost-effective solutions by customizing our standard products to meet your needs, from the UV to the NIR, and developing unique solutions. We routinely measure our waveplates to an accuracy of 1/350-wave with greater precision fi required. Please contact our Sales team with your requirements - sales@meadowlark.com or (303) 833-4333. Contact: Chris Toomey, Sales Engineer, ctoomey@meadowlark.com; Dan Rodda, Project Manager, drodda@meadowlark.com

Media Lario #1725

Località Pascolo, Bosisio Parini LC, 23842 Italy

+39 348 1518256; fax +39 031 876 595
giuseppe.borghi@media-lario.com;
www.media-lario.com

MegaWatt Lasers, Inc. #1129

SPIE Corporate Member

PO Box 24190, Hilton Head Island, SC, 29926 USA

+1 843 342 7221; fax +1 843 342 7223
www.megawattlasers.com

Featured Product: ER200: 200 µJ Eyesafe 1535nm Microlaser Transmitter.

MegaWatt Lasers provides superior solid-state laser consulting, R&D, and manufacturing for a diverse portfolio of clients. We specialize in application specific solid-state lasers, diffuse reflector pump chambers (pump cavities) for a variety of applications covering all solid-state wavelengths, including Kigre legacy replacement cavities, and eyesafe microlaser technology. Contact: Scott Hamlin, President, scott.hamlin@megawattlasers.com

Featured Product Launches

JULABO USA1557
Product: F250 Recirculating Chiller



250W recirculating chiller, consistent water temperature for cooling applications.

Kappa optronics Inc.1936
Product: Ruggedized HD Camera



Rugged high-definition camera designs for touch environments.

Kigre, Inc.1801
Product: AO-1010 Eye-Safe Laser



AO-1010 Eye-Safe Laser, 10mJ 10Hz, Medical Sensing, Range-Finding & Gated Imaging.

KiloLambda Technologies, Ltd.2021
Product: Wideband Laser Protection Filter (WPF)



A single filter against all laser wavelengths, provides protection against lasers.

Meller Optics, Inc. #1737

120 Corliss St., Providence, RI, 02904 USA
+1 401 331 3717; fax +1 401 331 0519
sales@melleroptics.com;
www.melleroptics.com

Meller Optics has been providing high quality optics to defense, medical, laser and industrial markets for over 50 years. Specializing in grinding and polishing of hard, durable materials. Meller has developed high-speed, low-cost finishing processes for Sapphire, Ruby, Laser Glasses, Fused Silica, Zinc Selenide, Germanium, Silicon, Fluorides and Ceramics. Configurations include windows, substrates, lenses, domes and prisms. Meller Optics is an ISO9001:2008 certified and ITAR registered. Contact: Craig Schweriner, Sales Mgr, craig@melleroptics.com

Melles Griot #1325

55 Science Parkway, Rochester, NY, 14620 USA
+1 585 244 7220; fax +1 585 244 6292
mgopticalsys@idexcorp.com;
www.mellesgriot.com

Featured Product: Shutters, shutter systems, optical systems

Melles Griot combines deep technical expertise with creative engineering teams who understand how to bring product ideas to market successfully for life science, medical, imaging, semiconductor and defense customers worldwide. From optical components and systems, to laser sources and light engines, to shutters — the Melles Griot team helps engineer your success. We exhibit high-performance optical shutters that can withstand harsh environmental conditions and fit restricted spaces.

Meprolight Ltd. #1560

58 Hazait St Or-Akiva Industrial Park, PO Box 26, Or-Akiva, 3060000 Israel
+972 4 6244111; fax +972 4 6244123
sales@meprolight.com;
www.meprolight.com

Meprolight (1990) Ltd. is a Leading Developer and Manufacturer of Innovative Single Pulse Laser Rangefinders for Land, Naval, and Airborne applications; and Remote Control Weapon Stations for Observation Systems.

MET Laboratories #1760

914 W Patapsco Ave, Baltimore, MD, 21230 USA
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info@metlabs.com; www.metlabs.com

Featured Product: Independent Test Lab Providing MIL-STD Environmental Hardiness and EMC Testing Services.

MET Labs is an independent ISO/IEC 17025 laboratory for the testing and certification of electrical products to commercial and military specifications.. MET tests for EMC (MIL-STD-461/462, 704, 1275, 1399, RS101/103/105, and MIL-PRF-28876/28800/85045) and environmental hardiness (MIL-STD-810, 202, 167, 883, MIL-E-5400) on both coasts MET's testing is accredited by A2LA, NVLAP, and ISTA. MET is also accredited for RTCA/DO aerospace testing. Contact: Kevin Harbarger, VP, Business Development, kharbarger@metlabs.com; Barnaby Wickham, Marketing Coordinator, bwickham@metlabs.com

MEWASA North America, Inc. #1948

SPIE Corporate Member

12841 N Bloomington Loop, Oro Valley, AZ, 85755-8777 USA
+1 520 797 6980; fax +1 520 797 9424
i.miller@mewasa.com; www.mewasa.com

Featured Product: Passive Thermal Actuators.

The Passive Thermal Actuator [PTA™] is a self-operating device that changes its length according to temperature fluctuations and serves as a linear actuator in various applications such as Electro-Optical Systems. The Thermal Actuator is designed for various specified temperature ranges and allows the user to design Mechanical and Electro-Optical systems with precise movements as required. The PTA™ design provides a maintenance free linear movement with extremely high reliability. Contact: Ira Miller, General Manager, i.miller@mewasa.com

Micro Laser Systems, Inc. #1104

SPIE Corporate Member

12841 Western Ave. Suite H, Garden Grove, CA, 92841 USA
+1 714 898 6001; fax +1 714 897 0979
sales@microlaser.com;
www.microlaser.com

Featured Product: Large Fiber Collimators for Free Space Comm. & Lidar. Violet to Green & Red lasers for excitation.

Manufacturer of high performance Free Space and Fiber Coupled Diode Laser Systems and Optical Systems ranging from 375nm to 2000nm and up to 5 Watts. Pulsed, modulated and CW with high stability and low noise define most lasers. Optical systems include Beam Expanders, Focusing optics and Fiber Collimators. Custom laser-optical systems, such as wavelength combiners, or small spot at hundreds of meter, are designed to work together and deliver the required output. Contact: Norma Adachi, Marketing Dir., norma@microlaser.com; Yoshi Adachi, President, yoshi@microlaser.com

Micro Photon Devices #1445

Via Stradivari 4, Milan, 39100 Italy
+39 0471 051212; fax +39 0471 501524
sales@optoecomponents.com;
www.micro-photon-devices.com

Micro Photon Devices (MPD) in-depth know-how of SPAD device fabrication and active quenching electronics has led the company to develop and market a comprehensive family of Single Photon Avalanche Diodes (SPADs), Silicon, CMOS or InGaAs/InP technologies. MPD products are self-contained modules that have ultra-fast timing resolution, high photon detection efficiency, low power consumption, high robustness and reliability that makes them suitable for all the low light level analytical detection. Contact: Nick Bertone, nick.bertone@optoecomponents.com; Natalie Raymond, natalie.raymond@optoecomponents.com

Micromechatronics, Inc. #1119

200 Innovation Blvd Ste 155, State College, PA, 16803 USA
+1 814 861 5688; fax +1 814 861 1418
contact@mmech.com; www.mmech.com

Midac Corporation #1039

6 Coleman Avenue, Westfield, MA, 01085 USA
+1 413 642 5595; fax +1 413 579 5393
info@midac.com; www.midac.com

Featured Product: FTIR Spectrometers.

MIDAC's passive remote sensing systems have a new ethernet interface, which fully exploits the high dynamic range, high speed dual ADC included in all MIDAC instruments. This allows all orientation, bi-directional scanning, and a scan rate increase of 4 times. MIDAC offers the broadest product line of FTIR based passive remote sensors, including: the highest resolution, highest sensitivity, fastest, smallest, lightest, and toughest of sensors. Contact: Martin Panek, Regional Sales Manager, mpanek@midac.com; Don Mullally, International Sales Manager, dmullally@midac.com

Midwest Optical Systems, Inc. #1963

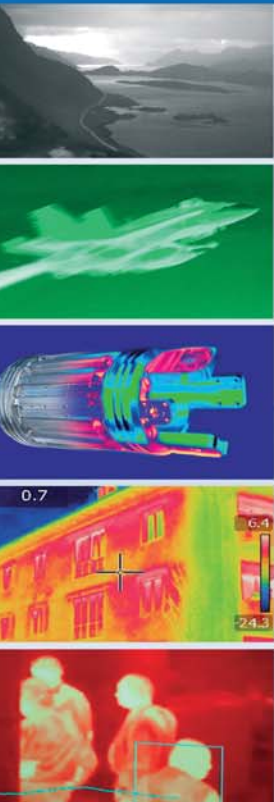
322 Woodwork Lane, Palatine, IL, 60067 USA
+1 847 359 3550
info@midopt.com; www.midopt.com

Featured Product: MidOpt Dual Bandpass Filters DB850 & DB940 allow for both daytime & nighttime imaging.

Midwest Optical Systems is the world's foremost supplier of mounted optical filters designed for industrial, scientific, security & defense CCD cameras and lenses. We also manufacture custom & stock optical components & assemblies including single & multiple element lenses, windows, mirrors, prisms, beamsplitters, and much more, for a variety of applications. We carry a large stock of raw materials and finished components, which can be quickly and economically modified to meet custom requirements.



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MWIR and LWIR.**

Wide range of technologies from one supplier:

- Lens centering, air spacing and center thickness inside of assembled IR optics
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- Surface profiling with Shack-Hartmann Sensors or interferometers

We offer standard and customized solutions for R&D, production and quality control.



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Mikrosens

#1769

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Dumlupinar Bulv, 280/B, Ofis:5, Cankaya,
Ankara, 06510 Turkey
+90 312 287 0228; fax +90 312 287 0229
sales@mikrosens.com.tr;
www.mikrosens.com.tr

Featured Product: MS16070A: Low-Cost Thermal Infrared Detector; MSE070D: Low-Cost Thermal Infrared Camera Core.

Mikrosens is a fabless semiconductor company that designs and markets cost-effective uncooled microbolometer infrared sensors and camera systems for a wide range of infrared imaging applications including automotive, security, machine vision, and consumer electronics. Contact: Zafer Zamboglu, VP Sales and Marketing, sales@mikrosens.com.tr

Mikro-Tasarim San.ve Tic. Ltd. Sti.

#1769

Mustafa Kemal Mahallesi, Dumlupinar Bulvari, 280/B Ofis 3 Cankaya, Ankara, Ankara, 06510 Turkey
+90 312 286 0103; fax +90 312 286 0104
info@mikro-tasarim.com.tr;
www.mikro-tasarim.com.tr

Featured Product: MT12812CA: 1280x1024 12.5µm CTIA ROIC

Mikro-Tasarim is a fabless semiconductor company that specializes in the development of advanced, high-performance imaging sensors and Readout Integrated Circuits (ROIC) for monolithic and hybrid imaging sensors for scientific, industrial and commercial imaging applications. Contact: Zafer Zamboglu, VP, Product and Business Development, zaferz@mikro-tasarim.com.tr; Selim Eminoglu, Co-Founder, CTO, selim.eminoglu@mikro-tasarim.com.tr

PROMOTIONAL PARTNER

Military & Aerospace Electronics Magazine

#908

98 Spit Brook Rd, Nashua, NH, 03062 USA
+1 603 891 0123
info@militaryaerospace.com;
www.milaero.com

For over 20 years, Military & Aerospace Electronics has been the trusted source for engineers, engineering managers and program managers who need to understand pivotal military and aerospace technologies, applications and opportunities. The comprehensive website, www.milaero.com, weekly e-Newsletter, Defense Executive and Embedded Computing e-Newsletters, all provide the latest mil-spec, rugged, high-reliability, and cots electronic technologies, design trends and standards. Contact: Ernesto Burden, Publisher, ernestob@pennwell.com

Mindrum Precision, Inc.

#1815

SPIE[®] Corporate Member

10000 4th St, Rancho Cucamonga, CA, 91730 USA
+1 909 989 1728; fax +1 909 987 3709
sales@mindrum.com; www.mindrum.com

Custom manufacturer of precision components. We specialize in low-volume, high-precision, complex parts on short timelines. 5-axis CNC machining and polishing in engineered materials including but not limited to glass, fused silica, quartz, sapphire and ceramics as well as conventional materials including but not limited to aluminum, stainless steel, titanium, Inconel and copper. Contact: Adam Pohl, VP Engineering, adam@mindrum.com; Linda Kondris, Technical Sales, linda@mindrum.com

Mirage Systems

#1932

921 Thompson Pl, Sunnyvale, CA, 95124 USA
+1 408 524 7900
info@miragesystems.com;
www.miragegpr.com

Mirage Systems is a subsurface imaging, technology development and systems company. Mirage has the proven ability to detect, characterize and accurately geo-locate subsurface items from both land-based and airborne platforms using its patented Ground Penetrating Synthetic Aperture Radar (GPSAR) data collection and imaging technologies.

MISTRAS Group

#817

195 Clarksville Road, Princeton Junction, NJ, 08550 USA
+1 609 716 4000; fax +1 609 716 0706
sales@mistrasgroup.com;
www.mistrasgroup.com

Moog Inc.

#2030

3650 Woodhead Drive, Northbrook, IL, 60062 USA
+1 847 498 0700; fax +1 847 498 1258
sales@quickset.com; www.quickset.com

Featured Product: EXO GeminEye - Dual Band Imaging with HD and Thermal nodes for around the clock surveillance.

Moog Inc. is a U.S.A. designer/manufacturer of innovative physical security and surveillance solutions including high-definition IP camera systems for harsh environments, custom integrated surveillance systems, components such as: rugged pan & tilt positioners, tripods, camera enclosures, and camera lowering devices. Contact: Jon Paine, Business Development Manager, jpaine@moog.com; Sheryl DiVita, Director of Programs, sdvita@moog.com.

Moore Nanotechnology Systems, LLC

#1564

230 Old Homestead Hwy, Swanzey, NH, 03446 USA
+1 603 352 3030; fax +1 603 352 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 control for single point diamond turning, deterministic microgrinding, or glass press molding. All Nanotech machines utilize a programming resolution of 1.0 nanometer, and a system feedback resolution of 0.034 nanometer. All systems are capable of sub micron form accuracies and < 1.0 nm surface finishes. Contact: Jeff Perra, Sales Engineer, perra@nanotechsys.com; Sam Bukovcan, Sales Engineer, bukovcan@nanotechsys.com

MOXTEK, Inc.

#1935

SPIE[®] Corporate Member

452 W 1260 N, Orem, UT, 84057-2941 USA
+1 801 225 0930; fax +1 801 221 1121
info@moxtek.com; www.moxtek.com

Featured Product: Moxtek Proflux[®] UVD260 and UVD240 analyzers improve UV-Vis NIR Spectrophotometer performance

Moxtek is a global leader in the design, development, and manufacture of inorganic wire grid optical polarizers, and is a leading manufacturer of miniature x-ray sources, detectors, and windows. From consumer electronics to scientific instrumentation, Moxtek is an enabler of product excellence in a wide range of technologies including: advanced optical systems, hazardous substances screening, recycling, and mining technologies. Each year Moxtek products enable many new scientific discoveries. Contact: Will Abraham, Sales Rep, wabraham@moxtek.com; Roger Ketcheson, Product Manager, rketch@moxtek.com

MPA Crystal Corp.

#1012

SPIE[®] Corporate Member

1702-L Meridian Ave. #234, San Jose, CA, 95125 USA
+1 408 300 0301; fax +1 408 300 0282
pmpa@mpa-crystal.com;
www.mpa-crystal.com

Featured Product: Custom made Crystal Optics SAPPHIRE, Fused silica, Glass, Silicon and coatings. Windows/Lens/Rods...

MPA Crystal is the direct US Office of our manufacturer-Nanjing Sapphire Electro-Optics Co. in China. We specialize in producing crystal optics mainly made of SAPPHIRE, Fused Silica, Glass, Silicon... Coating is also available as request. Products include Windows, Lenses (Plano-Convex, Plano-Concave, Bio-Convex, Bio-Concave), Ball lenses, Rods, Tips, Waveguides, Lightguides and many more, all custom made to your drawings and design. Contact: Pauline Liang, CEO, pmpa@mpa-crystal.com

Multi IR Optoelectronics Co., Ltd #1748

SPIE Corporate Member

Building 3, NO.503# Xingguo Road, Hangzhou, Zhejiang, 311106 China
+86 571 89905370; fax +86 571 89905376
service@mirhz.com; www.mirhz.com

Featured Product: Infrared Gas Detecting Filter and Temperature Application Filter.

Multi IR specialize in the researching, designing and producing the most durable, and reliable IR optical thin film coatings. Our exclusive thin film coating services and capabilities are concentrated in near infrared (NIR), mid-wave infrared (MWIR) and out to the far infrared (FIR), or the long-wave infrared (LWIR) which can be used in IR Thermal Imaging & Thermal Sensing, IR Thermography, IR light Emitters & Detectors etc, at competitive prices. Contact: JING LU, GM, jl@mirhz.com; TOM ZEISS, Marketing Manager, cgw@mirhz.com

Multisorb Technologies #1904

SPIE Corporate Member

325 Harlem Rd, Buffalo, NY, 14224 USA
+1 716 824 8900; fax +1 716 824 4128
info@multisorb.com; www.multisorb.com

Featured Product: POLYSORB™ Desiccant Loaded Polymer can be molded to replace a structural component in a product.

Multisorb Technologies has been an innovator in sorbent technology for more than 50 years. Our technologies protect electronics from the damaging effects of moisture, oxygen, and volatiles. If your product is experiencing performance degradation, corrosion, fogging on optics, or any other degradation caused by moisture, oxygen, or volatiles within the sealed product enclosure, call Multisorb to find out how we can improve your product's service life. Contact: Ken Credle, Business Development Leader, Electronics, Kcredle@multisorb.com; Dan Casacci, Business Development Leader, Industrial, Dcasacci@multisorb.com

Naked Optics Corp. #1925

SPIE Corporate Member

PO Box 584449, Kissimmee, FL, 34758 USA
+1 908 685 3590; fax +1 908 325 0250
sales@nakedoptics.com; www.nakedoptics.com

Featured Product: Armourdillo Impact Resistant.

Supplier of IR optics and diamond-turned components with aspheric, diffractive & free-form surfaces in IR materials, plastics and metals; optical design services; Polished & coated windows and substrates from prototype to high-volume production; IR and glass blanks including Si, ZnSe, Ge, BaF₂, CaF₂, KRS-5 and optical glasses; Optical glass strip, molded and CNC-machined blanks of all optical materials. Contact: Buzz Nesti, buzz@nakedoptics.com; Glen Dunn, glen@nakedoptics.com

Nallatech #1905

759 Flynn Rd, Camarillo, CA, 93010 USA
+1 805 482 2870; fax +1 805 482 8470
sales@nallatech.com; www.nallatech.com

Featured Product: FPGA Accelerated Computing Solutions.

Nallatech, a subsidiary of Interconnect Systems, Inc. (www.isipkg.com), is a leading supplier of accelerated-computing solutions. Nallatech designs and manufactures FPGA products for high performance computing applications and rugged embedded computing platforms. Customers benefit from lower costs, reduction in size, weight and power and improved performance. For further information, visit www.nallatech.com, or call (805) 383-8997 (North America) or +44 1236 789 567 (Europe). Contact: Ken Roberson, Regional Sales Manager, ken.roberson@isipkg.com; Tom Paulick, Regional Sales Manager, tom.paulick@isipkg.com

Nanomotion Inc. #1833

1 Comac Loop Ste 14B, Ronkonkoma, NY, 11779 USA
+1 631 585 3000; fax +1 631 585 1947
nanous@nanomotion.com; www.nanomotion.com

Featured Product: RS08, Silent rotary shutter, 8mm dia x 20mm long with integral electronics, to optimize SWaP.

Nanomotion designs and manufactures miniature piezo motors and motion modules for optronic applications in the defense industry. Linear and rotary motion modules are used for shutter/aperture control, thermal weapon sites, focus/zoom for target acquisition, and optical image stabilization. Nanomotion's motion modules do not consume power at rest, operate silently, and provide built in holding and braking to meet the demanding operating environments of defense applications. Contact: Alan Feinstein, President, afeinstein@nanomotion.com; Mike Bryant, Sales Manager, mbryant@nanomotion.com

National Aperture, Inc. #1859

SPIE Corporate Member

16 Northwestern Dr, Salem, NH, 03079-4810 USA
+1 603 893 7393; fax +1 603 893 7857
sales@nationalaperture.com; www.nationalaperture.com

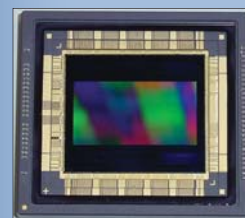
Featured Product Launches

Kurt J. Lesker Co. 2026 Product: Isoflux Inverted Magnetrons



Cylindrical targets uniformly surround substrates with sputtered material.

Kyocera America, Inc. 1758 Product: Kyocera High Resolution Image Sensor



High resolution image sensor used in commercial application.

L-3 Communications. 1309 Product: MicroCam 640 MWIR



Ideally suited for SWaP sensitive air, sea, and land platforms.

LaCroix Optical Co. 1554 Product: Custom Precision Aspheres



Ground and polished precision Aspheres manufactured to customer specifications.

INTERNET PAVILION SPONSOR

National Defense Industrial Association #1745

2111 Wilson Blvd Suite 400, Arlington, VA, 22201 USA
+1 703 247 2549; fax +1 703 527 6945
mkibler@ndia.org; www.ndia.org

NDIA is America's leading non-profit Defense Association providing a legal and ethical forum for networking and knowledge exchange between the DoD, Department of Homeland Security, all branches of the US Military, and industry. NDIA has local chapters, 36 divisions for corporate involvement, and numerous conferences and trade shows. Individual and Corporate memberships are available. US government and military are welcome to join free of charge. NDIA has roots dating back to 1919. Contact: Erica Utegaard, Associate Director of Membership Sales & Marketing, eutegaard@ndia.org; Michael Kibler, Director of Corporate Membership Sales, mkibler@ndia.org

National Reconnaissance Office #1913

14675 Lee Rd, Chantilly, VA, 20151-1715 USA
+1 703 808 2769; fax +1 703 808 2646
dli@nro.mil; http://dli.westfields.net

Featured Product: NRO's Director's Innovation Initiative (DII) Program - Research & Development Funding.

R & D Funding Program - 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: Kevin Donaleski, Program Support, dli@nro.mil; Bill Harter, Program Support, dli@nro.mil

National Security Agency (TAPO) #2055

9800 Savage Road, Suite 6579, Fort Meade, MD, 20755-6579 USA
info@tapoffice.org; www.tapoffice.org

Featured Product: TAPO provides low volume Multi-Project Wafer runs, dedicated prototypes, and custom logic services.

Microelectronics is dominated by global commercial interests, making issues of Trust and Product Assurance increasingly difficult to manage. Engagements with industry, coupled with long term forecast planning create significant opportunities to address key issues in partnering industry with DoD to develop needed solutions. The Trusted Access Program Office (TAPO) was established to provide a path for the DoD and Intelligence Community to have guaranteed access to trusted microelectronics. Contact: Michael Wehrmeister, D/Chief, Requirements Division, mrwehrm@nsa.gov.

METER BOARD SPONSOR

Neptec Technologies Corp. #1459

202-302 Legget Drive, Kanata, ON, K2K 1Y5 Canada
+1 613 599 7602; fax +1 613 599 7604
ntcinfo@neptec.com; www.neptectechnologies.com

Featured Product: OPAL-Family of rugged, multi-purpose obscurant-penetrating 3D laser scanners for harsh environments.

Neptec Technologies Corp. manufactures the OPAL 2.0 family of rugged, multi-purpose obscurant-penetrating 3D laser scanners specifically designed for harsh environments & a software development tool kit (3DRi) with advanced features like real-time change detection & object recognition & tracking. The company was founded in 2011 to commercialize the space technologies developed by Neptec Design Group, an award-winning technology innovation Co. & NASA Prime Contractor. We are located in Ottawa, ON. Contact: Mike Sekerka, COO, smongrain@neptec.com; Sarah Mongrain, EA, Global Marketing & Strategic Development, smongrain@neptec.com

New England Optical Systems #1346

SPIE Corporate Member
237 Cedar Hill Street, Marlborough, MA, 01752-3004 USA
+1 508 460 0019; fax +1 508 460 0098
info@neos-inc.com; www.neos-inc.com

Featured Product: MWIR Continuous Zoom Lens (border); LWIR DFOV Lens (perimeter); MWIR 4x Microscope Lens (close up).

New England Optical Systems (NEOS) is engineering and manufacturing high performance infrared optical systems for the SWIR, MWIR, and LWIR wavebands. Capable of manufacturing complex systems along with high volume production. Products can be found in applications such as ISR, tracking, navigation, and situational awareness. Platforms include LAV, UAV, aerospace, soldier systems and commercial. Also support IR Scene Projection, astronomy instrumentation, and automated optical test stations. Contact: Peter Kornik, Director of Business Development, pkornik@neos-inc.com; Todd Stolberg, COO, tstolberg@neos-inc.com

New England Photoconductor Corp. #2047

SPIE Corporate Member
PO Box M, 253 Mansfield Ave., Norton, MA, 02766 USA
+1 508 285 5561; fax +1 508 285 6480
nepcorp@nepcorp.com; www.nepcorp.com

New England Photoconductor manufactures PbS, PbSe and InGaAs single element, linear and 2D arrays with multiplexing. A wide variety of active areas and TO packages including room temperature, TE cooled and sandwich detectors. We offer detector filter assemblies, preamplifiers and TE controllers. Custom design detector services are available. NEP has 40 years experience in the IR field. Reach us by e-mail, phone or fax. Contact us at nepcorp@nepcorp.com, 508 285 5561, FAX 508 285 6480 www.nepcorp.com.

New Imaging Technologies #911

1-4 impasse de la noisette, Bat D 1er Etage, Verrières le Buisson, 91370 France
+33 1 64 47 88 58
info@new-imaging-technologies.com; www.new-imaging-technologies.com

Featured Product: NIT offers a complete range of standard, customized and full custom CMOS imaging sensors.

New Imaging Technologies (NIT) offers world class CMOS imaging sensors based upon a unique and patented pixel technology which provides intrinsic high dynamic range response of more than 140dB, no noticeable fixed pattern noise and operability without image artifacts to more than 90°C. Contact: Jean-Louis LAURONT, Deputy Sales Director, info@new-imaging-technologies.com; Nicolas BAROAN, Marketing & Sales Engineer, info@new-imaging-technologies.com

New Infrared Technologies, Ltd. #1959

Calle Vidrieros 30 Nave 2, Boadilla del Monte, 28660 Spain
+34 91 6324363
info@niteurope.com; www.niteurope.com

Featured Product: The new TACHYON SERIES: uncooled MWIR 80x80 FPA with ROIC and digital interface.

New Infrared Technologies manufactures MWIR imaging, linear FPA and single element detectors for high-speed uncooled IR systems. Our new TACHYON SERIES of FPAs with ROIC (digital interface) represents a major breakthrough in the market: larger resolution, uncooled & high-speed MWIR imaging FPA (80x80, 2000 frames per sec). Our other product lines include low-res imaging FPA (MATRIX 1024), linear arrays (LUXELL) and single element (LEPTON). The offer completes with systems for MWIR spectroscopy. Contact: Rodrigo Linares, Business Development Mgr, sales@niteurope.com; Germán Vergara, CTO, operations@niteurope.com

Newport Corporation

#1425

SPIE Corporate Member

1791 Deere Ave, Irvine,
CA, 92606-4814 USA
+1 949 863 3144; fax +1 949 253 1680
sales@newport.com; www.newport.com

Newport, the world's largest photonics company provides innovative solutions and industry leading product brands to multiple markets including the photonics and photovoltaic industries. Our combined broad product portfolio which includes: Corion®, ILX Lightwave™, New Focus™, Ophir, Oriol® Instruments, Richardson Gratings™, and Spectra-Physics® Lasers enables us to better partner with our customers to provide complete photonic solutions to make, manage and measure light. Contact: Darron Young, Sr. Director, Sales Oper & Bus Development, darron.young@newport.com

Newport Thin Film Laboratory

#2013

SPIE Corporate Member

13824 Magnolia Avenue, Chino,
CA, 91710 USA
+1 626 255 2261
sales@newportlab.com;
www.newportlab.com

Featured Product: UV-IR Coatings.

NTFL has been proving quality coatings worldwide for 35+ years, helping customers overcome engineering hurdles by designing and manufacturing coatings for commercial, aerospace, military, UV curing, germicidal, semiconductor, medical technology and scientific applications. Newport Thin Film Laboratory is a fully equipped coating facility specializing in the design and manufacture of vacuum deposited optical thin films. Contact: Ever Mata, Sales Manager, sales@newportlab.com

Nextek, Inc.

#1562

201 Next Technology Dr, Madison,
AL, 35758 USA
+1 256 772 0400; fax +1 256 772 0420
info@nextekinc.com;
www.nextekinc.com

Featured Product: Advanced Electronics Manufacturing Services, Circuit Card Assembly, Microelectronics Assembly, HLA.

Nextek is a full service Electronics Manufacturing company providing technology-based solutions for customers with needs-driven, non-commodity products. Our services include precision Circuit Card Assembly, Quick Turn Prototype Assembly, Production Assembly, Microelectronics & Opto-electronics Assembly, Box Build, Test, Engineering and Analytical Lab Services. We partner with companies who seek a high level of quality, reliability and professional service from their manufacturing partners. Contact: Justin Langford, Director, Business Development, justin.langford@nextekinc.com; Tom Abernathy, VP, Sales & Program Management, tom.abernathy@nextekinc.com

NiCoForm

#1121

SPIE Corporate Member

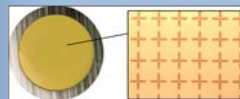
72 Cascade Dr, Rochester, NY, 14614 USA
+1 585 454 5530
inform@nicoform.com;
www.nicoform.com

Featured Product: Electroformed Infrared Radiation Cold Shields, Optical housings and high fidelity replications.

Electroformed as multilayer structures of copper, NiColoy®, and gold, sometimes containing internal baffles, the shields usually have tight dimensional and weight tolerances. NiCoForm offering internal baffl

Featured Product Launches

Lake Shore Cryotronics, Inc.1542 Product: Band Pass and Long-Pass Filters



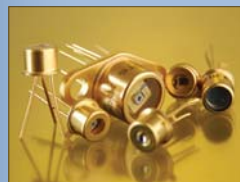
Thermally stable IR/THz performance at cryogenic to elevated temperatures.

Lambda Research Optics, Inc.1437



Announcing TracePro 7.4, opto-mechanical software with advanced stray light capabilities.

Laser Components USA, Inc.1237 Product: Avalanche Photodiode (APD)



High Sensitivity Si and InGaAs APDs for Low Light Applications

Laser Quantum Inc.1837 Product: Taccor



Turn-key 1BHz Femtosecond Laser for Optical Metrology and THz Spectroscopy.

Laser Technology, Inc. ...1834 Product: TrueSense S200



The S200 Sensors are powerful, compact, and affordable!

Northrop Grumman Cutting Edge Optronics #1919

SPIE Corporate Member

20 Point West Blvd, Saint Charles,
MO, 63301 USA
+1 636 916 4900; fax +1 636 916 4994
st-ceolaser-info@ngc.com;
www.as.northropgrumman.com/ceolaser

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

NovaSol #2069

1001 Bishop Street, Suite 2950, Honolulu,
HI, 96813 USA
+1 808 441 3600; fax +1 808 441 3601
info@nova-sol.com; www.nova-sol.com

Featured Product: Compact Hyperspectral Imaging Sensors, Systems, Services; Tactical Free Space Optical Communications.

NovaSol provides the world's lowest Size, Weight, and Power high performance hyperspectral imaging sensors and systems. NovaSol's patented microHSI™ designs feature a solid optical block reflective grating Offner spectrograph coupled with fully telecentric custom fore optics to provide unsurpassed throughput, spectral fidelity, and spatial resolution in a highly compact and thermally and mechanically robust sensor. Complete systems are configured with compact real time spectral processors. Contact: Barry Swartz, Chairman and CTO, barry.swartz@nova-sol.com; Rick Holasek, President and CEO, rick.holasek@nova-sol.com

Novotech, Inc. #1659

SPIE Corporate Member

916 Main St, Acton, MA, 01720-5808 USA
+1 978 929 9458; fax +1 978 929 9459
contact@novotech.net; www.novotech.net

Featured Product: Complete IR Lens and Housing Design and Assembly.

NOVOTECH, INC. is an ISO 9001-2008 ITAR Registered Infrared Manufacturer of Germanium, Silicon, ZnSe & ZnS Materials. These include: Generated Lens Blanks, Components, Finished Lens Elements, Optics, Aspheres, Diffractives and Mid to Longwave Windows & Substrates. NOVOTECH has the ability to manufacture large production orders to smaller R&D volumes in record time. Contact: Michael Hulen, President, mhulen@Novotech.net; Peter Schwarzer, IR Account Manager, peters@Novotech.net

NP Photonics, Inc #2110

SPIE Corporate Member

9030 S. Rita Rd., Ste. 120, Tucson,
AZ, 85747 USA
+1 520 799 7400; fax +1 520 799 7403
info@np Photonics.com;
www.np Photonics.com

Featured Product: Mid-IR Transport Fiber and mid-IR glass (high temperature oxide glasses), visible to ~5 microns.

NP Photonics Inc. is a leading manufacturer of fiber lasers, fiber amplifiers and specialty fiber for the sensing, defense, metrology and research markets. The NP Photonics family of products includes narrow line-width, low-phase-noise fiber lasers; compact, high-gain, fiber amplifier modules at 1 micron and 1.55 microns; broadly transparent (0.4 to 5 microns) ultra-low-loss, mid-IR transport fibers and glasses; mid-IR super continuum laser sources; high power 2 micron lasers. Contact: Eduardo Oteiza, Director of Sales, eotiza@np Photonics.com

Nufern #1809

SPIE Corporate Member

7 Airport Park Road, East Granby,
CT, 06026 USA
+1 860 408 5000; fax +1 860 844 0210
info@nufern.com; www.nufern.com

Featured Product: High-Performance NukW Fiber Laser Amplifiers For Directed Energy.

Nufern is a leading U.S. manufacturer of specialty optical fibers, gyro coil winding, fiber lasers and amplifiers serving diverse markets. Current products include over 300 standard fibers and range from sub-assemblies to complete turn-key fiber systems from mW to kW power levels. Nufern's integrated teams also provide rapid, cost-effective OEM fiber laser design, assembly and contract manufacturing. Contact: Scott Christensen, Sales Director Govt./Mil./Aero., schristensen@nufern.com; Fernando Martins, Customer Service Manager, fmartins@nufern.com

NuPhoton Technologies, Inc. #928

41610 Coming Pl, Murrieta,
CA, 92562 USA
+1 951 696 8366; fax +1 951 696 8394
info@nuphoton.com; www.nuphoton.com

Nuphoton manufactures fiber lasers, fiber amplifiers (EDFAs and YDFAs), broadband sources and Raman amplifier modules for LIDAR/LADAR, telecom, defense & medical markets. Specializes in compact and reliable fiber lasers in the 1550nm, 1064nm, 2000nm and 532nm wavelengths. Founded in 1996, Nuphoton is an ISO9001 and AS9100 certified company serving aerospace, defense, industrial, medical, test & measurement and R&D markets. Also supports continuous wave and pulsed custom laser development.

Ocean Optics, Inc. #1116

SPIE Corporate Member

830 Douglas Avenue, Dunedin,
FL, 34698 USA
+1 727 733 2447; fax +1 727 733 3962
info@oceanoptics.com;
www.oceanoptics.com

Ocean Optics is the inventor of the world's first miniature spectrometer and a global leader in optical and chemical sensing technologies. With a full range of UV-VIS-NIR, Raman, LIBS and oxygen sensing tools, Ocean Optics provides solutions for laboratory, classroom, process line and field. Contact: Sales Info, info@oceanoptics.com



OFS #1768

SPIE Corporate Member

55 Darling Drive, Avon, CT, 06001 USA
+1 860 678 0371; fax +1 860 674 8818
info@specialtyphotonics.com;
www.specialtyphotonics.com

OFS is a world-leading designer, manufacturer and provider of optical fiber, optical fiber cable, and specialty photonics solutions. Our marketing, sales, manufacturing and research teams provide forward-looking, innovative products and solutions in areas including Government, Aerospace and Defense, Sensing, Industrial Automation, Sensing and Telecommunications applications. We provide reliable, cost effective optical solutions to meet the needs of our customers. Contact: Cathy Ciardiello, Market Manager, crc7@ofsoptics.com; John Posey, Sales Engineer, jposey@ofsoptics.com

Omega Optical, Inc. #1455

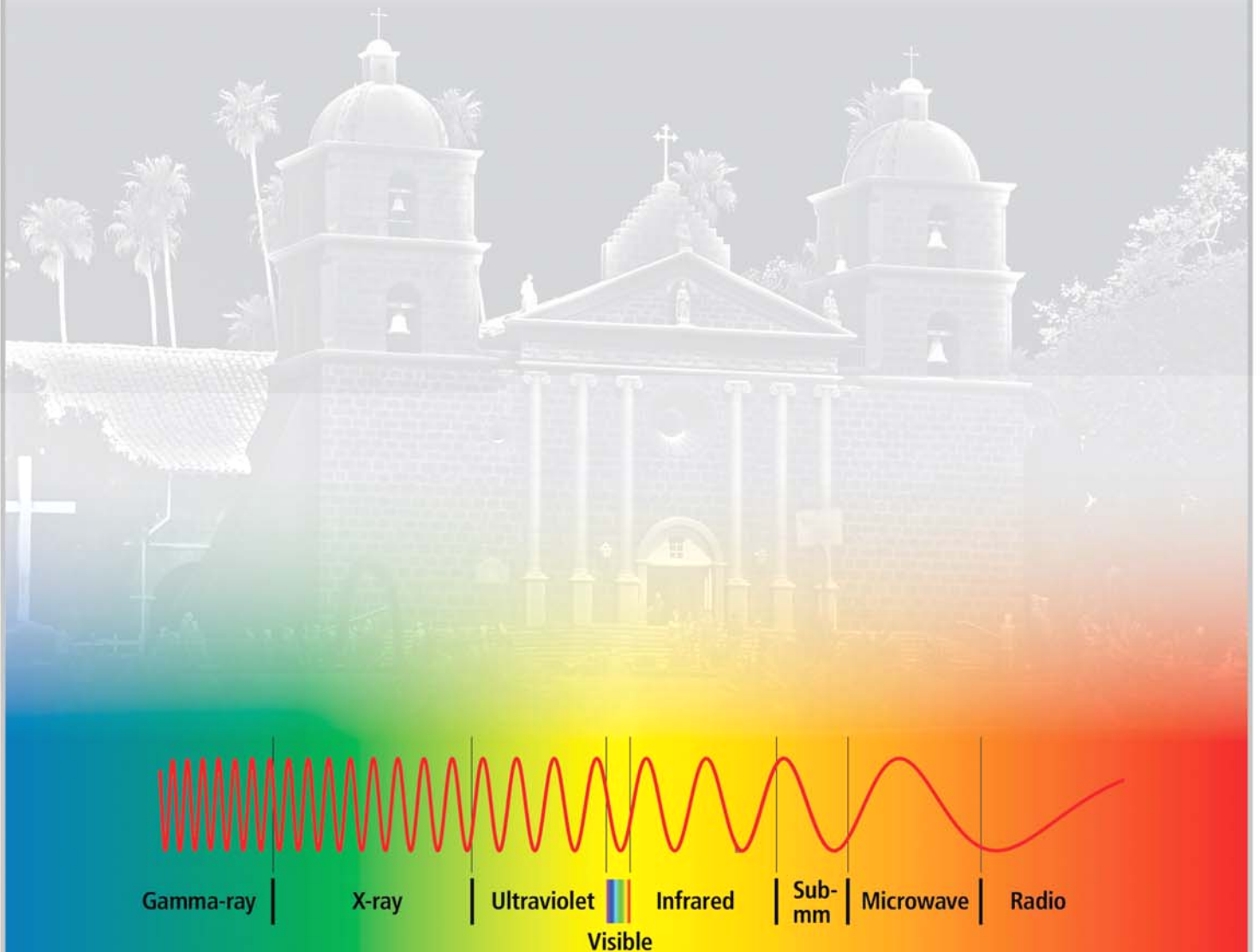
21 Omega Drive, Delta Campus,
Brattleboro, VT, 05301 USA
+1 802 251 7300; fax +1 802 254 3937
sales@omegafilters.com;
www.omegafilters.com

Omega Optical is a manufacturer of optical filters from UV to MWIR for Instrumentation, Research and Defense. We provide quick turnaround from concept to finished parts. We employ a variety of coating methods, including dual magnetron reactive sputtering, e-beam, thermal evaporation, and ion assist for both high volume production and special custom requests. Omega Optical is registered with the Department of State, Department of Defense. We follow the ITAR. Contact: Anita Foss, Business Development Executive-Defense, anita@omegafilters.com

Omnetics Connector Corp. #1740

7260 Commerce Circle East, Fridley,
MN, 55432-3103 USA
+1 763 572 0656
labfalter@omnetics.com;
www.omnetics.com

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ON Semiconductor

#1658

2300 Buckskin Rd, Pocatello, ID, 83201 USA
+1 208 234 6738; fax +1 208 234 6939
beth.johnston@onsemi.com;
www.onsemi.com

Featured Product: Custom Foundry Services: Trusted Foundry, Low-Cost Prototyping, Flexible Engagement Model.

ON Semiconductor is driving innovation in energy efficient electronics, empowering design engineers to reduce global energy use. The company offers a comprehensive portfolio of energy efficient power and signal management, logic, discrete and custom solutions to help customers solve their unique design challenges in automotive, communications, computing, consumer, industrial, LED lighting, medical, military/aerospace and power supply applications. For more info, visit <http://www.onsemi.com>
Contact: Matt Ganschow, Product Marketing Manager, matt.ganschow@onsemi.com; Beth Johnston, Marketing Communications Specialist, beth.johnston@onsemi.com

Ondax

#1939

SPIE[®] Corporate Member

850 E Duarte Rd, Monrovia, CA, 91016-4275 USA
+1 626 357-9600
sales@ondax.com; www.ondax.com

Featured Product: Ondax THz-Raman™ Systems for chemical/structural analysis and explosives/drugs/hazmat detection.

Ondax, Inc. is the largest manufacturer of high-performance Volume Holographic Grating (VHG) filters, wavelength-stabilized lasers and THz-Raman™ spectroscopy systems for industrial, defense, & scientific applications. PowerLocker® filters lock diode emission into a narrowed optical spectrum. SureLock™ lasers deliver wavelength-stabilized single-frequency or line-narrowed performance. Ultra-narrowband NoiseBlock™ ASE and SureBlock™ Notch filters enable ultra-low-frequency/THz-Raman™ systems. Contact: Linda West, VP Sales & Marketing, lwest@ondax.com; Dawn Ebertowski, Sr. Sales & Marketing Coordinator, dawn@ondax.com

Onefive GmbH

#1645

SPIE[®] Corporate Member

In Boeden 139, Zurich, 8046 Switzerland
+4143 538 3657; fax +4143 538 3686
contactus@onefive.com;
www.onefive.com

Featured Product: ORiGami-08 HP: the affordable alternative to Titanium:Sapphire lasers with e.g. 780nm, >100fs, 80MHz.

Onefive GmbH is a leading global supplier of industry-proven, low-noise femtosecond and picosecond laser products for OEM and R&D. The portfolio containing compact air-cooled maintenance-free lasers offers a wide choice: UV-IR wavelength range, picosecond to sub-100 fs pulse duration, single-shot to GHz repetition rate, and nJ to >250 µJ pulse energy. Contact: Alexander Lang, Head of Sales and Marketing, alex.lang@onefive.com

Ontar Corporation

#1721

SPIE[®] Corporate Member

9 Village Way, North Andover, MA, 01845 USA
+1 978 689 9622; fax +1 978 681 4585
sales@ontar.com; www.ontar.com

Featured Product: PcModWin5, HITRAN PC, PcLnWin, New PcNvMod for NVthermIP 2009, MODTRAN, LIDAR PC, and ALTM.

Ontar Corporation est. 1981 is an R&D software company. We sell software for optical atmospheric remote sensing. Products calculate gas transmission and evaluate sensor performance. Applications include; laser spectroscopy, atmospheric transmission, smart weapons for defense applications, EO sensors development/evaluations, ground and satellite image correction, hyper spectral imaging, laser comm. and LIDAR apps. Contact: Dylan Payne, Software Manager, dpayne@ontar.com Contact: Dylan Payne, Software Manager, dpayne@ontar.com

Onyx Optics Inc.

#1236

6551 Sierra Ln, Dublin, CA, 94568-2798 USA
+1 925 833 1969; fax +1 925 833 1759
sales@onyxoptics.com;
www.onyxoptics.com

OPCO Laboratory Inc

#1965

SPIE[®] Corporate Member

704 River St, Fitchburg, MA, 01420 USA
+1 978 345 2522; fax +1 978 345 5515
sales@opcolab.com; www.opcolab.com

Featured Product: Precision optics, microoptics, optical coatings, replicated mirrors and gratings, optical assemblies.

OPCO Laboratory, Inc. is a full service in-house manufacturer, providing high precision custom lenses, custom thin film coatings, replicated mirrors, diffraction gratings, and turn-key electro-optical assemblies. We provide prototype and high volume production quantities for commercial and defense markets worldwide. Our state-of-the-art manufacturing, coating, QC, assembly, and class 1000 clean rooms, ensure precise and repeatable optical components. Contact: Jim Diamond, Sales & Marketing Manager, jdiamond@opcolab.com; Dave Maldari, President, dmaldari@opcolab.com

Open Photonics, Inc.

#1440

220 North Rosalind Ave, 1st Floor, Orlando, FL, 32801 USA
+1 407 900 5259
info@open-photonics.com;
www.open-photonics.com

Featured Product: OPI was formed specifically to accelerate the commercialization of photonics R&D and technologies.

OPI has created an open innovation and crowd-sourcing grant program to help companies expand and enhance their photonics based R&D and product development pipeline. We do this by facilitating collaboration between established companies with channels to market with researchers and inventors having ideas that they want to see commercialized. Our Photonics Horizons grants harvests technology sitting dormant within universities and small companies and matches them with channels to market. Contact: Jason Eichenholz, CEO, info@open-photonics.com; Scott Faris, COO, info@open-photonics.com

Opgal Ltd.

#1200

SPIE[®] Corporate Member

PO Box 462, Industrial Area 5, Karmiel, 20101 Israel
+972 4 9953903; fax +972 4 9953900
www.opgal.com

Providing one of the broadest product lines of innovative thermal imaging and near-infrared illumination cameras, Opgal brings to the market a unique and highly differentiated set of solutions. It is the breadth and depth of this product line that establishes Opgal as a prominent provider in the complex and wide-ranging defense, security, safety and aviation markets. Backed by years of success, Opgal's products are installed with hundreds of customers in over 50 countries. Contact: Sylvie Dascalu, Vice President, Defense, dascalu@opgal.com; Liad Ben Ishai, Senior Director, ben-ishai@opgal.com

JOB FAIR

SPIE Defense, Security, and Sensing

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Exhibition Hall

Tuesday 30 April, 10:00 am to 5:00 pm
Wednesday 1 May, 10:00 am to 5:00 pm



CONFERENCE BAG SPONSOR

Ophir Optics, LLC

#1425

SPIE Corporate Member

1616 Osgood Street, North Andover, MA, 01845 USA
+1 978 657 6410; fax +1 978 657 6056
optics@ophiropticsinc.com;
www.newport.com/cms/products/ophir-optronics

Newport's Ophir Optronics Division, is a global leader in precision IR optics, laser measurement instrumentation and 3D non-contact measurement equipment. The division is comprised of three groups which develop, manufacture and market top quality products using the most advanced technologies. Contact: Glenn Breeze, Director Sales & Marketing, glenn.breeze@ophiroptics.com

Optec S.p.A.

#1969

SPIE Corporate Member

Via Mantegna 34, Parabiago, MI, 20015 Italy
+39 0331 021 815; fax +39 0331 495 091
info@optec.eu; www.optec.eu

Featured Product: Multispectral camera (up to 6 bands), X-Ray - Vis Swir - NIR Lenses, Laser Optics, Space Application.

Optec is the world's leading optical, optoelectronic and optomechanical Italian company established in Parabiago (MI) - Italy. Founded in 1985, Optec uses an experienced team of mechanical, optical and electronic engineers. With significant experience accumulated by its researchers over the years, Optec is able to meet any of the optical and optoelectronic industry requirements, combining research and productivity at maximum levels. Optec is a TUV certified ISO 9001 company. Contact: Giuseppe Cilia, General Manager, gcilia@optec.eu; Matteo Cilia, System Engineer, mcilia@optec.eu

Optech

#1317

150 Lucius Gordon Drive, Suite 215, West Henrietta, NY, 14586 USA
+1 585 427 8310; fax +1 585 427 8422
inquiries@optech.com; www.optech.com

Optech is known as a world leader in the manufacture of lidar and integrated camera solutions for survey and mapping applications. Through close collaboration with Defense and Security customers for nearly 30 years, Optech has played a key role in proving the unique value of lidar for ISR applications. Now a Teledyne majority-owned company, Optech has a renewed focus on leveraging its experience and technologies to meet evolving GEOINT and ISR requirements. Contact: Barry Cross, US Regional Sales Manager, ISR, inquiries@optech.com

Optex Systems, Inc.

#1661

1420 Presidential Dr, Richardson, TX, 75081 USA
+1 972 764 5700; fax +1 972 764 5701
devans@OPTEXSYS.COM;
www.optexsys.com

Featured Product: Sighting systems (electronic & mechanical), glass & plastic periscopes, ship binoculars.

Optex was founded in 1987, and is ISO 9001 certified. Optex products are installed on the majority of differing types of U.S. military land vehicles, such as the Abrams and Bradley fighting vehicles, Light Armored and Advanced Security Vehicles and have been selected for installation on the Stryker. Optex also manufactures numerous periscope configurations, rifle and surveillance sights and night vision optical assemblies. Contact: Michael Aldrich, V.P. Business Development, maldrich@OPTEXSYS.COM; Danny Schoening, CEO, dschoening@optexsys.com

PROMOTIONAL PARTNER

optics.org

#1869

2 Alexandra Gate, Ffordd Pengam, Cardiff, CF24 2SA United Kingdom
+44 (0)117 905 5330
rob.fisher@optics.org; www.optics.org
optics.org where the business of photonics meets the global photonics community! Excellent editorial quality, exclusive, must-read content makes optics.org essential for keeping up-to-date on news, market trends, new products, business analysis and financial updates. It also has a comprehensive buyers guide, international career centre and events info. Contact: Rob Fisher, rob.fisher@optics.org

OPTICS1, Inc.

#1224

SPIE Corporate Member

1050 Holt Avenue Ste 12, Manchester, NH, 03109 USA
+1 603 296 0469; fax +1 603 296 0473
sales@optics1.com; www.optics1.com

OPTICS1 Inc., www.OPTICS1.com, is dedicated to the design and development of optical devices. Our developments in optics include systems using visible, infrared and ultraviolet light, X-rays, and microwaves. Our team of experts designs, builds, tests and supports precision optical assemblies, subsystems, and integrated systems for the US DoD and other prime contractors. We leverage our expertise in optics, electronics, mechanics, software, and system integration to transform your concepts into market leading products. Contact: Thomas Ackerman, Director of Business Development, TAckerman@optics1.com; Tammy Riley, Administrative Assistant/ Receptionist, triley@optics1.com

Featured Product Launches

Lattice Materials LLC1451
Prod8uct: Wedged Silicon Witness Samples



Precision machined and polished wedged or flat witness samples.

Light Conversion2036
Product: ORPHEUS-Twins



Tunable femtosecond dual channel OPS with self-calibration.

LightPath Technologies, Inc.1451
Product: 25mm Lens with Diamond-Like Coatings



New thermal imaging assemblies with diamond-like coatings.

Liteye Systems.1854
Product: Aquila camera & Bligher radar system



Combine thermal imaging and radar for ultimate VIP protection package!

Optiforms

SPIE[®] Corporate Member

42310 Winchester Road, Temecula, CA, 92590 USA
+1 951 296 1300; fax +1 951 296 1178
info@optiforms.com; www.optiforms.com

Featured Product: Components manufacturer specializing but not limited to electrodeposition and vacuum deposition.

Optiforms, Inc. is an industry leader in manufacturing components as well as providing solutions. Our specialty is electroformed nickel components as well as vacuum deposition, but are able to provide a wide array of other solutions for component manufacturing. We service many different industries such as Defense, Medical, Lighting, and Space. Contact: Michael Birdsell, Sales Manager, mbirdsell@optiforms.com

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Optikos Corp.

SPIE[®] Corporate Member

107 Audubon Rd, Bldg 3, Wakefield, MA, 01880-1245 USA
+1 617 354 7557
info@optikos.com; www.optikos.com

Featured Product: LensCheck LWIR lens measurement instrument.

Optikos Corporation is the world's largest manufacturer of equipment for the measurement of optical image quality. For nearly 30 years, Optikos has been a recognized leader in the fields of optical and electro-optical testing; we offer complete solutions for both optical system qualification and system level tests on imagers ranging from the ultraviolet to the far infrared. Contact: Roger Kirschner, Sales and Marketing Director, rkirschner@optikos.com; Jill McGinnity, Marketing Communications Specialist, jmcginnity@optikos.com

Optimax Systems

SPIE[®] Corporate Member

6367 Dean Parkway, Ontario, NY, 14519 USA
+1 585 265 1020; fax +1 585 265 1033
sales@optimaxsi.com;
www.optimaxsi.com

Featured Product: Coating: unprecedented LDT AR coatings, UV through IR and deterministic uniformity on curved surface.

Optimax is set up to manufacture, test and deliver with the speed and performance your program requires. Our reliability has allowed us to become America's largest optics prototype manufacturer. We've invested in the technology and research that will enable your next program, but remain the people who are committed to small volume, high quality and quick delivery of your prototype optic needs. Contact: Mark Palvino, Vice President of Sales, sales@optimaxsi.com; Joe Pinto, Sales Manager, sales@optimaxsi.com

#1105

OptiPro Systems

SPIE[®] Corporate Member

6368 Dean Pkwy, Ontario, NY, 14519 USA
+1 585 265 0160; fax +1 585 265 9416
sales@optipro.com; www.optipro.com

Featured Product: PRO 80 UFF: Fast and accurate UltraForm Finishing of planos, spheres & aspheres up to 80mm.

World leader in providing CNC optical fabrication equipment for up to 5-axis grinding, polishing, and metrology of spheres, aspheres and conformal optics. Products include 5-axis optical generators, high speed spherical polishers, UltraForm Finishing (UFF) machines, and both contact and non-contact metrology solutions to help companies prosper in the precision optics industry. OptiPro controls all phases of production of our optics manufacturing equipment at our modern facility in Ontario, NY. Contact: Mike Bechtold, President, mike@optipro.com; David Mohring, Director of Technical Sales, dmohring@optipro.com

#1340

Opto-Alignment Technology, Inc.

SPIE[®] Corporate Member

1034 Van Buren Ave, Indian Trail, NC, 28079 USA
+1 704 893 0399
sales@optoalignment.com;
www.optoalignment.com

Featured Product: Dual Band Lens Alignment Station for MWIR LENS ASSEMBLY and inspection.

US manufacturer of LENS ALIGNMENT, ASSEMBLY & INSPECTION INSTRUMENTS & Provider of prototype ASSEMBLY SERVICES since 1992. The LASER ALIGNMENT AND ASSEMBLY STATION™ provides repeatable sub-micron lens centration, tilt measurements UV to LWIR. Spheric, aspheric or cylindrical lenses without changing objectives on any lens diameter or radius over 2mm. Inspection of lens-surface alignment inside finished lens stack. Other tools: LensHandler™ vacuum tweezer RotoWand™ lint free OptoWipes™. Contact: Steve Bohuczky, Director of Business Development, steve.bohuczky@optoalignment.com

#1442

OptoElectronic Components

SPIE[®] Corporate Member

28 Des Lilas, Kirkland, QC, H9J 4A7 Canada
+1 514 694 0336; fax +1 514 694 8535
sales@optoelectronics.com;
www.optoelectronics.com

Featured Product: Infrared Photon Counting Modules based on Superconducting Nanowires.

Supplier of single photon counting detector modules with 30ps timing resolution from Micro Photon Devices, TCSPC electronics and software from PicoQuant, and Infrared Photon Counting Detector Modules based on Super Conducting Nanowires from PhotonSpot. OptoElectronic Components also builds custom modules for demanding light detection applications. Contact: Nick Bertone, President, Nick.Bertone@optoelectronics.com; Natalie Raymond, Marketing, Natalie.Raymond@optoelectronics.com

#1445

OptoSigma Corp.

SPIE[®] Corporate Member

3210 S Croddy Way, Santa Ana, CA, 92704 USA
+1 949 851 5881; fax +1 949 851 5058
sales@optosigma.com;
www.optosigma.com

#1543

OZ Optics Limited

SPIE[®] Corporate Member

219 Westbrook Rd, W Carleton Industrial Park, Ottawa, ON, K0A 1L0 Canada
+1 613 831 0981; fax +1 613 836 5089
sales@ozoptics.com; www.ozoptics.com

Featured Product: Fiber Optic Distributed Temperature and Strain Sensors.

High Power Components/ Isolators/ Combiners/Patchcords/Connectors/ Intelligent Tunable Laser Diode Sources/Safety Interlocks/Shutters/Optical Coatings, Laser to Fiber Delivery Components, Adjustable Collimators/Focusers, PM/SM/MM Fused Fiber Couplers, PM Patchcords/Connectors/ Splitters/Switch, Polarized Sources, Polarization Rotators/Controllers/Analyzers, Polarizers, PDL Emulators, Extinction Ratio Meter, Turnkey Laser Diode Sources, Hermetically Sealable Patchcords, Fiber Optic Sensors SNO-PEN Contact: Omur Sezerman, President, sales@ozoptics.com

#1813

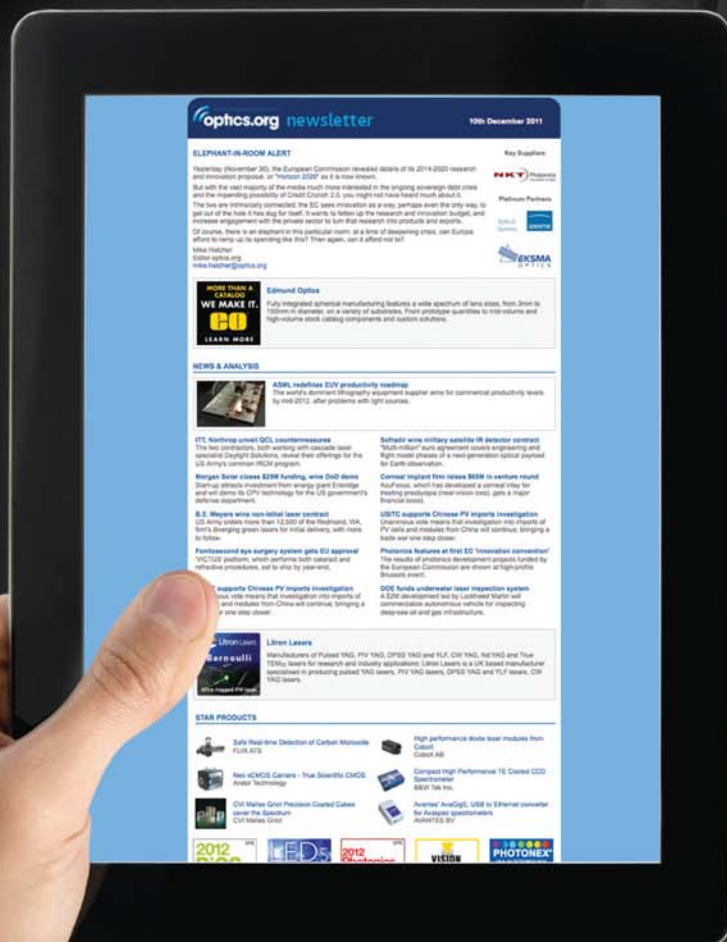
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Panavision Federal Systems

#1249

SPIE[®] Corporate Member

9340 DeSoto Ave, Chatsworth, CA, 91311 USA
+1 818 594 8000; fax +1 818 594 8001
www.panavisionfederalsystems.com

Featured Product: 360 degree Situational Awareness camera and display.

Optical Design - compound zoom lenses, conventional lenses, infrared lenses, relay optics, collimating optics, reflective and refractive optics, prisms/splitters, gratings and windows. Mechanical Design - full mechanical designs, including custom optical housings and mechanical structures. Software Development - control systems, stabilization, and image processing and tracking software. Electronics Engineering - camera control, stabilization, lens control, signal/data communications. Contact: Nolan Murdock, VP Marketing, nolan.murdock@panavision.com

PCO-TECH Inc.

#2054

SPIE[®] Corporate Member

6930 Metroplex Drive, Romulus, MI, 48174 USA
+1 248 276 8820; fax +1 248 276 8825
info@pco-tech.com; www.pco-tech.com

Featured Product: pco.edge sCMOS camera, 5.5 megapixels, low readout noise, high frame rates & high image dynamics.

PCO-TECH manufacturer of high-speed & high-performance CCD, CMOS, sCMOS & ICCD camera systems for scientific, industrial & military. Including pco.dimax HD high-speed 12bit camera over 1500fps at 1920 x 1080; pco.edge sCMOS camera, first camera system with the revolutionary sCMOS image sensor; intensified camera systems & specialized cameras with double shutter used in PIV & fuel spray imaging. Accessories include pulsed high intensity lighting & sequencers designed for dynamic Schlieren. Contact: Murad Karmali, Vice President, Sales, murad.karmali@pco-tech.com; Steve Daicos, President, steve.daicos@pco-tech.com



Free Popcorn

Exhibition Hall

A popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

PD-LD, Inc.

#3070

SPIE[®] Corporate Member

30B Pennington Hopewell Rd, Pennington, NJ, 08534-3612 USA
+1 609 564 7900; fax +1 609 564 7901
info@pd-ld.com; www.pd-ld.com

PD-LD is a manufacturer of customized laser products, headquartered in Pennington, New Jersey. Since 1993, PD-LD, Inc. has been leveraging top-notch technical and manufacturing capabilities to create active and passive (VBG[®]) laser products that are high-quality, cost-effective, tailored to customers' needs, and delivered in a timely fashion. Furthermore, PD-LD continues to innovate on its patented volume Bragg grating (VBG[®]) technology, for which the company has been awarded 15 patents. Contact: Robert Struthers, VP of Business Development, robert.struthers@pd-ld.com; Tom DeBerardine, VP of Sales, tomd@pd-ld.com

PENTAX Ricoh Imaging

#1006

633 17th St Ste 2600, Security Division, Denver, CO, 80202 USA
+1 866 267 6422; fax +1 303 728 0226
susie.jordan@prac.pentax.com; www.pentaximaging.com

Featured Product: PAIR LENS.

PENTAX RICOH IMAGING AMERICAS CORPORATION is the leader in the production of optics for high-end general security applications, as well as mid-range and long-range surveillance. PENTAX's proprietary PAIR technology (PENTAX Atmospheric Interference Reduction) provides image stabilization and heat-haze reduction while also mitigating the effects of fog, haze, smoke and other airborne interference. Contact: Sean Choi, CCTV Product Specialist, sean.choi@prac.pentax.com; Anthony Hong, Account Executive, anthony.hong@prac.pentax.com

PerkinElmer

#1131

940 Winter St, LST, Waltham, MA, 02451 USA
+1 781 663 6900
customer@perkinelmer.com; www.perkinelmer.com

Biological complexity raises questions requiring translational research from the well, to the cell, to the animal and back again. PerkinElmer enables you to approach your target from multiple perspectives: locate, detect and quantitate your biology of interest; analyze and understand it in wider physiological contexts. No matter where your research stands, PerkinElmer can help you move it forward with the translational data and analysis that lead to insight—and breakthrough answers. Contact: Pam Clemens, Trade Show Manager, pam.clemens@perkinelmer.com

PFG Precision Optics

#1216

SPIE[®] Corporate Member

733 Bienville Blvd., Ocean Springs, MS, 39564 USA
+1 228 875 0165; fax +1 228 875 9354
sales@pfgoptics.com; www.pfgoptics.com

Featured Product: Extensive UV to IR manufacturing and coating capability.

PFG is a high quality manufacturer of precision optical components, coatings, and assemblies from 193nm to 5.5 microns. We consistently produce ultra-tight tolerance lenses, specializing in high index glasses and IR materials with high included angles, truncated or cemented spherical lenses. Additionally we're proficient manufacturing all types of Prisms, Wedges, Windows, Mirrors, Beamsplitters and Filters. E-beam & ion-assisted deposition coatings make the difference with all PFG components. Contact: Colin Green, VP Sales & Supply, cody.pfg@gmail.com; Jacob Oh, Senior Sales Engineer, jjoh@pfgoptics.com

Phase Sensitive Innovations

#2012

51 E Main St Ste 201, Newark, DE, 19711-4676 USA
+1 302 456 9003
mackrides@phasesensitiveinc.com; www.phasesensitiveinc.com

Phase Sensitive Innovations is a privately-owned company specializing in passive millimeter-wave (mmW) imaging and RF photonic solutions for the DoD. Key PSI technologies include electro-optical modulators to 220 GHz, integrated microwave/fiber optic assemblies, mmW scene simulation software, custom fiber optic arrays, and specialty millimeter-wave components. PSI unique mmW imaging technology has applications from helping helicopter pilots see through "brownout conditions" in real-time to standoff screening for security applications. For more: www.phasesensitiveinc.com.

PHASICS

#833

SPIE[®] Corporate Member

rte de Saclay, XTEC Bat 404 Campus de l'Ecole Polytechnique, Palaiseau, 91120 France
+33 1 69 33 89 99; fax +33 1 69 33 89 60
contact@phasics.fr; www.phasics.fr

Featured Product: Phasics presents the first dual-band wavefront sensor (3-5µm & 8-14µm) for IR metrology: SID4 DWIR.

PHASICS, a French company based in the Paris region, manufactures high resolution (up to 400x300 simultaneous measurement points) wave front sensors based on its innovative technology: 4-wave lateral shearing interferometry. These solutions answer both scientific and industrial needs and are ideal for laser characterization and optical metrology. PHASICS also proposes adaptive optics loops for laser spot optimization and beam shaping. Contact: Yoann PRIOL, Technical Sales Engineer, priol@phasics.fr; Raphael SERRA, Sales Manager, serra@phasics.fr

Phoenix Optical Technologies Ltd

#1925

Glascoed Road, St. Asaph, LL17 0LJ
United Kingdom
+44 1745 584484; fax +44 1745 584050
sales@potl.co.uk; www.potl.co.uk

Featured Product: Armourdillo Glass impact resistant windows.

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

Photek, Ltd

#1665

26 Castleham Rd, Saint Leonards-on-Sea E Sussex, TN38 9NS United Kingdom
+44 (0)1424 850555
sales@photek.co.uk; www.photek.co.uk

Featured Product: P-TDC: Time to digital converter; 64 channel; 100 ps resolution or 16 channels 25 ps resolution.

Photek is a specialist manufacture of detectors and camera systems for photon detection. We manufacture image intensifiers, photomultipliers, streak tubes plus a range of complimentary electronics and camera systems. We are experts in large area image intensifiers, ultra-fast PMTs, UV detection and advanced photon counting camera systems. Contact: Gareth Jones, gareth.jones@photek.co.uk; Michael Pavia, pavia@sydorinstruments.com

Photonic Cleaning Technologies

#1668

SPIE Corporate Member

1895 Short Ln, Bldg 1, Platteville, WI, 53818-8977 USA
+1 608 467 5396
sales@photoniccleaning.com; www.photoniccleaning.com

Featured Product: First Contact Polymers™ available in spray or direct application formulas.

Manufacturer of First Contact Polymers™ - "THE Cleaning and Protection System." Apply liquid polymer solution to surfaces and peel the resulting dried film leaving the surface atomically clean. Independent XPS/ESCA and Laser Damage Threshold testing shows no residue down to the molecular level! Safe with high power laser optics. Remove Dust & Fingerprints. Reduce Solvent Waste. Non-Toxic Inert Polymer and solvents. Clean Nanostructures, Gratings & Masks! Protect and clean microscopes Contact: David Giesen, Sales and Marketing Manager, davidg@photoniccleaning.com; James Hamilton, Chairman and CTO, hamiltonj@photoniccleaning.com

Photonic Sense GmbH #1014

Am Goldberg 3, Eisenach, 99817 Germany
+49 369 17318 0; fax +49 369 17318 79
www.photonic-sense.com
GERMANIUM and SILICON blanks for infrared optics. Photonic Sense grows large germanium crystals with tightly controlled material specifications. We offer precision optical blanks manufactured to a wide range of sizes and shapes for defense & security or commercial applications. ITAR registered/compliant and approved TAA. Contact: Dawn Jennings, US Sales & Marketing Manager, dawn@photonic-sense.us.com; Andreas Zickler, International Sales Manager, azickler@photonic-sense.com



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Photonics Media #1208

SPIE Corporate Member

2 South Street, Pittsfield, MA, 01201 USA
+1 413 499 0514; fax +1 413 442 3180
photonics@laurin.co; www.photonics.com

Featured Product: Light Masters trivia game! Stop by our booth to test your industry knowledge and register to win!

Photonics Media – the Pulse of the Industry – invites you to explore the information leader and all that we have to offer. As the publisher of *Photonics Spectra*, *BioPhotonics* and *EuroPhotonics* magazines, Photonics Buyers' Guide, Photonics.com, and more, we bring you the news, research and applications articles you need to succeed. Stop by our booth to pick up your copy of April *Photonics Spectra* with features on IR Imaging, Standoff Detection, Multispectral Imaging, White LEDs, and more. Contact: Karen Newman, Group Publisher, editorial@photonics.com; Ken Tyburski, Director of Sales, advertising@photonics.com



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Photonics Online #1004

2591 Wexford-Bayne Road, Building II, Suite 305, Sewickley, PA, 15143 USA
+1 724 940 7555; fax +1 724 940 7707
info@vertmarkets.com; www.photonicsonline.com

Featured Product: Electronic Military & Defense Annual Resource, 2nd Edition. "Live from DSS" Daily Show E-Newsletter.

Photonics Online – Where the Future of Photonics is Found – is the leading online community and industry resource for optics and photonics professionals. On the Web since 1997, Photonics Online serves the needs of design engineers, scientists, R&D, and business executives by providing engaging original content, breaking research, industry news/views, product updates, and technical articles. Industries served include military/defense, medical imaging, industrial applications, and many others. Contact: Geoffrey Tecza, Director of Sales/Acting Publisher, gtecza@photonicsonline.com; Joshua Butia, Web Content Specialist, jbutia@photonicsonline.com

Featured Product Launches

Magnity Electronics Co. Ltd.1238
Product: Thermal Imager



Low cost thermal imager using innovative microbolometer technology.

MEWASA North America, Inc.1948
Product: Passive Thermal Actuator



A self operating device that changes its length according to temperature fluctuations.

Micro Laser Systems, Inc.1104
Product: Large Fiber Collimators



Large Fiber Collimators for free space communications.

Mikrosens.1769
Product: MS1670A



MS1670A: Low-Cost CMOS Infrared Imaging Sensor.

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Ploughshare Innovations #1961

Unit 2, Nine Mile Business Park, Nether Wallup, Stockbridge, Hampshire, SO20 8DR United Kingdom
+44 (0)1794 301602
info@ploughshareinnovations.com;
www.ploughshareinnovations.com

Ploughshare sells a portfolio of technologies developed by the UK's Defence Science and Technology Laboratory, a trading fund of the Ministry of Defence, with 3,700 staff and turnover of nearly £600 million. As a technology transfer specialist, Ploughshare represents a broad portfolio of technologies and intellectual property originally developed for defence and security purposes, for use in diverse industrial applications. Come and talk to us on stand 1961 and find out how licensing defence technology can benefit your business.

PLX Inc. #1336

25 W Jefryn Blvd, Deer Park, NY, 11729 USA
+1 631 586 4190; fax +1 631 586 4196
info@plxinc.com; www.plxinc.com

PLX Inc. 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.) Monolithic Optical Structure Technology integrates complex optical elements into compact monolithic structures to achieve these objectives. PLX is one of the world's leading manufacturers of Monolithic Optical Structures for military, aerospace and industrial applications.

Point Grey Research, Inc. #1145

12051 Riverside Way, Richmond, BC, V6W 1K7 Canada
+1 604 242 9937; fax +1 604 242 9938
info@ptgrey.com; www.ptgrey.com

Featured Product: Point Grey's latest USB3 Vision cameras featuring Sony EXview HAD CCD II and Sony CMOS sensors.

Point Grey is one of the world's largest and most innovative providers of high performance digital cameras for industrial, bioscience, traffic, and GIS applications. We offer a unique and comprehensive portfolio of USB 3.0, GigE, FireWire, USB 2.0 and Camera Link products known for their outstanding quality, ease of use, and unbeatable price-performance. Contact: sales@ptgrey.com

Power Technology #1915

SPIE Corporate Member

PO Box 191117, Little Rock, AR, 72219-1117 USA
+1 501 407 0712
sales@powertechnology.com;
www.powertechnology.com

Pranalytica, Inc. #1343

1101 Colorado Ave, Santa Monica, CA, 90401 USA
+1 310 458 3345; fax +1 310 458 0171
fxmcguire@pranalytica.com;
www.pranalytica.com

Precision Glass & Optics #2070

SPIE Corporate Member

3600 West Moore Avenue, Santa Ana, CA, 92704 USA
+1 714 540 0126; fax +1 714 540 1482
info@pgo.com; www.pgo.com

Featured Product: Precision glass, reliable optics & advanced thin-film coatings for military & security applications.

Precision Glass & Optics (PG&O®) has delivered excellent quality glass, optics, and optical coatings for a variety of military and defense applications for over 25 years. PG&O has a full optical fabrication shop, three large coating chambers, and an expert, in-house engineering staff, for added convenience. Our cost-effective, reliable optics and advanced thin film coatings are ideal for military, aerospace, SWIR, LADAR security and sensor applications. Contact: Thad Sanchez, Sales Manager, thad@pgo.com

Precision Manufacturing Group #2124

4020 Jeffrey Blvd, Buffalo, NY, 14219 USA
+1 800 875 1093; fax +1 716 821 9399
sales@pmg1source.com;
www.pmg1source.com

Featured Product: Component Fabrication, Contract Manufacturing, Metal Components, Precision Machining Parts

Precision Manufacturing Group (PMG) is a manufacturer of custom precision metal components, offering full fabrication services to the defense/aerospace industry, including chemical etching, stamping, punching, forming, laser cutting, waterjet cutting and subassembly. The company offers short standard lead times and guaranteed on-time delivery. PMG is composed of Precision Photo-Fab Inc. and Precision Specialty Fabrications LLC. Contact: Kathryn Kahanic, Sales & marketing, kathryn.kahanic@pmg1source.com; Paul Eppolito, Sales & Marketing, paul.eppolito@pmg1source.com



Free Popcorn

Exhibition Hall

A popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.

Precision Optics Gera #1925

1090 Delacroix Circle, Nokomis, FL, 34275 USA
+1 941 803 4927; fax + 941 237 4800
info@pog.eu; www.pog.eu

Featured Product: Active OLED Display.

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

Precitech, Inc. #1717

SPIE Corporate Member

44 Blackbrook Road, Keene, NH, 03431 USA
+1 603 357 2511; fax +1 603 355 3291
sales@precitech.com; www.precitech.com

Featured Product: Increase your Productivity and Yield with the HS150 Work-Holding spindle

AMETEK Precitech, Global Manufacturer of Innovative Ultra Precision Machining Solutions, provides customers with ultra precision machine tools for turning, milling, and grinding. Our machines produce rotationally symmetric, asymmetric, freeform and sculpted geometries. We achieve form tolerances in the sub-micron range and nanometer surface finishes. With sales and service in North America, Europe and Asia, Precitech has the global reach to quickly solve your most complex machining challenges. Contact: Mike Tanniru, Business Director, mike.tanniru@ametek.com; Kirk Rogers, North America Sales Manager, kirk.rogers@ametek.com

LANYARDS SPONSOR

Princetel, Inc. #1910

SPIE Corporate Member

2560 East State St. Ext., Hamilton, NJ, 08619 USA
+1 609 895 9890; fax +1 609 895 9552
info@princetel.com; www.princetel.com

Featured Product: Remote operated vehicles equipped with Princetel FORJs/media converters for HD video transmission.

Princetel is a dynamic company that provides customers with exciting and innovative fiber inter-connect products. Manufacturer of fiber optic rotary joints (single or multiple channel) (FORJs), fiber sliprings, electric slip rings, rotary adapters/junctions, pressure compensated FORJs, video/data mux/demux media converters, cable reels designed for Princetel's FORJs, fiber polishing machines/polishers, and fiber optic components such as collimators, fiber feed through, and WDMs/circulators. Contact: Alexis Tejada, Project Engineer, alexistejada@princetel.com; Bryan Horsford, Sales Manager, bryanhorsford@princetel.com

Princeton Lightwave, Inc.

#1656

2555 Rte 130 S, Ste 1, Cranbury,
NJ, 08512 USA
+1 609 495 2600; fax +1 609 395 9113
sales@princetonlightwave.com;
www.princetonlightwave.com

Princeton Lightwave produces high-performance InP photodetectors and laser diodes covering shortwave infrared wavelengths. Our extensive integration technologies enable solutions ranging from components to turn-key sub-systems for customers in defense, imaging, instrumentation, and optical communications markets. Key products include 1D and 2D focal plane arrays, FPAs and cameras for 3D LADAR, single photon detectors, avalanche photodiodes, high-power diode lasers, and superluminescent diodes. Contact: Joe Poekert, Director of Business Operations, jpoekert@princetonlightwave.com; Jason De Luca, Customer Service Representative, jdeluca@princetonlightwave.com

PriTel, Inc.

#2041

SPIE Corporate Member

P O Box 4025, Naperville, IL, 60567 USA
+1 630 983 2200; fax +1 630 983 2260
pritel@pritel.com; www.pritel.com

Featured Product: Femtosecond Fiber Lasers and Optical Fiber Amplifiers.

PriTel manufactures 775 nm, 1060 nm, and 1550-nm Femtosecond Fiber Lasers (<100 fs to 10 ps) for terahertz generation and nonlinear optics, and for replacing bulky Ti:Sapphire lasers. High-peak-power (>50kW (t)-11aper.6(g)-15opt 5-(:S)-pta9a-12.3(n)41.7.9(2(b)-18qS)-awe1.2(f)EiF D-28.2(j)-14.1-19.6(p)--12.8(b(n)-16.3(d f)-8e1.2(f)T)-20.3.8(t)

u

Featured Product Launches

Military & Aerospace Electronics Magazine908
Product: Military & Aerospace Electronics Magazine



Mirage Systems1932
Product: FIREFLY 9000



Next Gen GPSAR Sensor for UAVs.

MOXTEK, Inc.1935
Product: ProFlux Pixelated Polarizer



Moxtek ProFlux Pixelated Polarizer technology can resolve challenging imaging environments.

MPA Crystal Corp.1012



Sapphire/Fused Silica Windows, Lenses (Plano-Convex/Concave), Cylindrical lenses, meniscus and more.

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Qioptiq

#1771

SPIE Corporate Member

78 Schuyler Baldwin Drive, Fairport,
NY, 14450 USA
+1 585 421 4567; fax +1 585 421 7266
www.qioptiq.com

Qioptiq designs and manufactures photonic products and solutions that serve a wide range of markets and applications in the areas of medical and life sciences, industrial manufacturing, research & development, aerospace and defense. The company is known for its high-quality standard components, products and instruments, its custom modules and assemblies, its leading-edge innovation, its precision manufacturing and its responsive global resourcing. For more information, visit www.qioptiq.com Contact: Patrick Gray, Business Development Director, Patrick.Gray@qdi.qioptiq.com

QmagiQ, LLC

#1232

22 Cotton Rd Ste 180, Nashua,
NH, 03063-4219 USA
+1 603 821 3092; fax +1 603 821 3094
info@qmagiq.com; www.qmagiq.com
QmagiQ, LLC, designs and manufactures a variety of infrared focal plane arrays, sensor engines, and camera systems. Its products serve the commercial marketplace for applications including persistent surveillance, gas imaging, and radiometry. The company has established itself solidly as a leading producer of Qwp detector arrays. It is also poised to become a pioneer as an early commercial supplier of strained-layer superlattice focal plane arrays, both midwave and longwave. Contact: Mani Sundaram, CEO, msundaram@qmagiq.com; Axel Reisinger, CTO, areisinger@qmagiq.com

Quality Thin Films, Inc. #1537

141 Burbank Road, Oldsmar,
FL, 34677 USA
+1 813 855 1900; fax +1 813 855 5580
sales@qtf.com; www.qtf.com

Quality Thin Films supplies optics, laser crystals and thin film coatings. We specialize in ultra high damage threshold coatings on super polished crystals and optics, from the UV to the IR. State of the art equipment for substrate fabrication and leading edge coating chambers enable QTF to continuously improve on quality with emphasis on customer service. ISO 9001:2008 certified.

Quantel Laser

SPIE Corporate Member

601 Haggerty Ln., Bozeman,
MT, 59715 USA
+1 406 586 0131; fax +1 406 586 2924
quantel@quantel-laser.com;
www.quantel-laser.com

The Quantel Group is an international leader in providing pulsed laser technologies for research, industrial, commercial, military, and medical applications. Founded in 1970, the Group has a consistent record of investment leading to numerous innovative and successful products distributed worldwide. Quantel corporate headquarters is in Paris with manufacturing subsidiaries in the USA, Germany, and France.

Québec International Optic/ Photonics Cluster #2042

1175 Lavigerie Avenue, Suite 300,
Québec City, QC,
G1V 4P1 Canada
+1 418 681 9700; fax +1 418 681 1535
info@nullquebecinternational.ca;
www.quebecinternational.ca

Québec International's mission is to contribute to the economic development of the Québec City metropolitan region and enhance its international status. As a regional economic development agency, Québec International fosters growth and development, supports key business sectors and attracts talent and investment to the region. Optics photonics is part of the key business sectors. The region combines science expertise and innovation to create a hub for this growing industry sector.

Raicol Crystals Ltd. #1106

SPIE Corporate Member

22 Hamelacha Str Park Cible New
Industrial Area, Rosh Ha-Ayin, 48091
Israel
+1 972 3 936 7412; fax +1 972 3 906 8969
info@raicol.com; www.raicol.com

Featured Product: RTP crystals and RTP-based Electro-Optic Cells for high-repetition rate applications.

Raicol Crystals manufactures nonlinear optical and electro-optical elements, including KTP, HGTR KTP, RTP, LBO, BBO, PPKTP, PPMgLN and PPSLT. Raicol provides BBO-based electro-optic cells for high power applications. Raicol Crystals manufactures unique High Grey Track Resistant (HGTR) KTP crystals for high-average power SHG of 1064 nm. Raicol's newest products are the RTP Electro-Optic Cells for high-repetition rate applications and the Monolithic KTP OPO elements. Contact: Alex Skliar, VP of Sales, alexs@raicol.com

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Rainbow Research Optics, Inc.

#1930

SPIE Corporate Member

6830 S Dawson Circle, Centennial,
CO, 80112 USA
+1 303 371 3000; fax +1 303 371 1333
sales@rroptics.com;
www.rainbowoptics.com

Featured Product: Large 14inch Silicon and Germanium Lenses

Rainbow Research Optics, Inc is an optics manufacturing & coating company located in Centennial, Colorado. We offer prototype to production quantities for optical components, optical coatings and opto-mechanical assemblies. Our primary focus is for glass & Infrared materials including: Si, Ge, Amtr, ZnSe, ZnS, BaF₂ and CaF₂. Our in house coatings range from 193nm to 16um and our product size ranges from 5mm up to 18inch. RROI is ITAR Compliant, ISO 9001:2008 and SDB Registered. Contact: Hollie Marinecz, Director of Sales, h.marinecz@rroptics.com; Mike Pagano, Sales Engineer, sales@rroptics.com

Raptor Photonics

#1954

SPIE Corporate Member

Willowbank Business Park, Larnie, BT40
2SF United Kingdom
+44 2828 270141
sales@raptorphotonics.com;
www.raptorphotonics.com

Raptor Photonics offers a full line of high performance, rugged ultra low light cameras, which are optimized for day/night surveillance, homeland security, industrial and scientific applications. Raptor specializes in complete cameras and core engine solutions using CCD, EMCCD, SCMS and SWIR sensors. The extreme low light capability of Raptor's cameras makes them ideal in a variety of applications, including Border & Coastal Surveillance, Airport & Port Surveillance and Airborne/Land EO systems. Contact: Olivier Bernard, President Sales, ob@raptorphotonics.com; Mark Donaghy, VP Sales & Marketing, md@raptorphotonics.com

Plan to Attend FREE Exhibitor Product Demonstrations

Refer to pages 22-23 for complete times, schedules, and locations.

Raytheon ELCAN Optical Technologies

#1725

SPIE Corporate Member

450 Leitz Rd, Midland, ON, L4R 5B8
Canada
+1 705 526 5401; fax +1 705 526 5831
info@elcan.com; www.elcan.com

Featured Product: s-DMI - Multi-Modal Digital Microlmager integrated with an optical spectrometer.

Raytheon ELCAN Optical Technologies specializes in the design and manufacture of technologically sophisticated and superior quality opto-electronic systems and subassemblies that meet strict military and commercial specifications. Raytheon ELCAN offers superior design and engineering capabilities, proprietary production technologies and fully integrated manufacturing capabilities to provide custom, turn-key solutions. Raytheon ELCAN also offers Specter™ military weapon Sights by ELCAN. Contact: Wolf Glage, VP Engineering, info@ELCAN.com; Deborah Ratushniak, BD & Marketing, dratushniak@ELCAN.com

Reynard Corporation

#1550

SPIE Corporate Member

1020 Calle Sombra, San Clemente, CA, 92673 USA
+1 949 366 8866; fax +1 949 498 9528
sales@reynardcorp.com;
www.reynardcorp.com

Featured Product: ColorLock Filter Stacks are durable as glass, custom transmission spectrum & exhibit no angle shift.

Reynard Corp supplies custom and standard optical components & thin film coatings 0.2um to 50um (UV-FAR IR) to demanding specs for military, aerospace, medical & telecommunication applications. Our expertise in these markets enables us to stay on the leading edge of technological advancements through research partnerships, commercial development programs, SBIR programs and internal R&D. Other services include optical & mechanical fabrication, photolithography patterns & environmental testing. Contact: Sales Department, sales@reynardcorp.com

RFEL Ltd

#1934

Unit B, The Apex, St Cross Business Park, Newport, PO30 5XW United Kingdom
+44 1983 216600; fax +44 1983 216611
info@rfel.com; www.rfel.com

Featured Product: HALO Real-Time Video-Processing Platform and high-res, low-latency video processing FPGA IP-Cores.

RFEL is an innovative electronics design and IP (Intellectual Property) SME specialising in the development of high performance video processing and digital signal processing (DSP) techniques and the development of new products for the Defence & Security, Wireless Communications, Video & Imaging and Test & Measurement markets. HALO Real-Time Video-Processing Platform provides a SWaP optimised solution for registration, video fusion, stabilisation, image enhancement for several inputs/outputs. Contact: Wayne Cranwell, Sales Engineer, wayne.cranwell@rfel.com; Alex Kuhrt, CEO, alex.kuhrt@rfel.com

RICOR USA, Inc.

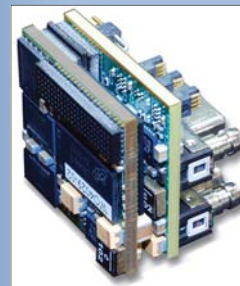
#1331

SPIE Corporate Member

1 Tara Blvd, Suite 300, Nashua, NH, 03062 USA
+1 603 718 8903; fax +1 603 718 8910
sales@ricor-usa.com; www.ricor-usa.com

Featured Product Launches

Nallatech1905
Product: NSC-625



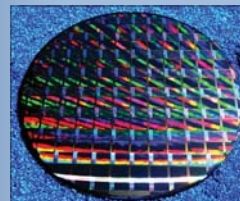
Miniaturized near-sensor-computing platform for distributed signal/sensor processing.

Nanomotion Inc.1833
Product: RS08 Rotary Shutter



Silent rotary shutter, 8mm diameter, with integral drive electronics.

New Imaging Technologies911
Product: WDR Readout Circuit



Wide Dynamic Range Readout Circuit for Infrared sensors.

NiCoForm1121
Product: Infrared Cold Shields



Electroformed cold shields with integrated baffles.

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Raytheon Vision Systems

#1725

75 Coromar Drive, Goleta, CA, 93117 USA
+1 805 879 2282; fax +1 805 879 2287
www.raytheon.com

RAYTHEON VISION SYSTEMS – For over a half century, Raytheon Vision Systems (RVS) products and innovations have probed the deepest recesses of space, defended US and friendly nations, and provided our customers with the advantages necessary to successfully complete their mission and return safely.

EXHIBITION MAP/RESTAURANT GUIDE SPONSOR

Renishaw Inc

#1907

5277 Trillium Blvd, Hoffman Estates, IL, 60192 USA
+1 847 286 9953; fax +1 847 286 9974
usa@renishaw.com; www.renishaw.com

Featured Product: New RESOLUTE ETR a range of high performance position encoders for tough environments.

Renishaw is a global company with core skills in measurement, motion control, spectroscopy and precision machining. We develop innovative products that significantly advance our customers' operational performance - from improving manufacturing efficiencies and raising product quality, to maximizing research capabilities and improving the efficacy of medical procedures. For more information visit: www.renishaw.com Contact: Jeff Seliga, Marketing Manager, jeffrey.seliga@renishaw.com; Howard Salt, Encoder Business Manager, howard.salt@renishaw.com

Riegl USA Inc.

#1233

SPIE Corporate Member

7035 Grand National Drive, Orlando, FL, 32819 USA
+1 407 248 9927; fax +1 407 248 2636
www.rieglusa.com

With over nineteen years' experience, RIEGL USA delivers cutting edge technology in quality airborne, mobile and stationary terrestrial laser scanning solutions. RIEGL USA is recognized as the performance leader in airborne, mobile, and terrestrial scanning. From your initial purchase, to integration of the systems, as well as training and support, RIEGL USA stands out as an industry leader. The key factor to RIEGL USA's success is providing complete reliability and support to our customers.

Rochester Precision Optics

#1649

SPIE Corporate Member

850 John St, West Henrietta, NY, 14586 USA
+1 585 292 5450; fax +1 585 292 5459
sales@rpopitics.com; www.rpopitics.com
Rochester Precision Optics offers manufacturing, design and consulting services for optical assemblies and precision optics. Specializing in aspheric designs for medical, defense, imaging and industrial applications and covering the UV to Far-IR. RPO's modern 105,000 square foot facility is vertically integrated featuring optical and electro optical assembly, precision glass and plastic molding, CNC optics manufacturing, diamond turning, thin-film coating and precision machining centers. Contact: Matthew Pembroke, Director of Sales, mpembroke@rpopitics.com

Rocky Mountain Instrument Co.

#933

SPIE Corporate Member

106 Laser Drive, Lafayette, CO, 80026 USA
+1 303 664 5000; fax +1 303 664 5001
sales@rmico.com; www.rmico.com
Rocky Mountain Instrument Co. (RMI) is a leading manufacturer of optical components, high power thin film coatings & assemblies. RMI offers design, fabrication and testing services in our 90,000 sq ft manufacturing facility in Lafayette, CO. RMI Infrared, LLC was created in 2012 and is an exclusive partner with our CVD ZnSe facility, providing our customers with raw materials through finished optics for your CO₂ laser needs. By combining RMI's well known, longstanding craftsmanship and expertise with precision lens polishing and coatings, RMI Infrared is positioned to deliver OEM quality CO₂ laser lenses at very attractive prices.

Rotem Industries Ltd.

#1110

Rotem Industrial Park, Crystals Division, Mishor Yamin D.N Arava, 86800 Israel
+ 972 8657 9732; fax + 972 8657 3186
info@rotemi.co.il; www.rotemi.co.il

Featured Product: Hyper Hemispherical Sapphire Dome. Sapphire Domes and Windows. Sapphire Products

The Crystals Division at Rotem Industries is a leading expert in sapphire technologies for more than 30 years: R&D, manufacturing (growth, precision fabrication & processing, QA) and marketing. Main Applications - Production of sapphire smart components for the defense market. Customers: Domestic: RAFAEL, The Israeli Aerospace Industry (IAI), The Israeli Military Industry (IMI), The Israeli Defense Force (IDF). Worldwide: USA, Europe, Far East. Contact: Revital Barda, Account manager and Quality assurance manager, revitalb@rotemi.co.il; Benny Ballin, Head of Crystal Division at Rotem Industries, BennyB@rotemi.co.il

RP Optical Lab.

#1843

Shimshon 5, Petach-Tikva, 49517 Israel
+972 350 57436; fax +972 390 88781
info@rp-optical-lab.com;
www.rp-optical-lab.com

A new and innovative line of LWIR and MWIR zoom and mono focal lenses. A leading Israeli company specialized in the Opto-mechanical design and production of LWIR/MWIR Thermal (zoom and mono focal) and other types of lenses in the visible and near IR spectrum. RP Optical Lab proposes a new business model to incorporate its lenses. We have "Off the shelf" products, as well as proven capability and experience for an "Extremely short development to production cycle time." Contact: Ran Carmeli, CEO, ran@rp-optical-lab.com; Pavel Reshidko, CTO, pavel@rp-optical-lab.com

RPMC Lasers, Inc.

#2002

SPIE Corporate Member

203 Joseph St, O'Fallon, MO, 63366-2614 USA
+1 636 272 7227; fax +1 636 272 3909
info@rpmclasers.com;
www.rpmclasers.com

Featured Product: Lasers and Laser Diodes.

RPMC offers laser diodes at wavelengths from 405nm – 2.3µm in a full range of products from single emitters to 2D and 3D arrays and fiber coupled packages. We offer the widest wavelength range in the industry with >30 wavelengths available. RPMC also offers flash lamp, diode pumped and fiber lasers and amplifiers, including femtosecond lasers, ps, ns, ms, and CW lasers, with energy from nJ up to 300J, and rep rates from pulse-on-demand to 50 MHz, and average powers up to 3,200W. Contact: Chuck Ratermann, President, chuck@rpmclasers.com; Dean Micke, Vice President, dean@rpmclasers.com

Rubicon Technology

#920

SPIE Corporate Member

900 E. Green Street, Bensenville, IL, 60106 USA
+1 847 295 7000; fax +1 847 295 7555
sales@rubicon-es2.com;
www.rubicon-es2.com

SAES Getters USA

#2014

1122 E Cheyenne Mountain Blvd, Colorado Springs, CO, 80906 USA
+1 719 576 3200; fax +1 719 576 5025
www.saesgetters.com

As a strategic supplier of technology innovation for the defense and sensing industry, SAES Getters provides products that allow customers to achieve lifetime vacuum integrity of their detectors and sensors. There are many configurations of getter solutions available for integration inside a device ranging from larger porous getters utilizing ST 171, ST 172, ST 175, or other varieties of getter alloys to SAES' thin film Page material. Contact: Heather Florence, Applications Engineer, haf@saes-group.com; Mabel Chan, Applications Engineer, mmc@saes-group.com

Saint-Gobain Crystals

#1957

17900 Great Lakes Parkway, Hiram, OH, 44234 USA
+1 440 834 5600
scintillation@saint-gobain.com;
www.crystals.saint-gobain.com

Featured Product: Sapphire windows for FLIR and transparent Armor and Crystals and Detectors for Radiation Detection.

Saint-Gobain Crystals is a global leader in materials and solutions for a variety of applications including the Defense, Security, Industrial, Physics and Medical markets. Products include sapphire windows for FLIR (forward looking infra-red) and transparent armor (sapphire@saint-gobain.com) and crystals and detectors used in active and passive radiation detection systems for CBRNE detection, including SNM (scintillation@ saint-gobain.com). Please stop by our booth to discuss your application. Contact: Ajay Krishnan, Market Manager, Defense, ajay.krishnan@saint-gobain.com; Corinne Dathy, Market Manager, Security, corinne.dathy@saint-gobain.com

Sandia National Laboratories

#1644

P.O. Box 5800, Albuquerque, NM, 87125-1071 USA
+1 800 417 2634
www.sandia.gov

Defense, Security and Sensing 2013

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SPIE Defense, Security, and Sensing Directory

Santa Barbara Infrared, Inc.

#1209

SPIE[®] Corporate Member

30 S Calle Cesar Chavez Ste D,
Santa Barbara, CA, 93103-5652 USA
+1 805 965 3669; fax +1 805 963 3858
sales@sbir.com; www.sbir.com

Featured Product: Common E-O is an easy to use, modular test set designed for first tier maintenance of EO sensors.

Santa Barbara Infrared designs and manufactures the most technologically advanced infrared and electro-optical test instrumentation available. SBIR's broad line of innovative products support testing of military and commercial sensor systems and are used world wide in laboratory, production, depot and field test applications. Contact: Steve White, Sales Manager, swhite@sbir.com; Gabe Amparan, Sales & Marketing, gamparan@sbir.com

Savvy Optics Corp.

#1138

SPIE[®] Corporate Member

35 Gilbert Hill Rd, Chester, CT, 06412 USA
+1 860 878 0722
sales@savvyoptics.com;
www.savvyoptics.com

Featured Product: Introducing the Davidson D-668 scratch and dig comparison set, certified using a SavvyInspector SIF4.

Founded in 2007, Savvy Optics Corp is an optical engineering and design company dedicated to practical solutions to optical problems. In addition to optical design consulting, Savvy Optics Corp provides on-site training and education for scratch and dig, waviness, texture, cleaning, inspection, and ISO 10110 specifications. In 2010, Savvy Optics Corp. announced the SavvyInspector[™] SIF4, a software assisted surface inspection tool that takes the subjectivity out of scratch and dig metrology. Contact: David Aikens, President, daikens@savvyoptics.com; Dana Takaki, Director, dtakaki@savvyoptics.com

SBG Systems

#1447

SPIE[®] Corporate Member

3bis Chemin de la Jonchere,
Rueil-Malmaison, 92500 France
+33 1 80 88 45 00; fax +33 1 80 88 45 01
sales@sbg-systems.com;
www.sbg-systems.com

Featured Product: At 0.05° Attitude, Ekinox Series brings cost-effective MEMS inertial sensors to the Tactical Grade.

SBG Systems is a leading French supplier of MEMS-based inertial motion sensing solutions. The company provides a wide range of inertial solutions from miniature to high accuracy. Combined with cutting-edge calibration techniques and advanced embedded algorithms, SBG Systems products are ideal solutions for industrial & research projects such as unmanned vehicle control, antenna tracking, camera stabilization, and surveying applications. Contact: Thibault Bonnevie, CEO, sales@sbg-systems.com

SCD USA LLC

SPIE[®] Corporate Member

1901 S. Harbor City Blvd Suite 806,
Melbourne, FL, 32901 USA
+1 321 724 6146; fax +1 321 724 6267
contactus@scdusa.com;
www.scdusa.com

SCD.USA located in Melbourne, Florida supplies high tech Infrared Detectors and High Power Laser Diode products to the U.S. Military and Commercial markets. Our product offerings stem from the technology transfer of the SCD Israel world class products in both cooled and uncooled infrared detectors. We have also established an in country Assembly and Test Operation as well as a full service Maintenance & Repair operation using factory approved test equipment and factory certified technicians. Contact: Robert McDaniel, President & CEO, rmcdaniel@scdusa.com; Bouchaib Nessar, Director of Business Development, bnessar@scdusa.com

Schneider Optics, Inc.

#1443

SPIE[®] Corporate Member

285 Oser Ave, Hauppauge, NY, 11788 USA
631-761-5000; fax 631-761-5090
industrial@schneideroptics.com;
www.schneideroptics.com

Featured Product: Our Compact Lens family is now available in both Manual and Motorized Iris configurations.

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: Stuart Singer, Vice President, ssinger@schneideroptics.com; Jim Sullivan, Director, Industrial Optics, jsullivan@schneideroptics.com

SCHOTT North America, Inc.

#1625

SPIE[®] Corporate Member

2451 Crystal Dr Ste 450, Defense Div,
Arlington, VA, 22202 USA
+1 703 418 1409
www.us.schott.com

For over 40 years, SCHOTT has delivered a wide range of leading edge glass and glass-ceramic solutions for defense and security applications. SCHOTT's optics, armor material and electronic packaging products are being used in the field today to keep soldiers safe and to improve their effectiveness. SCHOTT stronger. SCHOTT safer. SCHOTT smarter. Contact: Victoria Sanville, Manager, Government Communications, victoria.sanville@us.schott.com

#1617  PLATINUM SPONSOR

Selex ES

#1349

Christopher Martin Rd, Sigma House,
Basildon Essex, SS14 3EL United Kingdom
+44 1268 883 203
infomarketing@selex-es.com;
www.selex-es.com

Selex ES, a Finmeccanica company, is an international leader in electronic and information technologies for defence systems, aerospace, data, infrastructures, land security and protection and sustainable 'smart' solutions. From the design, development and production to through life support, Selex ES partners with its customers to deliver mission success. Contact: David Bishton, Marketing, david.bishton@selex-es.com; Sarah Marcham, Marketing, sarah.marcham@selex-es.com

Semrock

#1325

SPIE[®] Corporate Member

3625 Buffalo Road, Rochester,
NY, 14624 USA
+1 585 594 7050; fax +1 585 594 3898
semrock@idexcorp.com;
www.semrock.com

Featured Product: The 8" (200mm) MaxLine filter

The Optical Filters Business Unit manufactures hard-coated optical filters that provide durable, reliable performance from the visible to the long wave infrared. These include Semrock's acclaimed VersaChrome tunable bandpass filters, high-performance narrow-bandpass & dichroic beamsplitters, ultra-steep edge filters, and CVI's infrared coatings. Our innovative products are built on the latest in optical coating technology, which now includes sputtered filters up to 8" in diameter.

Shanghai Optics

#1544

SPIE[®] Corporate Member

17 Brant Avenue, Suite #6, Clark,
NJ, 07066 USA
+1 732 321 6915; fax +1 732 875 0298
info@shanghai-optics.com;
www.shanghai-optics.com

Featured Product: Custom Lens Design & Lens Assembly; Thermal Imaging Systems; Optical Systems for SWIR, MWIR, LWIR.

Shanghai Optics is a leading optics supplier of photonics products including optical components, lens system and opto-mechanical hardware in NIR & IR applications. We are ISO:9001 & 14001 certified and our clients span across defense, security, bioengineering, pharmaceutical, industrial and research industries worldwide. From prototyping to volume production, we offer a full spectrum of design and manufacturing expertise that can give our customers the most competitive edge in global markets. Contact: Kristi Sun, Senior Project Manager, kksun@shanghai-optics.com

PROMOTIONAL PARTNER

Shephard Media

#922

268 Bath Road, Slough, Berkshire, SL1 4DX United Kingdom
+44 (0) 1753 727004;
fax +44 (0) 1753 727002
info@shephardmedia.com;
www.shephardmedia.com

Featured Product: Night Vision and Optics Handbook.

Shephard's range of niche industry handbooks are extensive, comprehensive data sources to over 11 sectors within the aerospace and defence industries. In particular, the Night Vision and Optics Handbook is an essential information and reference source for the night vision community. It has become well established as an invaluable and useful guide to equipment for military, parapublic and civilian users around the world. Contact: Jane Smith, Commercial Manager, jane.s@shephardmedia.com

Showmark LLC

#2059

410 Eagleview Blvd, Suite 102, Exton, PA, 19341 USA
+1 610 458 0304; fax +1 610 458 0309
email@showmarkcorp.com;
www.showmarkcorp.com

Featured Product: Optical Fiber Coiling and Winding Machines.

Showmark manufactures winding and coiling machines for optical fiber and other fine filaments. Our systems are used for general purpose respooling and for precision coiling applications such as quadrupole and octupole coiling for Fiber Optic Gyroscopes (FOG's), Fiber Delay Coils, EDFA's, and Fiber Bragg Gratings. We also provide a range of contract Spooling Services. Showmark is pleased to introduce the Coilmaster FOG Winder at this year's SPIE Defense, Security, and Sensing Show. Contact: Scott Markovitz, President, scott.markovitz@showmarkcorp.com

Sierra Precision Optics

#825

12830 Earhart Ave, Auburn, CA, 95602-9027 USA
+1 530 885 6979; fax +1 530 885 1037
sales@sierraoptics.com;
www.sierraoptics.com

Plano optics, Filters, Panels, Windows, Mirrors, Beam Splitters, Wedges & Prisms, Spherical & Cylindrical Lenses, Specialties: Cylindrical optics, Excimer laser Optics, UV/VIS/NIR Resonator optics, Flow Tubes & Custom shaped optics, 1/20th wave metal polishing of Invar & stainless steel. Materials, optical glasses UV, Visible, Near IR such as Fused Silica, Optical Glass BK7, Pyrex, SF grade, Filter Glass, Samarium, Quartz, CaF2, MgF2, Zerodur, Yag, Silicon, ZnSe, ZnS, & Ge. Contact: Jim Stimpson, V.P. Sales & Marketing, jstimpson@sierraoptics.com; Steve Bennion, Engineering Manager, sbennion@sierraoptics.com

Sierra-Olympic Technologies, Inc.

#1914

3100 Cascade Ave, Hood River, OR, 97031-9780 USA
+1 425 445 8884; fax +1 541 387 0443
info@sierraolympic.com;
www.sierraolympic.com

Featured Product: Alticam SGS Stabilized Ground/Surface Imaging System.

Sierra-Olympic distributes advanced IR camera systems from leading manufacturers. Systems include micro-stabilized EO/IR airborne payloads from HoodTech Vision. Sierra-Olympic also offers advanced cooled IR systems from IRCameras, LLC, and uncooled thermal imaging technology from DRS. For 18 years, Sierra-Olympic has helped hundreds of customers from its Western US base. Contact: Chris Johnston, Customer Service, chris@sierraolympic.com; Charley Gilbert, Business Development, charley@sierraolympic.com

Sigmadyne, Inc.

#2025

SPIE Corporate Member

803 West Ave Ste 311, Rochester, NY, 14611-2447 USA
+1 585 235 6892; fax +1 585 235 6931
michels@sigmadyne.com;
www.sigmadyne.com

Featured Product: Optomechanical analysis services and software linking mechanical analysis with optical analysis.

Sigmadyne is an engineering consulting firm specializing in optomechanical analysis services and software. Our specialty is integrating mechanical predictions with optical predictions for photonic applications in a wide array of industries. We perform engineering services on a contract basis and also sell software to customers utilizing their own optomechanical analysis capabilities. Contact: Gregory Michels, Vice President, michels@sigmadyne.com

Sinclair Manufacturing Co.

#1847

PO Box 398, Chartley, MA, 02712 USA
+1 508 222 7440; fax +1 508 226 0517
sales@sinclairmfg.com;
www.sinclairmfg.com

Featured Product: Hermetic Packages; Hermetic Windows.

Manufacturer of high reliability hermetic packages and windows for RF/Microwave, Fiber Optic, Detector, Power and Hybrid applications. Custom designs or choose from our thousands of standard tools. Contact: Michael O'Keefe, Vice President Marketing & Sales, mokeefe@sinclairmfg.com

Featured Product Launches

Ningbo Sunny Infrared Technologies Co., Ltd. . . . 1906
Product: Athermal lenses



Opto-mechanical athermal lenses, cost advantage and excellent performance

Novotech, Inc. 1659
Product: Longwave IR Lens



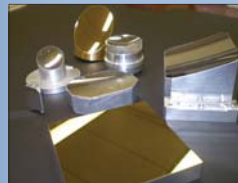
New Family of 7-14μm F/1.2 Lens

Ondax 1939



Ondax XLF-Series THz Raman Systems for Chemical Analysis/ Explosives Detection

OPCO Laboratory Inc 1965
Product: Replicated Mirrors and Assemblies



Lightweight, Low Cost, Precision Replicated Mirrors and Assemblies.

Ophir Optics, LLC 1425
Product: SupIR 15-100mm f/1.4, Motorized Continuous Zoom Lens



High performance, 7X zoom LWIR lens for mobile, security and surveillance applications.

Siskiyou Corporation #1770

SPIE[®] Corporate Member

110 SW Booth Street, Grants Pass, OR, 97526 USA
+1 541 479 8697; fax +1 541 479 3314
sales@siskiyou.com; www.siskiyou.com

Siskiyou Corporation manufactures motion control devices with manual and computer interfaced controllers, translation stages, mirror mounts, lens positioners, adjustment screws, construction hardware, fiber grippers, and other opto-mechanical components for use in research and manufacturing. Siskiyou Corporation will also custom tailor devices to fit your needs. Contact: Mark Mittelstaedt, western regional sales manager, mmittelstaedt@siskiyou.com

EXHIBITION MAP BACK COVER SPONSOR

SOFRADIR #1516

43-47 rue Camille Pelletan, Chatenay-Malabry, 92290 France
+33 1 41 13 45 35; fax +33 1 46 61 58 84
marc.larive@sofradir.com; www.sofradir.com

Featured Product: Come to see our Technology corner to discover the future.

Sofradir is the number one developer and manufacturer of a key class of infrared (IR) detectors for military, space and industrial applications. It specializes in cooled IR detectors based on a sophisticated high performance technology, MCT to which InSb, InGaAs and QWIP technologies are now added. Its vast product portfolio of scanning and staring arrays covers the entire infrared spectrum, from near infrared to very far infrared. Contact: Marc Larive, Marketing Manager, marc.larive@sofradir.com

Sofradir EC #1516

373 Rt. 46, Fairfield, NJ, 07004 USA
+1 973 882 0211; fax +1 973 882 0997
info@sofradir-ec.com; www.sofradir-ec.com

The Sofradir EC products include US-made infrared imaging cores and engines for military, industry and Research. The uncooled cameras include the Atom 1024 with industry-leading spatial resolution. The cooled products are available in SWIR, MWIR, LWIR and VLWIR and can be configured as SWaP engines for easy integration into EO systems or as fully-featured research cameras. The company's product line also includes its AstroScope night vision modules for low-light photography/videography. Contact: Brooke Herbst, Marketing Manager, bherbst@sofradir-ec.com; Chris Alicandro, Vice President, calicandro@sofradir-ec.com

Solid Sealing Technology, Inc. #1742

44 Dalliba Ave, Watervliet, NY, 12189 USA
+1 518 874 3600; fax +1 518 874 3610
info@solidsealing.com; www.solidsealing.com

Solid State Cooling Systems #2009

167 Myers Corners Rd, Wappingers Falls, NY, 12590 USA
+1 845 296 1300; fax +1 845 296 1303
info1@sscooling.com; www.sscooling.com

Featured Product: ThermoRack 275 PAO and ThermoRack 1000 PAO systems for reliable military/avionics fluid cooling.

We offer a broad selection of thermoelectric-based, temperature control which are compact, quiet, reliable and energy efficient. Our products provide precise temperature control for low light CCD cameras, diode lasers, DPSS lasers, analytical instruments, ground-based avionics testing, and much more. In laser applications, our chillers help improve beam shape, wavelength and pulse-width stability through smooth, steady temperature control and vibration-free fluid flow. Contact: Steve Huchro, Eastern Region Sales Director, shuchro@sscooling.com; Mark Logan, Vice President of Sales, mlogan@sscooling.com

Solid State Scientific Corp. #1527

27-2 Wright Rd, Hollis, NH, 03049 USA
+1 603 598 1194; fax +1 603 598 1197
sssc@solidstatescientific.com; www.solidstatescientific.com

Featured Product: Spectral-temporal sensors.

SSSC 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 #1527. As a leader in spectral sensing technologies, we combine phenomenology, hardware and software engineering to create innovative and comprehensive spectral sensors from concept to prototype, and from source to data product. Contact: James Murguia, President & CEO, jim@solidstatescientific.com; Linda Bouthillette, Contract Administrator, linda@solidstatescientific.com

Souriau PA&E #1636

434 Olds Station Rd, Wenatchee, WA, 98801 USA
+1 509 664 8000; fax +1 509 663 5039
sales@pacaero.com; www.pacaero.com

Featured Product: Hermetic Electronic Packaging and DC//RF/Fiber Optic Connectors for Harsh Environment Applications.

SOURIAU PA&E specializes in the custom design and manufacture of hermetic connectors and electronic packaging. Our technology is proven in the harshest applications - space, fighter aircraft, weapon systems, down-hole oil tools and more. We work directly with engineers to custom design and manufacture electronic packaging and connector products that meet the exacting standards for the reliability satellite, missile, fighter aircraft, under-sea and other mission-critical systems require. Contact: Rick Kalkowski, Marketing Manager, rkalkowski@pacaero.com

Specim Spectral Imaging #1917

SPIE[®] Corporate Member

Teknologiantie 18 A, Oulu, 90590 Finland
+358 10 4244 400
info@specim.fi; www.specim.fi

Featured Product: AisaFENIX Hyperspectral Sensor: 380-2500 nm in a single continuous image.

SPECIM Spectral Imaging Ltd. is a leading manufacturer of hyperspectral imaging instruments and systems. SPECIM provides Spectral Imagers and Hyperspectral Imaging Solutions to airborne, mineralogical, industrial, defence and research customers. Since 1995, SPECIM has delivered more than 3500 spectroscopic instruments to world class organizations. Contact: Ana Aranda, Sales & Marketing, ana.aranda@specim.fi

SpecTIR, LLC #1917

9390 Gateway Dr Ste 100, Reno, NV, 89521 USA
+1 775 329 6660; fax +1 775 329 6668
www.spectir.com

SpecTIR[™] LLC delivers hyperspectral and geospatial solutions that enable critical mission operations for our government and commercial clients. We span the globe focusing on specific client requirements. Our reputation is built on technical excellence and dedication to customer needs by applying a mixture of recognized scientists, engineers, program managers, remote sensing specialists, and analysts with a foundation based in hyperspectral technology. Contact: Conrad Wright, Chief Business Development Officer, conrad@spectir.com; Justin Janaskie, VP Remote Sensing, jjanaskie@spectir.com

Spectra Vista Corporation #905

29 Firemen's Way, Poughkeepsie,
NY, 12603 USA
+1 845 471 7007; fax +1 845 471 7020
svcinfo@spectravista.com;
www.spectravista.com

Featured Product: The SVC HR-1024i spectroradiometer delivers hi-quality spectral data, GPS, image & graphic display.

Spectra Vista Corporation (SVC) builds on over 20 years of experience in the design and manufacture of Remote Sensing Instrumentation. Both Airborne Imaging Spectrometers and Field Portable Spectroradiometers have been at the core of SVC's products for the past 10 years at our New York facility. SVC is proud to announce the availability of our newest instruments, the SVC HR-768i and SVC HR-1024i Field Portable Spectroradiometers. Contact: Thomas Corl, President & COO, Tomc@spectravista.com

Spectral Evolution #913

SPIE Corporate Member

1 Canal St. Unit B1, Lawrence,
MA, 01840 USA
+1 978 687 1833; fax +1 978 945 0372
info@spectralevolution.com;
www.spectralevolution.com

Featured Product: SR-3501 UV/VIS/NIR Spectroradiometer with a 280-2500nm spectral range.

SPECTRAL EVOLUTION Full Range UV-VIS-NIR Spectrometers, Spectroradiometers and Spectrophotometers are used worldwide for many lab and field assignments due to their reliable, robust, rugged yet lightweight design and user-friendly features including: 100% photodiode array construction for low noise & reliable battery operated performance; fast, full spectrum measurements with no moving gratings; integral dark shutter and autoexposure for 4314 scn.0004(r)-1.8717.8()4 sc.0004(r)3n as23.9(g)7.8(o)-12(r)JT*[(o)-14.-.4(o)-8.2(f..1901 0-.D-.0001 C)-17(s)o15.7(i)-13.0(e)-20.rps:17.2(p)-

Featured Product Launches

Optec S.p.A.1969
Product: Golden Line SWIR Lenses



Unmatched performance, fast aperture, SWIR Lens for defence and surveillance.

Optikos Corp.1118
Product: OG-1200 Multispectral Object Generator



Electronically switches between visible/infrared sources for improved alignment/set up times.

OptiPro Systems1340
Product: PRO 80 UFF



PRO 80 UFF: Fast and accurate UltraForm Finishing of planos, spheres & aspheres.

PCO-TECH Inc.2054
Product: Scmos pco.edge Camera System



Suitable for hyperspectral imaging, 5.5 Mpixel, <1.1electrons, >27 000 : 1 at 100 fps.

Spica Technologies, Inc. #1944

SPIE Corporate Member

18 Clinton Dr #3, Hollis, NH, 03049 USA
+1 603 882 8233
sales@spicatech.com;
www.spicatech.com

Featured Product: Laser Testing Services.

Spica Technologies provides a broad range of optical test and measurement services for manufacturers and end users of optical components. Founded in 1989, Spica has evolved as the premier source for laser damage testing, optical density measurements, environmental exposure, and general optical component metrology. Relying on numerous laser sources, a host of specialized optical instruments, and years of experience, Spica can support a broad range of optical test and measurements. Contact: Michael Thomas, President, sales@spicatech.com

SPIE Career Center #1869

1000 20th St, Bellingham, WA, 98225-6705 USA
+1 360 685 5600; fax +1 360 824 6014
sara@spie.org;
www.spie.org/CareerCenter

The SPIE Career Center is the leading recruitment resource for companies and professionals in the optics and photonics community. Whether you're looking for a new job or searching for top candidates, our resources will help you find the perfect match for your needs. Job seekers can post their resumes, search our online job board and access additional resources for career advancement. Employers can advertise jobs online, access the SPIE searchable resume database and exhibit in SPIE Job Fairs. Contact: Sara Liebert, Sales, Career Center Coordinator, sara@spie.org; Allison Romanyshyn, Digital Library Subscriber Manager, allisonr@spie.org

SRI International Sarnoff #1624

SPIE Corporate Member

201 Washington Road, Princeton, NJ, 08540 USA
+1 609 734 2040
info@sri.com; www.sri.com

Featured Product: Acadia® ILS-5000-SD™ is an electronic video stabilization module designed for Sony® block cameras.

SRI Sarnoff delivers advanced capabilities for situational awareness including real-time video processing, multi-spectral image fusion and low-light CMOS imagers. Optimized for SWaP-constrained applications, SRI technologies enable next-generation day/night vision systems such as goggles, weapons sights, manned/unmanned aerial and ground vehicles, border/perimeter protection, and surveillance platforms. These field-proven solutions offer complete awareness and total security in all environments. Contact: SRI International Sarnoff, info@sri.com

SRICO Inc. #1836

2724 Sawbury Blvd, Columbus, OH, 43235-4579 USA
+1 614 799 0664; fax +1 614 799 2116
sri@srco.com; www.srco.com

SRICO offers high-speed LiNbO₃ electro-optic modulators from the visible to mid-IR; beam scanners; optical switches; frequency converters; periodically poled lithium niobate (PPLN) devices; wideband photonic e-field and voltage sensors and systems; microwave fiber-optic data links; and platforms for THz detection devices. SRICO also offers custom photonic device design and fabrication services for a wide variety of material platforms. Contact: Sri Sriram, President & CEO, sri@srco.com

Standa #2036

Svitrigailos 4-39, Vilnius, 03222 Lithuania
+370 5 265 1474; fax +370 5 265 1483
sales@standa.lt; www.standa.lt

Featured Product: Motorized Iris Diaphragm 8MID98-4-90.

Standa motion control systems including high vacuum compatible (10-6 torr) motorized positioners, together with high quality precision mechanics are widely used to enable leading-edge research and products. Standa picosecond micro lasers deliver peak powers of 1 MW at repetition rates up to 120 kHz. Low timing jitter and SLM are key features making Standa lasers an attractive tool to use in spectroscopy or seeding high-energy MOPA systems. Contact: Lucian Hand, President, Altos Photonics, lucian@altosphotonics.com; Emily Bates, Customer Support, Altos Photonics, emily@altosphotonics.com

StingRay Optics, LLC #1754

310 Marlboro St, 2nd Fl, Keene, NH, 03431-4118 USA
+1 603 358 5577; fax +1 603 358 5579
info@stingrayoptics.com;
www.stingrayoptics.com

Featured Product: Innovative, compact, lightweight, ruggedized, folded, continuous zoom & DFOV thermal imaging lenses.

StingRay specializes in custom optical design, product development, prototyping, and production services across all spectrums; delivering exceptional performance with an emphasis on economical and timely results. We offer our customers over 100 years combined experience in optical design, opto-mechanical design, and optical fabrication knowledge along with a proven track record of developing innovative and cost-effective solutions. Contact: Sam Wyman, Standard Products Specialist, swyman@stingrayoptics.com; Christina Davis, Sales Coordinator, cdavis@stingrayoptics.com

Success Optics Limited #2101

268 Fanghua Rd, Hong Kong, Hong Kong, China
+86 18657212065
sales@successoptics.com;
www.successoptics.com

Featured Product: Aspheric lens with Ge, Si, ZnSe, Glass. chalcogenide polish single point diamond turned mirror.

Success Infrared: designs and manufactures integrated civil optical systems and component. Contact: Qi Lou, Oversea business manager, louqi@successoptics.com

Sunpower #1241

1055 E State St, Athens, OH, 45701-7911 USA
+1 740 594 2221
info@sunpower.com; www.sunpower.com

Featured Product: Sunpower CryoTel Cryocooler.

Sunpower develops and manufactures Stirling cryocoolers. Cryocoolers can be used in place of liquid nitrogen to reach cryogenic temperatures. Sunpower's CryoTel® cryocoolers are the result of over thirty years of technical leadership, innovation and evolution in free-piston Stirling technology. Our cryocoolers are cost effective, exceptionally quiet, low in vibration, and extremely efficient. Why hassle with LN₂ when all you have to do is flip a switch. Contact: Jimmy Wade, Business Development, jimmy.wade@ametec.com

Superior Technical Ceramics Corp. #2067

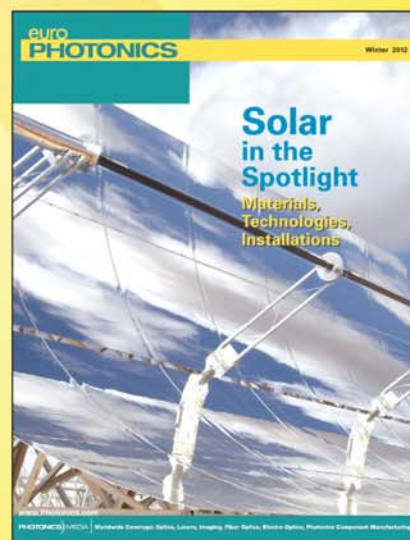
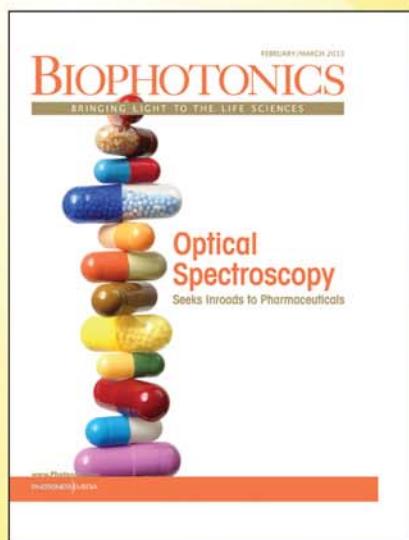
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Featured Product: Semiconductor Chuck plates: We support 300mm wafer systems and are ready for the push to 450.

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#2112

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sales@surmet.com; www.surmet.com

Sydor Instruments LLC #1665

291 Millstead Way, Rochester,
NY, 14624 USA
+1 585 278 1168; fax +1 585 278 1169
info@sydorinstruments.com;
www.sydorinstruments.com

Featured Product: Multi-Plane Ballistic Image Capture System.

Sydor Instruments has a history of developing and commercializing next generation technology. We deliver best in class streak cameras, photon counting cameras, image intensifiers, photomultipliers, and detectors for defense, energy, & life sciences. From X-ray to IR and femto to microsecond our products can detect photons across the entire time spectrum like never before. Need a custom diagnostic? Have a technology ready for transfer? Then you are ready for Sydor - Diagnostics Delivered! Contact: Mark Katafiaz, General Manager, mark@sydorinstruments.com; Michael Pavia, President, pavia@sydorinstruments.com

Syntec Optics

#1245

SPIE Corporate Member

7100 Junction Rd, Pavilion, NY, 14525 USA
+1 585 768 2513; fax +1 585 768 7138
sales@syntecoptics.com;
www.syntecoptics.com

Syntec Optics is North America's largest, private manufacturer of custom plastic optics serving the Medical, Defense and Biometric Industries by producing "Precision Plastic Optics for Tomorrow's Technologies" from our location near Rochester, NY. We specialize in Design for Manufacturability, Molded Plastic Optics, Diamond Turning, Assembly and Metrology. With our in house diamond turning and mold making capabilities, we can take your product from prototype to production. Contact: Rick Arndt, VP/GM, rarn@syntecoptics.com; Doug Hand, Sales Manager, dhand@syntecoptics.com

Systematic Vision

#813

SPIE Corporate Member

PO Box 490, Ashland, MA, 01721 USA
+1 508 532 1116; fax +1 508 275 3052
info@systematicvision.com;
www.systematicvision.com

Featured Product: Photonfocus

DR1-D2048x1088 Double Rate GigE camera series. 2048x1088 @ 85fps via one GigE cable.

As the North American Distributor for Photonfocus AG, Systematic Vision offers a complete line of CMOS sensors, OEM modules, Board Level, GigE Vision and Camera Link cameras based on Photonfocus, CMOSIS and e2V sensors. In support of these products we also offer an extensive line of Accessories, Cables, Computers, BitFlow Frame Grabbers, Lighting, Optics and Software as well as custom turnkey single and multi-camera High-Speed capture systems. Contact: William Carson, President, bill@systematicvision.com

PROMOTIONAL PARTNER

Tactical Defense Media #1230

Leisure World Plaza, PO Box 12115,
Silver Spring, MD, 20908 USA
+1 301 974 9792; fax +1 443 637 3714
susan@tacticaldefensemedia.com;
www.tacticaldefensemedia.com

Tactical Defense Media publications provide readers with insights into DoD program requirements and industry technologies that support joint force ops including mounted and dismounted protection systems, intel and comms applications, tactics, and training. TDM publications' mission focus is centered on collecting expert opinion regarding best practices and lessons learned through the eyes of military and civilian authority, warfighters, and law enforcement.

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Tactical ISR Technology #929

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Rockville, MD, 20855 USA
+1 301 670 5700; fax +1 301 670 5701
kmi@kmimediagroup.com;
www.tisr-kmi.com

ISR gathering, analysis and dissemination takes place at all levels, but delivering actionable information to the warfighter is the result that matters. TISR is laser-focused on the technologies, requirements and capabilities that best serve the warfighter and connect ISR providers and users at all levels. Contact: Kirk Brown, Publisher, kirkb@kmimediagroup.com; Scott Parker, Associate Publisher, scott@kmimediagroup.com

Tamron Co., Ltd.

#2007

1385 Hasunuma, Minuma-ku, Saitama,
Saitama, 337-8556 Japan
+81 48 684 9116; fax +81 48 684 9465
kodaka@tamron.com; www.tamron.com

Featured Product: LWIR Thermal Zoom Lenses.

At Tamron, we are committed to providing new imaging solutions for a variety of industries, ranging from optics for security/surveillance cameras, interchangeable lenses for D-SLRs, customized optics for digital still cameras and camcorders, mobile phone cameras, automotive on-board cameras and the like. Our featured product is a 3X optical zoom LWIR thermal lens equipped with stepping motors for electrical control of zoom and focus functions. Contact: Ichiro Kodaka, Manager, New Business Development, kodaka@tamron.com; Daisuke Naito, Sales, Components Group, d-naito@tamron.co.jp

TDK-Lambda Americas Inc.

#2027

405 Essex Rd, Neptune, NJ, 07753 USA
+1 732 922 9300; fax +1 732 922 1441
sales@us.tdk-lambda.com;
www.us.tdk-lambda.com/hp

Featured Product: New Genesys™

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Tecnottica Consonni Srl #1969

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www.tecnotticaconsonni.it

Tecport Optics

#1539

SPIE Corporate Member

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 salesamericas@teledynedalsa.com;
 www.teledynedalsa.com

Featured Product: Field-proven ITAR-free detectors and subsystems covering IR to X-Ray.

Teledyne DALSA provides state-of-art imaging components and sub-systems to the Defense and Security Industry. Commitments to innovation and performance have led us to build an extensive technology portfolio, from advanced image sensors to innovative "smart camera" platforms. We also offer a broad range of UV and X-Ray imaging solutions. With Canada's only world class MEMS foundry and technology partners, we have access to uncooled short-, mid-, and long-wavelength infrared detector technology. Contact: Cees Draijer, Technical Marketing Manager, cees.draijer@teledynedalsa.com; Jean-Pierre (JP) Luevano, Strategic Account Manager, jp.luevano@teledynedalsa.com

Teledyne Imaging Sensors #1317

5212 Verdugo Way, Camarillo, CA, 93012 USA
 +1 805 373 4545; fax +1 805 373 4775
 jhotchkiss@teledyne.com;
 www.teledyne-si.com

Teledyne Imaging Sensors (TIS) is a market leader, engaged in the design, development and production of high operating temperature, high performance, visible and infrared focal plane arrays, cameras, and sensor subsystems utilizing Mercury Cadmium Telluride and Strained Layer Super Lattice materials for use in DoD, government, tactical, commercial, and space applications as well as astronomy and civil space applications. TIS also designs and manufactures custom laser eye protection products. Contact: Louis Kilmer, Vice President & General Manager, lkilmer@teledyne.com; Juli Hotchkiss, Senior Manager, Marketing, jhotchkiss@teledyne.com

Featured Product Launches

PerkinElmer1131
Product: VariSpec Liquid Crystal Tunable Filter



Solid-state optical filter for VIS and NIR multispectral imaging.

Photonics Online1004
Product: Electronic Military & Aerospace Annual Resource, 2nd Edition



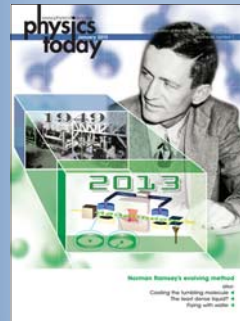
Read latest advancements in electro-optic technologies for defense/aerospace applications.

Physical Sciences Inc. ...1037
Product: InstantEye™ Micro Air Vehicle



InstantEye™ Micro-Quadrotor for Convert Surveillance, Illumination and Sensing.

Physics Today1218
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Teledyne Judson Technologies

#1317

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TJT is the recognized leader of IR photodetectors & accessories for use in military, space, & commercial markets. Specializing in Ge, InGaAs, InAs, PbS, PbSe, InSb, and HgCdTe, products include single and multi-element designs with integrated detector/dewar/cooler (IDCA) assemblies. TJT also provides InGaAs, InSb, and MCT 2D FPAs integrated to dewars & coolers. Products are used in surveillance, law enforcement/security, laser beam diagnostics, range finding, and chemical/biological detection. Contact: Mark Sediva, Sales Engineer, msediva@teledynejudson.com; Jim Dell, Std Products Technical Sales Mgr., jdell@teledynejudson.com

Teledyne Nova Sensors #1317

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760 McMurray Road, Buellton, CA, 93427 USA
+1 805 693 9600; fax +1 805 693 9668
tony@novasensors.com;
www.novasensors.com

Featured Product: Ask about our new Liquid Nitrogen (LN2) Pour Fill line of cameras.

Incorporating low power and compact camera electronics, Nova Sensors' offers infrared cameras, both closed cycle and pour filled, that cover the infrared spectrum. We have HD MWIR and SWIR, along with other formats, and offer formidable cutting edge image processing on camera. Our cameras products are off the shelf and in production while we still accommodate customization. Contact: Tony Vengel, Vice President, Business Development, tony@novasensors.com; Jeff Anderson, Director, Engineering, jeff@novasensors.com

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Refer to pages 22-23 for complete times, schedules, and locations.

Teletronics Technology Corporation #2060

15 Terry Drive, Newtown, PA, 18940 USA
+1 267 352 2020; fax +1 267 352 2021
KMcCall@ttcdas.com; www.ttcdas.com

Featured Product: High Definition Cameras and Displays.

TTC designs/builds ruggedized, networked Data Acquisition, Recording and Telemetry Systems/Products for Flight Test and Operational use including networked (iNet) Acquisition Units, Concentrators, GbE 1588 Switches, Gateways, HS Cameras, Video Encoders/Decoders, Bus Conditioners (CAIS, 1553B, ARINC-429/629, GPS, CAN) and more; Ground products include Tactical Mission Displays, Data Links, Transmitters (PCM/FM & SOQPST), portable Receive/Debrief Stations and Chapter 10-compliant Radar Recorders. Contact: Russell Moore, Director, New Business Development, RMoore@ttcdas.com; Albert Berdugo, Chief Technology Officer, ABerdugo@ttcdas.com

Telops Inc. #1112

SPIE Corporate Member

100-2600 Ave. St-Jean-Baptiste, Québec, QC, G2E 6J5 Canada
+1 418 864 7808; fax +1 418 864 7843
contact@telops.com; www.telops.com

Featured Product: High Performance Infrared Cameras and Hyperspectral Imaging Systems.

Telops is a leading supplier of high performance infrared cameras and hyperspectral imaging systems. In addition to providing specialized opto-electronic engineering services, Telops has also developed the new HD-IR 1280 Infrared Camera, the FAST-IR 1500, the first 1,500 FPS Infrared Camera, the TEL-1000, and the powerful Hyper-Cam providing information rich data for a wide variety of applications. With Telops Systems, you will detect, identify and quantify remote substances previously invisible. Contact: Vincent Farley, Business Development Manager, vincent.farley@telops.com; Frederick Marcotte, Product Line Manager, frederick.marcotte@telops.com

Temmek Optics Ltd #1670

SPIE Corporate Member

4 Faran St, Yavne, 81101 Israel
+972 8 9438408; fax +972 8 9438390
temmek@temmek.com;
www.temmek.com

Development and manufacturing of lenses for thermal imaging, for LWIR, MWIR and multispectral (combinations between SWIR, MWIR and LWIR) suitable for cooled and uncooled thermal imaging detectors. In-house complex optical, mechanical electronic design and manufacturing of infrared assemblies, in addition and adaptations for customer's requirements. Specialization in high performance off-the-shelf and custom built, continuous and discrete zoom lenses. Contact: temmek@temmek.com

Termotek #1970

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+1 847 227 9022; fax +1 847 227 9400
Angelo.Prisco@technotrans.com;
www.termotek-ag.com

THALES ANGENIEUX #916

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+33 (0)4 77 90 78 00;
fax +33 (0)4 77 90 78 03
angenieux@fr.thalesgroup.com;
www.angenieux.com

Featured Product: Zoom lenses (ruggedized, day & night, NIR, SWIR) for homeland security applications.

A subsidiary of the group Thales, Thales Angénieux is a world renowned manufacturer of high-technology optical and optronic systems, specialized in the design and the manufacturing of zoom lenses for security and surveillance, for cinema and television broadcast, and of night vision equipment. Our 75 years expertise in optics and optronics allows adaptation and customisation of products for defense and security applications. Contact: Severine SERRANO, Sales Director / Sub-assemblies and Security, severine.serrano@fr.thalesgroup.com; Jean-Alexandre ROBO, Customer Support Manager, jean-alexandre.robo@fr.thalesgroup.com

Thales Cryogenics B.V. #3058

Hooge Zijde 14, Eindhoven, 5632 RD Netherlands
+31 40 2503 603; fax +31 40 2503 777
www.thales-cryogenics.com

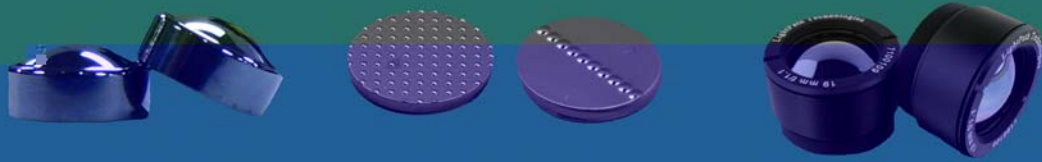
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The Optronics Co., Ltd. #931

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www.thermoteknix.com

Featured Product: Thermoteknix Systems Ltd launch new range of ultra low-power thermal imaging modules - MicroCAM II.

Thermal imaging specialists Thermoteknix unveil MicroCAM II - the new standard in ultra low-power and shock-resistant OEM thermal imaging modules. With user-specific overlays and bore-sighted adjustable reticules, MicroCam II include Thermoteknix patented shutterless XTi Technology® options. Also on display are TiCAM thermal imaging binoculars for reconnaissance, border/homeland security, target acquisition, counter-terror/drug operations & general situational awareness. Contact: Bob Blocksidge, Sales Manager - USA, b.blocksidge@thermoteknix.com; Alistair Brown, Product Manager Imaging, a.brown@thermoteknix.com

THINFILMS, Inc.

#1247

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Featured Product Launches

Pleora Technologies1242
Product: iPort™ IP Engines



iPORT™ IP engines transmit video from analog and Camera Link cameras over a network interface.

PLX Inc.1336
Product: PLX Modernized Boresight Module™ (M-BSM)



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Thorlabs Inc.

SPIE[®] Corporate Member

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sales@thorlabs.com; www.thorlabs.com

Featured Product: Thorlabs' new Mid-IR FT-OSA is a versatile tool for spectroscopic and characterization measurements.

Thorlabs designs, develops, and manufactures building blocks for the Photonics industry, including optomechanics, motion control electronics, nanopositioning stages, fiber and optical components, laser diodes, tunable lasers, and vibration isolation systems. Headquartered in Newton, NJ, our portfolio includes system-level solutions, including complete OCT, multiphoton, confocal, and adaptive optics systems.

Tornado Spectral Systems

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555 Richmond St W Ste 705, PO Box 218, Toronto, ON, M5V 3B1 Canada
+1 416 361 3444
info@tornado-spectral.com;
www.tornado-spectral.com

Featured Product: S4 Hyperspectral Imager and HyperFlux U1

Tornado Spectral Systems develops and markets spectroscopy devices using the patented High Throughput Virtual Slit (HTVS), a technology that increases the performance of high resolution spectrometers >10X. Tornado's products are based on the performance improvement provided by HTVS, marketed as the HyperFlux family of optical spectrometers. Tornado will be demonstrating "live" its S4 hyperspectral platform, and showing its next generation factory configurable HyperFlux U1 in booth # 1003. Contact: Edward Albe, VP of Sales & Marketing, edward.albe@tornado-spectral.com; Len Ball, Senior Marketing & Communications Associate, len.ball@tornado-spectral.com

Tower Jazz

4321 Jamboree Road, Newport Beach, CA, 92651 USA
+1 949 435 8181; fax +1 949 435 8186
lauri.julian@towerjazz.com

#1924

Tower Optical Corp.

SPIE[®] Corporate Member

3600 S Congress Unit J, Boynton Beach, FL, 33426-8488 USA
+1 561 740 2525; fax +1 561 740 2518
sales@toweroptical.com;
www.toweroptical.com

Featured Product: Large Zero Order Waveplates and Micro Achromatic Waveplates.

Tower is a manufacturer of precision optical components and assemblies including zero order and Achromatic waveplates, beamsplitters, prisms, mirrors, windows, lenses, optical flats, filters and Transmission flats. Also custom optics built to print. Machined parts, mounting rings and assembly of optical components is also supplied. Commercial and military parts accepted. Tower is an SD-VOSB company, ITAR registered, certified to ISO 9001:2008. Contact: Joel Kramer, Joel@toweroptical.com Contact: Mel Kantor, President, mkantor@toweroptical.com; Wayne Demaline, Director of Business Development, wayne@toweroptical.com

#1003

TrackGen Solutions Inc. #1555

5259 Lismic Blvd., Mississauga, ON, L5V 1P2 Canada
+1 416 273 5010; fax +1 416 273 5025
info@trackgen.com; www.trackgen.com

Featured Product: High-performance software & API for real-world large-scale multisensor-multitarget tracking & fusion.

TrackGen Solutions consists of internationally recognized experts in target tracking, sensor fusion, resource management and radar, sonar and video processing with application to surveillance, defence, law enforcement and transportation. COTS APIs for state-of-the-art real-time tracking, sensor fusion, track analytics, scenario generation, situation awareness, performance evaluation and sensor management algorithms are available for licensing, customization and integration into your products. Contact: Thia Kirubarajan, President, kiruba@trackgen.com; Andrew Lawrence, Marketing Director, andrew@trackgen.com

#1028

EXHIBITION MAP/RESTAURANT GUIDE SPONSOR

TRIOPTICS GmbH

#1749

SPIE[®] Corporate Member

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Featured Product: ImageMaster[®] HR IR - The only vertical and camera based MTF test station measuring in VIS and LWIR.

ImageMaster[®] complete characterization of lenses. OptiCentric[®] automatic alignment, cementing, bonding, assembly. OptiSpheric[®] integrated optical testing. WaveMaster[®] wavefront analysis of spherical & aspherical lenses. TriAngle[®] autocollimator for angle, wedge & straightness. PrismMaster[®] accurate automatic goniometer featuring ultra-accurate angle measurements SpectroMaster[®] measurement of refractive index from UV to IR. µPhase[®] Interferometer measures the quality of spherical, aspherical & flat optic.

ULIS

#1516

BP 27 ZI des Iles Cordees, Veurey Voroize, 38113 France
+33 4 76 53 74 94; fax +33 4 76 53 74 80
ulis@ulis-ir.com; www.ulis-ir.com

ULIS, a subsidiary of Sofradir and GE Equity, specializes in the design and manufacture of high quality infrared imaging sensors for thermography, security & surveillance, automotive and military applications. It enables makers of consumer electronics and infrared equipment to produce low weight, low power consumption and cost-effective thermal cameras in large volume. ULIS ranks among the top three for uncooled infrared (IR) sensors delivered. ULIS is located in Veurey-Voroize, near Grenoble, and employs 140 people.

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Umicore Optical Materials USA, Inc.

#1424

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2976 S 614 Rd, Quapaw, OK, 74363 USA
+1 918 673 1650; fax +1 918 673 2121
opticalmaterials@umicore.com;
www.optics.umicore.com

Featured Product: Germanium and GASIR[®]

Umicore offers infrared materials, optical coatings, components and assemblies for thermal imaging applications using either Ge or GASIR[®]. GASIR[®] chalcogenide glass can be molded or finished conventionally with DPT with complex geometry. Umicore has developed coatings, including iDLC hard coating for GASIR[®]. Umicore's optical-mechanical design competencies enable the manufacture of lens assemblies. Umicore also offers Ge recycling capabilities. Umicore Optical Materials USA Inc is ITAR compliant. Contact: Priyesh Narsale, Senior Sales Manager & Program Manager, priyesh.narsale@am.umicore.com; Jeff Koch, Sales Manager, jeff.koch@am.umicore.com

JOB FAIR

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#1569

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Featured Product: Optical components - HP thin film coatings, precision fabrications, machined & molded glass blanks.

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Univ. of Massachusetts Lowell

#1328

175 Cabot St. Suite 130, Submillimeter-Wave Technology Laboratory, Lowell, MA, 01854 USA
+1 978 934 1300; fax +1 978 452 3333
andrew_gatesman@uml.edu; stl.uml.edu

Featured Product: Two and three-dimensional THz imagery.

Specializing in terahertz imaging technologies, the Submillimeter-Wave Technology Laboratory builds systems that provide 3D target scattering and imaging solutions to their sponsors. STL expertise includes coherent transceiver design, acquisition of polarimetric UHF thru W-band target signatures, mm-wave & THz remote sensing technologies, dielectric materials characterization, radar range design, computational electromagnetic modeling, and radar data processing and analysis tools. Contact: Andrew Gatesman, Assistant Director, andrew_gatesman@uml.edu

Universal Photonics Inc. #1719

SPIE Corporate Member

495 W John St, Hicksville, NY, 11801-1028 USA
+1 516 935 4000; fax +1 516 935 4139
info@universalphotonics.com; www.universalphotonics.com
Specializing in the manufacture & distribution of advanced polishing consumables and machinery for glass, plastic, crystals, infrared, semiconductor, electro, laser & fiber optics. Including pads, compounds, ultra-pure alumina, colloidal silica, thermoplastic adhesive, holding foils, diamond powder, compound & lapping film, slurries for sapphire/CaF, lens bonding material, precision pitch, waxes & cements. Machinery: Advantage & DAMA, HKS centrifuges, SOMOS Double-sided Lapping & Polishing. Contact: Jerry Hammock, Technical Sales, jerryh@universalphotonics.com; Lynn Kelly, Director of Sales Administration, lynnk@universalphotonics.com

UTC Aerospace Systems (Sensors Unlimited Products)

#1217

SPIE Corporate Member

3490 Rte 1, Bldg 12, Princeton, NJ, 08540 USA
+1 609 520 0610; fax +1 609 520 1663
sui_info@utas.utc.com; www.sensorsinc.com

Featured Product: Sensors Unlimited High-Resolution, Mil-Rugged, Snapshot InGaAs SWIR Camera - Global Shutter Function.

UTC Aerospace Systems' Sensors Unlimited shortwave infrared (SWIR) digital video & snapshot cameras for military/defense applications. Low SWaP, indium gallium arsenide (InGaAs) imagers can be integrated into aerial, mobile, & handheld devices to provide real-time daylight to low-light imaging (including partial moonlight) in the 0.9 to 1.7 μm SWIR. Stop by UTC's booth #1217 to see the new 1.3 Mpixel resolution GA1280JS snapshot camera & the miniature 1-in.³ GA640C SWIR camera with CameraLink®. Contact: Karen Jeffers, Marketing Communications Specialist, karen.jeffers@utas.utc.com; Katie Gabriel, Sales Support & Marketing Manager, gabriel.kathryn@utas.utc.com

Vacuum Process Technology

#1457

SPIE Corporate Member

70 Industrial Park Rd, Plymouth, MA, 02360 USA
+1 508 732 7200; fax +1 508 732 0317
sales@vpotec.com; www.vptec.com

Featured Product: Vacuum Thin-Film Coating Systems for Optics, Solar, Health Care and LED.

VPT has invested over 22 years serving customers in a broad range of markets. From solar to optics, display and imaging to health sciences, aerospace to defense. Our product line is equally broad, ranging from optical coaters and sputtering systems to control and planetary systems. We also offer custom systems and spare parts. We're especially enthusiastic about our work in optical coating technology. Optical thin-film coatings that offer real cost and technology advantages. Contact: Ralph Faber, President, rfaber@vpotec.com

Velodyne Lidar, Inc.

#1739

345 Digital Drive, Morgan Hill, CA, 95037 USA
+1 408 465 2800; fax +1 408 779 9227
help@velodynelidar.com; www.velodynelidar.com

Velodyne LiDAR, Inc. is a leading manufacturer of high definition lidar sensors. Headquartered in Morgan Hill, California, the company's HDL-64E and HDL-32E sensors are used in a variety of military and commercial autonomous vehicle applications as well as 3-D mapping, surveying and other applications.

Vincent Associates

#1339

803 Linden Ave, Rochester, NY, 14625-2709 USA
+1 585 385 5930
vincentassociates@uniblitz.com; www.uniblitz.com

Vincent Associates is the manufacturer of UNIBLITZ 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, the NS (Bi-stable & uni-stable configurable) series, the DSS (Design scalable shutters) series, & the new TS (Flag shutter alternative) series. Standard aperture sizes range from 2mm - 90mm with many types of microscope and video mounting systems offered. Contact: Adam Lamb, VP Manufacturing, alamb@uniblitz.com; Stephen Pasquarella, Senior VP, spsq@uniblitz.com

Virtusphere, Inc.

#T1

123 Court St, Binghamton, NY, 13901 USA
info@virtusphere.com



PROMOTIONAL PARTNER

Vision Systems Design #908

98 Spit Brook Rd, Nashua, NH, 03062 USA
+1 603 891 0123; fax +1 603 891 0574

info@pennwell.com;
www.vision-systems.com

Vision Systems Design is the leading resource for engineering and design professionals who build complex machine vision and image processing systems for the factory floor, biomedical research, security, transportation and other sophisticated applications. Request a FREE subscription to *Vision Systems Design* magazine and e-Newsletters and visit vision-systems.com to see why engineering and design professionals rely on *Vision Systems Design*. Contact: Judy Leger, Sales, judyl@pennwell.com

Vision Systems Technology, LLC #2035

323 Skyline Dr, Vista, CA, 92084 USA
+1 585 627 1609

terry.guy@visionsystech.com;
www.visionsystech.com

Featured Product: VX-29MG-C2: 9 Million pixel - Electronic shutter - 12 bit ethernet digital output camera.

Vision Systems Technology, LLC are experts in providing digital imaging solutions to Aerial, Surveillance, & Reconnaissance applications. Our company's motto is: "We are your digital imaging experts; your trusted partner." Our approach is to listen to your requirements, then provide the best imaging components to meet your needs. We are experienced with government contracting and ITARS regulations. We provide digital cameras, lenses, frame grabbers, DVR, and precision alignment services. Contact: Terry Guy, VP Sales & Marketing, terry.guy@visionsystech.com; Kris Balch, CTO, kris.balch@visionsystech.com

Vision4ce LLC #927

479 Jumpers Hole Road, Suite 301,
Severna Park,
MD, 21403 USA

+1 410 384 9181; fax +1 410 510 1170
vision4ce@vision4ce.net;
www.vision4ce.com

Featured Product: GRIP Epsilon

Vision4ce (pronounced "Vision Force") specializes in the provision of rugged, real-time-high performance computing hardware and applications. Vision4ce products are used for real-time image processing, video tracking and EO sensor video management in the defense, security, surveillance and aerospace market sectors. Our rugged GRIP PCs & DVRs utilize the latest Intel mobile processors, and our PCs can include powerful GPUs enabling high performance GPGPU processing. Contact: Brad Zell, President, Brad.Zell@vision4ce.net; Ira Tabankin, VP of Sales, ira.tabankin@vision4ce.net

VITRON GmbH #1925

Am Nasstal 5, Jena, 07751 Germany
+49 3641 288130; fax +49 3641 288155
sales@nakedoptics.com; www.vitron.de

Featured Product: IG2, IG4 and IG6 Infrared-Transmitting Glass.

VITRON is a manufacturer of specialized glass and crystal materials for IR imaging and medical applications. We develop and produce a variety of IR-transmitting glass types including the popular IG2, IG4 & IG6 chalcogenide materials for precision lens molding. CVD zinc sulfide (ZnS) is grown and processed within our facility into shaped blanks and domes. VITRON collaborates with customer and research institutions to develop custom glass and ceramic solutions. Contact: Buzz Nesti, buzz@nakedoptics.com; Klaus Woehner, Director, woehner@vitron.de

VLOC #901

7826 Photonics Dr, Trinity, FL, 34655 USA
+1 727 375 8562; fax +1 727 375 5300
info@vloc.com; www.vloc.com

Voltage Multipliers, Inc. #1130

8711 W Roosevelt Ave, Visalia,
CA, 93291 USA
+1 559 651 1402; fax +1 559 651 0740
mfulley@voltage-multipliers.com;
www.voltage-multipliers.com

Voltage Multipliers, Inc. was founded in November 1980. VMI specializes in High Voltage products including: multipliers, discrete diodes, power supplies, rectifier assemblies, optodiodes, and optocouplers. Applications include Mass Spectrometers, XRF (hand held), Electrostatic paint spraying, Military, Medical, and Industrial. VMI is DSCC QPL and ISO9001:2008 certified. Our sister Company, CalRamic, located in Reno Nevada manufactures high voltage ceramic capacitors. Visit us at booth 1130.

Voxtel, Inc. #2048

15985 NW Schendel Avenue, Beaverton,
OR, 97006 USA
+1 971 223 5646; fax +1 971 296 2862
info@voxtel-inc.com; www.voxtel-inc.com

Featured Product: ROX™ series of high-sensitivity laser rangefinder receivers.

Voxtel, Inc. is a world leader in the design, development and sales of advanced photonics, electro-optical devices and systems, specializing in time-of-flight, LIDAR, LADAR, dual-mode active / passive detectors and focal plane arrays, including those hardened for harsh radiation and environmental applications. Our advanced photodetectors, electro-optical systems and optical instrumentation are implemented through a diverse array of industrial, commercial, research, and government applications. Contact: Joseph LaChapelle, VP Business Development, joel@voxtel-inc.com; George Williams, President, georgew@voxtel-inc.com

Featured Product Launches

Point Grey Research, Inc. #1145
Product: Blackfly



World's smallest, lightest, most efficient POE GigE Vision compliant camera.

Precision Optics Gera . . . #1925
Product: OLED Active Display



Display custom OLED structured features on transparent substrates

Princeton Lightwave, Inc. #1656
Product: 128 x 32 Geiger-mode Avalanche Photodiode (GmAPD) Camera



128x32 pixel GmAPD Camera provides single-photon imaging for 3D LADAR.

Pulse Instruments #1640
Product: Benchtop FPA Test System



Image, test, and characterize your FPA in weeks, not months.

VST America, Inc. #2150

2101 S. Arlington Heights Rd. Ste 135,
Arlington Heights, IL, 60005 USA
+1 847 952 3800; fax +1 847 952 3839
info@vstamerica.com;
www.vstamerica.com

VS Technology is a world leading optics manufacturer that creates a multitude of CCTV lens products for surveillance and machine vision applications. Cutting-edge zoom lenses that specialize in long range NIR and IR surveillance are developed and sold world-wide for defense and high end surveillance applications. Lenses feature motorized zoom, motorized iris, and auto focus control in a small package. Please come see us also to learn about custom lenses and options. Contact: David Suhadolc, daveids@vstamerica.com; Wakako Yamazaki, wakakoy@vstamerica.com

EXHIBITION MAP/RESTAURANT GUIDE SPONSOR

Wavelength Technology Singapore Pte. Ltd. #1841

SPIE Corporate Member

Blk 2 Bukit Batok St 24 #06-03, Skytech Bldg, Singapore, 659480 Singapore
+65 6564 9624; fax +65 6564 3862
info@wavelength-tech.com;
www.wavelength-tech.com

Featured Product: SWIR lens for 900-2300nm spectrum range with focal length 23mm, F#2.0 and works for 320x256, 30µm.

Wavelength Technology Singapore is a global company providing fully integrated, high quality and best value electro optic solutions to our customers. Contact: Robert Huang, CEO, bob@wavelength-tech.com; Yana Abiso, Product Marketing Engineer, yana@wavelength-tech.com

Welch Mechanical Designs, LLC #1947

1371 Brass Mill Rd, Suite B, Belcamp, MD, 21017 USA
+1 410 698 3024; fax +1 815 301 8416
info@wmdllc.com; www.wmdllc.com

Featured Product: Optical systems, telescopes, lasers, diffraction gratings, hexapods, aircraft electronics racks.

We design, manufacture high precision optics/optical systems for commercial, military and scientific applications. Specializing in telescopes, lasers, and complete optical systems ruggedized for deployment in diverse environments, WMD, LLC offers precision optics engineering consulting services for commercial and government contracts.

Engineer/Owner, info@wmdllc.com

Wells Research #1749

15A Lewis St, Lincoln, MA, 01773 USA
+1 781 259 8667; fax +1 781 259 8675
info@wellsresearch.com;
www.wellsresearch.com

Wells Research & Development sells optical metrology solutions. We combine our library of customized precision optical components—MTF benches, collimators and autocollimators, image analysis microscopes, and diopter measurement devices—with years of testing expertise to produce solutions to solve our customer's problems. From our industry-specific configured benches, to our powerful OpticStudio MTF software, to our years of expertise, we offer the tools to meet our customer's needs.

WITec Instruments Corp. #1857

130G Market Place Blvd, Knoxville, TN, 37922 USA
+1 865 984 4445; fax +1 865 984 4441
info@witec-instruments.com;
www.witec-instruments.com

We are a manufacturer of high resolution optical and scanning probe microscopy solutions for scientific and industrial applications. A modular product line allows the combination of different microscopy techniques such as Raman, NSOM or AFM in one single instrument for flexible analysis of optical, chemical and structural properties of a sample. Contact: info@witec-instruments.com

Wordingham Technologies #1245

SPIE Corporate Member

580 Fisher Station Dr, Victor, NY, 14564-9734 USA
+585 924 2294; fax +585 924 7660
sales@wordingham.com;
www.wordingham.com

Wordingham Technologies provides full service dock-to-stock mechanical components for your precision instrumentation. We have consistently delivered worry-free quality and the most dependable service in our industry for thirty years. Our capabilities include: multi-axis milling, multi-axis and swiss turning, honing, advanced metrology, finishing & mechanical sub-assemblies. Our company motto "Quality Delivered" is achieved through continuous process improvements and dedication to our customers. Contact: James Wood, New Business Development Manager, JRWood@wordingham.com; Tony Phillips, Process Engineer, tphillips@wordingham.com

Xactra Technologies #1341

9 Marway Circle, Rochester, NY, 14624 USA
+1 585 426 2030; fax +1 585 426 2709
sales@xactra.com

Xactra Technologies, produces precision custom machined components for the optics/photonics marketplace. Our meticulous attention to detail and high quality standards are well known to many major OEM optical companies. We provide precision components for all optical devices: Lenses, laser instrumentation, military/defense, Thermal Imaging, Night Vision, Thermal Weapon Sights. Xactra Technologies: Quality obsessed, Schedule driven and Competitively focused. Contact: Michael Grady, CEC sales@xactra.com

Xenics #1631

SPIE Corporate Member

Ambachtenlaan 44, Leuven, Belgium
+32 16 38 99 00; fax +32 16 38 99 01
sales@xenics.com; www.xenics.com

Xenics is the leading developer of innovative infrared detection solutions of applications. Xenics designs and sells infrared detectors and delivers custom solutions according to the agreed specifications. As a European company, Xenics provides worldwide service and distributes its products globally. Xenics is strategically placed in markets with highly innovative background. Contact: sales@xenics.com

Yole Développement #2106

75 cours Emile Zola, Villeurbanne, France
+00334 72 83 0180
info@yole.fr; www.yole.fr

Featured Product: Market analysis, Custom studies, services, Reverse engineering services

Created in 1998 Yole Développement provides marketing, technology and strategy consulting, media in addition to corporate finance services. Focusing on emerging applications using silicon or micro manufacturing, Yole Développement covers MEMS, CS, LED, Image Sensors, Optoelectronics, Medtech, PV, Advanced Packaging and Power Electronics. The group supports industrial, investors and R&D organizations worldwide to help them understand markets, technology trends and to develop their business. Contact: David Jourdan, Commercial, jourdan@yole.fr; Michael McLaughlin, Business development, mclaughlin@yole.fr

Free Popcorn

Exhibition Hall

A popcorn cart will be open Tuesday and Wednesday from 11:00 am to 3:00 pm; Thursday from 11:00 am to 2:00 pm.



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Security+ Sensing
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Pleora
Technologies
www.pleora.com

Z Microsystems Inc. #1946

9820 Summers Ridge Road, San Diego, CA, 92121 USA
+1 858 831 7000; fax +1 858 831 7001
scott@zmicro.com; www.zmicro.com

Featured Product: The zView Video Processor uses powerful algorithms to provide enhancement in Real-Time.

Z Microsystems is one of the leading manufacturer's of rugged displays and computing solutions for the Department of Defense, Military, and other industrial applications. We specialize in designing and engineering MIL-Spec ruggedized systems tailored to application-specific conditions and challenges. Our ruggedized products include displays, computers, handheld devices, data storage, imaging systems, video management resources, and more. Contact: David Hawthorne, Western Regional Sales Manager, David.Hawthorne@zmicro.com; Bob Kopas, VP of Military Programs, Bob.Kopas@zmicro.com

Zygo Corporation

SPIE Corporate Member

Laurel Brook Road, Middlefield, CT, 06455 USA
+1 860 347 8506; fax +1 860 347 3968
inquire@zygo.com; www.zygo.com

The world's leading optics manufacturers rely on ZYGO products for critical production testing, quality control, research & development. ZYGO continues to deliver the most advanced optical metrology tools for precise, noncontact measurement of surface and material characteristics. ZYGO provides high performance windows and electro-optic systems for surveillance, aerial reconnaissance, telescope systems, high energy laser optics, lightweighted structures, thin film coatings, and more. Contact: George Neale, Director Sales & Support Americas, gneal@zygo.com; Don Battistoni, Executive Director Worldwide Sales, dbattistoni@zygo.com

#1819

Featured Product Launches

Reynard Corp.1550
Product: ColorLock™ Filter Stacks



ColorLock™ Filter Stacks are durable, cleanable and exhibit no angle shift.

RFEL Ltd.1934
Product: HALO



HALO Real-Time Video Processing System.

Product Index

Astronomy

AdTech Ceramics
Andover Corporation
BAE Systems Imaging Solutions
BEI Precision Systems & Space Co., Inc.
Brandywine Photonics LLC
Corning Incorporated
Deposition Sciences, Inc.
EDT
Iridian Spectral Technologies Ltd
ITT Exelis
Lake Shore Cryotronics, Inc.
Lambda Research Corporation
Laser Quantum Inc
Lattice Materials LLC
MARS Scientific
MOXTEK, Inc.
Multi IR Optoelectronics Co., Ltd
Omega Optical, Inc.
Optimax Systems
OptiPro Systems
Photonic Cleaning Technologies
PHOTONIS USA
Point Grey Research, Inc.
Sigmadyne, Inc.
StingRay Optics, LLC
Teledyne Judson Technologies

Tornado Spectral Systems
United Lens Company, Inc.
Vincent Associates

Basic Research, Science

Adsys Controls, Inc.
Cobolt AB
D&P Instruments
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EPIR Technologies Inc.
FLIR Systems Inc.
Georgia Tech Research Institute
Helioworks, Inc.
Hitachi High Technologies America, Inc.
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Infrared Systems Development Corp.
Intevac Photonics
IRCAM GmbH
IRCameras
JULABO USA
Micro Laser Systems, Inc.
MOXTEK, Inc.
National Reconnaissance Office
National Security Agency (TAPO)
Newport Corporation
NorPix, Inc.



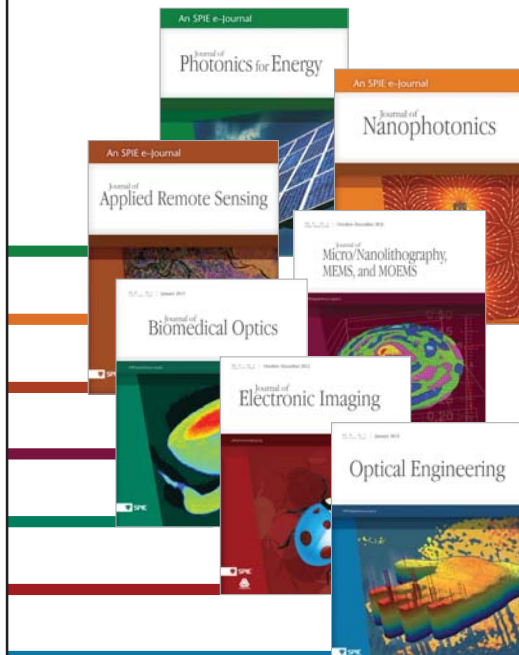
NP Photonics, Inc
Nufern
OFS
Ondax
Onefive GmbH
Open Photonics, Inc.
Photonics Online
Raicol Crystals Ltd.
Saint-Gobain Crystals
Sigmadyne, Inc.
Solid State Cooling Systems
Specim Spectral Imaging
Spectral Evolution

SRICO Inc.
Sunpower
Systematic Vision
Tornado Spectral Systems
Vincent Associates
Vision Systems Technology, LLC
Voxtel, Inc.

Biomedical, Medical Imaging, Health Care

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 America, Inc.
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 InfraTec GmbH
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 Iridian Spectral Technologies Ltd
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 ISVI Corp
 KEYENCE Corporation
 Kigre, Inc.
 Kowa Optimed, Inc.
 Kreischer Optics, Ltd.
 Lambda Research Corporation
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 Lasertel Inc
 LEONI Fiber Optics, Inc
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 Max Levy Autograph
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 Midwest Optical Systems, Inc.
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 OFS
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 Optimax Systems

OptiPro Systems
 OZ Optics Limited
 PCO-TECH Inc.
 PHASICS
 Photonics Media
 Photonics Online
 Physical Sciences Inc.
 PIXELTEQ
 Pleora Technologies
 Point Grey Research, Inc.
 Precision Glass & Optics
 Princetel, Inc.
 Raytheon ELCAN Optical
 Technologies
 Saint-Gobain Crystals
 Schneider Optics, Inc.
 Semrock
 Sigmadyne, Inc.
 Solid State Cooling Systems
 Souriau PA&E
 Specim Spectral Imaging
 Spectrogon US, Inc.
 SRICO Inc.
 Sunpower
 Syntec Optics
 United Lens Company, Inc.
 Vincent Associates
 Vision Systems Technology,
 LLC
 Voxel, Inc.
 Wordingham Technologies
 Zygo Corporation

Cameras and Imaging systems

1stVision Inc.
 Active Silicon, Inc.
 Adsys Controls, Inc.
 AdTech Ceramics
 Advanced Reconnaissance
 Corp.
 Advantest Corp.
 AGM Container Controls, Inc.
 AIM INFRAROT-MODULE
 GmbH

Featured Product Launches

RICOR USA, Inc.1331
 Product: K508N



*Long-Life Integral Rotary Stirling
 Cryo-Cooler.*

Riegl USA Inc.1233
 Product: LMS-Q780



*LMS-Q780, Glacier, Snowfield and
 Coastal Mapping, Wavelength and
 High Altitude Scanning*

Rotem Industries Ltd.1110
 Product: Hyper Hemispherical
 Sapphire Dome



*Hyper Hemispherical Sapphire
 Dome above 240°, in various
 diameter.*

RP Optical Lab.1843
 Product: TOPAZc



*Ultra Compact 18-60mm/f1.4 LWIR
 Continuous zoom Lens for Harsh
 environments.*

**Santa Barbara Infrared,
 Inc.**1209
 Product: Common EO Laser Tester



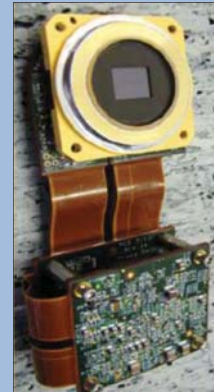
*Field Portable IR/Visible/Laser
 Sensor Tester.*

SBG Systems1447
 Product: Ekinox INS



*New-0.05°: Ekinox Inertial System
 brings cost-effective MEMS TO FOG
 level.*

SCD USA1617
 Product: Uncooled InGaAs SNIR
 640x512, 15µm



*Camera Demo at Booth 1617
 Tuesday at 11:00*

**Product: Cooled InSb SNIR
 640x512, 15µm**



*Camera Demo at Booth 1617
 Wednesday at 2:00*

**Sierra-Olympic
 Technologies, Inc.**1914
 Product: Alticam 11 EO/IR1



*Lightweight, precision-stabilized
 EO/MWIR airborne imaging system.*



Product Index



Allied Vision Technologies Inc.
AMETEK HCC Electronic Packaging
Andover Corporation
Applied Technology Associates
BAE Systems Imaging Solutions
Bertin Corp
BitFlow, Inc.
Bodkin Design & Engineering, LLC
Brandywine Photonics LLC
Bruker Optics Inc.
Cantronic Systems (Canada) Inc.
Carl Zeiss Microscopy, LLC
ChemImage Sensor Systems
EDT
EM Photonics Inc.
Epner Technology Inc.
ER Precision Optical
FJW Optical Systems, Inc.
FLIR Systems Inc.
G5 Infrared
Gavish, Inc.
General Dynamics Global Imaging Technologies
Headwall Photonics, Inc.
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Imaging Solutions Group
IMPERX
Infrared Systems Development Corp.
InfraTec GmbH
INO
Intevac Photonics
IO Industries Inc.
IRCAM GmbH
IRCameras
ISVI Corp
JAI Inc.
Janos Technology, LLC
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KEYENCE Corporation
Kowa Optimed, Inc.
Kreischer Optics, Ltd.
Magnity Electronics Co. Ltd.

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Mikrosens
Mikro-Tasarim San.ve Tic. Ltd. Sti.
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MOXTEK, Inc.
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New Imaging Technologies
New Infrared Technologies, Ltd.
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Sofradir EC
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Systematic Vision
Tamron Co., Ltd.
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Teledyne Imaging Sensors

Teledyne Nova Sensors
THALES ANGENIEUX
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Vision Systems Technology, LLC
Vision4ce LLC
VITRON GmbH

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Janos Technology, LLC
JULABO USA
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Lasertel Inc
MEWASA North America, Inc.
Mikro-Tasarim San.ve Tic. Ltd. Sti.
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Omega Optical, Inc.
Ondax
OPCO Laboratory Inc
PHOTONIS USA

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PIXELTEQ
Precision Manufacturing Group
Precitech, Inc.
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Solid State Cooling Systems
Specim Spectral Imaging
Spectral Evolution
Spectrogon US, Inc.
StingRay Optics, LLC
Sunpower
Teledyne Judson Technologies
Tornado Spectral Systems
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Vincent Associates
Vision Systems Technology, LLC
Voxtel, Inc.

Communications & Networking

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EMCORE Corporation
Florida Photonics Cluster
LightPath Technologies, Inc.
Nufern
OFS
OZ Optics Limited
SRICO Inc.

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SRI International Sarnoff
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SRI International Sarnoff
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G-S Plastic Optics

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MARS Scientific
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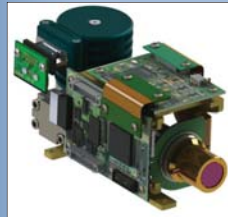
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Featured Product Launches

SOFRADIR EC1516
 Product: MITIE LW



High Performance, Cooled LWIR Miniature Infrared Imaging Engine.

Souriau PA&E1636
 Product: Hermetic Titanium Composite Electronic Packaging



Light, strong titanium construction with integrated thermally CuMo heat-sinks.

Specim Spectral Imaging .1917
 Product: AisaFENIX



AisaFENIX Hyperspectral Sensor: 380-2500 nm in a single continuous image.

Spectral Evolution913
 Product: SR-3501



SR-3501 lab spectroradiometer for full UV/VIS/NIR/SWIR measurements in the 280-2500nm range.

SRI International Sarnoff .1624
 Product: Aracadia® ILS-5000-SD™



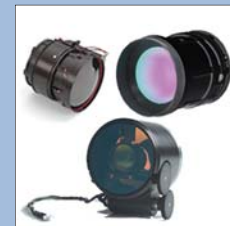
Aracadia® ILS-5000-SD™ electronic video stabilization module for Sony® block cameras.

Standa2036
 Product: Motorized Iris Diaphragm



8MID10-40 Motorized Iris Diaphragm.

StingRay Optics, LLC1754
 Product: StingRay Optics compact zoom & DFOV UAV series



Innovative, compact, lightweight, ruggedized, folded, continuous zoom & DFOV Lenses.

Sunpower1241
 Product: CryoTel DS 1.5



Gas bearing technology comes to IR coolers. Ultra long life Cryocoolers.

TDK-Lambda Americas Inc.2027
 Product: Genesys™ 2400W Programmable AC/DC Power in 1U



Breakthrough power density shares interface with all Genesys™ Products.

Tecport Optics1539
 Product: Symphony 22



2.2meter super plasma deposition system for non-absorbing, non-radioactive, infrared coating.

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Teledyne DALSA1317
Product: NIR detectors and subsystems



Field-proven ITAR-free detectors and subsystems covering IR to X-Ray.

Teledyne Judson Technologies1317

Product: Integrated Detector Cooler Assembly with 640x480 Mid Wave FPA.



Teledyne Nova Sensors ...1317
Product: Nova Sensors Camera Products



Close Cycle and Pour Fill Infrared Camera Products in all bands of the spectrum.

Telops Inc.1112
Product: Single Airborne Platform for Hyper-Cam



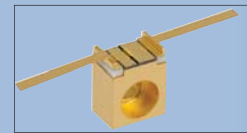
Airborne standoff chemical detection & identification with high spectral & spatial resolution.

Thermoteknix Systems Ltd.1900
Product: MicroCAM 2 Thermal Imaging Module



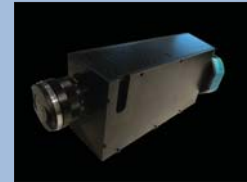
MicroCAM 2 – Low Power, Qualified For Thermal Weapon Sight Application.

Thorlabs Inc.1924
Product: Quantum Cascade Laser



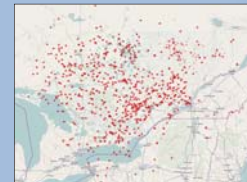
QCL and ICL for the Mid-IR (3-12 micron) Wavelength region.

Tornado Spectral Systems1003
Product: S4 Hyperspectral Imager



Wide-slit hyperspectral imaging for faster standoff threat detection.

TrackGen Solutions Inc. ...1555
Product: TrackVis



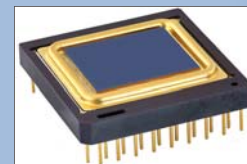
TracVis: High-performance tracking, track analytics and rapid prototyping suite.

TRIOPTICS GmbH1749
Product: ImageMaster® HR IR



Vertical and camera-based MTF test station for the all spectral ranges from VIS to LWIR.

ULIS1516
Product: Pico384E



Pico384E, 17 micron IR sensor, used in high-end military applications.

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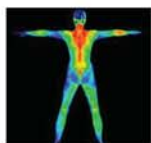
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