Wednesday, July 24, 2024

Vision spectra

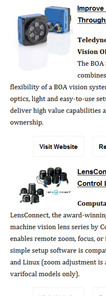
Bimonthly newsletter from Photonics Media featuring the latest advancements in and applications for vision systems – from sensors to software. Manage your Photonics Media membership at Vision-Spectra.com/subscribe.

The Future of Colloidal Quantum Dots for SWIR Sensing

In the realm of advanced imaging, shortwave infrared (SWIR) technology has undergone an identity challenge for more than 20 years. Typing "SWIR imagery" into a search engine often results in the same examples: visible images juxtaposed with SWIR ones, highlighting its ability to detect bruises on apples, ascertain fill levels in opaque shampoo bottles, and pierce through foggy coastlines. Read Article

Machine Vision with AI Assists Traffic Monitoring

According to analysts at INRIX, traffic congestion cost individual drivers in the U.S. $869 in 2022, an increase from $564 the previous year. In 2022, drivers in Germany and the U.K. lost $439 and $926, respectively, from sitting in traffic, an increase from $408 and $779 in 2021. What's more, traffic fatalities increased by 19% between 2019 and 2022 in the U.S. and increased about half of that in Germany. These trends of increasing congestion and fatalities spurred investment in infrastructure, with part of this money going into machine vision systems. Read Article



Machine Vision Lights Boost Canning Line Inspection Speeds

Machine vision systems cannot "see" without lighting. Systems for high-speed, 360° can and bottle inspection have existed for some time, but innovative lighting designs are needed to increase throughput while maintaining accuracy. Specifically, for software to perform inspections, cameras need to acquire quality images, a process that relies on effective lighting. Instead of relying on longer exposure times, lighting designers are creating faster systems with brighter lighting.

Read Article

Featured Products & Services

Improve Quality, Increase Throughput

Teledyne DALSA, Machine Vision OEM Components

The BOA Spot vision sensor combines the power and flexibility of a BOA vision system with integrated optics, light and easy-to-use setup software to deliver high value capabilities at a low cost of ownership.

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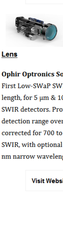

See the Invisible with SWIR & UV Cameras

Balluff Inc.

Balluff's new short-wave infrared (SWIR) and ultraviolet (UV) cameras make the invisible visible. They capture images in light ranges the human eye and typical cameras cannot see, creating new possibilities in industrial applications.

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LensConnect Remote Control Lenses

Computar Optics Group

LensConnect, the award-winning, plug-and-play machine vision lens series by Computar Optics, enables remote zoom, focus, or iris adjustment. Its simple setup software is compatible with Windows and Linux (zoom adjustment is available for varifocal models only).

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Zoom 7000-2 Macro Lens System

Navitar Inc.

Capture exceptional images with Navitar's next-generation macro imaging system perfect for machine vision, industrial imaging, life science, and research applications. Redesigned for versatility, this close-focusing lens delivers excellent image quality across various magnification ranges.

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Robotic Guidance Redefined

Recognition Robotics Inc.

For over a decade, Recognition Robotics, an independent American-owned company, has been producing innovative guidance software for industrial robots in automotive, general manufacturing, and aerospace industries. Applications include deracking, rack loading, bin picking, and best fit.

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100GigE Line Scan Cameras

Emergent Vision Technologies Inc.

For today's most challenging line scan machine vision applications, Emergent Vision Technologies offers a range of cameras, including the Pinnacle LZ-16KG (16 K × 16 Gpixel GLS016, 400 kHz) and the Pinnacle TLZ-9KG5 (9 K, 256 TDI Gpixel GLT5009BSI, 608 kHz).

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3S Series High-Resolution 3D Sensors

Zebra Technologies Inc.

Zebra's 3S Series delivers best-in class 3D scanning to address a broad range of machine vision automation applications. Using Structured Light technology, the 3S series scans areas with sub-millimeter resolution and accuracy for both static scenes and items in motion.

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Baumer SWIR Industrial Cameras for Highest Precision

Baumer Ltd.

Baumer CXV-SWIR.XC industrial cameras cover the visible, NIR, and SWIR spectral range of 400 - 1799 mm wavelength. Their specific thermal design and the optionally usable integrated cooling pipe deliver high precision image data for highly precise measurement and inspection tasks.

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Cognex In-Sight SnAPP Vision Sensor

Cognex Corp.

Powered by pre-trained AI, In-Sight SnAPP sensors are designed for ultimate simplicity, providing a fast and easy-to-deploy solution for novice users with little to no technical experience. They automate a range of error-proofing tasks, including those with variable anomalies. Powered by AI and image-based analysis, these sensors exceed the capabilities of conventional, laser-based sensors to offer higher accuracy and higher performance for any detection task.

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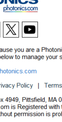

Ophir® SWIR & NIR 25 - 250 mm f/5.5 (NFOV) f/4.0 (WFOV) Continuous Zoom Lens

Ophir Optronics Solutions Ltd., Optics Group

First Low-SWaP SWIR & NIR lens, 860 g, 214-mm length, for 5 µm & 10 µm SXGA, and 15 µm VGA SWIR detectors. Provides high-quality images, detection range over 26 km, chromatically corrected for 700 to 1700 nm covering NIR & SWIR, with optional configuration for 1100 to 1700 nm narrow wavelength.

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In Case You Missed It

Applications Open for 2025 SPIE Prism Awards

SPIE, the international society for optics and photonics, is accepting applications for its 2025 Prism Awards, which will celebrate its 17th anniversary on January 29 during a gala evening at SPIE Photonics West. The awards, held annually by SPIE, recognize and honor the most innovative products on the market across the wide range of optics and photonics applications. Read Article

3D Method Tracks Fast-Moving Objects

A team of researchers from Tsinghua University have developed a new 3D method that can be used to track fast-moving objects at high speeds. The real-time tracking approach, which is based on single-pixel imaging, could be used to improve autonomous driving, industrial inspection, and security surveillance systems. Read Article

CEA-Leti Reports Progress on AI-Embedded CMOS Image Sensors

CEA-Leti researchers reported success in three related projects that are key steps to enabling a new generation of CMOS image sensors that can exploit all the image data to perceive a scene, understand the situation, and intervene in it — capabilities that require embedding AI in the sensor. Read Article

Next Issue:

Features

Imaging Lenses for UAVs, Cameras, Packaging Inspection, Bin Picking, and Multispectral & Hyperspectral Imaging

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *Vision Spectra*. Please submit an informal 100-word abstract to visionspectra@photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

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