

Vision spectra

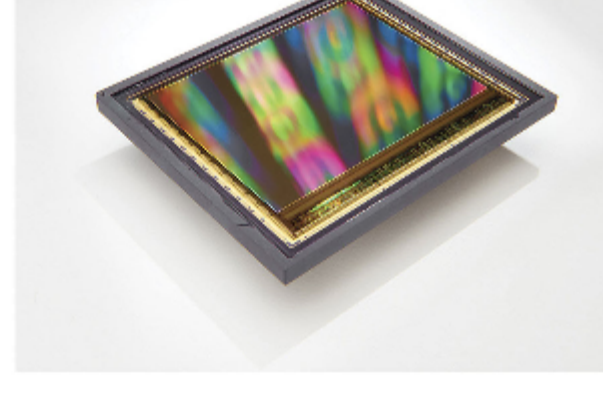
www.Vision-Spectra.com

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

Inspecting CMOS Image Sensors for Dirt and Defects

Automatic optical inspection systems provide fast, noncontact, and reliable high-resolution defect recognition for the microelectronics industry and are widely used and incorporated into the industry's in-line production flow. In-line inspection machines must be fast enough to meet or exceed the takt time of the line to avoid affecting production throughput.

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Selecting the Right Filter Is Critical to SWIR Imaging

Shortwave IR (SWIR) imaging has seen a surge in use in recent years, playing an important role in imaging agricultural products, food, pharmaceuticals, and high-heat glass and metal manufacturing. Given the strong absorption of moisture within the SWIR range, users can check fill levels in opaque bottles, visualize underlying features such as anti-counterfeiting security codes, or use the technology for a wide range of other applications.

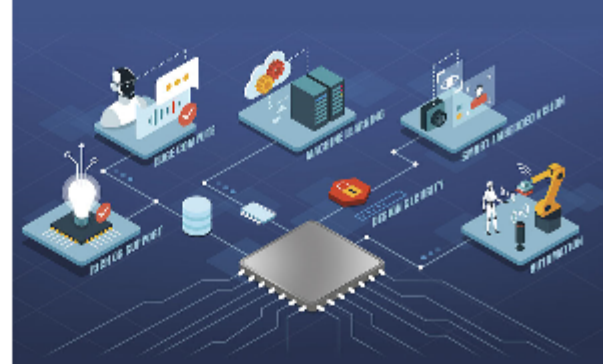
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The Rise of Embedded Vision Puts FPGAs in the Spotlight

A field-programmable gate array, as the name implies, is an integrated circuit that contains an array of transistor-based logic gates. The connections between these gates can be changed at will, allowing for rewiring that alters what the FPGA does. It can turn pixels into a video stream for further processing; locate features such as the eyes, nose, and mouth to determine where a person is looking; or perform other vision tasks, such as object detection and identification.

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About Vision Spectra



Vision Spectra is a global resource geared for the vision community, with real-world case studies of vision in action, comprehensive feature articles, and columns from experts in the field examining the trends that enable Industry 4.0.

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Featured Products & Services



Optical Filters for SWIR

Chroma Technology Corp.

We produce thin-film interference filters with extremely durable sputtered coatings in a variety of sizes.

Our line of filters ranges from 380 to 2800 nm and are suitable for a wide range of sensing/imaging applications. The filters are specifically designed to accept wide angles of incidence without chromatic aberrations.

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Baumer AX. AI Ready Smart Camera with NVIDIA Jetson Modules

Baumer Optronic GmbH

Baumer presents the AX smart cameras, its first industrial-grade smart cameras that combine the market-leading NVIDIA Jetson modules with powerful Sony CMOS sensors to create a compact, flexible, and freely programmable image processing platform for AI applications.

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New Ultra-Wide No Distortion Lens!

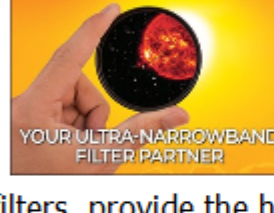
Theia Technologies

Theia's MY23F 2.3-mm lens provides 116° HFOV on a 1/1.8-in. sensor using patented Linear Optical

Technology to remove barrel distortion without software or latency. The fixed iris lens is NIR corrected for hyperspectral imaging. Available in a combination M12/C mount.

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Alluxa Ultra Series Filters

Alluxa

Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

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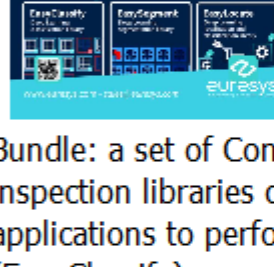
GigE Cameras Now with UV Sensitivity

Balluff Inc.

The MATRIX VISION, a brand of Balluff, mvBlueCOUGAR camera portfolio now includes UV-sensitive versions, extending the range of applications where the GigE Vision cameras are well suited, including the detection of transparent materials.

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Deep Learning Inspection Libraries

Euresys SA

Bundle: a set of Convolutional Neural Network-based inspection libraries optimized for machine vision applications to perform image classification (EasyClassify), supervised or unsupervised segmentation (EasySegment), and object localization (EasyLocate).

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High-Speed Cameras for UV & Polarization

Emergent Vision Technologies Inc.

Many machine vision applications require specialized cameras that go beyond standard visible imaging capabilities. For these difficult applications, Emergent Vision Technologies offers 10GigE and 25GigE ultraviolet cameras and 10GigE polarization cameras that deliver high-speed, high-data-rate capabilities.

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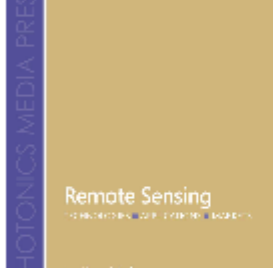
In-Sight 2800 Vision System

Cognex Corp.

The In-Sight 2800 vision system combines artificial intelligence with traditional rule-based vision tools to solve a wide range of applications. From simple presence/absence detection to advanced categorization and sorting tasks, In-Sight 2800 provides an easy-to-deploy solution for error-proofing.

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Remote Sensing

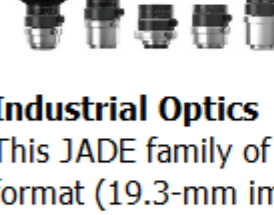
Photonics Media

From space and the sky around us to firmly on the ground, remote sensing is providing an important view of our surroundings that can't be seen with our eyes alone.

A variety of optical technologies are having an impact on applications as diverse as agriculture and defense, weather and climate, and are now part of the payload on satellites, planes and drones, and riding in and even guiding vehicles on the highway.

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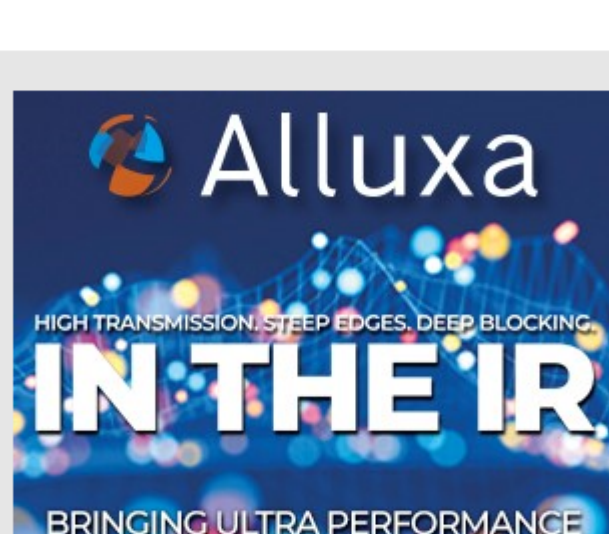
C-Mount Lenses

Schneider Optics Inc.,

This JADE family of C-Mount Lenses covers a 1.2-in. format (19.3-mm image circle) with a broadband antireflection coating that allows transmission from 400 to 1000 nm.

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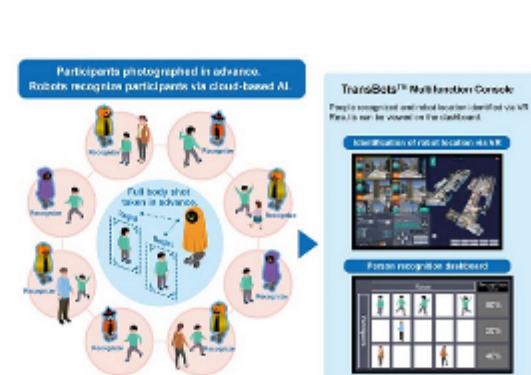


More Vision News

Toppan AI System Gives People Recognition Capabilities to Robots

Technology company Toppan has added person recognition capabilities to its existing TransBots digital twin solution. TransBots links physical spaces with virtual reality reconstructions in real time and centrally manages and controls multiple types of service robots. TransBots operators can use a multifunction console to configure courses for robots' movement in a virtual space. Robots in the real space then move in accordance with the courses to arrive safely at their preset destinations.

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Ambarella Details Centrally Processed 4D Imaging Radar Architecture

Ambarella, an edge AI semiconductor company, has revealed a centralized 4D imaging radar architecture that allows both central processing of raw radar data and deep, low-level fusion with other sensor inputs — including cameras, lidars, and ultrasonics. The architecture provides greater environmental perception and safer path planning in AI-based advanced driver assistance systems and L2+ to L5 autonomous driving systems, as well as autonomous robotics, the company said.

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Cognex Acquires German Firm SAC Sirius Advanced Cybernetics

Cognex has acquired SAC Sirius Advanced Cybernetics GmbH, a German provider of lighting technology. The acquisition of SAC and its technology will expand Cognex's capabilities in defect detection, and accelerate its growth trajectory with electric vehicle battery manufacturers, according to Cognex.

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Next Issue:

Features

Hyperspectral Imaging, AI Techniques for Vision Guided Robotics, Image Sensors

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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