



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](https://www.vision-spectra.com/subscribe).

Smart sensors:
a smarter choice for inspection tasks over laser sensors?

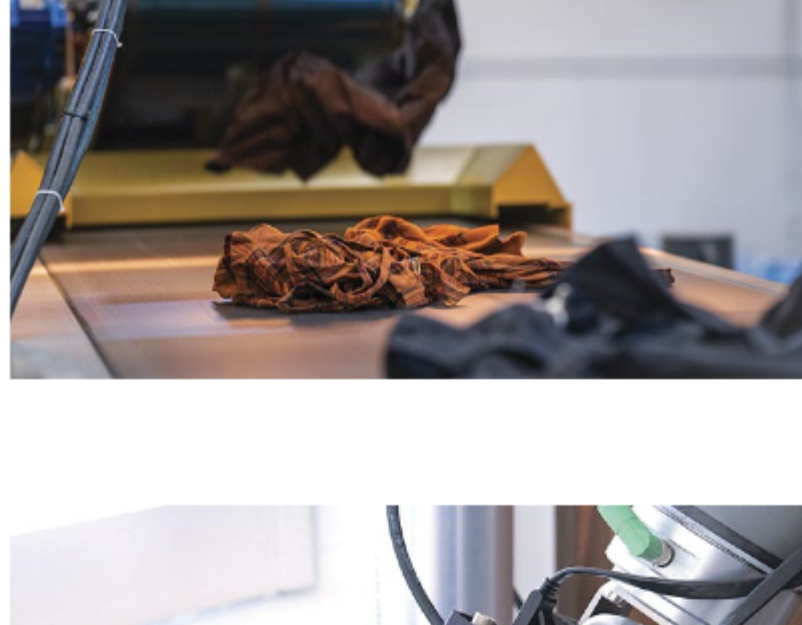
COGNEX
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The Evolution of 3D Imaging in Industrial Applications

A wide range of applications in industrial automation require and are enabled by 3D imaging. 3D technologies are in demand in varied industries, including aerospace, automotive, logistics, and more. Components and software that deliver high-quality 3D data have evolved in recent years and the result, in many cases, has been an advancement in image

quality, resolution and precision, ease of use, and greatly expanded reliable and robust use cases. [Read Article](#)



Hyperspectral Machine Vision Finds Its Place in a Growing Number of Sorting and Inspection Applications

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3D Imaging and AI Advance Robotic Bin Picking and Material Handling

Automated robots have been a fixture in manufacturing since the 1960s, serving the same purpose: ensuring human workers are spared repetitive tasks while on the work line. Over time, these robots have advanced in scale and complexity, performing dangerous or monotonous tasks at impressive rates. This has only been enhanced by AI and machine vision. To that effect, British startup Cambrian Robotics Limited is offering an AI-based solution for fast bin picking or pick-and-place, the precise feeding of parts for machines and various work steps in materials handling. [Read Article](#)

36th Control International trade fair for quality assurance
23.-26. April 2024
Stuttgart
next level quality assurance

22nd European Machine Vision Business Conference
13 – 15 June 2024
Gdansk, Poland
Where machine vision business leaders meet.

www.business-conference-emva.org

Featured Products & Services

Computer ViSWIR: Hyper-Spectral and Multi-Spectral Lens Series Created for the Latest Visible and SWIR Imaging Sensors

Computer Optics Group
Experience unparalleled imaging with Computer's VISWIR lenses, bridging visible and SWIR spectrums. Engineered for the latest SWIR imaging sensors (IMX990/IMX991*), their precision, durability, and seamless integration, they unlock new possibilities in industrial inspection, security, agriculture, and research. Elevate your imaging capabilities with VISWIR's innovative cross-spectral technology.

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SpecimONE Spectral Imaging Platform

Specim, Spectral Imaging Ltd.

Looking for an imaging tech that can identify unseen materials? Introducing SpecimONE: a hyperspectral camera, + user-friendly inspection software, + real-time material inspection computing platform. Create hyperspectral imaging applications faster, cheaper, and easier than ever before.

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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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Wide Range (450-1700 nm) Covering Hyperspectral Camera

Aval Global Co. Ltd.

A hyperspectral imaging camera spanning 450 to 1700 nm, employing the push broom method for swift acquisition. With 512 bands, it enables precise analysis for applications like plastic, art, pharmaceutical, and food sorting. GigE and Camera Link connectivity ensure rapid data transfer.

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Helios2 Ray Outdoor 3D ToF Camera

LUCID Vision Labs Inc.
The Helios2 Ray camera is powered by Sony's DepthSense IMX556PLR ToF sensor and built for exceptional performance in challenging outdoor lighting conditions. Equipped with 940-nm VCSEL laser diodes, the Helios2 Ray generates real-time 3D point clouds, even in direct sunlight. Ideal for outdoor applications such as agriculture, container unloading and depalletization, environmental monitoring, and infrastructure inspection.

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VCXG.SWIR.XC Camera: Short-Wave Infrared

Baumer Ltd.
The rising demand of machine vision inspection tasks for wavelengths beyond-the-visible light spectrum leads to the need for innovative inspection solutions. That is where our new Baumer CX.SWIR.XC can help. This Short-Wave Infrared can detect wavelengths from 400 to 1700 nm. It also comes with a unique, integrated cooling pipe, in a very small SWIR camera housing, which can help you get high-precision image data, even in warm environments.

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Recognition Robotics 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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Simple, Affordable Vision Solution

Teledyne DALSA, Machine Vision OEM Components
Designed for error proofing, identification, general inspection and robot guidance, BOA™ Spot XL vision sensors deliver the performance and capabilities to rival any product in its class.

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Photometric Stereo 3D Inspection

Euresys SA

Euresys' Photometric Stereo is suitable for the detection of details present on the object's surface by estimating the orientation and albedo of each point of a surface with several images taken from a single viewpoint/camera under illumination from different directions.

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ELEVATE YOUR VISION AT NORTH AMERICA'S LARGEST AUTOMATION EVENT
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In Case You Missed It

[SPIE Names 2024 Prism Award Winners](#)
SPIE, the international society for optics and photonics, recognized the top innovations in new optics and photonics products at the 2024 Prism Awards held at Photonics West on Jan. 31. The gala event marked the Prism Awards' 16th anniversary. [Read Article](#)

[Researchers Develop AI-Enabled Liquid Holographic Camera](#)
A team of researchers has collaborated to develop a holographic camera based on liquid lens technology, capable of recording high-quality holograms of real 3D scenes in a matter of 150 ms. The team expects the technology to see wide use in a variety of fields, including 3D display, measurement, and encryption, among other fields. [Read Article](#)

[Xiaomi and Leica Unveil Dedicated Collaborative Institute](#)
Xiaomi and Leica Camera AG have established the Xiaomi x Leica Optical Institute, which the companies plan to use to develop digital imaging and AI technologies for mobile imaging. The institute will lead to the design of ultra-precision optical lenses in a compact form factor, advance performance in computational photography, ensure adherence to optical standards for lenses, and conduct research and develop applications for optoelectronic technology. [Read Article](#)

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Features
Sub-Pixel High Dynamic Range, Optics/Illumination, SWIR, and Transportation/Traffic

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