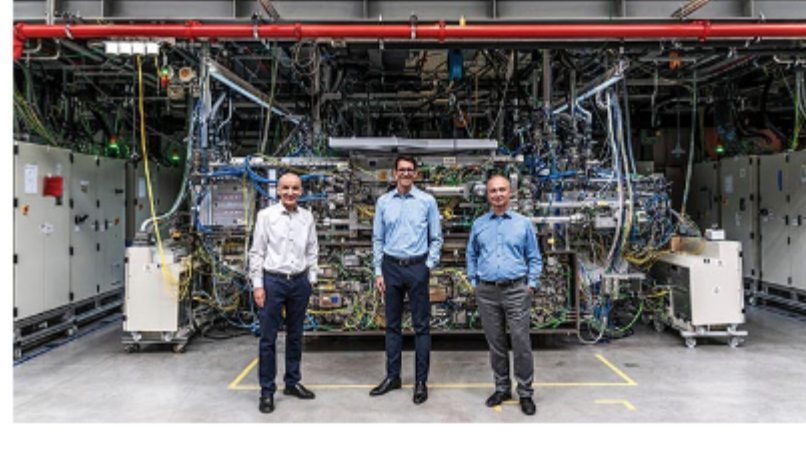




Monthly Newsletter

Monthly newsletter from the editors of Photonics Spectra, with features, popular topics, new products, and what's coming in the next issue. Photonics.com/subscribe.



Lasers Accelerate the Application of Secondary Sources, Among Others

For many years, secondary sources were just a vision held by scientists. Eventually, their progress was driven by the goal to build a particle accelerator, such as the Large Hadron Collider in a laser lab at the European Council for Nuclear Research. An urgent need from big business led to the first industrial-scale solution. The semiconductor industry required a source of extreme-ultraviolet radiation with a wavelength of 13.5 nm

to meet its manufacturing demands. It took the brilliant ideas of some scientists, plus the bravery of a few business leaders, to develop a secondary source for this purpose. [Read Article](#)



Visualizing Brilliance: Exploring Optical Design Through Simulation

From medical devices to precision instruments used for industrial manufacturing, innovative optical technologies are being increasingly integrated into products across numerous industries. The micro- and macroscopic optical components constructed from these advanced technologies — including freeform optics, diffractive optics, and metasurfaces — must perform well under all operating conditions. [Read Article](#)



Highly Efficient Multijunction VCSELs Advance for Automotive Lidar

Vertical-cavity surface-emitting laser (VCSEL) technology is expanding and penetrating fields such as industrial automation, medical diagnostics, and environmental monitoring. A core application area for the present wave of VCSEL technology is high-power sensing, which envelops distance lidar applications, such as automotive for advanced driver-assistance systems and self-driving vehicles. Automotive lidar manufacturers use different architectures to create a 3D map of the environment in front of, and sometimes around, the vehicle, actively scanning the surrounding areas. [Read Article](#)

Featured Products & Services



ArmD™ Specialty Optical Fibers

Armadillo SIA
Armadillo SIA ArmD™

Specialty Optical Fiber line excels in spectral transmission across an extensive range from 180nm to 18,000nm, featuring minimal optical losses and exceptional coupling efficiency. Available with numerical apertures spanning 0.06 to 0.57 and core diameters from 40 to 2000 μm.

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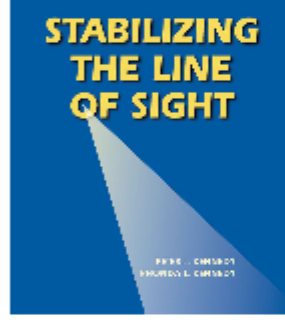
Near-Eye Display Test Solution

Radiant Vision Systems, Test & Measurement

The XRE Lens is a game-changer for evaluating visual quality of displays through XR headsets. Measure brightness, color, and image quality up to 70° FOV and adjust electronic focus via software for multiple focal planes. Available in folded and non-folded configurations.

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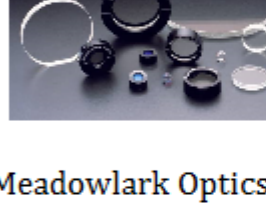
Stabilizing the Line of Sight

Photonics Media

In *Stabilizing the Line of Sight*, authors Peter J. and Rhonda L. Kennedy provide a methodology and an example for executing a successful end-to-end line-of-sight (LOS) design. Comprehensive in scope, this book will give readers a better understanding of the relationships between the various engineering disciplines that are required for successful LOS control.

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Waveplate Quality in Catalog and Custom

Meadowlark Optics Inc.

Meadowlark Optics makes the best waveplates, having over 40 years of retarder manufacturing expertise and the ability to manufacture from a wide variety of materials to facilitate high- or low-power applications. Some materials allow retarders to be used over different wavelengths from the ultraviolet through the visible and into the near infrared.

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In Case You Missed It

How to Build a Photonic Quantum Computer

Expectations for quantum computers are high: They are supposed to outperform digital computers and pave the way for solutions that go far beyond the capabilities that artificial intelligence already delivers. They are predicted to crack unbreakable codes, find new materials for superconductors, and help develop medicine for the next pandemic. These are only some of the envisioned outcomes. [Read Article](#)

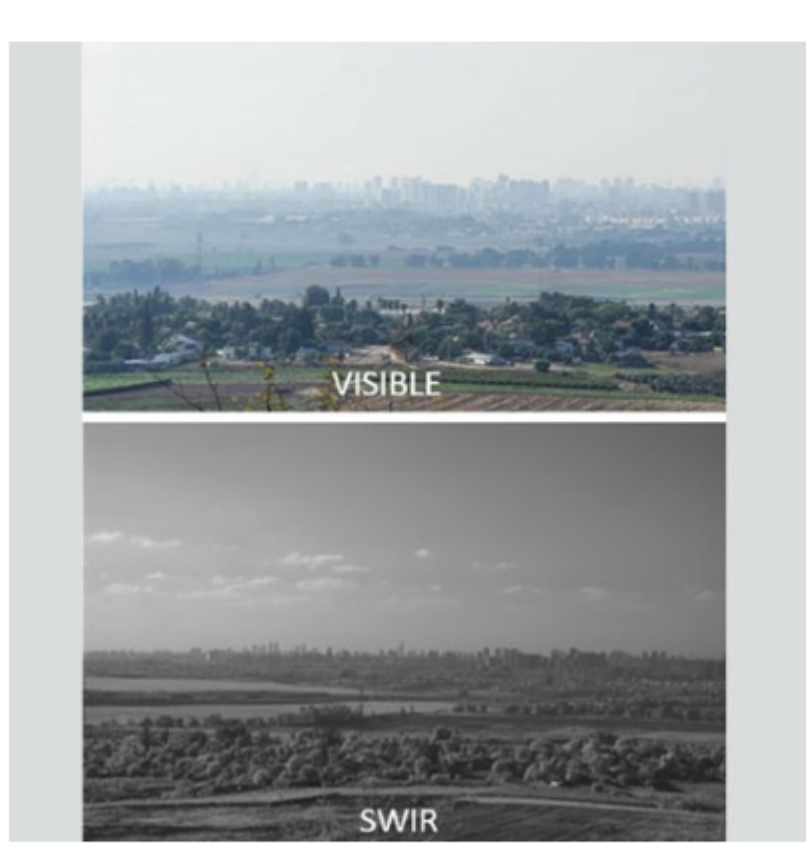
Low-Power Lasers Exhibit Narrow Linewidth Needed for Quantum Computing

Using a commercial Fabry-Pérot interferometer, researchers at FLEET, the Australian Research Council's Center of Excellence in Future Low-Energy Electronics Technologies, investigated the energy and linewidth of exciton-polariton lasers in the single-mode regime. The researchers demonstrated that, contrary to previous assumptions, the exciton-polariton laser can maintain an ultra-narrow linewidth of 56 MHz, or 0.24 microelectronvolts — 10x smaller than previously thought. [Read Article](#)

New and Improved Skipper CCDs Count Photons from Distant Galaxies

Using on the 4.1-meter Southern Astrophysical Research Telescope, researchers obtained the first astronomical spectrum instrument skipper charge-coupled devices. Originally envisioned for this purpose, the technology has been largely limited to the study of charged particles since its introduction in 1990. [Read Article](#)

Latest Webinars



SWIR and NIR Disruptive Zoom Lens for Challenging Environments: Air, Land, and Maritime

Thu, Sep 12, 2024 9:00 AM - 10:00 AM EDT

Peter Kunert of MKS Ophir IR Optics explores the advantages of SWIR lenses and how they play a pivotal role in air, land, and maritime imaging, offering unparalleled visibility even in challenging conditions, such as haze, smoke, and fog. Incorporating SWIR and NIR into electro-optical (EO) systems significantly enhances image clarity and performance. SWIR lenses excel in long-range daytime observation, effective glass transmission, and precise laser spot detection for designators, making them an ideal solution for defense and homeland security applications. This presentation shares how SWIR technology can transform an EO system and improve operational efficiency. Presented by MKS Ophir.

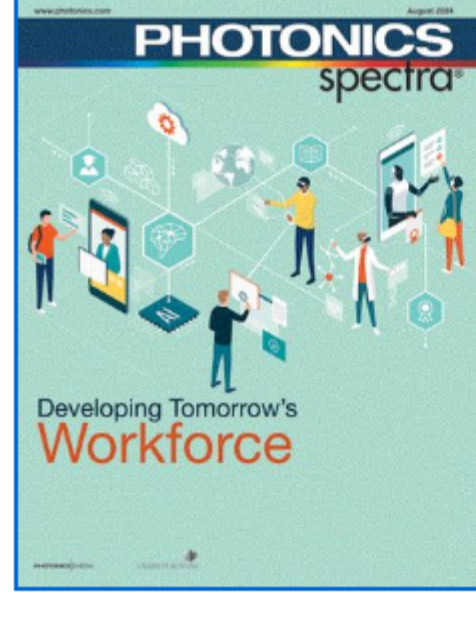
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Features
Test Design Kits, Large Optics, Meta-Optical Metrology, and Optical Materials

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