

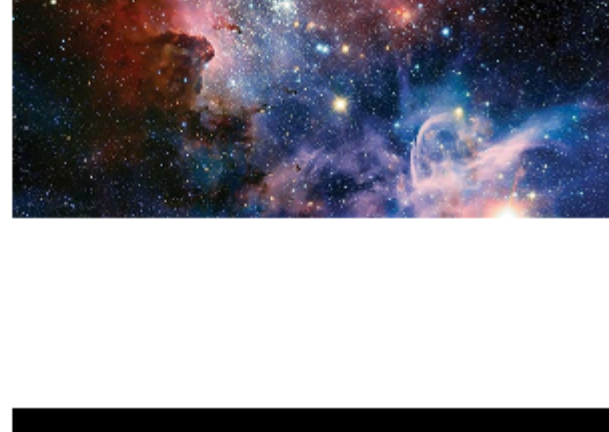


Monthly newsletter from the editors of Photonics Spectra, with features, popular topics, new products, and what's coming in the next issue. Manage your Photonics Media membership at [Photonics.com/subscribe](https://photonics.com/subscribe).

Large-Format Image Sensors Frame the Future

Sensor manufacturers have continuously sought to increase the size of the pixels and performance of their products by decreasing the size of pixels while increasing their number. However, some applications require the scale and unique architecture of larger-format sensors to capture images under challenging conditions.

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Precision Optics Shape Both the Light and the Limits of High-Power Lasers

High-power lasers have become a standard and ubiquitous tool in many industrial applications, due, in part, to the precisely controllable energy that they provide. But "high power" can be a challenging term to parse, and it often needs some external context to define.

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Laser Shock Peening Fights Fatigue in Metal Parts

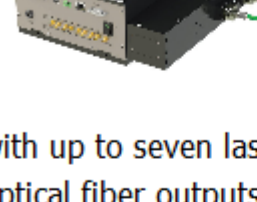
Laser shock peening is a process that adds beneficial residual stress points in materials commonly used to develop a wide range of parts and components. These residual stresses effectively increase the materials' resistance to surface-related failures such as fatigue, fretting fatigue, and corrosion cracking.

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.: Featured Products

Wavelength Combiners



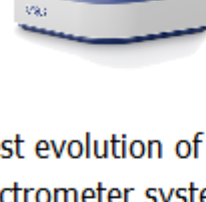
Oxxius SA

Compact and flexible all-in-one multicolor laser sources, with up to seven laser lines and delivery up to four optical fiber outputs. The modular design allows for a large choice of lasers from 375 to 1064 nm and with output power up to 500 mW. Extension modules provide the ultimate level of flexibility with advanced functionalities for microscopy and imaging.

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CYGUS[®] from ZEISS



Carl Zeiss Spectroscopy GmbH

CYGUS[®] from ZEISS is the latest evolution of high-performance, fiber-coupled spectrometer systems covering the 190 – 1100 nm spectral range. CYGUS[®] spectrometers provide great versatility in CMOS detectors with configurations for exceptional resolution, high sensitivity, and fast readout.

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peaXXus - Multispot Optics

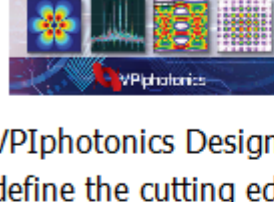


Adloptica GmbH

Lossless laser beam shaping by splitting multi-kW laser energy into 3x3 matrix of spots with variable intensity for welding, cladding with TEM₀₀ or multimode lasers. Optimizing heating of the processed area in order to reduce spatter and bubbles, thereby stabilizing the technology.

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VPIphotonics Design Suite™

VPIphotonics

VPIphotonics Design Suite™ empowers you to define the cutting edge by embedding expert knowledge from component and transmission design tools in an integrated software environment. Simulate optical communication systems, photonic integrated circuits, and fiber optic devices in a hierarchical workflow.

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High-Precision CNC Polished Aspherical Lenses

CASTECH INC.

CASTECH offers CNC precision-polished aspherical lenses, with or without anti-reflection (AR) coatings, to enable our customers from prototype to mass production stage with greater freedom and imagination.

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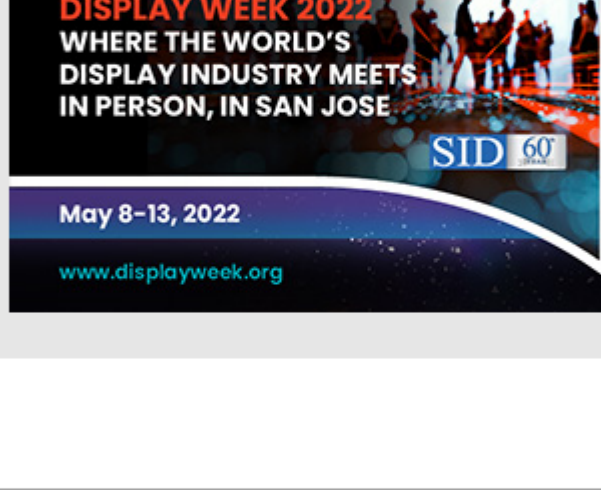
Norland Optical Splice

Norland Products Inc.

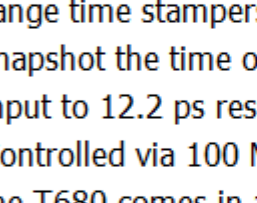
Norland's optical splice provides a high-performance connection for optic fibers in a unique one-piece design.

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.: More Featured Products



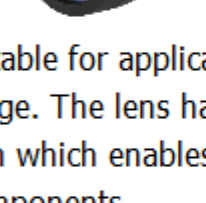
Ethernet Time Interval Counter

Highland Technology Inc.

The T680 contains five wide-range time stampers where each channel can snapshot the time of the rising edge of one electrical input to 12.2 ps resolution with 48 bit range. Controlled via 100 Mbit Ethernet and USB interfaces, the T680 comes in a compact extruded enclosure.

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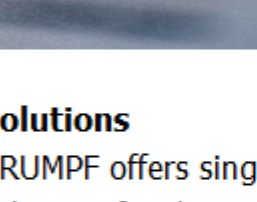
F-Theta Optical Scan Lens

Sill Optics

Scan lenses for stereolithography: The S4LFT1655/328 is very suitable for applications in the infrared wavelength range. The lens has a scan field of 410 mm x 410 mm which enables the production of very large components.

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VCSELs for Sensor Applications

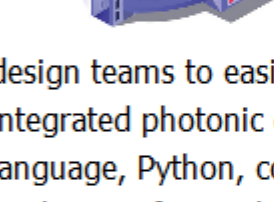
TRUMPF Photonic Components GmbH, VCSEL and Photodiode

Solutions

TRUMPF offers single- and multimode VCSEL solutions for demanding sensor applications in consumer electronics, automotive, or industrial applications. The VCSELs feature high beam quality and energy efficiency as well as outstanding reliability. There are solutions for different wavelengths with options such as integrated...

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IPKISS PIC Design Platform

Luceda Photonics

Luceda's IPKISS Photonics Design Platform enables design teams to easily share and reuse their integrated photonic design IP using a standard language, Python, covering a wide range of application from telecom to lidar, and more. Enhance your design with IPKISS' single component definition and parametric...

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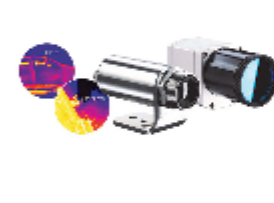
The 2022 Photonics Buyers' Guide

Photonics Media

If you buy products and services related to lasers, optics, imaging, sensors, detectors, test and measurement, light sources, fiber optics, spectroscopy, materials and coatings — you need the Photonics Buyers' Guide. Our editors verify all 4000+ company listings annually, making it the most trusted, accurate and comprehensive global photonics buyers' resource available.

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Affordable IR Cameras

Optris GmbH

Affordable and fixed installed IR cameras for different spectral ranges. Xi Compact Line: autonomous operation with automatic spot finder and with Fast Ethernet. PI Precision Line: high thermal sensitivity, laser blocking filters, and for fast processes (up to 1 kHz). Fast temperature measurements and easy process...

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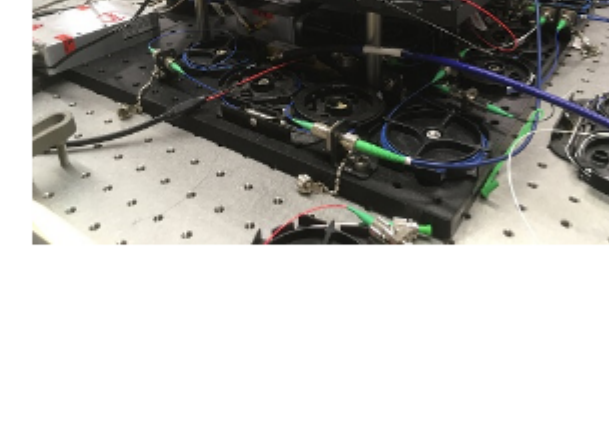
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.: In Case You Missed It

Photonic Correlator Outperforms Radio-Frequency Signals, Outperforms Digital Processes

A team at the University of Grenoble Alpes-CNRS has created a radio-frequency correlator, based on a photonic platform, that is suitable for analog wideband RF signal processing and that enables the real-time calculation of RF signal correlation across a broadband. Correlation of RF signals is a requirement for many applications, including imaging, information processing, and sensing and detection. The analog, photonic-based lag correlator outperforms conventional analog and digital techniques, according to the research team.

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Microresonator Increases Strength of Light-matter Interactions

Researchers at the University of Massachusetts Amherst, the University of Maryland, and the National Institute of Standards and Technology built an on-chip microresonator that strengthens light-matter interactions without losing optical quality. The microresonator could be used for light-matter interactions in sensing and metrology, nonlinear optics, cavity quantum electrodynamics, and other photonics applications.

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A Research Team Keeps Liquid Marbles Functional for Microfluidic Systems

A research team from Griffith University developed a technique that uses condensation to noninvasively refill liquid marbles with water. The method could improve the viability of applications such as drug delivery. According to the researchers, it could also establish improved opportunities for the droplet-size microreactors to see use in opto- and microfluidics.

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.: Upcoming Webinars

Motion Amplification and Other Camera-Based Full-Field Vibration Techniques

Tue, Apr 19, 2022 1:00 PM - 2:00 PM EDT
Jeff Hay, Ph.D., Founder and CEO of RDI Technologies, speaks on the Motion Amplification® technique, a camera based, full-field motion and vibration technique that detects subtle motion and enhances it to a level visible to the naked eye. Hay also provides a comprehensive look at new techniques that produce multiple layers of data extracted from a video. This is done to better understand the motion in a scene. Frequency, amplitude, and phase are all fundamental to vibration. Each topic is discussed to demonstrate how they can be quantified and visualized. Presented by RDI Technologies.

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Adopting Deep Learning in Machine Vision: Scaling to Enterprise-Level Solutions

Wed, Apr 20, 2022 1:00 PM - 2:00 PM EDT
Enterprise-level manufacturing customers looking to leverage the power of deep learning and artificial intelligence to solve their quality inspection applications have unique needs. Quinn Killough of Landing AI offers best-in-class solutions for automated inspection applications. These solutions include efficient data collection and model generation across global production networks, as well as how to communicate and deploy these systems in companies across diverse populations that include subject matter experts, quality managers, and system engineers. Presented by Landing AI.

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Achieving Ultralow-Loss Photonics Array Alignment

Tue, Apr 26, 2022 1:00 PM - 2:00 PM EDT
Two- and three-dimensional photonic arrays are commonly used for coupling light in photonic integrated circuits. With the increasing demand for ultra-low loss transmission in applications such as datacom, artificial intelligence (AI), virtual reality (VR), and quantum computing, the need for fast and precise alignment of photonic arrays to other devices is critical. Darrell Paul will present the current industry challenges and limitations as well as automation solutions for achieving ultra-low loss photonics alignment. Presented by Aerotech.

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Features

Ultrafast Lasers, Raman Spectroscopy, Single-Photon Avalanche Diodes, and more.

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