

PHOTONICS spectra®

www.PhotonicsSpectra.com

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://www.PhotonicsSpectra.com/subscribe).

3D Printing Creates New Optical Possibilities

Being able to print an optic along with its mount and other elements saves time and minimizes installation errors. Plus, being able to adjust an optic's shape and properties on a small scale allows one lens to do the work of several. Medical applications, cellphones, and soldiers in the field could benefit. 3D printing can also reduce the amount of time needed to prototype an optical design from months to days, a significant time savings. But 3D printing of optical components also faces hurdles, such as limited availability of optically relevant materials, slow manufacturing speed, and high cost, especially for large volumes.

[Read Article](#)



Optical Frequency Combs Reach Beyond Research

Optical frequency combs measure the oscillations of light directly, delivering a level of precision superior to any other measurement technique. This feature of direct measurement is being exploited in applications ranging from metrology to quantum computation, and the user community is continuously expanding, along with the market and a growing selection of OFC manufacturing companies.

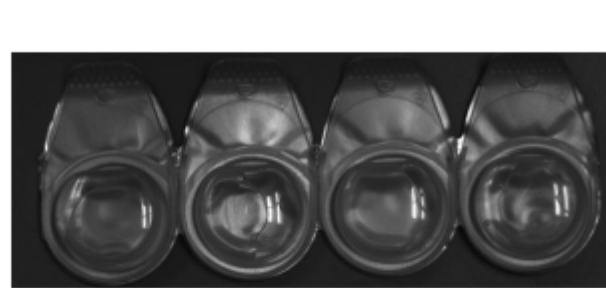
[Read Article](#)



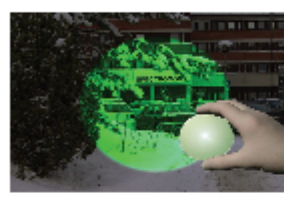
UV Imaging Reveals Useful Details — at a Cost

Feature sizes of modern electronics continue to shrink, approaching or even surpassing the wavelength of light, and equipment manufacturers are looking for new ways to improve the optical resolution of their systems to inspect ever smaller structures. One way to do this is by reducing the wavelength of the illumination. While in the past this has moved the light source to the blue end of the visible spectrum, some applications are shifting into the near UV, the deep UV, or even the extreme UV.

[Read Article](#)



:: Featured Products & Services



[IR Filters for Thermal Imaging](#)

Spectrogon US Inc.

Spectrogon manufactures infrared filters and windows with high transmission, high rejection outside the passband, while maintaining excellent coating uniformity for thermal imaging and gas detection applications such as cryogenically cooled IR detectors and uncooled microbolometers. Our filters and windows range in dimension from Ø6.0 to Ø200.0 mm with dicing capabilities down to as small as 1.0 × 1.0 mm.

[Visit Website](#)

[Request Info](#)



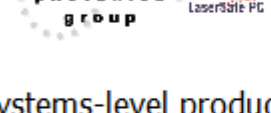
[Diffraction Gratings for Telecommunication](#)

CASTECH INC.

CASTECH's high DE reflection grating is ideal for WSS and other applications in the optical communication industry. The high-precision design of the grating provides outstanding diffraction efficiency and perfect uniformity.

[Visit Website](#)

[Request Info](#)



[Consulting Services](#)

The Photonics Group

Systems-level product concept, development, and production support since 1980. A complete suite of administrative services (documentation/systems, audit/review, and training). Compliance and risk engineering services (21CFR1040, IEC EN60825/62471, and ANSI Z136). Creation of industry-changing VERISA and INPHOSE technologies. North American distributor of LaserSafe PC software.

[Visit Website](#)

[Request Info](#)



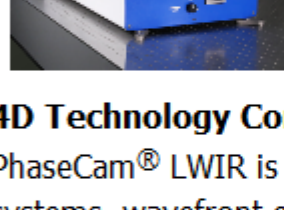
[Alluxa Ultra Series Filters](#)

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.

[Visit Website](#)

[Request Info](#)



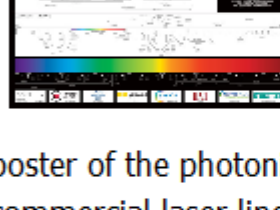
[Instantaneous Optical Metrology - PhaseCam LWIR](#)

4D Technology Corporation

PhaseCam® LWIR is used to align complex optical systems, wavefront error and even surface shape of rough, unpolished components using a 10.6 µm infrared wavelength. Featuring 4D Technology's ground-breaking dynamic interferometry mode. This system creates accurate and rapid measurements for critical optical parameters. Even through difficult environments.

[Visit Website](#)

[Request Info](#)



[Photonics Spectra Reference Chart](#)

Photonics Media

This full-color, 30 × 20.5-inch poster of the photonics spectrum displays the major commercial laser lines, detectors and optical materials in the ultraviolet to the far-infrared and beyond. The chart was updated in 2021 to reflect the changing technologies in the photonics industry. The convenient format makes it easy to quickly find the information you need.

[Visit Website](#)

[Request Info](#)

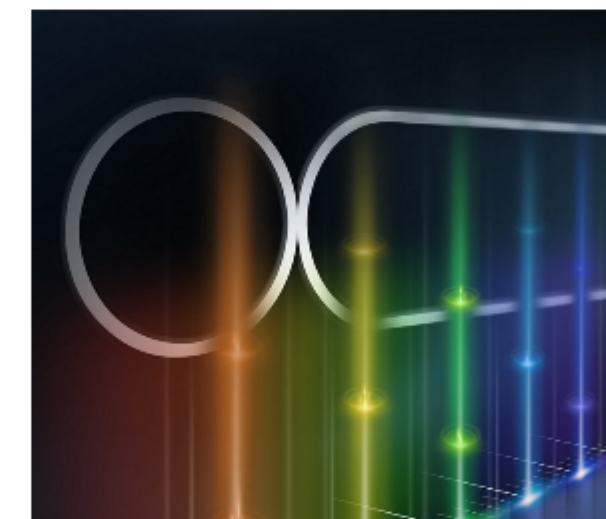


:: In Case You Missed It

High-Efficiency Frequency Comb Invites Range of Optical Endeavors

On-chip laser frequency combs are a promising technology for applications including environmental monitoring, optical computing, astronomy, and metrology. However, the inability to design an on-chip laser frequency comb that is both efficient and broad has stymied researchers for years and hindered the widespread commercialization of these devices.

[Read Article](#)



Rare-Earth Materials Lay a Stable Multiband Microlasing Platform

A recent demonstration by a team at Huazhong University of Science and Technology spotlights the possibility of stable multiband lasing by rare-earth elements. In the work, the research team used polymer-assisted thermal doping to fabricate rare-earth-doped microcavities with ultrahigh intrinsic Q factors exceeding 108. The doping process did not introduce any obvious ion clustering or scattering loss. The ultrahigh intrinsic Q factor makes the process a natural platform for achieving lasing and further nonlinear phenomena that require low power.

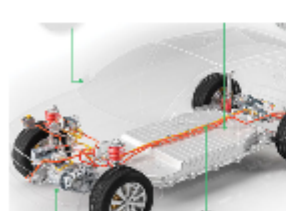
[Read Article](#)

3D Printing Tackles One of the Strongest Stainless Steels

A team from the National Institute of Standards and Technology, the University of Wisconsin-Madison, and Argonne National Laboratory have 3D-printed a variety of stainless steel that is favored for its high strength and corrosion resistance. The alloy, called 17-4 precipitation hardening stainless steel, is used in airliners, cargo ships, nuclear power plants, and other critical technologies.

[Read Article](#)

:: Upcoming Webinars



Dynamic Beam Lasers: Introducing New Parameters for Laser Welding

Thu, Oct 20, 2022 10:00 AM - 11:00 AM EDT

Dr. Asaf Nissenbaum shares new parameters for the Dynamic Beam Laser created by Civan Lasers.

The laser's unique power distribution provides complete control of the melt pool and keyhole which greatly reduces spatter, hot cracks, and porosity. It also provides new opportunities for laser material processing applications by increasing production speed, volume, and their capabilities. The Dynamic Beam Laser can be quickly programmed to move seamlessly between different workpieces and processes. This ability maximizes each machine's output. Presented by Civan Lasers.

[Register Now](#)

:: Next issue:

Features

Laser Welding, Quantum Dot Sensors, Design for Manufacturability, and more.

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

About *Photonics Spectra*



Since 1967, *Photonics Spectra* magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products.

Visit [Photonics.com/subscribe](https://www.PhotonicsSpectra.com/subscribe) to manage your Photonics Media membership.

[View Digital Edition](#) [Manage Membership](#)



We respect your time and privacy. You are receiving this email because you are a Photonics Media subscriber, and/or a member of our website, Photonics.com. You may use the links below to manage your subscriptions or contact us.

Questions: info@photonics.com

[Unsubscribe](#) | [Subscribe](#) | [Subscriptions](#) | [Privacy Policy](#) | [Terms and Conditions of Use](#)

Photonics Media, 100 West St., PO Box 4949, Pittsfield, MA 01202-4949

© 1996 - 2022 Laurin Publishing. All rights reserved. Photonics.com is Registered with the U.S. Patent & Trademark Office. Reproduction in whole or in part without permission is prohibited.