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Photonics West is the premier photonics and laser event. With more than 1,250 companies, this exhibition continues to be the flagship event to find the latest products, tools, and applications for your research or business needs.

**SPIE. PHOTONICS WEST**

The Moscone Center, Moscone North and South  
San Francisco, California, United States

**30 January - 1 February 2018**

## product focus

Welcome to the optics.org Product Focus which we have published specifically for Photonics West 2018 in partnership with SPIE and the Photonics West Show Daily.

Here you will find an effective at-a-glance guide to some of the latest products available on the market with booth numbers if available making it easy for you to check out the products for yourself.

All this information and more can be found on the optics.org website. Simply go to [www.optics.org](http://www.optics.org) for all the latest product and application news.

Alternatively, why not sign up to our **free weekly newsletter** ([www.optics.org/newsletter](http://www.optics.org/newsletter)) and get the information delivered direct.

### Navitar

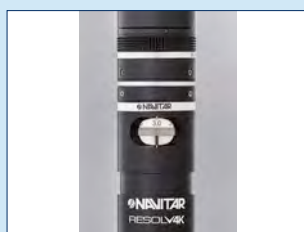
Visit us at Booth #125

#### Resolv4K Lens System

Navitar's Resolv4K lens system is designed to maximize the usage of modern sensors with higher pixel densities.

The Resolv4K Zoom offers tremendously more resolving power over a traditional zoom imaging system – achieving a 400-600% larger field of view without any loss of detail.

The new Resolv4K Fixed system is ideal for fixed field of view applications with closer working distances and offers higher magnification and resolving power than standard enlarging or SLR lenses in macro mode.



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Tel: +1 585 359 4000

### Nanoscribe GmbH

Visit us at Booth #4368

#### Photonic Professional GT 3D Printer for Nano- and Microfabrication

Nanoscribe's Photonic Professional GT is the world's most precise 3D printer based on two-photon-polymerization.

It combines additive manufacturing and maskless lithography in one device.

The resolution is approximately 100 times higher than that of stereolithography, submicrometer details down to a feature size of 200 nm are possible, and printed parts with optical quality surfaces can be printed.

This award-winning system sets new standards in a multitude of applications like photonics, micro-optics, plasmonics, micro-fluidics, MEMS, biomimetics and microrobotics.



#### Contact Details

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Tel: +49 721 981 980 0

### Ibsen Photonics

Visit us at Booth #5232

#### Ibsen Photonics launches new ultra-compact FREEDOM C spectrometer with improved resolution

The FREEDOM C spectrometers offer a very high resolution; down to 0.15 nm in a small foot print of only 61x65 mm for the UV, VIS and VIS-NIR range. It is equipped with the latest CMOS detector technology with 4096 pixels and a cylindrical lens to increase throughput.

The FREEDOM C can be supplied with Ibsen's own DISB electronics, which offer fast and accurate timing control for applications like LIBS and Raman.



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### ALPhANOV

Visit us at Booth #437

#### ALPhANOV introduces a Pocket-size Ultrashort Laser Seeder: PULS

The new laser oscillator developed by ALPhANOV illustrates its expertise in modeling, designing and prototyping innovative fiber laser sources.

The PULS (Pocket-size Ultrashort Laser Source) is an oscillator offering a unique and monolithic solution for seeding ultrafast laser amplifiers and for applications in multiphoton imaging, laser micromachining and bio photonics.

It delivers linearly polarized laser pulses with a nearly Fourier-transform limited pulse duration and a tunable repetition rate in the 20-60 MHz range.



#### Contact Details

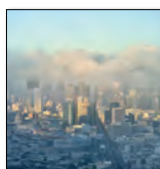
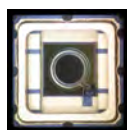
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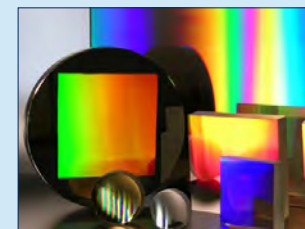
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#### Holographic Diffraction Gratings

Spectrum Scientific, Inc. (SSI) manufactures a range of standard blazed and sinusoidal diffraction gratings as well as supplying OEM customers with high volume, custom gratings.

SSI can replicate a wide variety of holographic diffraction gratings, including plane, convex, concave, toroidal and aspheric gratings. Our gratings are available with blazed or sinusoidal profiles and our proprietary blazing technique offers lower stray light and higher efficiency compared to ion-etched gratings. We are one of the few companies with the capability to manufacture blazed holographic concave gratings.

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**ALPhANOV**

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**ALPhANOV launches an Ultra-Compact Electric Pulse Delay Generator: TOMBAK**

TOMBAK is a product enabling ALPhANOV to complete its wide range of optoelectronic modules.

TOMBAK is a universal picosecond resolution module that integrates many features gathered in one easy-to-use and compact device which can be controlled via USB connection.

It is used as Pulse/Burst Generator, Delay Generator, Voltage Converter, Pulse-Picker or Frequency Divider. The frequency of the input signals can reach 200 MHz.



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**Diverse Optics Inc.**

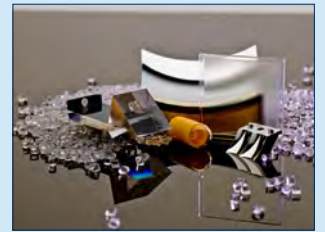
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**Custom Polymer Optics**

Diverse Optics specialize in precision injection molding and single point diamond turning of custom polymer optics. Reduce cost, trim weight, improve performance, and simplify your product design by implementing precision polymer optics!

We do it all; prototyping to series production of free-forms ,spheres, micro-optics, aspheres, domes, convex/concave, plano/convex, bi-convex, diffractives, Fresnels, prisms, light-pipes, lens arrays, collimators, combiners, toroids, CPC's, TIR's, parabolics, off-axis, ellipticals, and more.

Whether its thousands of molded optics or a few diamond turned prototypes, we'll show you how polymer optics are perfected!



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**Bristol Instruments, Inc.**

Visit us at Booth #215

**Wavelength Meters – Fast and Accurate for CW and Pulsed Lasers**

Bristol Instruments' wavelength meters are used by scientists and engineers who need to know the exact wavelength of their lasers.

Systems are available for CW and pulsed lasers that operate at wavelengths from 375 nm to 12 μm.

These systems use proven interferometer-based technology to measure absolute wavelength to an accuracy as high as ± 0.0001 nm and offer the fastest sustained measurement rate of 1 kHz.

Continuous calibration with a built-in wavelength standard guarantees the reliable accuracy required for the most meaningful experimental results.



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**Spectrum Scientific Inc.**

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**Hollow Retroreflectors**

Spectrum Scientific's Hollow Retroreflectors have a monolithic construction made from solid aluminum and consist of three mirrored surfaces resembling the corner of a cube. These optics reflect light parallel to its incidence angle, allowing insensitivity to vibration, position and movement. SSI's replication process allows for high volume production of repeatable performance retroreflectors.

- Return Beam Accuracy: <2 arcsec
- Surface Accuracy: < λ/2
- Gold & Aluminum Coatings
- Monolithic construction with custom mounting features available
- Wavelength independent, No dispersion

Custom Hollow Retroreflector designs are available upon request in addition to stock units.



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**Navitar**

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**New Pixelink Machine Vision Camera Models**

Pixelink has released new 5, 9 and 12 MP machine vision camera models with Sony Pregius global shutter CMOS technology.

New models include: PL-D795 5MP 2/3" format camera with Sony IMX264 sensor, PL-D799 9MP 1" format with Sony IMX267 sensor, and the PL-D7912 12MP 1.1" camera, based on the Sony IMX304 sensor.

All are available in color, monochrome, enclosed and board level versions.



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**ficonTEC Service GmbH**

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**C-RED 2: High Performance InGaAs camera**

Designed for Bio-imagery of Industrial applications, the latest compact InGaAs camera from First Light Imaging is revolutionizing SWIR imaging:

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- Electronic shutter  $<1 \mu\text{s}$
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Air or liquid cooled (no LN), C-RED 2 can operate in any environment, offering at the same time the fastest acquisition rate and the lowest read out noise of all InGaAs SWIR cameras. More information: [www.first-light.fr/c-red-2/](http://www.first-light.fr/c-red-2/)

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**Bristol Instruments, Inc.**

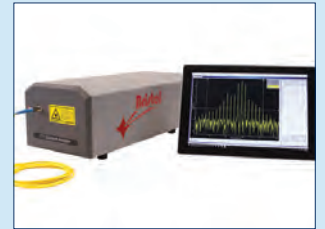
Visit us at Booth #215

**Spectrum Analyzer - High Resolution and High Accuracy**

The Laser Spectrum Analyzer from Bristol Instruments operates as both a high-resolution spectrum analyzer and a high-accuracy wavelength meter.

These systems are for scientists and engineers who need to know the spectral properties of their lasers that operate from 375 nm to 12  $\mu\text{m}$ .

With spectral resolution up to 2 GHz, wavelength accuracy as high as  $\pm 0.0001 \text{ nm}$ , and an optical rejection ratio of more than 40 dB, this instrument provides the most complete analysis needed for the most demanding applications.

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**Knight Optical (UK) Ltd**

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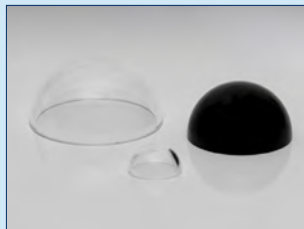
If you are trying to protect your sensor but still achieve a 360° image, Knight Optical's domes are the perfect solution.

Our high quality domes are manufactured from BK7 or equivalent, UVFS, Quartz, Sapphire, Silicon, Acrylic and a range of filter glass option. Antireflective coating options are available.

Stock range from 25mm to 100mm.

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**Contact Details**

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[info@knightoptical.co.uk](mailto:info@knightoptical.co.uk)

**Spectrum Scientific Inc.**

Visit us at Booth #1352

**Off-axis Parabolic Mirrors**

Spectrum Scientific, Inc (SSI) offers high precision, cost-effective, volume manufacturing of off-axis parabolic (OAP) mirrors with typical surface figures of  $\lambda/10$  or Better. OAPs eliminate aberrations that are present when trying to use spherical mirrors in off axis conditions and ensure high resolution in compact system designs and offer achromatic focusing on collimation coupled with low scatter for UV applications

The mirrors feature light weight monolithic designs which can incorporate mounting features onto the mirror itself for easy alignment and reduction of assembly costs.

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In setup with pMaster 4.0H digital synchronization and delay pulse generator, MP1 can be synchronized for single pulse picking from max 30MHz repetition rate laser pulse train.

MP1 has BBO Pockels cell and is set for quarter-wave voltage operation. On demand BBO cell can be changed to KTP cell for half-wave voltage operation.

**Contact Details**

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It is a powerful laser source for nonlinear microscopy applications like effective two-photon excitation of fluorescent proteins and SHG-based contrast mechanisms, as well as micro-lithography.

The femtosecond laser combines ultra-high reliability with compact design.

It is easily controlled via Ethernet or USB and a simple graphics user interface (GUI) enables user-friendly access to all laser parameters.



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### Iridian Spectral Technologies

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Iridian is a global leader in optical filter design and manufacturing for applications such as: tele/data-com, spectroscopy, 3D entertainment, and detection/sensing/imaging (for example industrial, earth-observation, process control).

Current capabilities extend from ~300 nm to 10 μm (UV-LWIR) with filter sizes from < 1mm to >300mm.

Iridian supports all customer needs from prototype to high volume production and focuses on tailoring solutions for specific OEM applications.

Areas of specialization include both multi-band filters (multiple notch/bandpass filters) and multi-spectral filter arrays (assemblies or photo-lithographically patterned filters).



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The FGC can measure the widest range of fiber types and diameters including PM, multicore, dual clad, octagonal fibers and more - up to 1000μm in diameter. Clear end face imaging along with our template system gives the ultimate flexibility in a commercial fiber geometry measurement system.

This production ready solution gives reliable, repeatable, operator independent results in seconds, and all in one unit to save on bench space and training.

For more information go to <http://www.ardenphotonics.com/product-types/fiber-geometry-measurement/>



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### Spectrum Scientific Inc.

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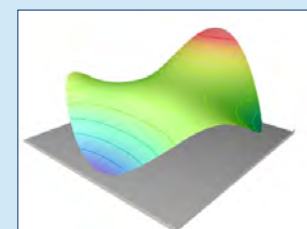
#### Freeform Mirrors

Freeform mirrors are curved optics with no axial symmetry and offer many advantages over conventional optics.

Their single optical surface allows for compound compensation and a reduction in the number of optics in the system, reducing optical volume, easing alignment and improving throughput. They also provide additional aberration correction and allow for redistribution of tolerances.

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### Synopsys

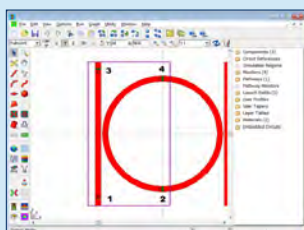
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Visit Synopsys in Booth 941 at SPIE Photonics West 2018 to get a demo, or contact us today for a free evaluation.



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### Navitar

Visit us at Booth #125

#### Cleared Tissue Objective

Special Optics and ASI have developed an immersion objective lens specifically designed for light sheet microscopy of cleared tissue samples, including ASI's dual-view Selective Plane Illumination Microscopy (diSPIM).

The lens appeals to researchers building customized microscope setups (e.g. OpenSPIM type) as it is available for separate purchase, unlike other objectives suitable for cleared tissue.

The 0.4 N.A. multi-immersion objective is designed for dipping media RI ranging from 1.33 to 1.56, has NA ~0.4, >1 mm field of view, ~17x magnification, and 12 mm working distance.



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