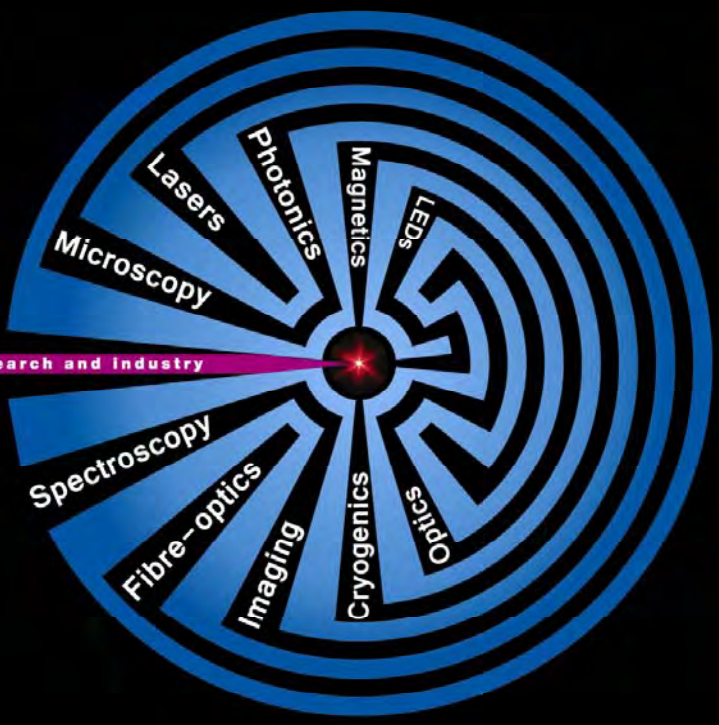
Elliot Scientific

solution science for research and industry



2018 Newsletters

About Elliot Scientifc

Elliot Scientific serves the UK and Ireland's academic research, commercial, and industrial communities as a major supplier of equipment dedicated to the science of light.

Lasers, LEDs and other high-power light sources, optical fibre and custom optics, positioning systems and opto-mechanics, instrumentation for cryogenic and magnetic research, as well as probes and sensors, are just some of the technologies we source from leading manufacturers.

We also design and build our own ranges that are marketed globally under the Elliot|Martock and Elliot Scientific brands. These include award-winning Optical Tweezers, world-renowned flexure stages, and class-leading micropositioners, fibre positioning components, automated alignment systems, and waveguide manipulators among others.

All of our customers - from academic institutions and government agencies through to commercial researchers and industry - are provided with a top-quality service backed up by solid technical support from our knowledgeable team.

Solution Science for Research and Industry

We pride ourselves in offering *Solution Science for Research and Industry*. We employ experienced people to help you match equipment to project for the perfect union.

Elliot Scientific's scientists and engineers will assist you with your product search or application, and offer accurate and balanced advice. The team have worked together for over a decade, bringing with them a huge amount of real-world know-how to help you achieve the desired result.

Our accounting and administration staff have also been recruited from the best to ensure that you are always served on-time and with integrity by the company.

Quality

We understand the need for continual improvement in services and traceability, both in distribution and manufacture, so our commitment to this ensures our standards are the highest in our industry.

Elliot Scientific has been ISO registered since 1993, gaining the latest BS EN ISO 9001:2015 accreditation in the summer of 2016.

Elliot Scientific

solution science for research and industry

January 2018

Introducing Siskiyou: Now available in the UK and Ireland through Elliot Scientific

Siskiyou Corporation has been producing popular laboratory mechanicals for over 40 years; designing from the outset with quality and flexibility in mind. This concept has ensured Siskiyou components outperform and outlast competitive products.

Siskiyou do not aim at single disciplines, such as Photonics or Life Sciences, but craft their products to provide users with the modular tools for constructing systems that are only limited by their imagination.

Over the year, the Elliot Scientific newsletter will feature selected products from the Siskiyou range. This month...

IXF Series: *A monolithic flexure mount range*

Standard IXF flexure

Top Adjust IXF

Single axis mount

The IXF range of optical mounts offer exceptional stability for optics up to 2" in diameter. Performance is achieved through the use of monolithic flexure construction, in which the entire mount - both plates and springs - are fabricated from a single piece of metal.

This unique configuration yields improved heat transfer through the mount over the traditional kinematic constructions, resulting in significantly better pointing stability in the presence of temperature changes.

The IXF range is available in both steel and aluminium versions. Steel construction offers superior mechanical and thermal stability, while aluminium confers lower weight and vacuum compatibility.

The tip/tilt flexure mounts are specifically designed for OEM applications. They have a wide variety of optic mounting options, including bulkhead mounting as either a front adjusted or through the bulkhead adjusted mount.

In addition, these versions have M4 (8-32) mounting holes on two edges for post mounting and locks on the adjustment screws.

Top adjust versions have a novel actuating mechanism to eliminate rotational torque being applied to the axis under adjustment.

Designed to be either panel or bracket-mounted; Siskiyou flexures provide the ultimate in stability, even in challenging environments.

Product features

- Available for ½", ¾", 1" and 2" optics
- Lockable 100 tpi adjustment screws
- One-piece aluminium or nickel-plated steel construction
- Metric or imperial models
- Special beamsplitter versions with 45° cutouts (*right*)
- Single axis mount also available (*left*)
- UV and vacuum compatible options

If you want to see some more of the Siskiyou precision positioning products Elliot Scientific currently offer, then visit our growing **Siskiyou products page**.

Mad City Labs' Nano-ZL is ideal for high-speed multiwell plate imaging

The **Mad City Labs**' Nano-ZL Series are long range, Z-axis nanopositioners specifically designed to hold multiwell plates used in biomedical research. High-throughput single cell fluorescence microscopy and high speed, high resolution confocal imaging can be accomplished while simultaneously adjusting the Z-axis position to remove the effects of multiwell plate irregularities.

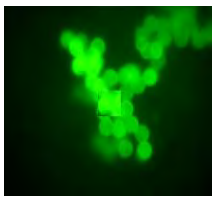
The **Nano-ZL Series** has true flexure guided motion and contains internal position sensing for a resolution of better than 1 nm over the full 500 µm travel range, and sub-nanometer for the shorter 100 µm travel range. In addition to high resolution spatial imaging, the Nano-ZL step response allows entire Z-section acquisitions with minimal photo bleaching.

For more information, please **contact us**.

New UV laser source for CRAIC Technologies' 20/30 PV™ Microspectrophotometer

The introduction of new UV laser sources will dramatically enhance the capabilities of the **20/30 PV™ microspectrophotometer** from **CRAIC Technologies** in terms of both fluorescence and photoluminescence microspectroscopy.

The major application will be to serve as an intense excitation source for fluorescence and photoluminescence (PL) microspectroscopy. This will broaden the range of materials that can be caused to emit photons via a luminescent process.



The 20/30 PV™ microspectrophotometer combines the latest technologies to allow the user to see and measure UV-visible-NIR range transmission, absorbance, reflectance, emission and fluorescence spectra of sample areas smaller than a micron across. Thin film thickness and colour spaces can also be determined.

Scientists in the UK and Ireland involved in forensics, geology, gemology, biochemistry and spectroscopy among others, **contact us now** to discuss specifications and pricing.

Award-winning Vibrating Sample Magnetometer from Lake Shore Cryotronics

Two videos detailing the 8600's capabilities are online

The 8600 Series VSM, from **Lake Shore Cryotronics**, raises the bar for magnetometer performance and convenience by combining high sensitivity, rapid measurement speeds, and ease of operation for faster and more accurate measurements.

The entire **8600 Series** system was conceived with a focus on a clean, ergonomic design that simplifies the researcher's interaction with the system. For this resason, it won the 2017 R&D 100 award from *R&D Magazine*.

The 8600 has a number of temperature options. These include a cryostat, a high-temperature oven, and a single stage variable temperature insert. The combined temperature range of the options is 4.2 to 1273 K, and all three options quickly slide into place and are auto-detected by the system's software - **video demonstrations**.

8600 Series Features

- 0.25 x 10^{-7} emu noise floor at 10 sec/point
- 10 ms/pt data acquisition rate & 10,000 Oe/s field ramp rate
- Rapid, repeatable temperature option exchange
- High stability of ±0.05% per day
- Fields to 3.26 T
- Widest temperature range: 4.2 K to 1273 K

The magnet poles are also easily adjusted with a specially designed indexed positioning system that allows the pole gap to be set at one of six repeatable positions, eliminating the need to recalibrate after each change. Please **contact us** for more details.

This month, meet Elliot Scientific at...

Photonics West

30th January to 1st February 2018: Booth #4953, Moscone Center, San Francisco

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Elliot Scientific

solution science for research and industry

February 2018

Active Vibration Isolation Systems from Accurion now available through Elliot Scientific

- *Active platforms*
- *Active workstations*
- *Active supports*
- *Acoustic enclosures*
- *Custom designs*

Accurion designs and manufactures the **Halcyonics** range of advanced vibration reduction systems for today's exacting nanotechnologies:

- **Benchtop** units for small to medium-sized applications up to 120 kg
- **Workstations** for the science or medical laboratory, for example IVF
- **Supports** for larger, heavier applications which are usually floor mounted

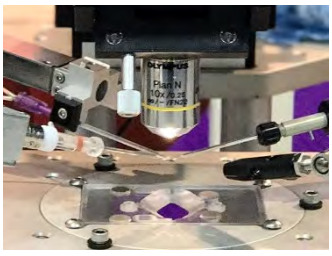
Active vibration isolation overcomes the limits of passive damping systems, enabling the attenuation of vibrations caused by machinery, people, traffic, even sound waves; that would disturb delicate instruments.

ACCURION

Elliot Scientific is now distributing these very effective anti-vibration solutions within the UK and Ireland so, whether it's high-resolution measurement or a high-precision manufacturing process, **contact us** to get the best performance from your equipment.

For more information about Accurion's technology, you can download and read their ***Principles of Antivibration***.

Siskiyou MX-Series Manipulators for smoother probe positioning in the Life Sciences



Click for the bigger picture

In electrophysiology, positioning probes for patch and intracellular recording is a fine art. So, to improve your chances of success, **Siskiyou** offer a range of well-proven manipulators ideal for such tasks.

With single and 4-axis devices, Siskiyou's **MX series** of manually operated manipulators enable the life scientist to place probes quickly and accurately.

Most feature coarse controls for fast postioning, with fine movement achieved through precision adjuster screws. Colour coded controls aid low light operation.

The smoothness, accuracy and range of travel of the probe is determined by the construction of the manipulator, so Siskiyou offer different bearing configurations such as dovetail, ball and crossed-roller systems. Each has its own advantages and costs.

For even smoother operation, Siskiyou manufacture special hydraulic manipulators that deliver instant response with sub-micron resolution and minimal drift at the output across the entire range of travel.

Please **contact us** for more information.

siskiyou

Lake Shore Cryotronics offers world-class temperature measurement systems...

Model 211: *Accurate single-channel temperature monitoring*

Lake Shore's Model 211 single-channel temperature monitor provides the accuracy, resolution, and interface features of a benchtop temperature monitor in an easy to use, easily integrated, compact instrument. With appropriate sensors, the Model 211 measures temperature from 1.4 K to 800 K including temperatures in high vacuum and magnetic fields.

Alarms, relays, user-configurable analogue voltage or current output, and a serial interface are standard features on the Model 211. It is a good choice for liquefied gas storage and monitoring, cryopump control, cryo-cooler, and materials science applications, and for applications that require greater accuracy than thermocouples allow.

Model 218: *Eight channels of versatile temperature monitoring*

Lake Shore's Model 218 is a very versatile temperature monitor. With eight sensor inputs, it can be used with nearly any diode or resistive temperature sensor. It displays all eight channels continuously in K, °C, V or Ω.

The input was designed for the demands of cryogenic temperature measurement, however, the monitor's low noise, high resolution, and wide operating range make it ideal for non-cryogenic applications as well.

Model 224: *Twelve channels of precision low temperature measurement*

Lake Shore's Model 224 temperature monitor offers precision measurement in a wide range of cryogenic and higher-temperature applications with the ability to easily monitor up to 12 sensor channels. It provides better measurement performance in applications where researchers need to ensure accuracy and precision in their low cryogenic temperature monitoring.

Used with Lake Shore's Cernox™ sensors, the Model 224 enables reliable and repeatable temperature measurement over a broad range and as low as 300 mK.

240 Series: *Precisely monitoring distributed cryogenic temperature sensors*

Lake Shore's **240 Series** offers a convenient, modular input solution for precision monitoring of cryogenic temperature sensors in large-scale applications employing distributed PLC-based control. Conversion of sensor resistance/voltages to calibrated temperature units is performed automatically by the module and reported digitally to the controller via PROFIBUS-DP or Modbus.

Lake Shore's benchtop cryogenic instruments are trusted throughout the world for precision measurement. Now that same measurement performance can be achieved in widely distributed *big physics* applications like particle accelerators and fusion reactors, as well as other large industrial sites.

- 2 or 8 inputs
- 1 to 800 K
- OLED display
- USB & PROFIBUS-DP
- Broad range of sensors

For peace of mind, Lake Shore back all their equipment with a three-year warranty. Please **contact us** for further details.

Latest from EXFO: An Optical Spectrum Analyser and a PON-aware™ Power Meter

FTB-5235 Optical Spectrum Analyser

The new FTB-5235 Optical Spectrum Analyser from EXFO is a compact, entry-level optical spectrum analyser (OSA) ideal for a variety of field applications, including DWDM and CWDM network commissioning and troubleshooting.

With the largest screen in the industry, and an intuitive user interface, the FTB-5235 offers power and wavelength measurements, has a WDM and drift mode, is capable of OSNR testing (IEC 61280-2-9) and also offline post-processing.

PPM-350D PON Power Meter

EXFO's new PPM-350D has been designed to fulfil the field technicians need to know what's what. As communications service providers (CSPs) deploy next-gen technologies onto legacy passive optical networks (PON), by overlaying new wavelengths on existing lines, it is necessary to quickly determine what's being squirted down a fibre. The PPM-350D PON Power Meter automatically detects the PON technology in use and adapts its test parameters to match.

The PPM-350D is compatible with GPON and EPON, can handle single- and multi-layer PON, has a pass-through mode for ONT/ONU verification, and supports 10G. It also comes with a smart App, Bluetooth and USB.

Please **contact us** for more information about these or other **test and measurement instruments from EXFO**.

Products 2017

Optical Tweezers 2016

Opto-Mechanics 2018

Previous Newsletter

2017 Newsletters

2016 Newsletters

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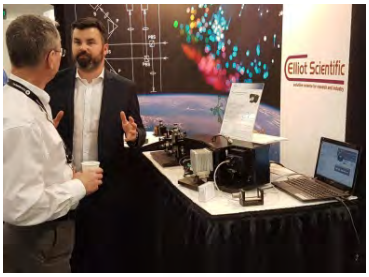
March 2018

A High Output Tuneable Light Source from Mountain Photonics... *The Hyperchromator*

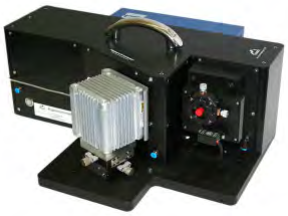


An efficient monochromator utilising the high-brightness **Energetiq EQ-99X LDLS™** Laser Driven Light Source (*right*) has been developed by **Mountain Photonics**, and was recently demonstrated on our booth at Photonics West.

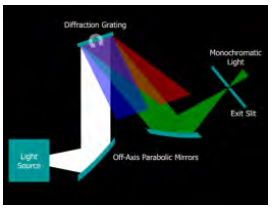
The **Hyperchromator** uses an off-axis parabolic mirror to focus the broadband light generated by the small plasma spot of the LDLS™ directly onto a diffraction grating, and then off a second mirror to an exit port.

As no entrance slit is used, the optical efficiency of the system is very high - typically f/1.5 or f/2, depending on the required resolution or throughput. A white light bypass output is also available.

Mountain Photonics GmbH



The output port has been designed to allow for a multitude of illumination or light coupling options. By using standard catalogue components, the Hyperchromator can be easily integrated into an application.



The Hyperchromator is controlled via USB/RS-232 and an intuitive GUI, with LabVIEW™ and other software libraries supported.

Existing owners of an Energetiq EQ-99X LDLS™ can add tuneability by purchasing the Hyperchromator unit alone.

Please **contact us** for further details, or download the **datasheet**.

Siskiyou *Go Large*: 3" and 4" IXF mounts added, plus stainless steel now an option

The popular series of IXF optical mounts from **Siskiyou Corporation** have been extended with the recent introduction of models that accept 75 mm (3") and 100 mm (4") optics.

These high-performance mounts use a monolithic flexure construction to deliver exceptional stability at a low price point.

Ideal for aerospace applications, the **IXF range** is now available in either aluminium, stainless or nickel-plated steel. Steel construction offers superior mechanical and thermal stability, while aluminium confers lower weight and vacuum compatibility.

The mounts are equipped with lockable 100 TPI adjustment screws and can be fixed to a post or bulkhead by using metric or imperial threaded holes. Please **contact us** for more information.

RS-7-SWIR latest addition to SpectralLED® models from Gamma Scientific

The RS-7-SWIR offers a 0.9 to 1.7 µm spectral range

For the ultimate in resolution and accuracy, the **SpectralLED®** tuneable SWIR source incorporates 9 shortwave infrared wavelengths for synthesis of commercially available light sources or a spectra of your own design.

The platform is easily adaptable for automated test systems and production line integration, with integrated optical feedback and temperature control to ensure rock-solid stability and consistent results.

Variants

- Standard
- Fibre optic output
- Wafer probe
- Baffle output
- Wide field of view

Please **contact us** for more information about this or other **products from Gamma Scientific**.

GAMMA SCIENTIFIC
Light Measurement Solutions

EXFO's Yenista Optics acquisition expands their T&M range

EXFO's is now offering more instruments in their fibre-optic test and measurement portfolio following the acquisition of Yenista Optics. In addition to the **TL100S-HP** (formerly TUNICS) laser source; the **OSA** Optical Spectrum Analyser; and the **XFA, XTA and XTM** range of tuneable filters; the **OSICS** multifunction modular platform - which was formerly manufactured by Anritsu - is now EXFO badged.

This instrument has the widest selection of plug-in modules, making it the most flexible platform for DWDM (Dense Wavelength-Division Multiplexing) system evaluation and fibre optic component testing. Up to 8 modules can be mixed and matched in a single OSICS mainframe. The range includes: compact tuneable lasers, a compact transmission laser, broadband light sources, and passive optical functions such as high-power optical attenuators and variable back reflectors.

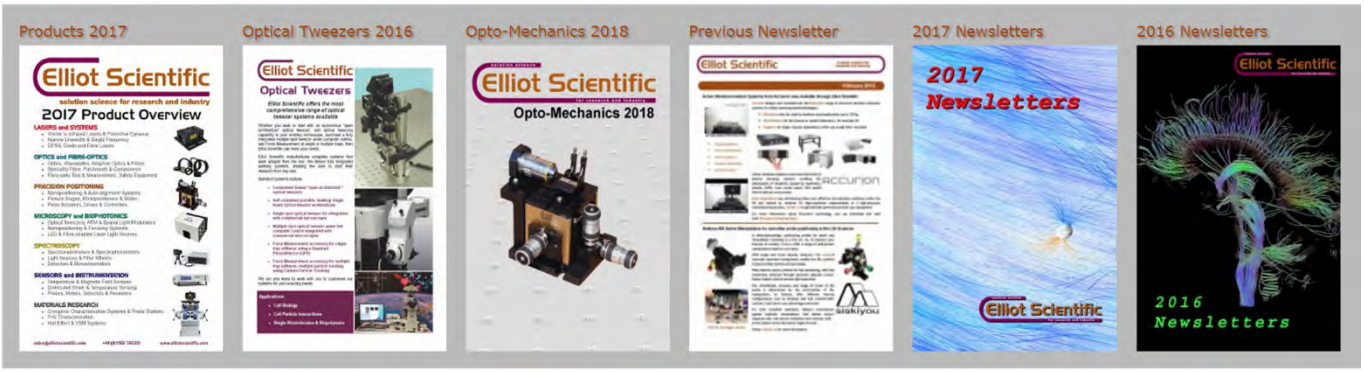
Please **contact us** for specification and price information for these or the many other **test & measurement instruments from EXFO**.

EXFO
EXPERTISE REACHING OUT

New month, meet Elliot Scientific at…

Magnetism 2018
9th and 10th April 2018, University of Manchester

Photonex London
18th April 2018, University College London



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April 2018

Elliot|Martock Gold Series Flexure Stages are valued by scientists and engineers

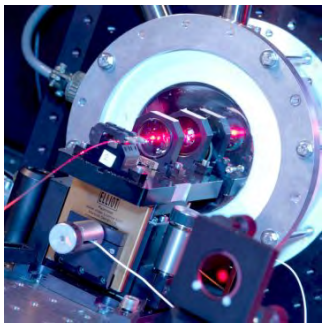


Photo courtesy of NPL: the National Physical Laboratory

The **Gold Series Flexure Stages** are Elliot Scientific's best seller. Leading scientists and engineers around the globe recognise that these high-resolution XYZ positioners outperform rivals and are of exceptional value - both in terms of price and performance.

The precision engineered stages are highly adaptable and can be used in a multitude of applications. For example: quantum photonics and colloid studies.

Choose from a range of systems preconfigured for **fibre launch**, such as free space light into fibre (*see photo right*), or for alignment of other types of optical device (*left*).

Note that we offer a number of ready-built configurations in left and/or right-hand at lower cost when compared to purchasing individual parts.

The positioners can be purchased without adjusters, or select from simple thumbwheels, precision micrometers, and piezo driven actuators in any combination.

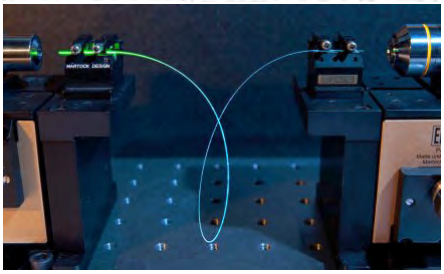


Photo courtesy of Nitin Jha of Heriott-Watt University

Features

- 20 nm resolution with 2 mm travel per axis depending on adjuster chosen
- Excellent smooth operation with superb long term stability
- Great versatility in a petite package

An extensive range of add-ons, accessories, and attachments ensure that most applications can be satisfied. If not, **contact us for a custom solution**.

Lake Shore Cryotronics introduces the F Series Teslameters

Lake Shore CRYOTRONICS ADVANCING SCIENCE

The new F41 Single-axis and F71 Multi-axis **Teslameters** from **Lake Shore Cryotronics** offer a new level of precision and convenience for engineers, QC technicians, and lab researchers. In conjunction with a new series of compatible Hall probes and 2Dex™ Hall sensors, users can measure with confidence in challenging applications.

The TiltView™ display makes them easy to operate even when mounted in the bottom of a rack or on the bench, and probe swapping is now much faster due to a compact quick-release connector and integrated calibration data for all probes.

TruZero™ technology

Lake Shore's TruZero™ technology eliminates the need to perform frequent zero gauss chambering as an onboard algorithm combines the sequential Hall voltage readings in a way that eliminates any offsets due to misalignment and thermoelectric effects. It also improves precision and accuracy.

Please **contact us** for more information.

Product Overview 2018 now available

Our new **Product Overview for 2018** is now available online.

This latest brochure includes new signings **Accurion**, **Mountain Photonics**, and **Siskiyou**; plus fully revised sections devoted to many of the other companies we distribute for. For example: **EXFO**, **HOLOEYE**, and **Gamma Scientific**, among others, have all been updated.

You can download the **PDF brochure**, request a printed copy by **contacting us**, or pick one up at any UK conference or exhibition we are attending.

Siskiyou Fibre Positioners have a *Soft Touch*

Siskiyou Corporation offers a range of **fibre translators** as 3 or 5-axis positioners. The BFT range is for bare fibre, while the CFT is for connectorised fibre.

Both models are ideal for post or base mounting in crowded beam path applications and use 80 TPI adjustment screws for precise positioning. The Soft Touch colour-coded screwcaps make identification of the X and Y axes in low light conditions easy. The Y-axis is also designed to ensure no drift due to overloading.

The CFTx-series is more robust, being based on hex-adjustable OTX 100 TPI rolled-thread lens positioners that can take a 4G jolt without moving more than 5 µm when the axes are locked. Z-axis adjustment is via an 80 TPI internal thread for accurate focusing.

The BFT model can be ordered with a polarisation option, whereas all CFT models have this as standard. Please **contact us** for more information.

Gamma Scientific unveils newest GS-1290 NVIS Spectroradiometers

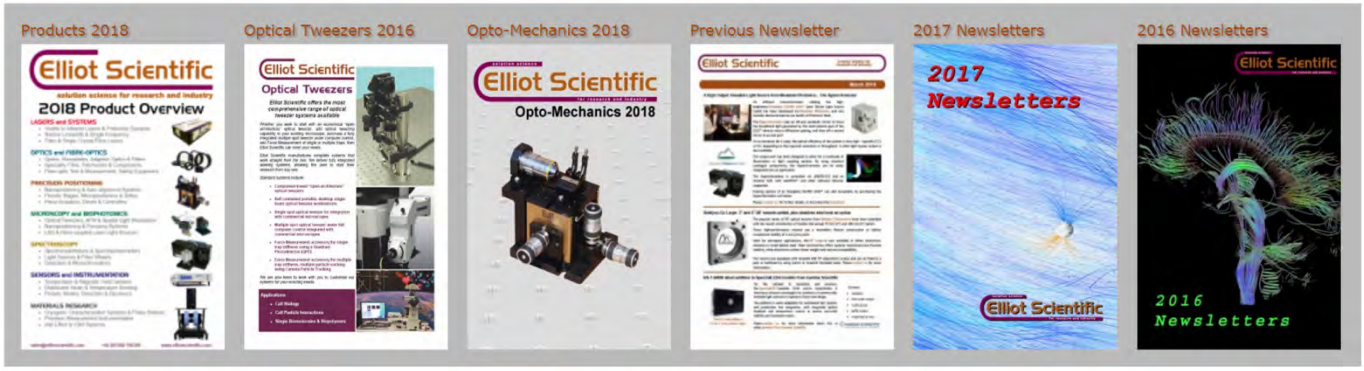
The latest version of **Gamma Scientific**'s **GS-1290-NVIS** is an advanced, high-speed spectroradiometer that combines the leading-edge sensitivity of a cooled backside-thinned CCD detector technology with the industry-renowned RadOMA opto-electrical platform.

The GS-1290-NVIS is specifically configured for ANVIS testing of cockpit displays and lighting. It far exceeds all requirements outlined in MIL-L-85762A and MIL-STD-3009. The MIL-SPEC requires a 10:1 signal-to-noise (SNR) measurement ratio, whereas the GS-1290-NVIS spectroradiometer is built to deliver an SNR of 100:1 or greater.

The GS-1290-NVIS offers superior sensitivity, an outstanding signal-to-noise ratio, exceptional accuracy, and high-resolution bandwidth coverage. Please **contact us** for further information.

Tomorrow, meet Elliot Scientific at…

Photonex London
18th April 2018, University College London



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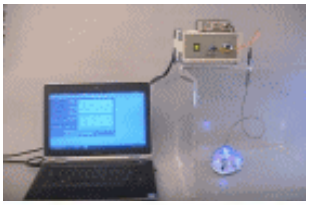
May 2018

Optogeneticists not silent about activating opsins with Prizmatix products



Prizmatix

Hundreds of **research papers** have been published by scientists around the globe who have used **Prizmatix** equipment within their experiments.

The company offers an extensive range of modules for in-vivo and in-vitro optogenetics, starting from single wavelength plug-and-go Optogenetics-LED kits, to multi-wavelength systems for activation and silencing.

From light sources to cannulae and everything in between, Prizmatix can provide all the components necessary for researchers working in neuroscience - especially fibre photometry, neurobiology, biochemistry and biophysics.

Prizmatix also offer a wide range of standard and customised multi-mode silica/polymer fibres, ferrules, rotary joints and pulse modulators for optogenetics research. Please **contact us for full details**.

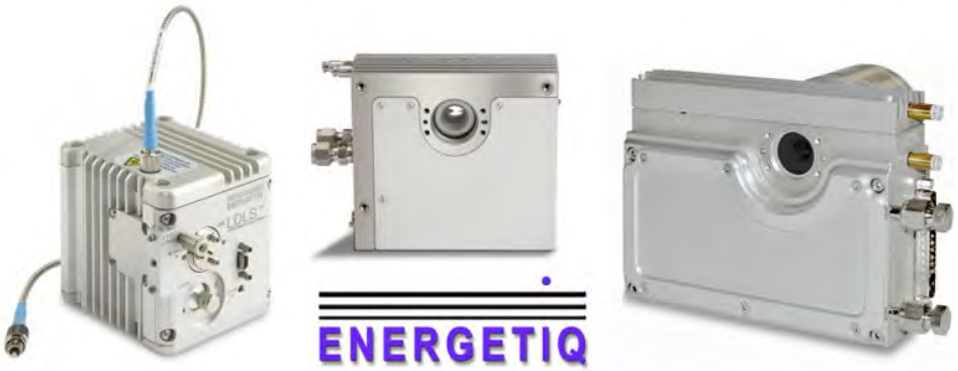
Intense LDLS™ broadband light sources from Energetiq are spot on

LDLS™ features

- Super bright
- Broadband
- No electrodes
- Long life
- Excellent stability
- Dual beam options
- Replaces multi-lamp systems

Applications

- Advanced imaging
- Microscopy
- Materials research
- Gas analysis
- Spectroscopy & HPLC



ENERGETIQ

Researchers using light for imaging and analytical spectroscopy in a variety of applications in the life and materials sciences need light sources capable of providing extremely high brightness across a broad wavelength range.

Energetiq® has developed a series of revolutionary light sources using LDLS™ technology to fulfil scientists' requirements. These laser driven lamps generate light from the UV through to the visible and beyond via an electrodeless plasma discharge. Please **contact us** for more information.

The long and the short of it... Slides and Stages from Siskiyou

siskiyou

A broad portfolio of **linear translation stages** with travel up to 100 mm (4") are available from the **Siskiyou Corporation** in the following versions:

- Dovetail slides - Simple, with a high stiffness and load capacity
- Ball bearing - Low friction offers smoother action, but with reduced loading
- Crossed roller bearings - High stiffness and load capacity with precision bidirectional straightness

All are lockable and can be ordered with either imperial or metric threads. In addition, most models are 25 mm (1") in height, except the low profile models which are 12.5 mm (½") or less. Vacuum compatible versions and ready-built multi-axis assemblies are also available. Please **contact us** for more information.

International Day of Light: May 16th

Tomorrow is the **International Day of Light**, a global initiative providing an annual focal point for the appreciation of light and the role it plays in science, culture, art, education, and sustainable development.

The UNESCO International Day of Light will again raise the profile of science and technology, stimulate education, and thus contribute to improving the quality of life worldwide.

Elliot Scientific takes this opportunity to wish all participants in tomorrow's events every success in your endeavours.

FEMTO-30: a high pulse energy ultrafast laser with flexible repetition rates from Fibercryst

Fibercryst is the only manufacturer of short pulse lasers and amplifiers that utilise the innovative Single Crystal Fibre technology (SCF) - a technology that offers significant performance advantages over existing technologies.

The **FEMTO-30** is Fibercryst's 1030 nm laser system that can deliver pulse energies of 160 µJ (@ 100 kHz) in pulse widths of around 600 fs, with repetition rates selectable between 100 kHz and 1 MHz.

A significant feature of this 30 W laser is the ability to easily and quickly change the repetition rate to favour the average power or the energy per pulse. This makes it ideal for:

- Cutting and drilling of hard materials
- Cold machining of polymers and composites
- Micromachining and structuring of surfaces, for example medical devices and semiconductors

For more information about this or other lasers from Fibercryst, please **contact us**.

This month, meet Elliot Scientific at…

SU²P
The 9th Annual Symposium that connects Scottish and Stanford Universities
21st and 22nd May 2018, University of Strathclyde, Glasgow

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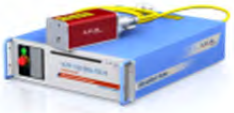
June 2018

New ultrafast fibre lasers from IPG Photonics



IPG Photonics has developed a range of green, infrared, and mid-IR high speed fibre and fiber-to-bulk hybrid lasers operating in the pico and femtosecond regimes, making them ideal for scientific and medical research. Material processing applications, such as flat panel displays; thin films; and semiconductor processing, can also benefit.

The infrared pulsed fibre lasers are available at 1.06 µm, with powers up to 100 W; 1.5 µm, with powers up to 10 W; and 2 µm, with powers up to 20 W. Non-linear external conversion can produce a 5W 520 nm green, or 355 nm nanosecond laser.

Picosecond and femtosecond pulsed lasers are available in the infrared up to 10 W at 1.5 µm, up to 100 W at 1.06 µm or as a second harmonic source up to 5 W at 515 nm. Femto pulse lasers range from 400 to 600 fs, pico pulse models range from 10 ps to 1 ns. For some models the pulse duration can be adjusted by the user.

For more information about these or other lasers from IPG, please **contact us**.

New fibre-optic thermometry systems by Rugged Monitoring

Rugged Monitoring is a new company formed by veteran fibre optic engineers. This industry leading team has over 100 years of combined experience, and is committed to delivering customisable fibre optic based sensing solutions for challenging applications.

Rugged Monitoring currently offers two multi-channel instruments compatible with a wide range of fibre optic temperature sensors from both themselves and other companies.

The architecture is based on proven GaAs technology with inbuilt redundancy. It also does not require calibration and has been designed to offer simplicity of use with plug and play operation.

Rugged Monitoring fibre optic temperature sensors are highly responsive, intrinsically safe and immune to external influences such as electromagnetic fields, corrosion, and vibration.

Used together, the right combination of sensor and instrument deliver Rugged Monitoring's promise of precision, reliability, and high performance. Please **contact us** for more information.

New GMx mounts for square optics from Siskiyou

A new range of **mounts** for square optics, such as diffraction gratings, have been unveiled by **Siskiyou Corporation**.

- Dovetail slides - Simple, with a high stiffness and load capacity
- Ball bearing - Low friction offers smoother action, but with reduced loading
- Crossed roller bearings - High stiffness and load capacity with precision bidirectional straightness

All are lockable and can be ordered with either imperial or metric threads. In addition, most models are 25 mm (1") in height, except the low profile models which are 12.5 mm (½") or less. Vacuum compatible versions and ready-built multi-axis assemblies are also available. Please **contact us** for more information.

Tecella patch clamp amplifiers now available through Elliot Scientific in UK and Ireland

Tecella

Tecella has supplied electrophysiology measuring systems since 2007, allowing pharmaceutical researchers to rapidly screen drugs and medical compounds and thereby accelerate and improve new drug discovery.

Elliot Scientific is now able to a range of instruments from Tecella for this fundamental technique. These include their popular single channel Pico 2, right up to the gargantuan 384-channel Apollo - designed for high-throughput screening.

Applications

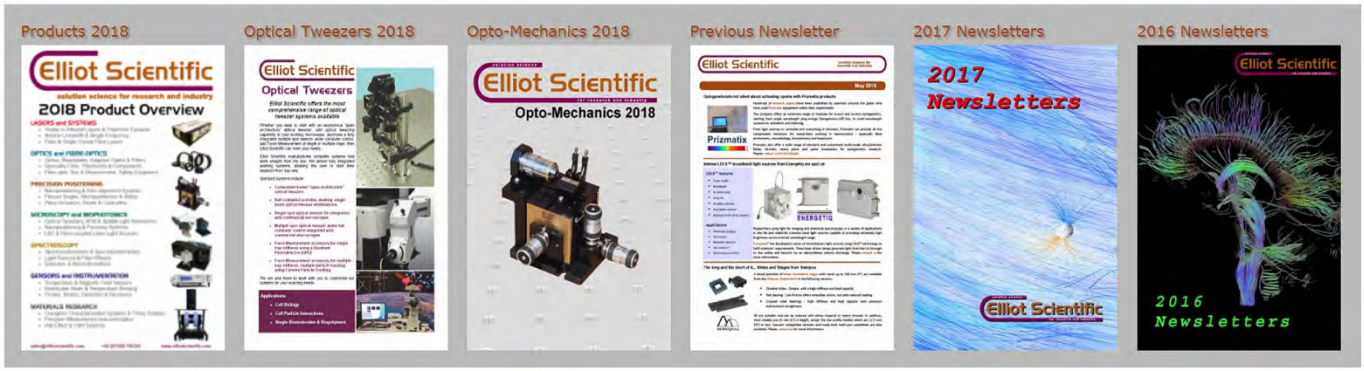
- **Whole cell**
  - Vclamp
  - Iclamp
- **Single-channel recording**
  - Patch
  - Planar lipid bilayer
  - Synthetic nanopore
- **Cellular electrochemistry**

In addition to electrophysiology, researchers working in electrochemistry, MEMS and other biotech fields can benefit from Tecella's highly scalable amplifier architectures and fully customisable software and hardware solutions. Please **contact us** for more information.

This week, meet Elliot Scientific at…

Photonex SCOTLAND
Photonics Exhibition & Conference
14th June 2018 · University of Edinburgh

Photonex Scotland
14th June 2018, University of Edinburgh



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Elliot Scientific

solution science for research and industry

July 2018

A golden anniversary for Kinetic Systems and their vibration isolation systems

Kinetic Systems is celebrating 50 years in the vibration isolation and optical table market.

As a world leader in the development and application of advanced low frequency vibration control systems for sensitive equipment, the company is recognised globally as a trusted and valued supplier to academic, industrial, OEM and government facilities.

50 years manufacturing:

- **Optical tables & accessories**
- **Breadboards & Platforms**
- **Workstations**
- **Isolation legs**
- **Custom & OEM products**

Elliot Scientific is able to offer expert advice on selecting the best in vibration control, so please **contact us** with details of your application and we will be happy to help.

Want to get a new angle on the table? Add a Siskiyou MXT Tilt Platform

Siskiyou manufacture three different designs of **tilt platform** for researchers and experimenters:

siskiyou

Tilt Platform

The MXT (*left*) is a small, stable tilt platform offering from zero to 45° by adjusting a control at the back of the stage. It is spring-loaded, to minimise backlash, and has a non-influencing foil lock to fix the platform in place.

Adjustable Tilt Platforms

These variable angle platforms (*right*) from Siskiyou support up to 2¼ kg, are easy to use, offer *positive* or *negative* vertical configuration, and come in three convenient sizes: 1.5" x 1.75" with 8 tapped holes, and 2.5" x 3.5" or 3.5" x 2.5", both with 18 tapped holes.

Fixed Angle Tilt Platforms

This *rock solid* design of tilt platform (*left*) uses an adjustable wedge format for the fixed angle setups. There are two models: the 3" square MX3T with 5 preset angles, and the 5" square MX5T with 7 preset angles. Both can support a load of up to 23 kg. The angle is changed by moving link arms to the desired position.

Please **contact us** for more information.

NoIR delivers eye protection from intense light sources

NoIR LaserShields offer a broad range of filters and frames for eye protection from intense light sources such as lasers and LEDs.

NoIR have been manufacturing high-quality internationally-certified safety eyewear for the protection of laser users in a broad range of fields and applications for many years now. Their filters offer protection from:

- Lasers, LEDs and other strong light sources
- Multiple waveband devices
- Therapeutic and cosmetic systems
- Laser pens (For pilots and the emergency services)

NoIR

Elliot Scientific is able to offer expert advice on selecting the best in cost-effective laser safety. So, if you are an academic, beautician or clinician, we can protect your eyes. **Contact us** with details of your laser or ultra-bright light source application and we will be happy to help.

CODIXX colorPol® polarisers are tough filters

The CODIXX range of robust, dichroic glass-based colorPol® polarisers pass or stop polarised light, modulate or reduce brightness, diminish noise and lots more. With over two dozen standard colorPol® versions available for use throughout the UV, Vis, NIR and mid-IR wavelength ranges, CODIXX have released two catalogues to help you choose the right polariser for your application.

CODIXX colorPol® polarisers deliver:

- High contrast ratios
- High transmittance values
- Large acceptance angles
- Resistance to UV radiation and chemicals
- Resistance to temperatures up to +400 °C

The **colorPol® catalogue** is complemented by a **High Transmission brochure** especially for the telecoms industry. Do **contact us** for details about both standard and custom filters.

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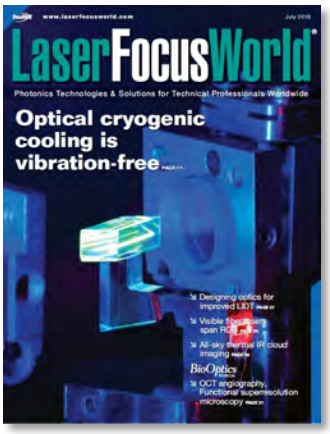
solution science for research and industry

August 2018

IPG, Lake Shore and Siskiyou named in Los Alamos & UNM all optical cryocooler paper



The July issue of ***Laser Focus World*** magazine featured a photo of a YLF:Yb crystal mounted between two top-adjustable Siskiyou IXF monolithic tip/tilt flexure mounts on the cover. This illustrated their top story about a breakthrough all-solid-state optical cryocooler developed by the Los Alamos National Laboratory and the University of New Mexico.

Solid-state optical refrigeration uses anti-Stokes fluorescence to cool macroscopic objects to cryogenic temperatures without the annoying vibrations typically introduced by mechanical cryocooling systems.

The crystal was excited by a low power linearly-polarised continuous-wave fibre laser by **IPG Photonics**, while the temperature was monitored with a calibrated DT-670-SD silicon diode from **Lake Shore Cryotronics**.

Coupling the laser light to the crystal was achieved by using an astigmatic Herriott cell, with the optics held in vacuum compatible **Siskiyou IXF flexure mounts**... known for their excellent mechanical and thermal properties.

Researchers in the UK or Ireland wishing to replicate this experiment can **contact us** for research lasers from IPG Photonics, sensors and instrumentation from Lake Shore Cryotronics, and the full range of mounts and stages from Siskiyou. Elliot Scientific can also be approached to supply optics and custom machined parts as well.

The full paper describing the experiment can be **read here on nature.com**.

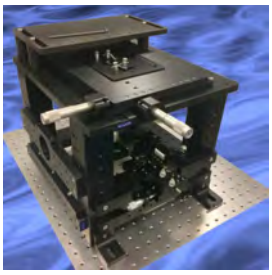
Economic laser trapping with Elliot Scientific Optical Tweezers

Optical Tweezers have been around for a long time. Over 40 years have passed since Arthur Ashkin and his colleagues described the single-beam gradient force trap and sparked a realisation in many scientists that this novel instrument would be a powerful tool for use in the course of their research. However, the costs - both in time and money - of building Optical Tweezers from scratch were often prohibitive.

With the development of easy to use 'straight out of the box' systems by Elliot Scientific, Optical Tweezers are now found in many labs around the world. Real experiments carried out in one such lab can be found **here**.

Download our **2018 Optical Tweezers Brochure**. It describes all the systems we offer; from open architecture kits to complete computer-controlled multiple spot trapping systems with force detection and more, or **contact us** to discuss details.

The RM21™ Platform from Mad City Labs aids microscopy



The precision manufactured RM21™ from **Mad City Labs** offers maximum user accessibility and more opportunities to develop configurable instruments with ease. Consequently, scientists in the global microscopy community have recognised its invaluable contribution towards their research.

The **RM21™** is the ideal platform for a range of microscopy applications such as super resolution (SR) microscopy, fluorescence microscopy and TIRF. Easy alignment of microscopy and optical components is achieved within its three dimensional space as all posts and fixturing points are referenced to a known datum.

The standard RM21™ includes a precision platform and an axial, motorised Z-axis for objective positioning. The Z-axis has a travel range of 50 mm (2") with a 95 nm step size. Please **contact us** for more information about other options.

CRAIC Technologies' 508 PV™ adds advanced spectroscopy to your microscope

The **CRAIC Technologies' 508 PV™** UV-visible-NIR spectrophotometer is designed to be added to a microscope's open photoport or a probe station for high-resolution colour image capture and non-destructive analysis of the spectra of many types of microscopic samples.

The 508 PV™ features CRAIC's cutting edge Lightblades™ spectrophotometers which can acquire spectra from microscopic sample areas by absorbance, reflectance, polarisation, luminescence and fluorescence. Typical applications include:

- MEMS devices & material characterisation
- FPD colour masks, OLEDs and LEDs
- Surface plasmon resonance
- Mineralogy and vitrinite coal reflectometry
- Photoreceptors and semiconductors
- Optical thin film thickness
- Process contamination analysis

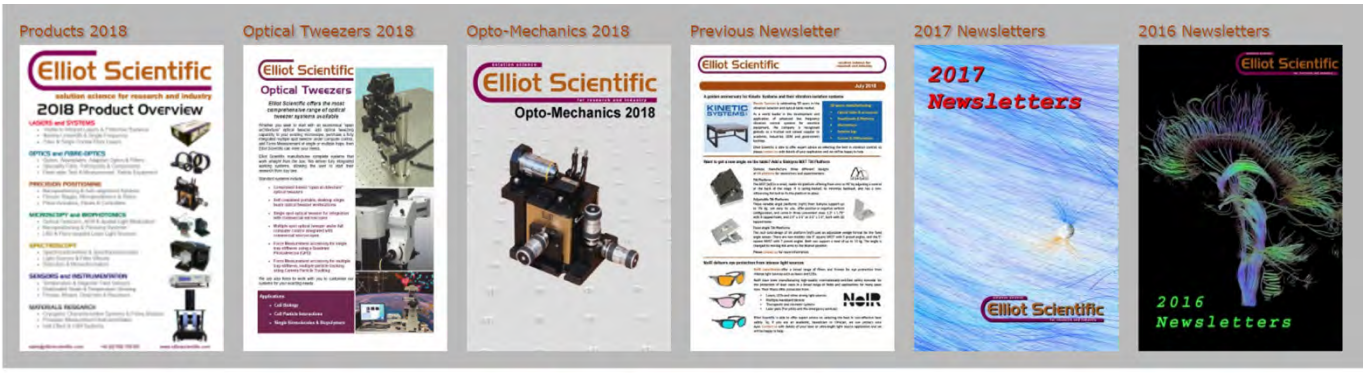
Please **contact us** for more details about this or other **CRAIC** products.

Next month, meet Elliot Scientific and Lake Shore Cryotronics at...

ICEC27-ICMC 2018

3rd to 7th September 2018, University of Oxford

Exhibition days are Tuesday and Wednesday



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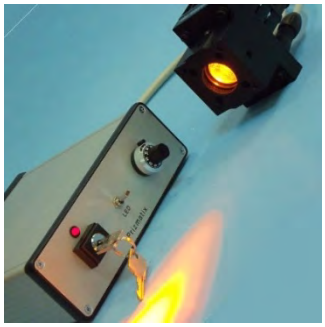
September 2018

Popular Prizmatix products pinch prime page positions - now say that again quickly!



Prizmatix

Frequent visitors to our website may have noticed that **Prizmatix** products regularly feature in our *most popular products viewed* section on the homepage. Chief among these are their range of collimated Ultra High Power LED light sources.

The **UHP Series** provides nearly ten times more power in comparison with typical high-power LEDs, making them an effective replacement for Hg and Xe lamps, as well as lasers in many applications. These can include fluorochrome activation in fluorescence microscopy, optogenetics, chemical reaction activation, and uncaging. UHP features include:

- Speckle-free ultra high-power LED light
- Excellent for fluorescence excitation
- Optional band pass filtering
- Precisely adjustable, stable power with rapid warm up time
- Long life - over 10,000 hours. No lamp replacement required
- Easy connection to microscopes, fibre-optics and lightguides
- Specialised MP version for microplate and petri dish illumination
- Up to 3 Prizmatix LEDs can be combined to form a multi-λ system

The large LED chip used in the UHP range delivers an impressive flat field illumination, ideal for general fluorescence microscopy and even more so for quantitative imaging. Alternatively, high NA optical fibre can be attached via an adaptor to achieve maximum light power from the distal end for use in optogenetics.

Contact us for info, or see them live at **Photonex** next month.

Siskiyou stimulates optogenetics research with field of view light spot

The **Siskiyou IS-OGP** provides a simple, complete solution that adds a high power light source to your Nikon, Olympus or Zeiss microscope for optogenetics research.

It positions a small - 10 µm typical with 20x objective - stimulation spot to any location within the field of view.

The single-mode FC connectorised fibre optic cable input from a light source, combined with the included FLG-FC/2 optics internal to the IS-OGP, creates a collimated input to the rear aperture of the microscope objective.

For more information about this or other life science products from Siskiyou Coproration, please **contact us**.

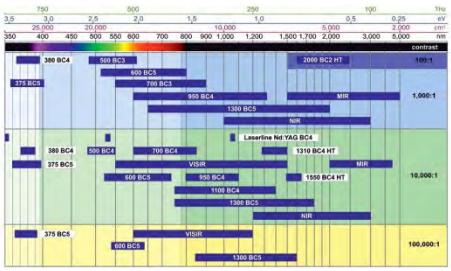
CODIXX release new larger catalogue for 2018/19

CODIXX

colorPol® polarizers

Video clip courtesy of

Optatec



CODIXX colorPol® glass polarisers utilise a unique silver nano-particle technology to deliver high contrast ratios and high transmittance across a variety of wavebands.

The wavelength ranges of effective polarisation span to the UV region (UV: 340 nm to 415 nm), the visible, and near infrared regions (VIS and IR series: 450 to 5000 nm).

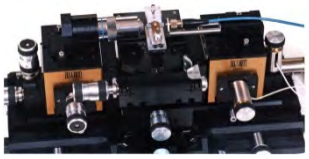
With more than two dozen different standard polarisers available plus the customisable *S series*, there should be a model that covers your application.

The new 2018/19 catalogue can be downloaded **here** or you can get individual polariser information by **contacting us**.

DAli 3 delivers fast auto-alignment with precision via piezo-driven flexure stages

E2300 DAli 3

E1100 Piezo Controller



Piezo-driven alignment system

The **Elliot Scientific DAli 3** is an automated photonic device alignment system for the following applications:

- Fibre-to-fibre coupling
- Fibre-to-waveguide alignment
- Fibre-to-laser diode alignment
- Fibre array-to-device alignment
- Compensation for epoxy drift during pigtailing
- Compensation for drift during long-term characterisation
- Simultaneous alignment of input & output fibres (or arrays) to waveguide device

A typical DAli 3 system consists of our new 3-channel **E1100 piezo controller**, the USB-equipped DAli 3 interface, and a PC or laptop for driving the easy to use software. A DAli 3 will be demonstrated at **Photonex** next month.

Although designed to complement the piezo-driven versions of the Elliot Gold™ Series range of flexure stages, such as the **MDE123** and **MDE125**, it is also suited to other piezo devices working on 0 to 150 volts.

DAli 3 incorporates the latest in electronics and uses complex software algorithms to quickly deliver precision automated alignment. It does this by locating and optimising an optical feedback signal derived from the components being aligned. It then adjusts their relative position to optimise the signal and therefore their accurate alignment.

The software and hardware package includes many features to enhance use, while also providing the necessary flexibility to allow it to be incorporated into a wide range of photonic alignment tasks for development, test, and production applications.

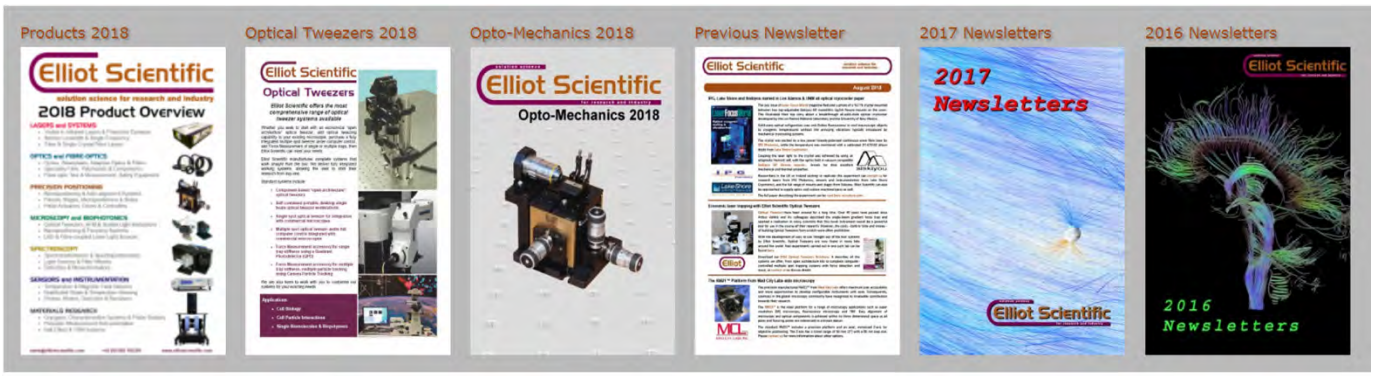
For more information, options and specifications, please **contact us**.

Next month, meet Elliot Scientific at...

Photonex EUROPE LIVE! 10/11 October 2018 | Coventry

Photonex Europe Live!

10th and 11th October 2018
Ricoh Stadium, Coventry
Stand B10



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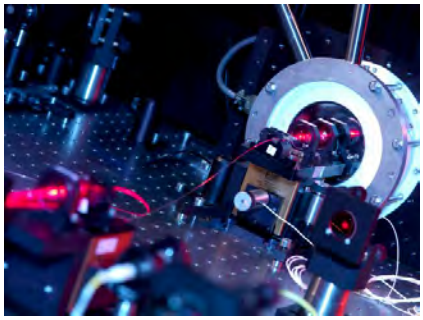
Elliot Scientific

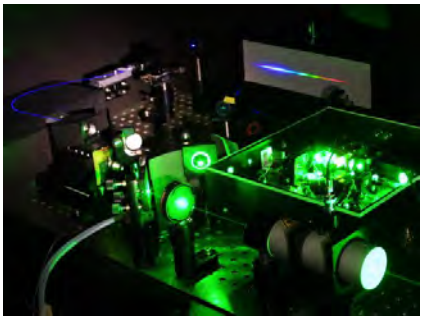
solution science for research and industry

October 2018

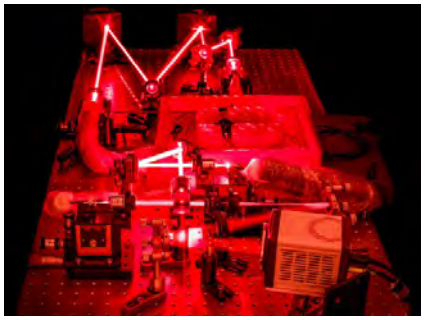
Our *Gold Series* Flexure Stages support quantum research in many labs worldwide



National Physical Laboratory



Theodor Hänsch, MPI Quantum Optics



Kevin J. Mitchell, University of Glasgow

Swipe through the ten photos above - choose our **browser newsletter** for the best viewing experience - and you'll see our ***Gold Series* Flexure Stages** being used in light-based experiments probing the secrets of the quantum world.

These versatile Elliot|Martock stages deliver nanometre positioning for fibre launch systems (single-mode, multimode, and polarisation maintaining fibres), waveguide alignment, and other precision photonics applications.

Derived from the immensely popular original stage invented and patented by Martock Design, Elliot Gold™ series XYZ flexure stages offer arcuate displacement (vertical displacement due to longitudinal flexure motion) up to 4x better than competing products.

We will be demonstrating these stages and their accessories, as well as our range of compact stages and dovetail slides (*right*), at **Photonex**. If you are unable to attend, then please **contact us** for more information.

Thanks go out to all persons and institutions who contributed photographs for this section. If you have a photo of any **Elliot|Martock** or **Elliot Scientific** products used in your lab, and would be happy for us to feature them, then please let us know by emailing **marcom@elliotscientific.com** or tweeting **@elliotsci**.

It's no trick: Amazing active vibration isolation systems from Accurion

- *Active platforms*
- *Active workstations*
- *Active supports*
- *Acoustic enclosures*
- *Custom designs*

Accurion designs and manufactures the **Halcyonics** range of advanced vibration reduction systems for science, technology *and* the HiFi enthusiast.

- **Benchtop** units for small to medium-sized applications up to 120 kg
- **Workstations** for the science or medical laboratory, for example IVF
- **Supports** for larger, heavier applications which are usually floor mounted

Active vibration isolation overcomes the limits of passive damping systems, enabling the attenuation of vibrations caused by machinery, people, traffic, even sound waves, that would disturb delicate equipment.

So, whether it's high-resolution measurement, high-precision manufacturing process, or high fidelity sound, **contact us** to get the best performance.

As our demo unit weighs in at 37 kg, we decided not to schlep it to Photonex.

Send this newsletter to 10 of your friends... or else

In the early days of email and the internet, then later with social media, messages circulated asking the reader to forward it on to at least 10 of their friends for good fortune... or bad luck would ensue if they didn't.

Well, we at Elliot Scientific do not promise you riches or ills, but we do ask that if you know of any colleagues who might benefit from reading our newsletter to let them know about it.

They can sign up or read it via our **website**, join the mailing list using this **link**, or just read it online at **Issuu**. Thanks go to CNgoXkde for allowing us to use the photo of his homemade chainmail - CC BY

New RS-7-SWIR from Gamma Scientific covers 900 to 1700 nm spectral range

RS-7 SpectralLED®

RS-7 with fibre-optic outputs

1m integrating sphere fitted with RS-7 illumination

The multiple award winning **SpectralLED®** tuneable visible light sources from Gamma Scientific combine the output of nearly three dozen discrete LEDs - each having a different centre wavelength - to produce output that can be programed to closely match virtually any illuminant source or the spectrum of any illuminant reflected by a target.

The new SWIR model (*Shown right*) is fitted with 9 short-wave infrared wavelengths for synthesis of commercially available light sources, making it well-suited for calibration and testing of night vision sensors, remote sensing sensors and industrial monitoring equipment.

SpectraLED® Family of Tuneable Light Sources

- **RS-7-1 Benchtop**
  75 mm output port & integral integrating sphere
- **RS-7-2 Large Output Port**
  Exit ports up to 600 mm dia.
- **RS-7-3 Fiber Optic Output**
  Fibre outputs with distal end collimation
- **RS-7-4 Wafer Probe**
  Directly replaces lamp-based systems
- **RS-7-5 Baffle Output**
  150 mm output with adjustable f/number
- **RS-7-6 Wide Field of View**
  75 mm output port with up to 180° FoV
- **RS-7-7 Light Booth**
  For CRI experiments
- **RS-7-SWIR**
  900 to 1700 nm spectral range

We will be demonstrating a selection of **Gamma Scientific** products at Photonex. If you are not attending, please **contact us** for more information.

Siskiyou engineer with quality and flexibility in mind for life science and photonics

Siskiyou Corporation offers a diverse range of micromanipulators, microscope sample positioners, and modular opto-mechanical building blocks to life science and photonics researchers.

- Single-axis manipulators
- 4-axis manipulators
- Huxley-style manipulators
- Translation stages & slides
- Optogenetics positioner

Siskiyou has been a leading designer and manufacturer of versatile laboratory mechanicals, photonics components and precision positioning products for decades, and Elliot Scientific will be demonstrating a selection of their robust products at Photonex.

From the beginning, these products have been engineered with quality and flexibility in mind. For more information, please **contact us**.

This month, meet Elliot Scientific at...

Photonex EUROPE LIVE!
10/11 October 2018 | Coventry

Photonex Europe Live!

10th and 11th October 2018
Ricoh Stadium, Coventry
Stand B10

Products 2018

Optical Tweezers 2018

Opto-Mechanics 2018

Previous Newsletter

2017 Newsletters

2016 Newsletters

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solution science for research and industry

November 2018

Prizmatix reveal DMD module at Neuroscience 2018

New Prizmatix DMD module (black unit) in-situ

Prizmatix announced, at Neuroscience 2018, the introduction of a digital micromirror device (DMD) module for delivering light to cellular and subcellular targets. Applications include: optogenetics, uncaging, photoactivation and fluorescence recovery after photobleaching (FRAP).

The one megapixel DMD utilises a grid of 1140 x 914 independently controllable micromirrors to divert light to specific areas under study at over 1000 times per second, offering almost spatial light modulator (SLM) performance without the need to use lasers.

Prizmatix were also wowing the crowds at last week's conference and exhibition with their self-contained **UHP-M**, an ultra-high power UV and visible light source for many applications, such as a mercury lamp replacement in fluorescence microscopy.

Microscope mounted UHP-M

Incorporating two independently controllable Prizmatix large-chip LEDs, the UHP-M delivers broadband white light from a single 55 W LED, and high power UV from a single 10 W LED operating at 365, 385 or 405 nm depending on model ordered. The UHP-M offers:

- Optically isolated TTL & analogue inputs
- Fast TTL switching
- Low optical noise
- Long life (no lamp replacement)
- Fanless operation
- Remote control*
- USB interface*

** The UHP-M requires no external control if operating at full power. However, if power levels need to be adjusted, the optional remote control or USB interface will be required.*

For more information about these or other life science products from Prizmatix, please **contact us**.

Lake Shore's 240 Series monitor distributed cryogenic temperature sensors precisely

Lake Shore's **240 Series** offer a convenient, modular input solution for precision monitoring of cryogenic temperature sensors in large-scale applications employing distributed PLC-based control.

Conversion of sensor resistance/voltages to calibrated temperature units is performed automatically by the module and reported digitally to the controller via PROFIBUS-DP or Modbus.

Widely distributed *big physics* applications like particle accelerators and fusion reactors, as well as large industrial sites, can benefit from the same performance as **Lake Shore**'s benchtop cryogenic instruments - which are trusted throughout the world for precision measurement

Space telescopes, research satellites, supercolliders, and fusion reactors are just some of the difficult to access systems that would benefit from Lake Shore **HR (High Reliability) Sensors**.

- 2 or 8 inputs
- 1 to 800 K
- Integral OLED display
- PROFIBUS-DP & USB
- Broad range of sensors

These off-the-shelf sensors, ideal for use with the Model 240, have already undergone extreme testing for such mission-critical applications. **Contact us** for more information now.

Ultrafast fibre lasers for science from IPG Photonics

IPG Photonics are developing a range of green, infrared, and mid-IR high speed fibre and fiber-to-bulk hybrid lasers operating in the pico and femtosecond regimes, making them ideal for scientific and medical research.

Ultrashort pulse durations in the 10^{-11} to 10^{-13} s range are generated by a master oscillator/ fibre power amplifier (MOFPA) architecture, and are particularly well suited for generating pulse energies in the range from several microjoules to ~1 mJ with repetition rates from 10 kHz to 3 MHz.

IPG Photonics currently offer two **1030 nm pulsed ultrafast lasers**. For more information about these or other lasers from IPG, please **contact us**.

A-H enable precision metrology via capacitance measurement in a multitude of applications

Andeen-Hagerling has been manufacturing class-leading capacitance and capacitance/loss bridge test equipment for over thirty years. Their equipment is used in laboratories worldwide, in a wide variety of research and industrial applications. These include:

- Atomic Layer Deposition (ALD)
- Dielectric characterisation
- Glasses
- Spectroscopy
- Gravity
- Liquid crystals
- Magnetometry
- Low temperature physics
- Nano-force metrology
- Quantum Dots
- Tunneling
- Dilatometry:
  - Thermal expansion
  - Magnetostriction
- Biophysics
- Carbon nanotubes & nanowires
- Electrical/Capacitance metrology
- Ferroelectrics
- Semiconductor testing
- Precision positioning
- Pressure/Capacitive Bolometry
- Scanning Capacitance Microscopy (SCM)
- Scanning Tunneling Microscopy (STM)
- Single Electron Tunneling (SET)
- Structure & Phase transitions
- Superconductivity & Superfluids
- Magneto-capacitance, -resistance & -dielectric effects

Elliot Scientific is able to offer expert advice on selecting the right Andeen-Hagerling instrument for your project, so please **contact us** with details of the application and we will be happy to help.

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Elliot Scientific

solution science for research and industry

December 2018

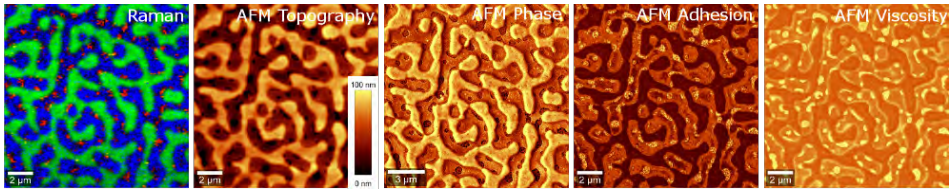
WITec Raman imaging systems now available through Elliot Scientific

WITec is a market leading manufacturer of high-quality micro- and nano-analytical imaging instruments for the geoscience researcher, forensic and materials scientists, pharmaceutical lab technician, semiconductor manufacturer, and food and drinks technologist.

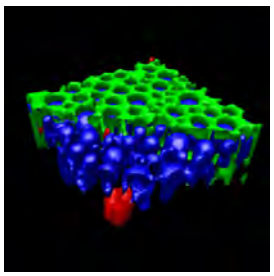
Elliot Scientific is now the exclusive UK and Ireland distributor for WITec confocal Raman microscopes, Atomic Force Microscopes (AFM), and Scanning Near-field Optical (SNOM) Microscopes.

WITec Raman imaging systems offer diffraction-limited spatial resolution (typically down to λ/2 of the excitation wavelength, ~200 nm) for solid and liquid analysis without the need for labelling or any other sample preparation. The resulting images deliver clear and detailed information related to the sample's chemical compounds and their distribution.

A key feature of WITec's award-winning systems is correlative analysis whereby Raman imaging can be combined with **AFM** or **SNOM** in the one instrument. Combination of the various imaging techniques and switching between the different acquisition modes is simply done by rotating the microscope turret.



Combined Raman-AFM measurement of the same sample area of a multicomponent polymer blend

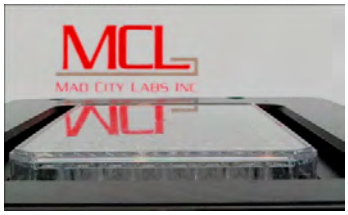


WITec emerged from the academic world in 1997 and the company's team of scientists and engineers work together on a programme of continuous product innovation to ensure WITec can deliver reliable groundbreaking solutions to the latest imaging challenges.

Elliot Scientific's new Managing Director, Dr. Adrian Knowles, has many years of experience in spectroscopy systems and will be responsible for the new WITec product range.

Please **contact us** for more information.

Mad City Labs say Nano-ZL ideal for high-speed multiwell plate imaging



Watch closely...
500 microns of travel in action

The **Mad City Labs**' Nano-ZL Series are long range, Z-axis nanopositioners specifically designed to hold multiwell plates used in biomedical research.

High-throughput single cell fluorescence microscopy and high speed, high resolution confocal imaging can be accomplished while simultaneously adjusting the Z-axis position to remove the effects of multiwell plate irregularities.

The **Nano-ZL Series** has true flexure guided motion and contains internal position sensing for a resolution of better than 1 nm over the full 500 µm travel range, and sub-nanometre for the shorter 100 µm travel range. In addition to high resolution spatial imaging, the Nano-ZL step response allows entire Z-section acquisitions with minimal photo bleaching.

For more information, please **contact us**.

Rugged Monitoring introduce multi-channel capability with new T301 module

The new T301 series is a robust 8 to 24 channel (expandable to 256 channels) fibre optic temperature monitor from **Rugged Monitoring** designed for use in environments where extreme conditions limit conventional temperature sensor/monitor systems.

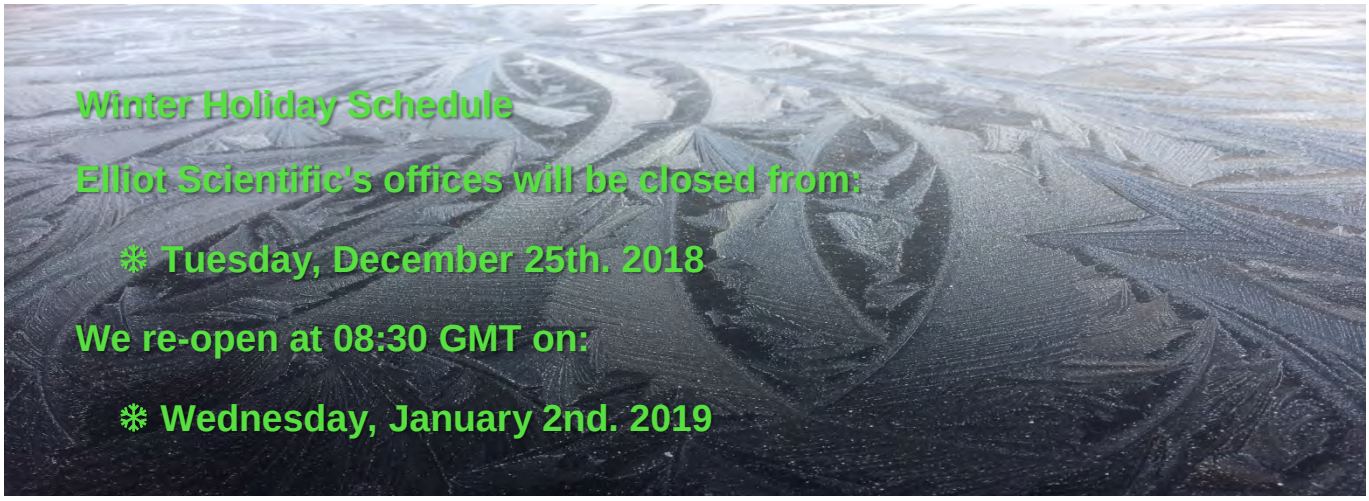
The instrument has a measurement range of -269 to +300 °C; complete immunity to RFI, EMI, microwave and high voltages; and is compatible with a wide range of GaAs fibre optic temperature sensors from both Rugged Monitoring and other companies.

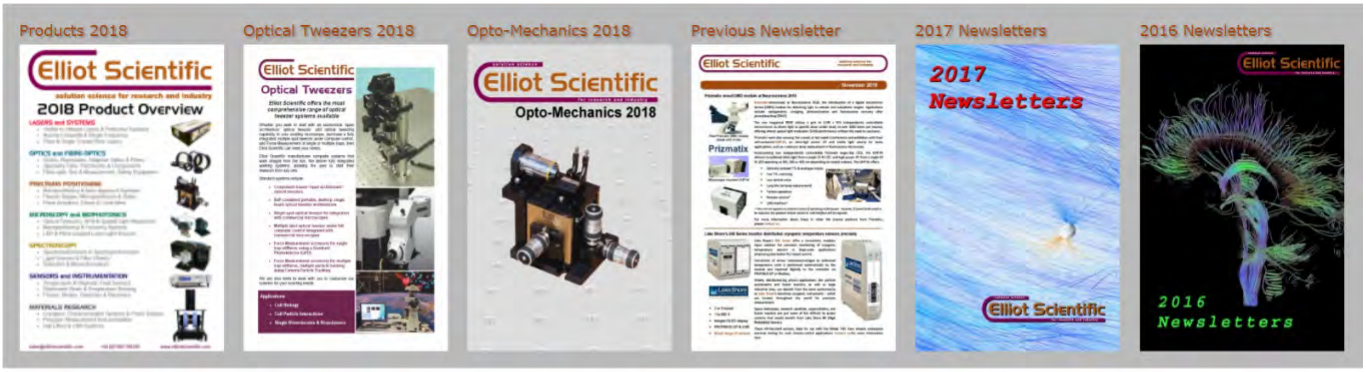
The T301 is designed for data collection and ease of integration into existing systems. As such it is equipped with an RS-485 interface as standard. Optional interfaces include: RS-232, Gigabit Optical Ethernet, or simple 0-10 V analogue outputs. Please **contact us** for more information.

Seebeck coefficient measurement made easy with CryoLab as video explains

The Seebeck effect is the direct conversion of temperature differences to electric voltage and vice versa. A thermoelectric device creates voltage when there is a different temperature on each side. Conversely, when a voltage is applied to it, it creates a temperature difference.

By using the **CryoLab from Kryoz**, it is possible to measure the Seebeck coefficient of a material sample, wire or thin film from 373 Kelvin down to cryogenic temperatures. In this informative **video**, Kryoz demonstrate how such measurements are made using their equipment. For more information, please **contact us**.





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