# PRODUCT GUIDE 2023-2024

LASERS
SPECTROSCOPY
MICRO-POSITIONING
ANTI-VIBRATION SYSTEM





## **About us**



With a firm seating in French and German speaking Switzerland, GMP SA is the Swiss specialist of spectrometers, lasers, systems of micropositioning and anti-vibration.

Founded in 1977, GMP SA has ever since contributed to the development of the Swiss photonic market by supplying to its customers the best available products and solutions.

#### Our promise: our expertise is at your service

As per its CEO Fabio Manzini, the team of GMP has a wide range of expertise covering the scientific and industrial fields, in Switzerland as well as in an international framework.

The GMP team with PhD and Master level engineers, is the perfect interface between the manufacturers of advanced technology products and the Swiss Market.

This team has the right level of expertise to help you find the solution to your project, whether you are in Industry or in Research.

We prioritize customer proximity for a long-term partnership. We are reactive and we are located at less than one hour from all our Swiss customers.

We offer standard and customized solutions, with a complete service from delivery to installation with a Swiss warranty.

# Our strengths: a strong market presence and our long-term partners

Long term trusted relations, with partners that are at the forefront of the technology, with innovative products and the needed flexibility to adapt to the customer requirements are the foundation on which relies our strength. Over 45 years of continued market presence GMP has adapted its offering to match the progress of science and technology and the needs of its customers.

All our products can be reviewed on: www.gmp.ch

#### Our mission: provide the right technology for your success

GMP SA has strong ties that have been built over the years with its customers, suppliers and the major actors and institutions active on the Swiss market. GMP member of the major industrial and photonics associations, every year sponsors and participates in various fairs and events that take place in the academic and industrial environment.



Jean-Jacques Goy Founder and President



Fabio Manzini CEO

# Summary

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#### **OUR PARTNERS**



































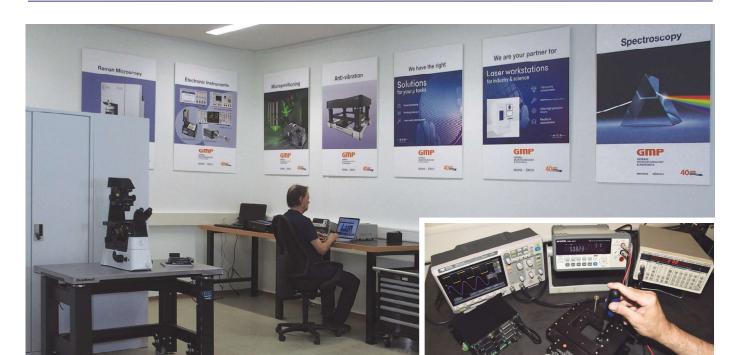








# **GMP** Headquarter



We have a technical service facility equipped to test and service many of the products that we supply to our customers. Fast diagnostics, local repair, whenever possible, does mean a shorter time for our customer to get his equipment back into operation.

In this facility, we can also build and test various setups for demonstration purposes for our customers, or for the various events in which we participate.

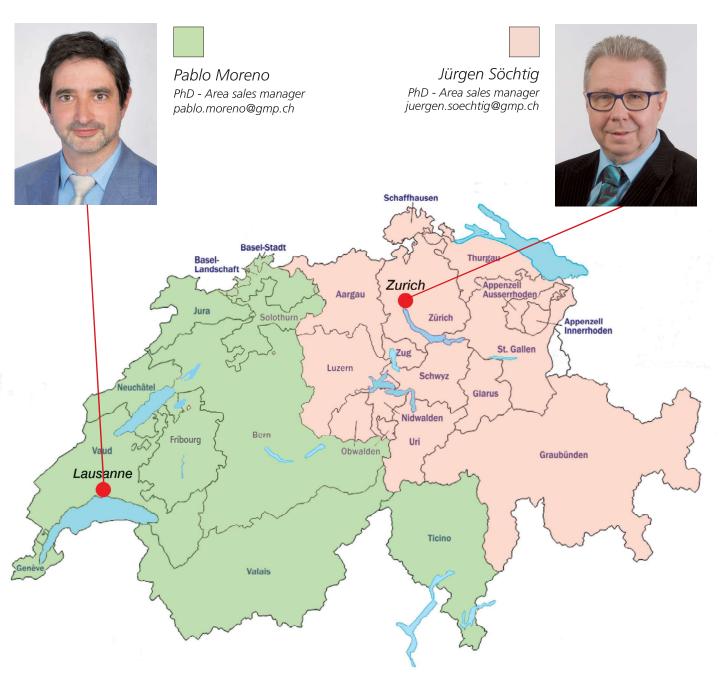
We have a storage facility for our OEM customers. They will be served upon request on a very tight delivery schedule.

We have the possibility to handle large and heavy items. All items that enter our facility are inspected before leaving for the customer premises.

Our logistics department is highly competent to carry out all the required procedures related to the import/export of goods and services.



At GMP headquarter we have a conference room fully equipped with the latest technology for online meetings, trainings with customers and partners, with a high quality of sound and image for up to eight participants.





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#### **PHAROS**

#### Modular-Design Industrial-Grade Femtosecond Lasers

PHAROS is a series of femtosecond lasers combining mJ pulse energy and high average power. PHAROS features a mechanical and optical design optimized for both scientific and industrial applications. A compact, thermally-stabilized and sealed design enables PHAROS integration into various optical setups and machining workstations.

The tunability of PHAROS allows the system to cover applications normally requiring multiple different laser systems. Tunable parameters include pulse duration (190 fs – 20 ps), repetition rate (single-shot – 1 MHz), pulse energy (up to 2 mJ) and average power (up to 20 W).



#### **CARBIDE**

#### **Unibody-Design Industrial-Grade Femtosecond Lasers**

CARBIDE is a series of femtosecond lasers combining high average power and excellent power stability.

The tunability of CARBIDE lasers enables our customers to discover the most efficient manufacturing processes. Tunable parameters include pulse duration (190 fs – 20 ps), repetition rate (single-shot – 2 MHz), pulse energy (up to 0.8 mJ) and average power (up to 80 W).

A pulse-on-demand mode is available using the built-in pulse picker.



#### **FLINT**

#### **Femtosecond Oscillators**

FLINT oscillators are based on an Yb crystal pumped by high-brightness laser diodes. Generation of femtosecond pulses is provided by Kerr lens mode-locking. Once started, mode-locking remains stable over a long period and is immune to minor mechanical impact. Oscillator cavity length can be adjusted using an optional piezo actuator. FLINT oscillators can also be equipped with carrier-envelope phase (CEP) stabilization and repetition rate locking to an external source.

Product	Maximum output power	Maximum pulse energy	Repetition rate	Pulse duration	Special features
PHAROS	20 W	2000 μJ	Single-shot – 1 MHz	190 fs – 20 ps	CEP stabilization option Repetition rate locking option
CARBIDE	80 W	800 μJ	Single-shot – 2 MHz	190 fs – 20 ps	Compact footprint Air- or water-cooled models
FLINT (oscillator)	20 W	0.26 μJ	≈ 76 MHz	0 fs – 170 fs	CEP stabilization option Repetition rate locking option



#### **Harmonic Generators**

PHAROS and CARBIDE lasers, as well as FLINT oscillators, can be equipped with modules for a high-efficiency harmonic generation. This includes industrial-grade harmonic generators (HGs), automated and fully integrated into the system, and HIRO, a free-standing module with manual control but highly customizable and offering simultaneous outputs, thus more fitting to scientific applications.



#### **Wavelength-Tunable Sources for Yb Lasers**

The highlight of wavelength-tunable sources is the ORPHEUS series of femtosecond optical parametric amplifiers (OPAs) for Yb lasers. Coupled with PHAROS or CARBIDE femtosecond laser, ORPHEUS makes an invaluable source for ultrafast spectroscopy, nonlinear microscopy, and a variety of other scientific applications.



#### **TOPAS**

is a series of femtosecond optical parametric amplifiers (OPAs) for Ti:Sapphire lasers which delivers continuous wavelength tunability from 189 nm to 20  $\mu$ m, high conversion efficiency, high output stability, and full computer control.

TOPAS can be pumped by Ti:Sapphire lasers with pulse duration from 20 fs to 200 fs and pulse energy from 15  $\mu$ J to 60 mJ.



#### **Laser Sources for Microscopy Systems**

LIGHT CONVERSION product portfolio with recently released microscopy-dedicated femtosecond laser sources, applications in functional neuroimaging, optogenetics, and deep imaging using medium-repetition-rate three-photon excitation and fast high-repetition-rate two-photon imaging, as well as widefield and holographic excitation using high-power laser sources.



#### **Comprehensive Spectroscopy System**

The HARPIA comprehensive spectroscopy system performs a variety of sophisticated time-resolved spectroscopy measurements in a compact footprint. Modules and customization options tailor the HARPIA system to specific measurement needs. The system is built around the HARPIA-TA transient absorption spectrometer and can be expanded using time-correlated single-photon counting and fluorescence upconversion (HARPIA-TF), third beam delivery (HARPIA-TB), and microscopy (HARPIA-MM) modules. For a single-supplier solution, the HARPIA spectroscopy system can be combined with a PHAROS or a CARBIDE laser together with ORPHEUS series OPAs. HARPIA also supports Ti:Sapphire lasers with TOPAS series OPAs.

# **\*\*EKSPLA**



# PT277-XIR series Single Housing MIR Tunable Picosecond Laser

PT277 series laser systems integrate a picosecond optical parametric oscillator and DPSS pump laser into a single compact housing. Mounting the components into one frame provides a cost-effective and robust solution. It makes laser installation shorter and improves long-term stability, reduces maintenance costs.

- 1400 16000 nm (7000 625 cm<sup>-1</sup>) tuning range
- Linewidth <5 cm<sup>-1</sup> in the full tuning range
- Nearly diffraction limited divergence



#### PT403 series Tunable Wavelength Picosecond Laser

PT403 series laser systems integrate a picosecond 1kHz repetition rate DPSS pump laser and optical parametric generator into a single housing. New picosecond tunable wavelength laser system provide from 210 to 2300 nm from the one box.

- From 210 to 2300 nm output wavelength
- 1 kHz repetition rate
- Narrow linewidth < 9cm<sup>-1</sup>
- OPO and pump laser integrated into one box



#### PL2210 series Diode Pumped Picosecond kHz Pulsed Nd:YAG Lasers

PL2210 series diode-pumped, air-cooled, mode-locked Nd:YAG lasers provide picosecond pulses at a kilohertz pulse repetition rate.

Short pulse duration, excellent pulse-to-pulse stability, superior beam quality makes PL2210 series diode pumped picosecond lasers well suited for many applications.

- Diode pumped solid state design
- Up to 5 mJ
- 20 80 ps pulses
- 1 kHz pulse repetition rate



#### PL2230 Diode Pumped High Energy Picosecond Nd:YAG Lasers

The heart of the system is a diode pumped solid state (DPSS) master oscillator placed in a sealed monolithic block, producing high repetition rate pulse trains (87 MHz) with a low single pulse energy of several nJ.

- DPSS high pulse energy mode-locked lasers
- Up to 140 mJ
- 20 80 ps pulses
- 50 100 Hz pulse repetition rate

# **\*\*EKSPLA**



# PL2250 series Flash-Lamp Pumped Picosecond Nd:YAG Lasers

PL2250 series lasers cost-effective design improves laser reliability and reduces running and maintenance costs.

#### INNOVATIVE DESIGN

The heart of the system is a diode pumped solid state (DPSS) master oscillator placed in a hermetically sealed monolithic block. The flashlamp pumped regenerative amplifier is replaced by an innovative diode pumped regenerative amplifier.

- Flash lamp pumped high pulse energy mode-locked lasers
- Up to 100mJ
- 20 80 ps pulses
- 10 20 Hz pulse repetition rate



# Atlantic 5 series Compact Air Cooled Picosecond Laser

Atlantic 5 series air-cooled lasers are among the most compact picosecond industrial lasers. This series was designed as a versatile tool for a variety of applications.

Atlantic 5 series lasers have a versatile synchronisation capability with external equipment, including PSO (position synchronized output) which makes integration with any laser beam control equipment seamless and easy.

- Up to 5W at 1064nm
- Up to 30µJ pulse energy
- Up to 1 MHz repetition rate
- Air cooled
- Burst mode



# SFG Spectrometer Sum Frequency Generation (SFG) Vibrational Spectrometer

Sum Frequency Generation Vibrational Spectroscopy (SFG-VS) is powerful and versatile method for in-situ investigation of surfaces and interfaces. In SFG-VS experiment a pulsed tunable infrared IR ( $\square$ IR) laser beam is mixed with a visible VIS ( $\square$ VIS) beam to produce an output at the sum frequency ( $\square$ SFG =  $\square$ IR +  $\square$ VIS). SFG is second order nonlinear process, which is allowed only in media without inversion symmetry.

At surfaces or interfaces inversion symmetry is necessarily broken, that makes SFG highly surface specific. As the IR wavelength is scanned, active vibrational modes of molecules at the interface give a resonant contribution to SF signal. The resonant enhancement provides spectral information on surface characteristic vibrational transitions.

- Characterisation of vibrational bonds of molecules at surfaces or interfaces
- Intrinsically surface specific
- High spectral resolution
- Wide range of accessible (molecular) vibrations: 625 4000 cm<sup>-1</sup>





# LPY Series – Superior performance through superior design. 850mJ to 10,000mJ

The LPY series of pulsed lasers have been designed to suit almost any industrial or research application in which a high-energy or high-specification Nd:YAG laser is required. Based around a fully self supporting Invar rail the LPY series exhibit both exceptional mechanical and thermal stability.



# The Litron's Nano Series – Small in size, big in performance. 30 mJ to 340 mJ

A family of compact and rugged Q-switched lasers suited to a multitude of applications including mask repair, LIBS, LIDAR, PIV, pump sources and spectroscopy.

The Nano series of pulsed Q-switched Nd:YAG lasers have been designed to satisfy the demands of customers today.



# The TRLi Series – True flexibility and advanced automated control features. 400 mJ to 850 mJ

The TRLi Series offers energies up to 850 mJ and repetition rates up to 300 Hz. This series offers a fully birefringence compensated pulsed laser systems with both high energy and high repetition rate outputs. Its twin-rod architecture ensures high beam homogeneity even at very high average power outputs.



# DPSS Lasers – Pulsed Diode Pumped Solid State Q-switched Nd:YAG Lasers. 50 mJ to 1000 mJ

These systems use the very latest in high efficiency fully diode pumped technology to replace traditional flashlamp pumping. Litron DPSS lasers use sealed, mechanically robust diode pump modules to ensure stable output, high reliability, easy diode replacement and long diode lifetime of more than 4 billion pulses.



#### Aurora OPO Range - Tunable Wavelength Lasers Both lamp pumped and DPSS tunable systems

The Aurora II Integra series combines a Type II BBO broadband OPO and Nd:YAG nanosecond pump source into a single laser head, using an ultrarigid Invar optical rail to provide class-leading performance and stability. True no-gap tunable output from 410 to 2600 nm with options to extend into the 210 to 410 nm UV range as well as direct access to the pump laser and its harmonics make the Aurora II the perfect choice for a wide range of research and industrial applications.





For more than 20 years now, Omicron has been developing, building and producing its systems inhouse.

Product quality is ensured with the aid of modern measurement technology. Development and production meet both European and American standards.

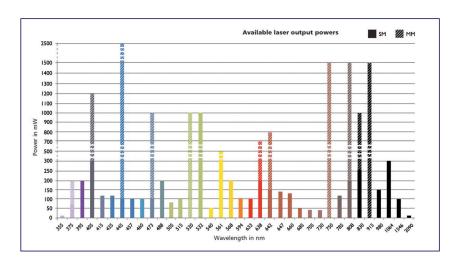












#### BrixX® Diode Lasers & LED

- Many different wavelengths between 375 nm and 2080 nm available
- Single-Mode optical output powers up to 1000 mW
- Multi-Mode optical output powers up to 3.5 Watt
- High-Stability CW operation (ACC and APC mode)

# LightHUB Ultra® – Plug&Play Laser Light Engines with up to 7 user-upgradable wavelengths and 2 fibre outputs

- Up to 7 wavelengths beam-combined and efficiently fibre coupled into one or two fibres
- Over 30 different wavelengths available
- Wavelengths upgradable by the end-user

# BrixXHUB® – high-power laser combiner with up to 6 wavelengths

- Up to 6 wavelengths beam-combined and efficiently fibre coupled in one compact housing
- Wavelengths between 375 and 808 nm available
- Free-space emission or Multi-Mode fibre coupled output

#### QuixX® Picosecond pulsed diode lasers

- 375-2090 nm
- Picosecond & CW mode
- User adjustable pulse-shape
- Arbitrary frequency generator

#### **LaserNest® Desktop Diode Laser Series**

LaserNest systems are a combination of the well-established LuxX+diode lasers and a desktop-style housing

- Plug & Play desktop-style laser
- >30 different wavelengths between 375nm and 1550nm
- Optical output powers up to 500 mW
- Fast analogue modulation >3 MHz
- Ultrafast digital modulation >250 MHz

# **Chromacity**



#### **Specifications**

- Output power: 1.1 W
- Wavelength: 920 nm
- Pulse duration: < 180 fs
- Pulse energy: 12.5 20 nJ (Depending on repetition frequency)
- Pulse repetition frequency: 80 MHz (Configurable at the point of manufacture)
- Control interface: Web browser interface. Ethernet & serial port (RS232) also available.
- Cooling: Air-cooled

### **Chromacity 920**

A highly-stable 920 nm femtosecond laser to achieve your two-photon microscopy goals.

This exciting new 920 nm femtosecond laser is the next generation of fiber-based technology which is enhancing multiphoton imaging with higher resolution and faster acquisition at significant depth.

The 920 nm femtosecond laser is ideal for multiphoton excitation (MPE). particularly two-photon excitation of fluorophores and calcium markers (including YFP, GFP, eGFP, GCaMP).

Fiber coupling capability reinforces seamless integration into microscopy set-ups for fundamental research and industrial applications, with maximum optical power transmission and minimal dispersion of the femtosecond pulses.

# Other products



Output Power: Up to 2.25 W Pulse Duration: < 150 fs Repetition Frequency: 100 MHz Beam Parameters: Ellipticity > 0.95



1040 nm

Output Power: Up to 2.25 W Pulse Duration: < 150 fs Repetition Frequency: 100 MHz Beam Parameters: Ellipticity > 0.95



Haskeir OPO

Spectral Range: 4.5 μm – 12 μm Output Power: Up to 100 mW at 5-7 μm Up to 20 mW at 12 µm Repetition Frequency: 100 MHz



Auskerry OPO

Output Power: Up to 2.25 W Pulse Duration: < 150 fs Repetition Frequency: 100 MHz Beam Parameters: Ellipticity > 0.95









#### **Passively Q-Switched Picosecond Lasers**

Largest standard range of passively Q-Switched DPSS lasers at 1535, 1064, 532, 355, 266 & 213nm. Up to 150kHz rep-rate and up to 280kW peak power, with pulses as short as 100ps. Wide ranging applications include scientific research, biomedical and environmental sciences, industrial material processing and ablation, micro-electronics, telemetry and mapping.

#### **Applications:**

- **Biomedical**
- Marking
- Sensing
- Scanning (Lidar)
- Material processing
- Electronics
- Transparent media processing
- Non-linear processes
- Interferometry



Mid IR OPO source

#### Supercontinuum sources and Volume picosecond pulsed Industry fiber lasers



Triggerable SC Source, SC-PRO 400-2400nm, up to 8W



OEM Supercontinuum Source



AOTF and VLF Systems for YSL SC Source



Supercontinuum Source SC-5 450-2400nm, >1W



Tuneable pulse duration fibre laser, 100 ps, 4 ns, 20 W



Tuneable pulse duration fibre laser, 600ps, 4 ns, 20W

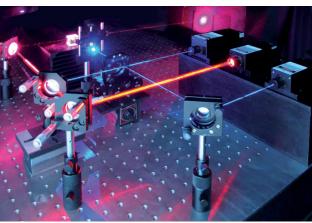


Total power up to 20W Wavelength 430nm-240nm

# **High Energy Lasers**







#### **High energy Laser**

High energy laser includes lamp pumped (LPS series) and diode pumped (DPS series) lasers. It is widely used in medical, military defense, scientific research, material processing and industrial applications. Available with 266 nm, 355 nm, 532 nm, 1064 nm, 1573 nm, etc... The single pulsed energy of 532 nm green laser can be up to 450 mJ and the energy of 1064 nm infrared laser can be up to 20 J.

#### **Applications:**

- Remote Sensing
- PIV, LIBS
- Marking & Engraving
- Laser Repairing
- Laser Pump Source
- Materials Processing



# Industrial Laser Systems





## Solutions for Your µ Tasks

Femtosecond laser micromachining products and services for industry & science



#### All-in-one R&D platform for laser micromachining

FemtoLAB is a femtosecond laser micromachining workstation. A perfect choice for scientific laboratories and R&D centers requiring custom solutions for various tasks.

FemtoLAB laser workstation offers combined laser micromachining processes at a submicron resolution and can perform a variety of applications.

#### Key applications:

- Surface and volume micro- and nano- structuring
- Femtosecond laser ablation (FSLA)
- Laser grooving
- Multiphoton polymerization (MPP) I direct laser writing (DLW)
- Laser cutting & drilling
- Uniquely, the system is compatible not only with planar samples but supports optical fibers machining as well.



#### **FemtoGLASS**

#### Glass cutting and dicing workstation for industry

The FemtoGLASS is a new glass & sapphire laser cutting and dicing workstation ideal for research & development, and volume manufacturing.

It is based on patented WOP glass & sapphire cutting technology, which is unique for ultra-high quality and precision results.

Our technology outperforms other glass-cutting methods and thus is very well applicable in semiconductors, microfluidics, and micro-optics industries.

- Ultra-thin (30 µm to 2 mm in a single pass) glass & sapphire cutting
- High process speed up to 800 mm/s
- All shapes: circular, square, irregular
- Tunable dicing process for different substrate thicknesses
- Inner and outer contours
- Easy breaking for non-tempered glass and self-breaking for tempered glass



#### **FemtoMPP**

#### Laser workstation for multiphoton polymerization

FemtoMPP is a laser micromachining workstation optimized for multiphoton polymerization (MPP) technology.

FemtoMPP is a perfect choice for scientific laboratories and R&D centers, requiring custom solutions for various tasks.

#### Main features

- Fabrication of complex objects with submicron resolution.
- High speed and ultra-high precision micromachining.
- Efficient beam delivery and power control.
- High-end industrial-grade femtosecond laser.
- High-performance galvanometer scanners.
- Object movement and laser pulse synchronization in time and space.
- Unique software interface controlling all hardware units.

# **Industrial Laser Systems**





#### **FemtoFBG**

#### Laser workstation for fiber Bragg gratings writing

FemtoFBG is a laser micromachining workstation optimized for fiber Bragg gratings (FBG) writing.

It is a perfect choice for scientific laboratories, R&D centers, and industrial clients working with telecommunications, distributed sensors, and Bragg Grating based devices development.

Femtosecond FBG writing is a proven technology for universal Bragg Gratings writing in various optical fibers, including not UV-sensitized fibers.

The main advantage of femtosecond laser writing is the ease of process tuning compared to a process using a UV phase mask.

Femtosecond lasers can be applied for Point-by-Point (PbP) and Line-by-Line (LbL) writing for up to 2nd order FBGs writing in various optical fibers, including multicore fibers. The smallest pitch in PbP writing is  $\sim 1 \mu m$ .

#### Main features

- Direct writing (point-by-point, line-by-line)
- Wide range Reflection/Transmission parameters control
- Variety of standard optical fibers



#### **FemtoFAB**

#### Laser machine for industry

FemtoFAB is a turnkey laser workstation designed for a specific industrial process – highly reliable, offers significant advantages in high speed, ultra-high precision, melt-less micromachining.

#### Main features

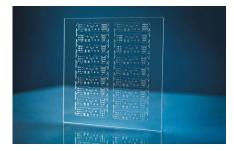
- High fabrication speed up to 300 mm/s (more on request)
- Fabrication of complex objects with submicron resolution
- High-performance galvanometer scanners
- Pulse density control
- Precise object positioning with submicron accuracy
- Object movement and laser pulse synchronization in time and space.
- Unique software interface controlling all hardware units













## **Industrial Lasers**







LightWAVE lasers are pulsed CO<sub>2</sub> lasers, with exceptional power stability and an ultra efficient RF design. The KT100, KT150 and KT200 come in the same footprint and offer a power range from 100 to 200 watts.

- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability ±5%
- Fast Rise and Fall Time <50 µsec
- Pulsed up to Quasi-CW Operation
- Under 25 kg



#### LightWAVE CO<sub>2</sub> Laser KT300 | KT500

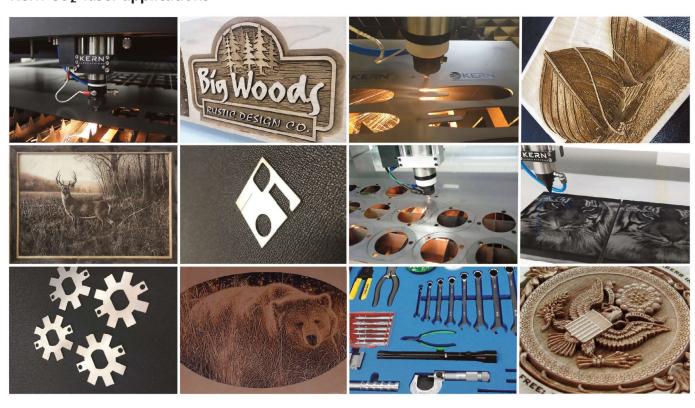
Kern Technologies has expanded their laser product line by now offering a 300+ and 500+ watt  $CO_2$  laser. The high power level will allow customers to process a wide range of materials faster as well as thicker materials.

- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability
- Fast Rise and Fall Time
- Pulsed up to Quasi-CW Operation

#### **Standard Features**

- Metal Sealed Laser Cavity
- Integrated Red Beam
- Internally Collimated
- Integrated RF
- Common Footprint
- Overbuilt Electronics

#### Kern CO<sub>2</sub> laser applications



# **Laser Safety**

# laservision<sup>®</sup>

- Laser safety eyewear based on all available technologies
- Coatings on plastic and glass filters
- Absorbing glass and plastic filters
- Absorbing mineral glass protection windows
- Active/passive absorbing plastic windows
- Laser safety curtains, slats and barrier plates
- Enclosures and cabins
- Training for Laser Safety Officers (LSO)





Cleaning station with accessoires





#### **Laser Safety Eyewear**









#### **Laser Safety Windows**









#### **Area Laser Protection**







With a 45-year track record of innovation and providing quality solutions for laser power and energy measurement applications, Gentec-EO stands ready to serve you now and in the future.





# MIRO ALTITUDE is Gentec-EO's flagship product for reading laser power and energy.

It was designed to help engineers and service technicians increase their productivity thanks to numerous innovative features in both hardware and software. Enter modern times of laser beam measurement with MIRO ALTITUDE.

Supercharge your productivity with an intuitive user interface, an extra large screen, tons of connectivity possibilities, 3 convenient display modes, a built-in dataviewer and a built-in file manager.

- Detector Compatibility
- Power measurement UP, XLP, PH, HP, UM-B, THZ-D
- Energy measurement QE, PE, also UP & XLP in SSE mode
- Display 10in touchscreen
- Output 2xUSB, USB-C, RS-232, Ethernet, analog output, sync. out
- Data logging Internal memory and USB key
- External trigger Yes
- Number of channels 1

#### **Other Display Devices**







Detector Compatibility

Detector Compatibility			
- Power measurement	UP, XLP, PH, HP, UM-B, THZ-D	UP, XLP, PH & HP	UP, XLP, PH & HP
- Energy measurement	QE, PE, UP & XLP in SSE mode	N/A	N/A
Display	10in touchscreen	5.6in touchscreen	3.8in LCD
Output	USB, RS-232, Ethemet, analog output	Analog output	N/A
Data logging	USB key	N/A	N/A
External trigger	Yes	N/A	N/A
Number of channels	1	1	1
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#### **PC** Interface

The U-LINK, P-LINK, S-LINK and M-LINK are PC interfaces for Gentec power or energy detectors and are provided with free software applications



- U-LINK is a universal power & energy meter that measures ALL detectors in the product range up to 10 kHz repetition rate. It has a very small footprint
- P-LINK is a small power meter, available with either a USB or RS-232 connector. A 4-Channel version is also available
- S-LINK comes with 1 or 2 channels and measures energy detectors at a very fast rate. It comes with a USB connector, Ethernet also available in option
- M-LINK is a universal power & energy meter that measures ALL detectors in the product range and features a unique noise suppression method

#### All-in-one Detectors

We also offer displays and PC interfaces which are integrated with the detector head. We offer three families of these all-in-one detectors. INTEGRA features either a USB or RS-232 output for a direct connection to your PC. BLU is available for all our thermal power detectors and allows you to view and log power measurements on your mobile device or PC. PRONTO includes a display, so you have everything you need in a single, portable device.



#### **Power & Energy Detector**

Gentec pyroelectric energy meters cover a very wide range, going from nanojoules to several tens of joules per pulse. The power detectors measure from a few nW to 15kW



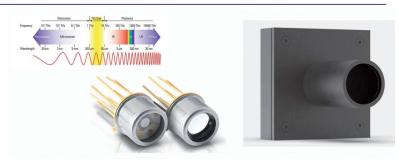
#### **Beam Diagnostics**

Profiling a laser beam is a convenient complement to the measurement of its power or energy because it provides very useful additional information, like spatial energy or intensity distribution, beam widths, centroid, ellipticity and orientation, that may help you determine if your laser-based systems are operating optimally.



#### **THZ Detector**

Gentec has a unique line of sensors and meters for the terahertz region. You can choose either a standalone device with on-board electronics or go with T-Rad meter and a separate sensor.





#### **Pulse Selection Systems**

Conoptics has developed a complete line of Pulse Systems for use with Ti:Sapphire, YAG, YLF and OPO's from 350nm to 1600nm applications. Customized options are also available.

#### **Deflection Systems**

Conoptics series of electro-optic deflectors are the most efficient mechanisms for changing the angle of a laser beam.



#### **Laser Modulation Systems**

ADP Cristal Series Wavelength Limits (240 to 800nm) KD\*P Crystal Series Wavelength Limits (240 to 1100nm) LTA Crystal Series Wavelength Limits (700 to 2000nm).



#### **Optical Isolators**

Optical Isolator with input and output polarizer's pre-aligned to the rotator glass.



#### **Noise Eaters**

Conoptics Laser Stabilization System (LASS-II) is designed to lower the noise intensity in laser beams.





#### Ultrafast Laser Pulse Characterisation

Compact, convenient and inexpensive devices for measuring ultrafast laser pulses completely and in real time. Swamp Optics also offers custom devices for nearly every pulse-measurement problem as well as an elegant pulse compressor.

#### **Boa Pulse Compressors**

When ultrashort pulses propagate through material (even simple glass), they spread in time due to group-delay dispersion (GDD). The red colors propagate faster than blue colors, lengthening the pulse – we say that the resulting pulse becomes chirped – one of the reasons we need to measure it.





#### **MID-IR** optics

for wavelengths up to 12 µm:

- Focusing objectives
- Optical isolators
- Collimating and coupling lenses
- Beam expanders



Founded over 4 decades ago, Hinds Instruments, Inc. co-pioneered with the late Professor James Kemp, physicist at the University of Oregon, the development of photoelastic modulators (PEMs) for the advanced measurement of a wide range of polarization properties important to academic and industry researchers and professionals worldwide.

#### **Photoelastic modulators**

Hinds Instruments is the world's leading developer of technologies based on the principles of polarization modulation. Photoelastic modulators (PEMs) are key components in a diverse range of photonics applications. As such, Hinds has become a key contributor to a wide range of critical polarization-based measurements.



#### **Birefringence Measurement Technology**

Hinds Instruments Birefringence Measurement technology has been adopted by industry leaders worldwide to measure birefringence and characterize stress birefringence in materials with unsurpassed accuracy, resolution and repeatability. Capable of measuring optical retardation at 0.001 nm resolution with noise floors as low as 0.005 nm, these systems are robust, dynamic and scalable to fit the demanding requirements of your application. We provide measurement systems across the light spectrum (DUV, VIS and NIR) and are able to measure virtually all optical materials.







Mueller Polarimeters



Exicor Microimager





#### **FLS1000 Spectrometer**

The FLS1000 sets the standard in both steady state and time-resolved photoluminescence spectroscopy for both fundamental research and routine laboratory applications.

- Modular construction for maximum flexibility and upgradability.
- Industry leading sensitivity specification >35,000:1 (SQRT Method).
- Unrivalled spectral coverage from the deep UV to the MIR,185 nm up to 5,500 nm.
- Fluoracle® software package easily accessible user interface and updated features.
- Higher Resolution 325 mm focal length monochromators provide superb accuracy and excellent stray light rejection with minimum step size.



#### **FS5 Spectrofluorometer**

The FS5 is designed to meet the highest measurement specifications in the research and analytical markets. The FS5 is truly unrivalled in its spectral performance and sensitivity.

- Multiple detector ports in one integrated instrument.
- >10,000:1 Water Raman SNR.
- Three detectors as standard, reference detector to correct for light source fluctuations, transmission detector for absorbance, single-photon counting (SPC) detector for ultimate sensitivity.
- Plug & Play sample modules, automatic sample module recognition and initialisation saves the user time and effort. Wide range of modules available for varied sample analysis.



#### **IR5 FTIR Spectrometer**

The IR5 is a high-performance benchtop Fourier Transform Infrared (FTIR) spectrometer from Edinburgh Instruments.

The IR5 is the perfect choice for analytical and research applications such as polymer, semiconductor, and pharmaceutical samples, offering simple operation as well as fast and accurate results. IR absorption, transmission, reflectance, and infrared photoluminescence can all be measured in the IR5 using only one software package.

- Outstanding Performance High sensitivity and spectral resolution
- Photoluminescence Upgrade Fourier Transform PL upgrade with a choice of laser source
- Configurable Option for a second detector enhancing sensitivity at selected spectral ranges
- User-friendly Simple to operate and suitable for all user levels, from beginner to advanced



#### **LifeSpec II Lifetime Spectrometer**

The Lifespec II is a compact, fully integrated, high performance, time-correlated single photon counting (TCSPC) fluorescence lifetime spectrometer designed for use with high repetition rate pulsed femtosecond and picosecond lasers. The system is a fully automated solution, combining hardware and software in a single package for fundamental research and routine laboratory application.





The RMS1000 is an open architecture research grade confocal Raman microscope. It has been designed so it can be adapted to almost any modern, state-of-the-art Raman application.

This high-end research tool has been built with no compromises; resulting in a system that stands alone in both specification and ease of use. Applications beyond Raman such as time-resolved fluorescence microscopy and fluorescence lifetime imaging (FLIM) are all possible with the versatile RMS1000.

EDINBURGH INSTRUMENTS

- Truly Confocal multiple position pinhole for high spatial resolution, fluorescence and background rejection and application optimisation
- Five-Position Grating Turrets for unrivalled spectral resolution from <0.1 cm<sup>-1</sup> and coverage over 5 cm<sup>-1</sup> 30,000 cm<sup>-1</sup>



#### **RM5 Raman Microscope**

The RM5 is a compact and fully automated Raman microscope for analytical and research purposes. The truly confocal design of the RM5 is unique to the market and offers uncompromised spectral resolution, spatial resolution, and sensitivity.

The Raman microscope builds on the expertise of robust and proven building blocks, combined with modern optical design considerations; and a focus on function, precision and speed. The result is a modern Raman microscope that stands alone in both specifications and ease of use.



#### **DS5 Dual Beam UV-Vis Spectrophotometer**

The DS5 UV-Vis Spectrophotometer is a high performance dual beam instrument that measures absorption and transmission as a function of wavelength and is suitable for many analytical applications where accuracy and precision measurements are key to your results.



#### **LP980 Spectrometer**

Transient Absorption Measurements using Laser Flash Photolysis

The LP980 sets the standard for technical performance required in a premier research instrument, offering unsurpassed measurement capabilities across a broad range of chemical, physical and biological applications.

• All-in-One spectrometer for Transient Absorption, Laser-Induced Fluorescence, Raman and Laser-Induced Breakdown Spectroscopy (LIBS)



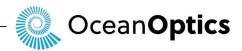
#### **Lasers and LEDs**

Picosecond Pulsed Diode Sources

• Far Infrared / Terahertz Lasers

• CO / CO<sub>2</sub> Gas Lasers







#### **Microspectrometers Ocean ST series**

Lightweight, ultra-compact spectrometers

Ocean ST is a powerful microspectrometer that provides excellent UV response, high-speed spectral acquisition, and high signal to noise ratio performance in an ultra-compact footprint.

- Ocean ST UV Microspectrometer
- Ocean ST VIS Microspectrometer
- Ocean ST NIR Microspectrometer



#### **Standard SR series spectrometers**

Versatile UV-Vis and NIR spectrometers from Ocean Optics address a range of applications and industries.

**SR2 Series:** Compact spectrometers offering rapid acquisition and high SNR for high light level applications including LED/laser characterization.

**SR4 Series**: SR4 spectrometers offering good sensitivity, high SNR and thermal stability for applications including plasma monitoring and reflection measurements.

**SR6 Series:** High-sensitivity SR6 spectrometers offering excellent SNR and UV response for applications including UV absorbance, fluorescence and plasma monitoring.



#### **High Resolution HR series spectrometers**

With high-resolution performance and rapid integration times, HR spectrometers are ideal for applications where closely aligned spectral features must be resolved and high light levels may saturate detectors.

HR2 & HR4 Series: spectrometers provide reliable performance with rapid acquisition speed and excellent thermal stability for UV-Vis-NIR applications ranging from plasma monitoring to pharmaceuticals analysis.

HR6 Series: The HR6 is a high sensitivity, high resolution spectrometer with excellent signal to noise ratio (SNR) performance for applications including absorbance of proteins and emission of broadband sources.



#### **High Speed FX serie spectrometers**

Super-fast, high performance spectrometers

Ocean FX has acquisition speed up to 4,500 scans per second, with onboard spectral buffering of up to 50,000 spectra. It's a great option for high-speed process applications and measurement of flicker in lighting.



#### **Near Infrared spectrometers**

Its high-performance optical bench and low noise electronics make NIRQuest an excellent choice for applications from 900-2500 nm.

NIRQuest+ is the next generation of NIR spectrometers from Ocean Insight. The NIRQuest+ family has an improved optical bench design for higher-sensitivity performance and is available in a configuration well suited for your NIR application.

NIRQuest+ is available in three versions covering different wavelengths from 900-2500 nm. These spectrometers are ideal for applications including moisture content for fruit sorting; plastics recycling; and chemical concentration measurements. The spectrometer can be used in the lab or on the line, such as on a conveyor belt or in a sample stream.





#### **High sensitivity spectrometers QEPro & HDX**

High-sensitivity, back-thinned CCD array spectrometers offer outstanding quantum efficiency and low noise operation for low light applications such as fluorescence measurement and Raman analysis.

The QE Pro is a high sensitivity spectrometer with low stray light performance. It is ideal for a wide range of low light level applications such as fluorescence, DNA sequencing and Raman analysis.

Ocean HDX spectrometer uses a robust optical bench design, optimized components and precision engineering to maximize optical resolution, increase throughput, reduce stray light and maintain thermal stability for integrated, industrial and research applications.

#### Raman measurement packages

Take advantage of Ocean Insight application-ready systems – spectrometer, laser, accessories and software – for Raman measurements. These bundles have all the components necessary for probe-based Raman measurements.

Packages are available for Raman excitation wavelengths of 532 nm, 638 nm, 785 nm and 1064 nm. Designed to operate as a system, the components in these packages mate seamlessly to get you started taking Raman spectra more quickly. All bundles come with software and the appropriate laser safety glasses.



All excitation wavelength versions are anchored by the high-sensitivity QE Pro-Raman+ spectrometer. Also available for 785 nm Raman applications is a more affordable measurement package anchored by the Ocean HDX-Raman spectrometer.



#### **Absorbance Measurement Packages**

These bundles have all the components necessary for cuvette-based UV-Visible (200-850 nm) absorbance measurements.

Whether you're an educator looking for an instrument to teach students basic principles of spectroscopy or a research lab making routine lab measurements, Ocean Insight absorbance measurement packages deliver the features, performance and convenience you need.



#### Fluorescence Measurement Packages

These bundles have all the components necessary for cuvette-based fluorescence measurements.

Each measurement package provides a simple yet effective setup for fluorescence measurements. Choose from a general-purpose or high-sensitivity spectrometer, plus a cuvette holder, 365 nm LED excitation source and large-diameter patch cords. Software completes the package.

#### **Light sources & Lasers**

Deuterium, Halogen & Xenon lamp systems available to cover the entire range from UV to NIR, as well as LED sources for fluorescence and Raman lasers covering the region from DUV to VIS. Radiometric and wavelength calibrations available.







Goyalab





#### **Optical Chemical Sensors**

pH and Oxygen Sensors:

- Easily applied to probes, patches, cuvettes, and other media
- More robust and require less maintenance than most electrodes
- Do not consume or alter the chemical composition of the sample
- Less susceptible to environmental changes, moisture, and interfering chemicals



# IndiGo: An affordable, modular, connected spectrometer

IndiGo is a visible portable spectrometer.
It is modular for multiple use cases. IndiGo fits in the palm of your hand.

# IndiGo Raman: a portable Raman spectrometer with laser excitation

IndiGo Raman is a portable Raman spectrometer with a laser excitation at 532nm or 785nm

# G8 Integrating Sphere for Measurement of Absolute Quantum Yield

Designed by qualified and experienced specialists in Spectroscopy, the GMP G8 Sphere has been crafted as to present an excellent signal to noise ratio, avoid retro diffusion of the excitation light and any possible contamination of the sphere when manipulating the sample, and facilitate the critical calibration process.

The result is a neat, practical and easy to use device intended for high precision and repeatable measurements. Sample switching in seconds.

The GMP G8 Integrating Sphere allows for the determination of Quantum Yield with a reproducibility within a few percent and a precision within less than 10%.



# LiDAR Hardware Development Kit





# \*fastree 3D

Falcon is a Hardware Development Kit (HDK). It includes all hardware components, i.e., sensor, illuminator, computational module and reference optics, enabling the commissioning, development and demonstration of Fastree3D LiDAR solutions. The rich set of supported interfaces allow the integration of those solutions in the scope of the user's system. On another hand, Falcon can run standalone, connecting directly to a screen and USB peripherals (e.g., keyboard, mouse).

The kit minimizes adaptation efforts by supporting the latest C1004 and future Fastree3D devices, and providing a dedicated software stack running locally in a fully-featured Linux OS environment. In addition to the standard control and visualisation applications, the stack includes a software library, which together with a preinstalled GNU toolchain and Python interpreter allows for the rapid development and debugging of user-specific software.

## **Photon Counters**

Micro Photon Devices offers a comprehensive family of Single Photon Avalanche Diodes (SPADs), ranging from Single Pixel Silicon and InGaAs detectors to bidimensional array of CMOS detectors.









# Hyperspectral cameras







#### Hyperspectral cameras

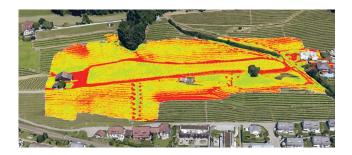
Photonfocus has developed outstanding solutions for numerous fields of application in order to meet the growing demand for imaging applications in invisible light spectra. The photonSPECTRAL platform offers highly sensitive cameras with wavelengths ranging from deep UV to shortwavelength infrared light (SWIR), as well as innovative systems for the hyperspectral range.

#### Modular design

Photonfocus' unique modular camera system allows for quick integration of both proven and new technologies according to your application requirements.

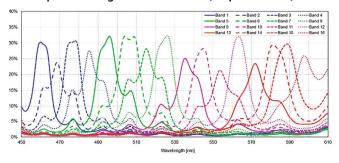




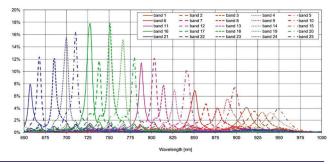


#### **Quantum Efficiency Image Sensors**

Spectral range: 470 to 630nm (16 pass bands)



Spectral range: 665 to 975nm (25 pass bands)







#### Uncooled real-time 4.6 THz imager

- Beam profiling
- Non-destructive testing
- Imaging systems
- Quality control
- Security and surveillance
- Optical alignment
- Power: 0.6 μ W
- Integration time: 50 µs
- Acquisition: Single shot

# **Vibration Isolation Systems**



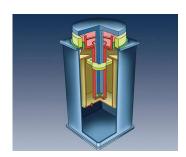
# Active and passive vibration isolation systems for sensitive research and manufacturing processes







**Faraday Cage** 



All CleanBench tables incorporate TMC's Gimbal Piston Air Isolators as a standard feature. The Gimbal Piston has consistently shown to out-perform other air isolators in side-by-side testing. It offers outstanding low frequency vibration isolation in all axes and maintains its performance specifications even when subjected to extremely low input levels of excitation. Proprietary damping techniques allow the Gimbal Piston to stabilize relatively top-heavy payloads and quickly dissipate disturbances of the isolated table top.



# **Vibration Isolation Systems**

#### **Joining Optical Tables with Rigid Couplings**





CleanTop Optical Tops are available in individual sections up to 1.5 m x 4.8 m. Complex beam-path requirements often require even larger sizes which is achieved by coupling tops. To be effective, the coupling must not compromise stiffness, damping or flatness across the joints.

By welding a proprietary precision ground and aligned joiner plate system to the top's structural elements, TMC provides a rigid coupling between optical tables. TMC's unique process includes alignment techniques that ensure that the tops maintain their high flatness specifications without distortion from the heat effects of welding the joiner plates to the tops.



#### **Everstill K-400**

Everstill is latest breakthrough in advanced floor vibration control. The patented Everstill K-400 is a benchtop active vibration cancellation platform which incorporates a serial type active architecture.



#### **Piezoelectric Active Vibration Cancellation**

STACIS® III is a flexible advanced active vibration isolation system. Employing advanced inertial vibration sensors, sophisticated control algorithms, and state-of-the-art piezoelectric actuators, STACIS cancels vibration in real time by continuously measuring floor activity, then expanding and contracting piezoelectric actuators to filter out floor motion.



#### **STACIS Quiet Island**

Semiconductor manufacturing factories, Nanotechnology Centers, Nanofabs, and other precision manufacturing and research facilities often incorporate cleanrooms with a system of raised false floors to accommodate complex facilities requirements and to maintain strict cleanliness standards. TMC's Quiet Island is an innovative solution and consists of a cleanroom compatible platform top combined with an application and site specific support structure.



#### **STACIS Compact Quiet Island**

Similar to the standard STACIS Quiet Island, this Compact version provides excellent sub-Hertz active floor vibration cancellation for large instruments that typically weigh over 1134 kg.

# **Vibration Isolation Systems**

#### **SEM-Base**



#### LaserTable-Base

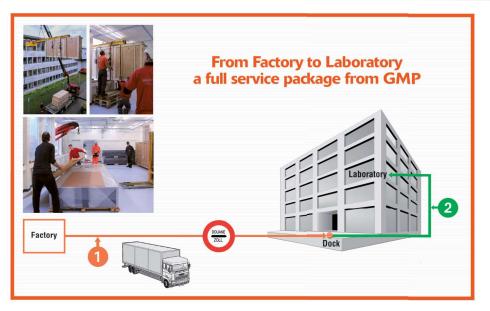


SEM-Base® VI is the next generation in STACIS active piezoelectric vibration cancellation. SEM-Base VI is designed to support all commercial Scanning Electron Microscopes (SEMs), as well as many Focused Ion Beam (FIB) and Small Dual Beam instruments. SEM-Base VI provides improved vibration isolation performance, a faster more robust controller, and an advanced graphical user interface (GUI). SEM-Base VI will enable more labs and facilities to achieve the level of floor vibration required to satisfy the specifications of the tool manufacturer.

LaserTable-Base™ offers an extraordinary level of improvement over existing technology in the amount of vibration isolation attainable with an Optical Table. Typically, optical tables are supported by low-frequency pneumatic vibration isolation systems. Though very effective at isolating high frequencies, these passive systems actually amplify vibration in the critical 1 to 3 Hz range.

TMC's STACIS technology overcomes these limitations through proprietary technology which incorporates piezoelectric actuators and inertial vibration sensors to cancel, not amplify, very low frequency vibration. LaserTable-Base combines these two technologies, air and STACIS, into one integrated cancellation system. The result is vibration cancellation at very low frequencies and unprecedented levels of high frequency isolation due to the combined effect of two isolation systems in series.





#### Package 1 Sales and delivery

- comprehensive requirement study
- shipping, customs clearance
- import duties and insurance
- transport cost to the final destination
- loading dock
- guarantee and service support directly from Switzerland

Calculated with the price of the table

#### Package 2 Optional full installation

- pre-delivery transport inspection of site
- rental of crane if necessary
- floor protection
- transfer into the laboratory
- unpacking and installation by a product specialist
- table setup and optimisation for level and control
- removal and disposal of all packing materials

Quotation price depends upon location, size, weight and complexity of delivery

# **Motorised Positioning Systems**



Zaber Technologies design and manufacture precision positioning devices that are affordable, integrated, and easy to use. Devices are used in many different applications and markets, such as photonics and optics, life sciences, microscopy and industrial automation.

#### **Linear Motors & Voice Coil Motors**





**Gantry and Multi-axis Systems** 



**Scanning & Microscope Stages** 



# **Motorised Positioning Systems**

#### **Easy Installation**

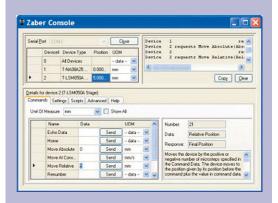
**Step 1.** Connect the Zaber controller (built into the device or stand-alone) to your computer via USB or RS-232 port using the cables included if you ordered an accessory kit.



**Step 2.** Step 2 Connect the power supply to your Zaber device.



**Step 3.** Send instructions or automate your setup using the Zaber Console, our free, opensource software or write your own application based on our source code.





**Controllers** 









**Actuators** 



**Optical Mounts** 



**Vacuum Devices** 





#### Goniometers



# **Motorised Positioning Systems**



#### Piezo actuators, piezo motors and piezo stages

Xeryon offers a wealth of experience in the design and manufacturing of piezo actuators, piezo motors and piezo stages. We develop and produce complete turnkey solutions as well as customized piezo based micro- and nanopositioners.



# **Motion Controllers**



Galil Motion Control provides powerful, cost-effective and easy-to-use motion controllers, PLCs and servo and stepper drives to all industries that require automation.



Ether CAT.









A full range of single and multi-axis motion controllers designed to solve any kind of motion control application. PC based solutions and stand-alone controllers with RS232, PCI, USB, EtherCAT & Ethernet connectivity.

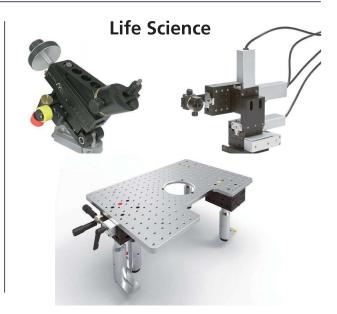
# **Optics and Optomechanics**



Siskiyou Corporation provides a diverse range of micromanipulators, microscope sample positioners, motion control systems and modular optomechanical mounts and positioners to life science and photonics researchers and OEMs.







Comar Optics supply custom optical components to OEMs, serving many different industries. The company has been established for over 40 years and is renowned in the industry for its reliability and excellent service.

#### **Standard Optics & Customs optics:**

- Lenses Mirrors
- Prisms
- Beamspliters
   Windows
- Objectives Filters and polarisers
  - Plano-optics





# **Analytics & Particle Sizing**













#### **Particle Size Analysis and Characterization**

Flexible particle size analysis for the lab and in situ measurements on diameters of 0.5 nm - 10 µm and sample concentrations of 0.1 ppm 40% w/v. Powerful advanced calculation options with full open access to measurement data, features Cumulants, Contin, SBL and unique Padé-Laplace inversion algorithms.

#### **Thetis Particle Size Analyzer**

The latest nano-particle size analyzer from Cordouan Technologies represents a new step in the DLS technique for nano-particle size analysis. For the very first time, an instrument allows to measure easily length and width of anisotropic nanoparticles in a colloidal suspension.

- Three-in-one instrument
- DLS, SLS and DDLS modes
- Multi angle scattering detection system from 30 to 150 degrees
- Detection according to 2 polarizations VV and VH
- Size, aspect ratio, length and width measurements
- Molecular weight measurement

#### **Amerigo Particle Size & Zeta Potential Analyzer**

AMERIGO is an innovative analyzer for the characterization of nanoparticle suspensions combining into the same instrument Particle Size and Zeta Potential measurements.

- Three-in-one instrument
- Possibility to perform the measurements in a standard cell ...or using an interchangeable remote heads (see below)
- Sample compartment designed for standard 10mm x 10mm cuvettes
- Measurements in two configurations: backscattering (170°) or transmission (17°)

#### **Vasco Kin Particle Size Analyzer**

The VASCO KIN™ is a new generation of Time-Resolved instrument for accurate kinetic analyses combined with an in situ and contactless remote optical head. It allows to monitor in Real Time nanoparticles synthesis, agglomeration or the stability of suspensions.

With a single and continuous measurement, VASCO KIN™ gives access to all characterization data of a reaction (size distribution, scattered intensity, correlogramms, etc.

#### **WALLIS Zeta Potential**

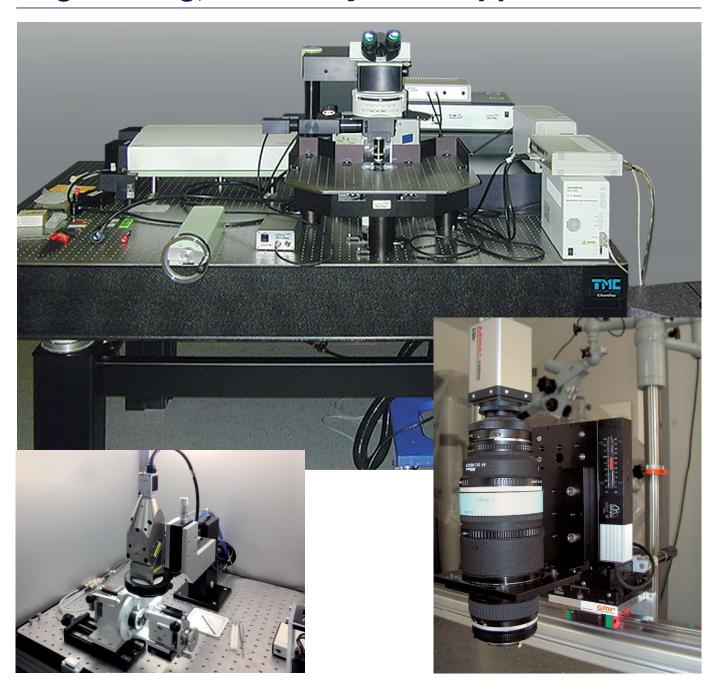
WALLIS is an innovative high resolution Zeta potential analyzer purely dedicated to nanoparticle and colloidal charge characterization.

- Based on a modern version of Laser Doppler Electrophoresis (LDE) technique
- Ideal tool for studying colloidal suspensionís stability and nanoparticles electrophoretic properties.

# **ELMO Glow Discharge system for TEM grids**

A Glow Discharge treatment with a specific gas atmosphere will modify the surface properties of TEM support films or grids in order to optimize the adsorption of the solutions to spread.

# **Engineering, Assembly and Support**





When a comprehensive solution is required, GMP can provide a turn-key system to meet the specifications and requirements of the proposed application. Working with its in-house engineering team, GMP undertakes the design, assembly and testing of the complete solution.

GMP can put together custom built turn-key systems in the areas of:

- Photonics
- Electronics
- Precision mechanics
- Software engineering

# **Electronic Instruments**

## **Scientific Instruments**

- Current Source
- Precision DC Voltage Source
- Laser Diode Controller
- Optical Shutter Systems
- Programmable Temperature Controller
- Small Instrumentation Modules
- Lock-In Amplifiers
- Optical Chopper
- Preamplifiers
- Digital Delay Generators
- High Voltage Power Supplies
- Gated Integrators and Boxcar Averagers
- Photon Counter

















## **Time & Frequency Instruments**

- Frequency Standards/Oscillators
- Time Interval and Frequency Counters
- Distribution Amplifiers







## **Analytical Instruments**

- Melting Point Apparatus
- Potentiostat / Galvanostat
- Quartz Crystal Microbalances
- Nitrogen Laser





# **Electronic Instruments**

#### **Test & Measurement Instruments**

- RF Signal Generators
- Synthesized Clock Generator
- Synthesized Function Generators
- FFT Spectrum Analyzers
- Audio Analyzers
- LCR Meters
- Thermocouple Monitor
- Dual Channel Programmable Filters
- Binary Gas Analyzer















#### **Vacuum Instruments**

- Residual Gas Analyzers
- Ion Gauge Controllers
- Atmospheric Sampling Systems
- Process Monitoring Systems







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PREMIUM BRANDS
WARRANTY IN SWITZERLAND



HIGHLY QUALIFIED TEAM



**TECHNICAL SUPPORT** 



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