PHOTONIC SOLUTIONS

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PRODUCT CATALOGUE

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PHOTONIC SOLUTIONS
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We provide enabling solutions & technologies that support ground-breaking research and innovation in science and industry.

About Us

Established in 1999, Photonic Solutions Ltd represents many of the world's leading manufacturers of laser systems, spectroscopy solutions, optical instruments, microscopy and imaging systems, together with optics, laser diagnostics and detectors for science and industry.

Our mission is to provide our customers with the best-in-class photonic products and the highest quality customer service and support.

We work with our customers to understand their objectives and help them achieve their goals together. With our expertise and knowledge, we are an extension of our manufacturing partners.

We provide a fully integrated service and have a team of highly skilled photonics specialists with years of experience across the photonics sector. Our service team is on hand to assist our customers in the field or at our head office facility.

Core Values

Customer Focused - We seek to add value to our customers through tailored solutions and support. We maintain a close relationship with our customers, working in partnership with them and collaborating through open and transparent communication.

Innovative - We ensure we keep up to date with the latest developments in the industries we serve, ensuring our knowledge and expertise evolves alongside advances in our customers' processes.

Quality - We strive to continually provide high-quality products and services that meet and exceed expectations and requirements of our customers.

Expertise - Our team of photonics specialists are highly qualified with a wealth of experience from years of working across multiple disciplines. This skill and expertise allows us to always offer our customers a wide range of enabling technologies across various applications.

We Have The Products,
We Have The Technology,
We Have The Quality,
We Have The Expertise.

Quantel laser
BY LUMIBIRD

The Quantel laser range from Lumibird includes a wide range of products designed for industrial, military, and scientific applications, such as: Pulsed solid-state lasers (Nd:YAG, Nd:YLF, Nd:Glass); Fiber lasers for marking and engraving; Tunable OPO lasers; and High power laser diodes.

Merion

To meet the laser market's diverse needs with reliable, high-performance and competitive solutions, Lumibird's product ranges are transitioning to an industrial platform model. Merion is the first platform model for diode-pumped solid-state lasers.

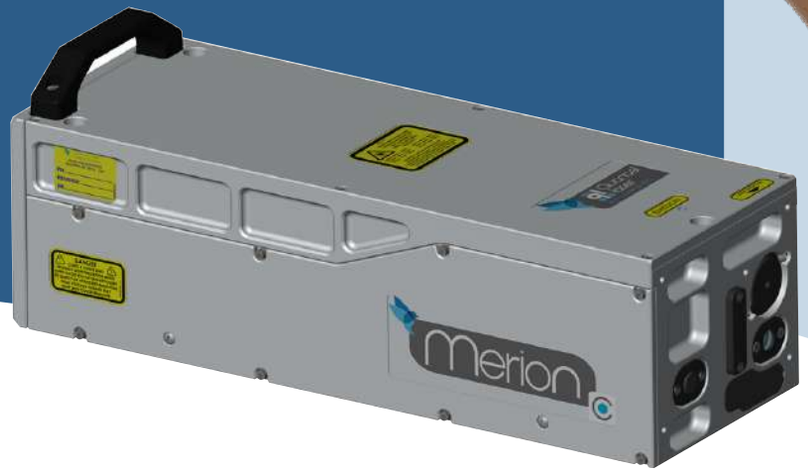
This modular and versatile new laser platform will enable use in almost any application, from environmental LiDARs to medical equipment and industrial instrumentation. The platform model also enables Quantel to produce a highly diverse range of lasers with different power levels (100mJ to 1J), different frequencies (from a few dozen to 500Hz) and variable wavelengths.

Merion MW

- Lightweight and compact design
- Repetition rates up to 200Hz
- Quick and easy access to 1064, 532, 355 and 266nm
- Plug & play harmonics with automatic phase-matching
- Quick-connect cables and cooling lines
- Single longitudinal mode option available
- No installation required
- Diode warranty 2 billion shots

Merion C

- Compact and portable
- Sealed laser head
- Industrial design, built to last
- Superior beam profile up to 400Hz
- Easy to integrate
- Plug-in and operate remotely
- Interchangeable laser head



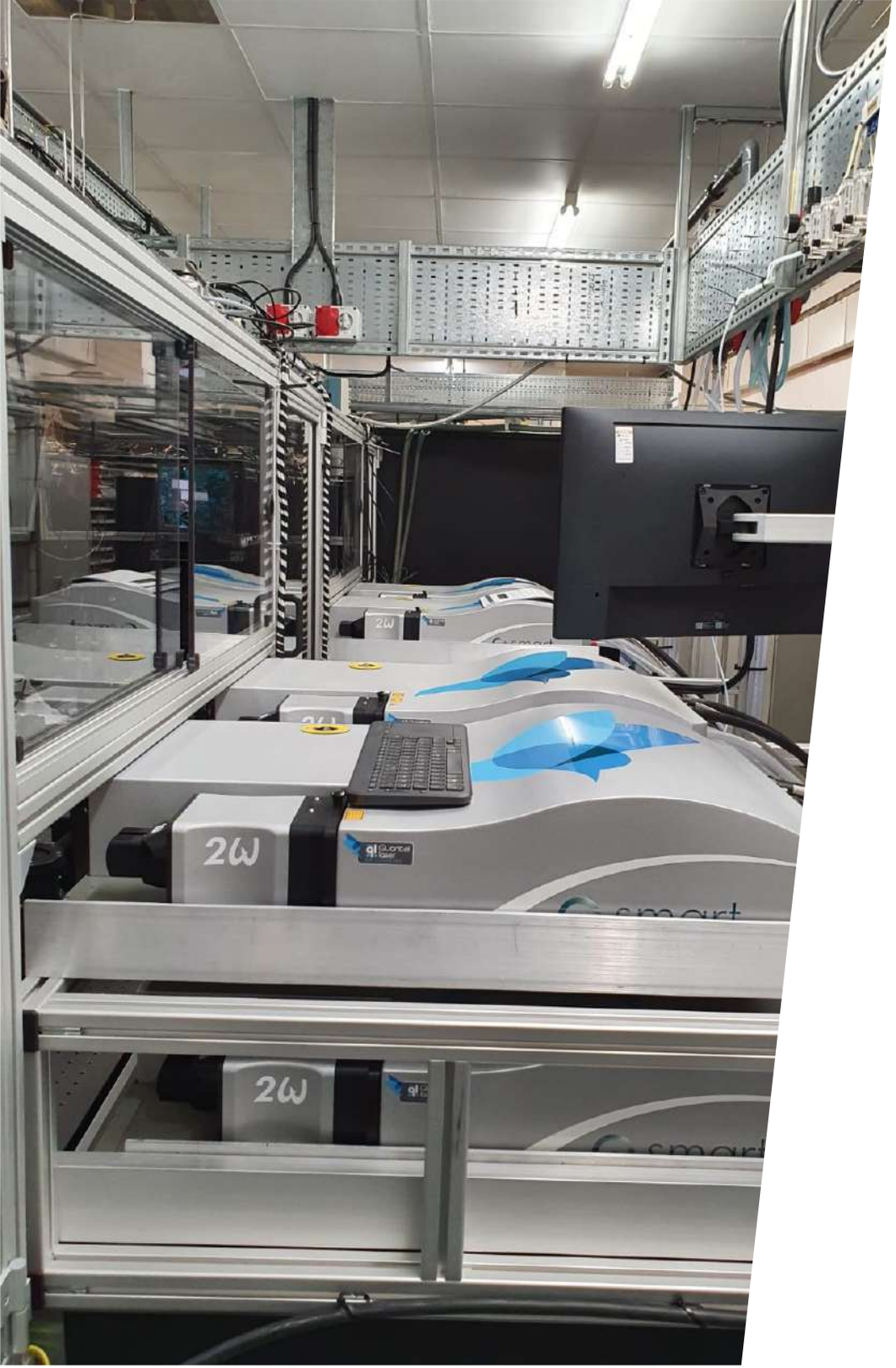
Model		Merion MW 7-100	Merion MW 7-200	Merion MW 9-100	Merion C-S4	Merion C-G4
Repetition rate (Hz)		100	200	100	up to 400Hz	up to 400Hz
Energy (mJ)	1064nm	300	200	650	100	100
	532nm	160	95	360	50	50
	355nm	90	60	200	30	30
Pulse duration (ns)	1064nm	5-9			<10	

Viron 50mJ

The VIRON is a DPSS Q-switched Nd:YAG laser specifically designed for high efficiency in a robust and compact package as required by instrumentation manufacturers.

- Air cooled, compact DPSS laser
- Laser head and control electronics integrated into one single housing
- Operation only requires an external 24VDC supply
- Sealed for operation in various environments
- Easy to integrate

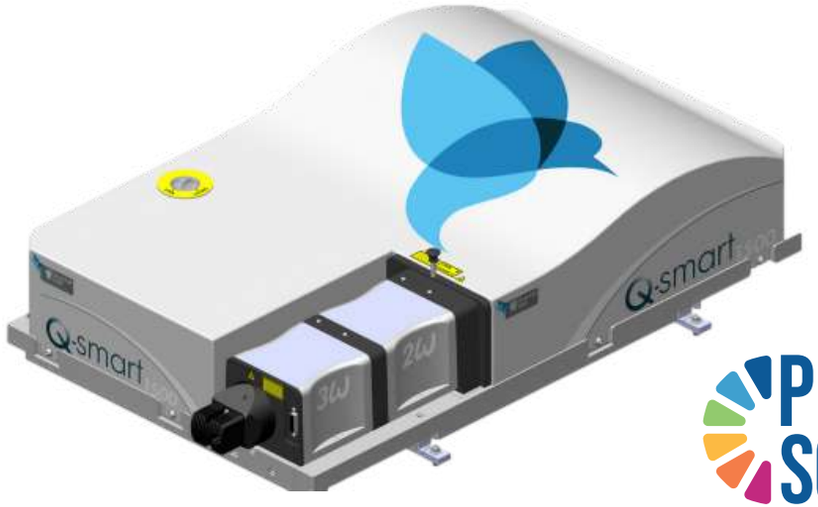
Model	VRN20-30-G	VRN20-50-G
Repetition rate (Hz)	20	20
Energy per pulse (mJ) @ 1064 nm	30	50
Energy per pulse (mJ) @ 532 nm	15	25
Pulse width (ns)	<8	



Q-smart HE

Compact High-Energy pulsed Nd:YAG lasers with excellent beam quality and versatility.

- Up to 2.3J @ 1064nm
- Robust and field proven technology
- Built to last thanks to ceramic reflectors and long flash lamp life time warranty
- Plug & play harmonic modules with automatic phase-matching
- Cables and cooling lines fully disconnectable
- Easy to use and maintain
- Optional chiller
- Intuitive GUI interface
- SLM option (Single Longitudinal Mode)



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In addition to developing innovative, patented, diode pumped solid state architectures, Oxxius also provides a wide variety of diode laser modules covering the UV to near-IR wavelength range. The continuous-wave lasers produced by Oxxius are utilised in applications such as bio-photonics, metrology, spectroscopy, and other analytics and instrumentation.

One Platform for All Colours

Oxxius has a unique range of extremely stable and reliable DPSS lasers (LCX) and LPX (LaserBoxx) along with stabilised laser diode modules (LBX). The key to their superior performance is the proprietary Alignment-Free Monolithic Resonator (AMR). This technology yields the highest spectral quality on the market, with high stability and robustness over time.

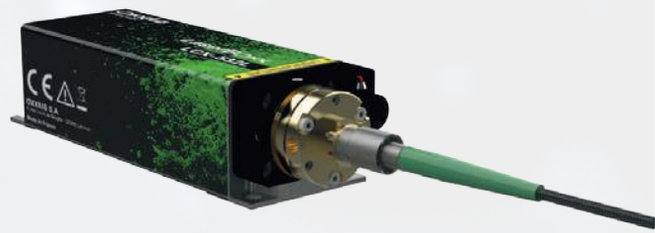
Due to the highly efficient design of the resonator, Oxxius is able to provide much higher powers than their competitors from the same compact industry standard sized package. The LPX LaserBoxx consists of a laser diode emitter with an integrated drive. It provides a low noise optical output and allows for fast modulation.

By packaging the laser controller in the same housing as the laser, Oxxius offer a true one-box solution – another significant advantage over competitive systems.

Continuous and Modulated lasers

All lasers in the range feature superior beam quality, excellent stability and fast modulation capabilities. Contained within a compact, industry standard sized package, these lasers are the ideal addition to the laboratory or for integration into OEM instruments.

Monolithic DPSS Lasers	Laser Diode Modules
Up to 500mW continuous wave	Superior beam quality
Low profile laser head (32mm)	Excellent stability
Lowest power consumption on the market	Fast TTL and analog modulation
≤12W for LCX's any wavelength, less than 200mW	Optional clean up filter
TEM_{00} beam, up to 500mW	
Ultra-low noise ≤ 0.2% rms	
Industry standard footprint (100x40mm, LBX and LCX)	
Integrated control electronics	
SM/PM/MM fiber coupling options	
USB and RS232 interfaces	
Dedicated control software	
External controller with power display (Plug&Play versions, CDRH-compliant)	
375, 395, 405, 415, 445, 450, 473, 488, 505, 515, 522, 532.2, 553, 561.4, 607.5, 633, 638, 642, 639.7, 647, 660, 698, 721, 730, 785, 808, 830, 980, 1064nm	



Single Longitudinal Model Laser

LCX and LPX LaserBoxx monolithic DPSS lasers and VGB stabilised LBX and LSX diode lasers ideally suited to applications such as Raman spectroscopy, brillouin, scattering, interferometry, holography, photo-luminescence, and laser doppler velocimetry. Operating at 532.3, 553.0, 561.4, 946 and 1064nm.

- Single longitudinal mode
- TEM_{00} beam
- 40-500mW
- Ultra-low noise ≤ 0.2% rms
- Wavelength stability ≤ 1pm
- Long coherence length >100m for LCX and >1m for LBX
- Line width <1MHz for LCX and <100MHz for LBX
- Industry standard footprint (100x40mm, LBX and LCX)
- SM/PM/MM fiber coupling options

High Power Laser Diode Modules

The LaserBoxx HPE series are high power laser sources offering excellent performance and reliability in a compact, driver-integrated laser head. The optical output is a multi-mode elliptical beam, either propagating in free space, or injected into an optical fiber.

Features

- 375, 405, 450, 473, 488, 520, 638, 750, 785, 830, 940 and 980nm
- Up to 1.2W power
- Multi-mode coupling efficiency exceeds 80%
- Round-core 50, 100 or 200mm core diameter
- Liquid light guides with mm core diameter available

ADVANCED FEATURES FOR LASERS

The L1C and the L1C+ platforms offer efficient, compact and cost effective solutions to add advanced features to the LCX, LPX, LSX and LBX-S lasers. Add high power isolators, motorised power attenuators (MPA) or Acousto-Optic Modulator (AOM) for fast modulation capabilities

	MPA with e-m shutter	AOM with e-m shutter	Isolator	Single-mode fiber coupling	Multi-mode fiber coupling
Transmission ratio	>85%	>85%	>70% wavelength dependent	>70%	>80%
Response time	300ns max. (10%-90%) 100ns typical	0-100% in 1 second			
Dynamic range	45dB typ. Full contrast with e-m shutter	40dB min. Full contrast with e-m shutter			

MPA motorised Power Attenuator

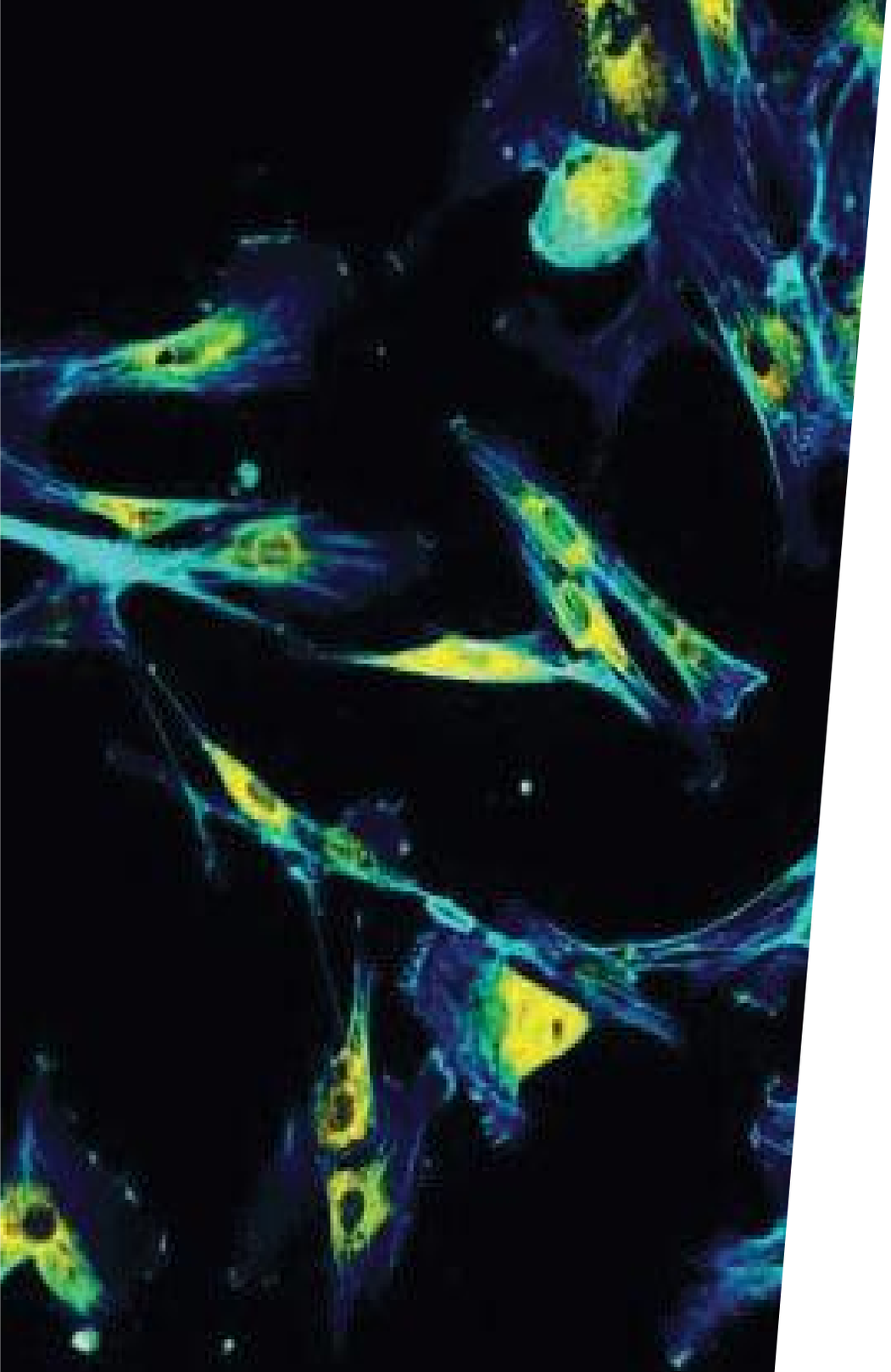
- Power adjustment 0-100%
- Electro-mechanical shutter included
- Maintains beam quality and spectral properties
- USB and RS232 interface
- External analogue input control

AOM Acousto-Optic Modulator

- DC to 3MHz bandwidth modulation
- >85% power transmission
- USB interface
- Analogue digital inputs

Isolators

- Compact and alignment free
- Isolation 17dB min.



OXXIUS LASER COMBINERS

The L6Cc and L4Cc laser combiners are one of the most compact and flexible all-in-one multicolour laser sources. Both sources allow for delivery with up to 4 optical fiber outputs. The modular design allows for a large choice of lasers from 375nm to 1064nm and with output power up to 500mW when incorporating the standard range of laser diodes and DPSS lasers.

The extension modules provide the ultimate level of flexibility by integrating fast switching output ports for FRAP, adjustable split power for light sheet microscopy among other advanced functionalities. With free space output or fiber delivery, these laser banks are ideally suited to applications in bio-imaging where combinations of wavelengths may be required for multi-wavelength interrogation, eg confocal microscopy, super resolution imaging, single molecule localisation, STORM, optogenetics, light sheet microscopy, FRAP and flow cytometry.

Features

- Large choice of wavelengths 375nm–1064nm
- Up to 4 or 7 combined wavelengths
- Up to 4 output ports (with extension module)
- Fast AOM available delivering linearised output
- High efficiency PM fiber
- EOM shutter on each output and each DPSS laser

APE offers a range of world-leading picosecond and femtosecond OPOs, ultrashort laser pulse diagnostics and tunable wavelength conversion devices.

The portfolio includes OPO systems, harmonic generation (HarmoniXX series), autocorrelators for pulse width measurements and spectrometers, measuring and characterising femtosecond and picosecond laser pulses.

In addition, APE offers impressive OPO solutions for existing Ti:Sapphire pump lasers and single box solutions for AFM-IR and SNOM applications.

OPTICAL PARAMETRIC OSCILLATORS

The newly designed Levante series of femtosecond and picosecond OPOs now feature full automation with software-controlled tuning, so handling and integration have never been easier.

Both the Levante Emerald (pumped in the green) and Levante IR (pumped in the infrared) are extremely versatile, synchronously pumped OPOs offering dual-colour outputs with broad tunability and are available in both femtosecond and picosecond configurations. In combination with wavelength converters from the HarmoniXX series, almost every wavelength from 190nm up to 15µm can be generated via SHG, THG, FHG, and DFG. A range of fully qualified and recommended picosecond/femtosecond pump lasers are also available allowing us to offer complete system solutions for every OPO.

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picoEmerald for CARS & SRS

The picoEmerald is a fully automated, one box light source for coherent Raman spectroscopy (e.g. CARS and SRS) and multiphoton microscopy, covering the entire Raman fingerprint region (720-9000cm^{-1}). The system delivers 2ps pulses with 10cm^{-1} spectral width, providing the shortest possible pulses for the highest signal levels, while maintaining the optimum spectral resolution.

The picoEmerald supplies three temporally and spatially overlapping picosecond pulse trains (Pump, Signal, Idler), making it a perfect source for multicolour experiments such as CARS:

- Fundemental (IR) at 1031nm
- Signal beam tunable from 720-990nm
- Idler beam tunable from 1150-2030nm
- Optional modulation of the IR beam for video-rate SRS

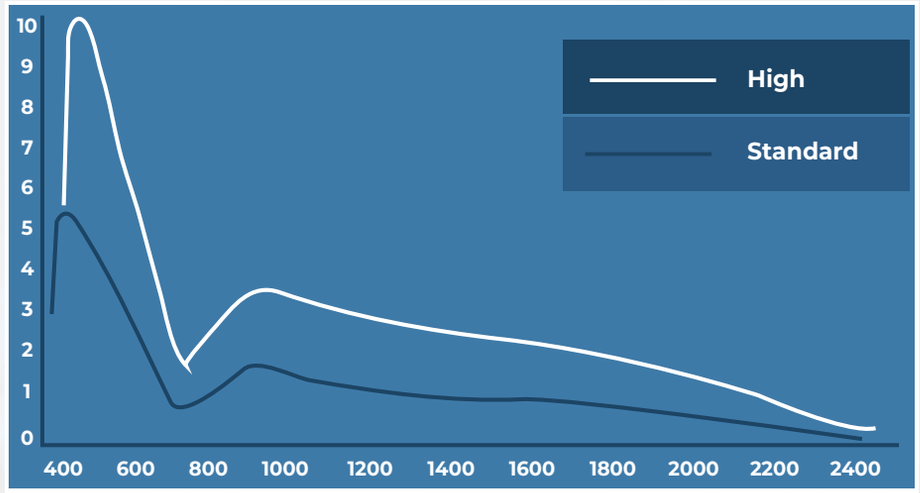
With its patented optical parametric oscillator (OPO) design, OPOTEK are an industry leader in OPO tunable laser products. OPOTEK has a wide range of user-friendly, tunable light source solutions that can be used in diagnostics, photoacoustics, hyperspectral imaging and medical research. From stand-alone OPO modules to complete scientific instruments.

OPOLETTE

World's smallest OPO tunable laser systems

This tunable laser system utilises patented OPO technology to generate wavelengths over a broad range in the UV, VIS and IR. Designed for portability, the entire laser head (including the Nd:YAG pump laser) fits into a compact footprint and ships hermetically sealed to protect the components from the environment.

Requiring no installation, the system includes verification hardware to check alignment after shipping or relocation. All tunable beams exit the system from the same port resulting in only one beam path to the end user application. Wavelength tuning is hands-free under PC control.



Product	Tuning Range (nm)	Peak OPO Energy
OPOLETTE 2731	2700 – 3100	6mJ @ 2940nm
OPOLETTE 3034	3000 – 3450	5mJ @ 3400nm
OPOLETTE 2940	2940 (fixed)	6mJ @ 2940nm
OPOLETTE 355 LD	410 – 2200 210 – 2200 (UV option)	9mJ @ 450nm 2mJ @ 320nm (UV option)
OPOLETTE 532 LD	650 – 2400	13mJ @ 750nm

RADIANT X20

A fully integrated low divergence, NIR tunable laser system. The Radiant tunable laser series utilises optical parametric oscillator technology to generate wavelengths over a broad range in the UV, VIS and IR. Integration of system components into one compact unit increases ruggedness, minimises misalignment and allows the user to reposition the system. Included verification hardware enables the user to confirm that beam paths are preserved after shipment or relocation.

Hermetically sealed modules protect sensitive optical materials from the environment. All tunable beams exit the system from the same port resulting in one beam path to the end-user's application. Wavelength tuning is hands-free and PC controlled.

All-in-one housing design integrates pump laser, OPO, harmonics, beam steering optics and control electronics. Option to extend the tuning range with the addition of the UV (210-410nm) or EUV (192-410nm) tuning. All tunable wavelengths output from a single port.

MagicPRISM

The MagicPRISM module utilises patented optical parametric oscillator (OPO) technology to transform the end-user's fixed wavelength Nd:YAG laser into a tunable laser system that covers a broad range in the visible (VIS) and near infrared (NIR) regions. The compact, motorised module converts second or third harmonic Nd:YAG laser light with an efficiency as high as forty percent.

- Stand-alone OPO module, compatible with most nanosecond Nd:YAG pump lasers
- Computer controlled tuning via control software/software development kit (SDK)
- Shipped with protective hard shell casing (PHSC)
- Requires alignment kit (AK) or Qsmart adapter (QSA) for alignment/mounting

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LIGHT CONVERSION

Light Conversion is the world's leading manufacturer of continuously tunable ultrafast light sources. These systems are equally at home in an ultrafast laser laboratory or an industrial micromachining environment.

	PHAROS	CARBIDE
Maximum Output Power (W)	20	80
Maximum Pulse Energy (mJ)	4	2
Repetition Rate	Single-shot-1MHz	Single-shot-2MHz
Pulse Duration	100fs-20ps	190fs-20ps

PHAROS AND CARBIDE

PHAROS and CARBIDE are a family of impressively robust and truly flexible femtosecond laser systems.

The industrialised CARBIDE design boasts a fully integrated laser head and power supply combined in a single ultra-compact unit.

The PHAROS is the market leader in key applications such as material processing and precision laser micromachining.

"The PHAROS is a workhorse in our facility and is in constant use. I am extremely impressed with its performance and the level of service from both Photonic Solutions and Light Conversion."

Dr. Julian Fells,

Single-mode sapphire fiber Bragg grating
Optics Express Vol. 30, Issue 9, pp. 15482-15494 (2022)
https://doi.org/10.1364/OE.446664

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Product	Max Pump Power (W)/pulse energy (µJ)	Tuning Range (nm)	Extended Range (nm)	Pulse Duration (fs/ps)	Key Features
ORPHEUS | NEO	80W / 800µJ	640 – 2600 (HP)	320 – 2600	120 - 250	Exceptional stability. Continuous power monitoring and diagnostics.
		1350 – 4500 (ONE)	640 - 16,000	100 - 300	
ORPHEUS | MIR	80W / 2mJ	2500 - 10,000	1350 – 16,000	< 100	Broad bandwidth Mid-IR
ORPHEUS	80W / 2mJ	630 – 2600	190 – 16,000	120 – 250	Cost effective Fully automated
ORPHEUS | ONE	80W / 2mJ	1350 – 4500	1350 – 16,000	100 – 300	Cost effective Fully automated
ORPHEUS | F	80W / 500µJ	650 – 900 1200 – 2500	325 – 2500	25 – 100	Optional GDD control
ORPHEUS | N	8W / 200µJ	650 – 900 (2H)	325 – 450 650 – 900	< 30	Broad bandwidth UV/VIS
		520 – 900 (3H)	260 - 450 520 – 900	< 30	
ORPHEUS | PS	20W / 3.2mJ	640 – 2600	210 – 4800	1-3	Narrow bandwidth

THE ORPHEUS FAMILY OF OPAs

Pumped by a PHAROS or CARBIDE laser system, the ORPHEUS are a series of high-energy OPAs offering tunable femtosecond pulses at up to 2MHz between 190nm and 16µm.

“The PHAROS laser is a rugged and flexible system which has been an excellent addition to our facility.

It is easy to use, reliable, and combines good beam quality with femtosecond pulses, all of which allow for great machining results in all materials.”

Dr. Nadeem Rizvi,
Laser Micromachining Ltd

THE CARBIDE CB5

The fully air-cooled CARBIDE CB5 is an ultra-stable and robust industrial laser system offering unprecedented performance and requiring no water cooling whatsoever – all in one single, compact housing. It remains the comfortable market leader in terms of highest pulse energy, shortest pulse duration, and power/energy stability.

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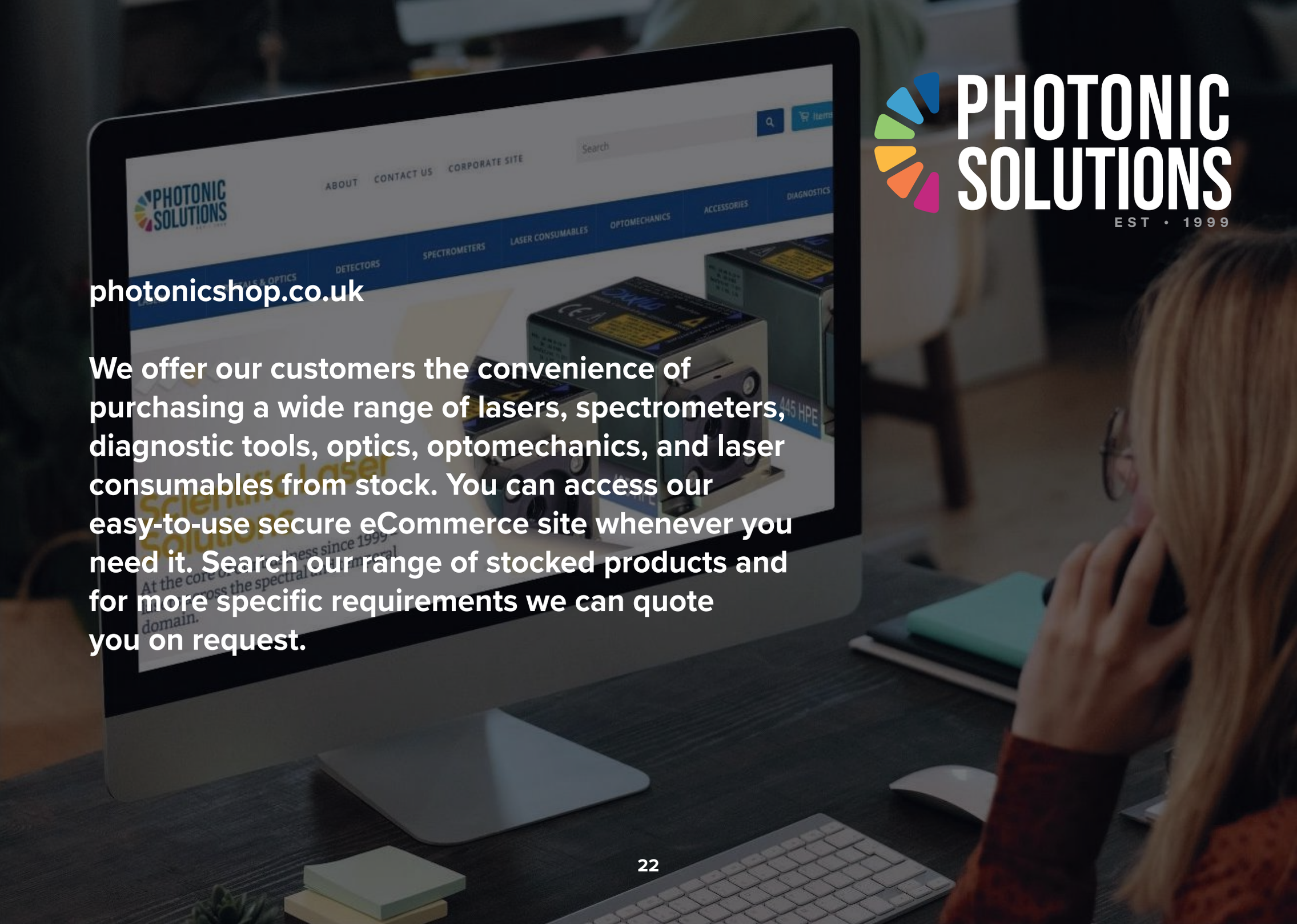
	CB5	CB5-SP
Maximum Output Power (W)	6	5
Maximum Pulse Energy (µJ)	100	100
Repetition Rate (MHz)	Single Shot to 1MHz	Single Shot to 1MHz
Pulse Picker	Included	Included
Pulse Duration	<290fs to 20ps	<190fs to 20ps
Beam Quality	$M^2 < 1.2$	$M^2 < 1.2$
Pulse to Pulse Energy Stability	<0.5% RMS (over 24h)	
Long-term Power Stability	<0.5% RMS (over 100h)	

UVC Photonics produces the world's only deep ultraviolet diode laser modules.

The Model 261 laser is a new kind of laser. This OEM component provides a continuous wave output greater than 10mW at 261nm making it ideal for a range of applications, such as disinfection, defect inspection, fluorescence and UV Raman. Its compact size, wide operating temperature range, and low divergence output beam, means it is easily incorporated into fixed, portable, or handheld applications.

Output Power (mW)	>10
Wavelength (nm)	261.4
Linewidth	<100 picometers
Beam dimensions	V: 0,2mm, H: 0.6mm
Beam divergence, $1/e^2$	V: 2.5 mrad, H: 6.5 mrad
M^2	V: ~1.1, H: ~6.5
Normalised astigmatism	~1.5
Operating current (A)	<1.1
Operating voltage (V)	<4.5s
Case temperature	25 C +/- 10 C
Temp. sensor	10k thermistor



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We offer our customers the convenience of purchasing a wide range of lasers, spectrometers, diagnostic tools, optics, optomechanics, and laser consumables from stock. You can access our easy-to-use secure eCommerce site whenever you need it. Search our range of stocked products and for more specific requirements we can quote you on request.

LUMENTUM

Lumentum is a global laser manufacturer specialising in HeNe, Argon Ion, SDL laser diodes, CW and pulsed DPSS lasers, ultrafast lasers for micromachining and fiber lasers.

Helium-Neon Lasers

1100 series

Industry standard cylindrical housing with power outputs up to 22.5mW, linear or randomly polarised. Choice of power supply module for 12VDC, 115/230VAC inputs, or CDRH approved laboratory type with a key switch and emission indicator.

Model	1101/P	1103/P/H	1107/P	1108/P	1122/P	1125/P	1137/P	1135/P	1144/P	1145/P
Min. Output Power (mw)	1.5	2.0	0.8	0.5	2.0	5.0	7.0	10.0	15.0	22.5/21.0
Wavelength (nm)	632.8									
Mode purity (TEM_{00})					>95%					
Beam Diameter (mm)	0.63	0.63	0.48	0.48	0.63	0.81	0.81	0.68	0.7	0.7
Beam Divergence (mrad)	1.3	1.3	1.7	1.8	1.3	1	1	1.2	1.15	1.15
Polarisation Ratio	N.A./500:1									
Mode Spacing (MHz)	730	730	1090	1090	730	435	435	320	257	257
Overall Length (mm)	241	241	178	178	272	401	401	486	635	635
Diameter (mm)	31.6	31.6	31.6	31.6	44.2	44.2	44.2	44.2	44.2	44.2
Power Supplies										
12VDC OEM Power Supply	101T-1700	101T-1700	101T-1250	101T-1250	101T-1800	101T-2300	101T-2300	n/a	n/a	n/a
115/230VAC OEM Power Supply	314T-1700	314T-1700	314T-1250	314T-1250	314T-2300	314T-2300	314T-2300	380T-3100	380T-3100	380T-3100
Lab Type Power Supply	1201-2	1201-2	1205-2	1205-2	1206-2	1202-2	1202-2	1216-2	1218-2	1218-2

Argon Lasers

Lumentum 2213 cylindrical argon ion lasers operate at 458, 488, 514nm or multiline. Powers up to 75mW at 488nm or 150mW multiline. Air cooled, symmetric design and axial airflow in this cylindrical argon ion laser head provide the best mechanical package to ensure optimum beam-pointing stability and fast warm-up.

Model	2211-XXSL	2211-4VL	2214-XXSL	2214-4VL	2214-XXGL	2213-75SL	2213-XXVL	2218-OXXSLS	2218-010GLS
Power (mw)	20/30	4.0	10/20/30	4	15/20	75	15/25	10/20/30	10
Wavelength (nm)	488	458	488	458	515	488	458	488	515
Package	Rectangular			Cylindrical					

Novette Series

The Novette 1500 is a series of Self Contained Helium-Neon Lasers with an integrated power supply and with a red (632nm) 0.5 or 0.8 mW HeNe laser tube. Ideal for applications where a small low-power laser is required such as alignment, inspection, or metrology.

Model	1508	1508P	1507	1507P
Power (mW)	0.5	0.5	0.8	0.8
Wavelength (nm)		623.8		
Beam Diameter (mm)		0.48		
Beam Divergence (mrad)		1.7		
Polarisation	n/a	500:1	n/a	500:1
Longitudinal Mode Spacing (MHz)		1090		
CDRH Class	II	II	3R	3R

Sirah Lasertechnik

From simple broadband systems to ultra-narrow linewidth double grating designs, Sirah offers the broadest tuning range of pulsed dye lasers on the market - 190-1100nm. This highly modular design enables systems to be configured precisely to match your requirements. All systems feature replaceable dye cells, making for fast and simple dye changes. It is now possible to exchange resonator units quickly, giving you the key to a new world of dye laser applications.

High Energy Pulsed Lasers

Cobra

- Compact design
- Modular design
- Low amplified spontaneous emission (ASE)
- Up to 150mJ pump (grating) or 230mJ (prism)

Cobra Stretch

- Excellent long term stability
- Reduced sensitivity to environmental influences
- Touch panel remote control
- Up to 650mJ pump

Precision Scan

- Unique double wavelength pumping optics
- Replaceable dye cells allow fast and easy dye change
- Automatic grating exchange
- Touch panel remote control
- Free placement of pump laser on any side
- Up to 1.4J pump

Pulsed Dye Amplifier

- Ideal source for single-frequency laser pulses
- Seed input power 50–300 mW single frequency
- High peak powers while ultra-low amplified spontaneous emission (ASE)
- Optional SHG/THG frequency conversion or other nonlinear conversion processes can be used
- Either Ti:Sa or dye based CW systems can be used as seed for large wavelength ranges (also possible to use diode lasers with high isolation for smaller wavelength ranges)

High Repetition Rate Pulsed Lasers

Credo

- Solid-state high repetition rate
- Wide tuning range
- High pulse intensity with narrow linewidth

Gropius

- Synchronously pumped tunable picosecond dye laser.
- Wavelength 370-780nm
- Repetition rate 75-80MHz
- Pulsewidth 1-50ps
- Tunable

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Power Technology incorporated

Power Technology Inc designs and manufactures laser diode products for OEM analytical, biomedical, semiconductor inspection, defence, security, machine vision and many other applications. Wavelengths from 375nm to 1650nm, temperature stabilised modules, beam circularisation, cw, pulsed and modulated outputs.

Grande – High Power Laser Diode

The Grande laser provides up to 20W of optical power for demanding applications that require high output powers. Controlled by an internal microprocessor, the design features an LCD display which provides users with safety status as well as real time information on power current settings and internal temperature.

Visible Specifications		IR Specifications	
Wavelength (nm)	Powe (W)r	Wavelength (nm)	Power (W)
450	3	808	5 & 10
515	0.9	915	5 & 10
635	0.65	980	5 & 10
CW and modulated outputs are available			

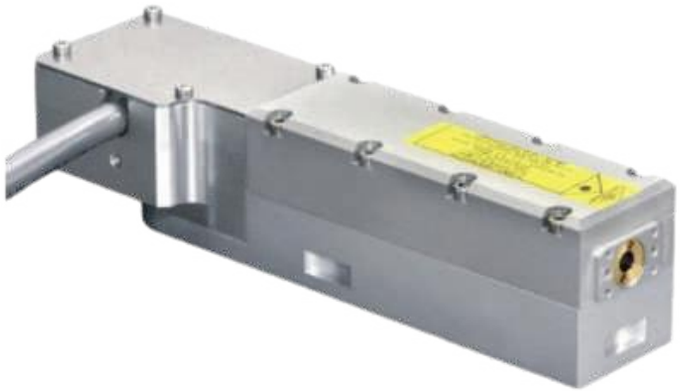
iQ series laser heads

The iQ series of laser heads and modules are designed specifically to address the needs of high-end OEM applications requiring superior optical quality, together with precise control over crucial operating parameters to ensure excellent thermal, wavelength and output power stability. These laser heads and modules offer excellent optical and mechanical stability. The iQ series can be configured to provide wavelengths from UV, VIS, and IR.

Teem Photonics is a world leader in passively Q-switched micro lasers for industrial use with a broad product offering covering wavelengths from 213-1535nm.

Single Longitudinal Mode Lasers (SLM)

Teem Photonics offers a complete range of Single Longitudinal Mode (SLM) lasers with wavelengths from 1535nm down to 266nm. These products display the same high quality and long operational life as the other lasers in the range.



- Various models at 1535, 1064, 532,255 and 266nm,
- Sealed or unsealed packages
- Ultrashort pulses
- High peak power
- Air Cooled
- Excellent beam quality

PowerChip Series

The PowerChip passively Q-switched MicroChip lasers offer the highest peak powers and shortest pulses at kHz repetition rates with an excellent beam quality. They feature a completely integrated platform which includes the laser head, power supply and air cooling in a compact, rugged, and turnkey package.

- Peak power up to 200kW
- Pulse width down to 350ps
- 1064, 532, 355, 266 and 213nm
- Single shot to 5000Hz
- Excellent beam quality, TEM_{00} M^2<1.3
- Completely integrated compact platform, including laser head, power supply and air cooling

PicoOne Series

The PicoOne amplified laser series is based on a microchip seeder and an efficient MOFA (Master Oscillator Fiber Amplifier) amplification stage, this laser produces 650ps pulses at frequencies in excess of 100kHz with an average power reaching 1W at 532nm. The laser operates with a single emission frequency.

- 1064, 532, 355 and 266nm*
- Ultra-short pulses, down to 650ps at 100kHz
- Peak power >38kW at 1064nm
- Excellent beam quality – TEM_{00} M^2<1.2

* For detailed performance please get in touch

.

PicoSpark

The PicoSpark series combine multi-watt output level with a high repetition rate and exceptional pulse characteristics to provide the best price/quality ratio for micromachining applications.

- 1064nm and 532nm
- Ultra-short pulses down to 500ps
- High Rep Rate up to 100kHz
- AOM option at 532nm
- Peak power over 200kW
- Excellent beam quality – TEM_{00} M^2<1.2
- Air Cooled
- Sealed package

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KIMMON

Kimmon specialises in the manufacture of HeCd lasers at 325, 442nm and dual wavelength (325/442) up to 180mW. Their reputation for reliability and quality is unmatched.

Wavelength (nm)	CW Power Available (mW)
325	Up to 100mW
442	Up to 180mW
325nm/442 (dual wavelength)	Up to 40/150mW

LTB LASERTECHNIK BERLIN

Experienced developers and manufacturers of modern laser technology, from the UV to the NIR range, LTB Lasertechnik provides appropriate tools for a wide range of scientific research and industrial applications.

General		PD Series		LD Series	
		MNL 103-PD	MNL 106-PD	MNL 103-LD	MNL 106-LD
Wavelength	(nm)	337.1		337.1	
Spectral Bandwidth	(nm)	0.1		0.1	
Pulse Energy	(µJ)	≤130	≤110	≤75	≤55
Pulsewidth FWHM	(ns)	3		3	
Pulse Power, typ.	(kW)	47	40	28	22
Repetition rate	(Hz)	1 - 30	1 - 60	1 - 30	1 - 60
Energy stability SD	(%)	<2			

Becker & Hickl design and manufacture picosecond diode lasers with wavelengths from the NUV to the NIR. All bh pulsed diode lasers operate at high repetition rate with short pulse width, unprecedented timing and power stability, and extremely low electrical noise level. The complete driver electronics is integrated in the laser module. All bh diode laser modules are directly compatible with the bh TCSPC modules.

USB-Controlled Picosecond/CW Diode Lasers

BDU-SM picosecond/CW features exceptionally high timing stability and intensity stability. They are fully controlled and powered via a 3.0 or 2.0 USB interface and are available in wavelengths ranging from 375-780nm. The lasers are available with elliptical or circular free-beam output and with single-mode fiber output.

- Compact size 40mm x 80mm x 120mm
- Power supply from USB port
- No external controller, no external power supply
- Wavelengths from 375-785nm
- Pulse repetition rate 20, 50, 80MHz and CW mode
- Pulse width down to 40ps
- Fast on/off/multiplexing capability
- Trigger in (on request)
- Excellent timing stability
- Excellent power stability
- Free-beam or single mode fibre output
- Free-beam power in pulsed mode up to 3mW
- Free-beam power in CW mode up to 20mW
- Internal power stabilisation loop
- USB 3.0 interface, USB compatible
- Compatible with all B&H TCSPC devices

edgewave

EdgeWave is a highly innovative provider of high-end laser beam sources and are the pioneers in the conception of InnoSlab technology. They now lead the market in this area.

InnoSlab lasers count among today's most efficient production tools, with a unique combination of high power output, high pulse frequencies, beam quality, scalability in power and energy and tailorable beam profiles. They allow users to improve existing manufacturing processes and extend them to new types of products.

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Short Pulse Lasers

BX-SERIES

An electro-optical Q-switched InnoSlab laser with low to medium power and pulse energy. Passively cooled diode lasers are used for increased reliability.

- Beam quality $M^2 < 2$
- Pulse energy up to 8mJ
- Pulse length down to 4ns
- Peak power up to 1MW
- Pulse rep.rate up to 150kHz
- Average power up to 80W
- Wavelength 1064, 532, 355, 266nm

IS-SERIES

An electro-optical Q-switched InnoSlab laser with medium to high power and pulse energy.

- Beam quality $M^2 < 2$
- Pulse energy up to 50mJ
- Pulse length down to 1ns
- Peak power up to 10MW
- Pulse rep.rate up to 150kHz
- Average power up to 400W
- Wavelength 1064, 532, 355, 266nm

Short Pulse Lasers

GX-SERIES

An electro-optical Q-switched InnoSlab laser with high power and pulse energy.

- Beam quality: $M^2 < 2$
- Pulse energy up to 120mJ
- Pulse length down to 1ns
- Peak power up to 10MW
- Pulse rep. rate up to 150kHz
- Average power up to 800W
- Wavelength 1064, 532, 355, 266nm

Ultra Short Pulse Lasers

PX-SERIES

PX-series is a picosecond oscillator and amplifier system based on InnoSlab technology with medium to high power and pulse energy.

- Beam quality: $M^2 < 1.5$
- Pulse energy up to 1000µJ
- Typical pulse length 10ps
- Peak power up to 100MW
- Pulse rep. rate up to 50MHz
- Average power up to 400W
- Wavelength 1064, 532, 355, 266nm

FX-SERIES

FX-series is a femtosecond oscillator and amplifier system based on InnoSlab technology with medium to high power and pulse energy.

- Beam quality: $M^2 < 1.5$
- Pulse energy up to 100µJ
- Typical pulse length 600fs
- Peak power up to 160MW
- Pulse rep. rate up to 50MHz
- Average power up to 200W
- Wavelength 1030, 515, 343nm

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moglabs

The portfolio from MOGLabs includes tunable Cateye and Littrow diode lasers, laser electronics, optical amplifiers, and wavemeters. Resulting from years of active laboratory development by research students and scientists, they balance outstanding performance, superb features, high-quality design, excellent ergonomics, and moderate cost.

Tunable Littrow Lasers (LDL)

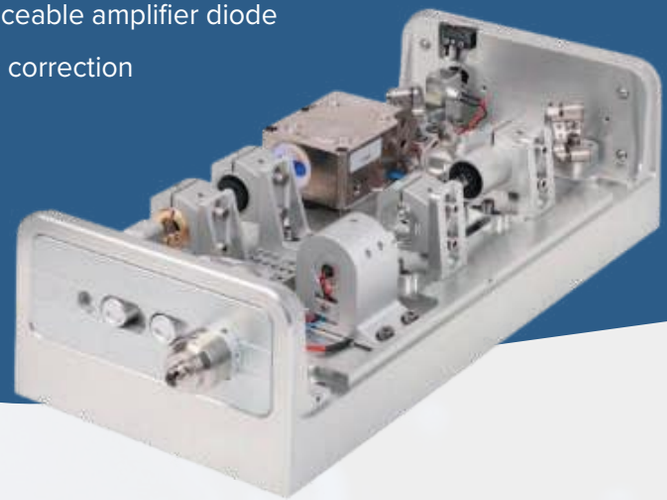
The MOGLabs LDL Enhanced Littrow External Cavity Diode Laser is a fourth-generation Littrow laser for advanced applications in atomic and quantum physics. With monoblock chassis, there are no coil springs to vibrate. It's machined from a solid block of aluminium alloy making this laser compact, robust, and stable.

- Wavelengths from 368-1620nm
- Vibrationally inert
- Wide tuning range
- Decoupled grating rotation and tilt
- Wide mode-hop free scan range
- Narrow linewidth
- Fastest piezo feedback on the market
- Precision alignment controls, including focus
- High bandwidth low latency current modulation
- Simple and fast diode replacement

ILA Injection-Locked Amplified Laser System

This system is a novel approach to high power narrow linewidth tunable lasers. Higher power, up to 1W, is available at critical wavelengths with no complex and expensive frequency doubling cavities. The ILA uses new MOGLabs technology, giving a new class of UV, blue, green, and red amplified lasers offering a low cost and compact alternative to SHG systems.

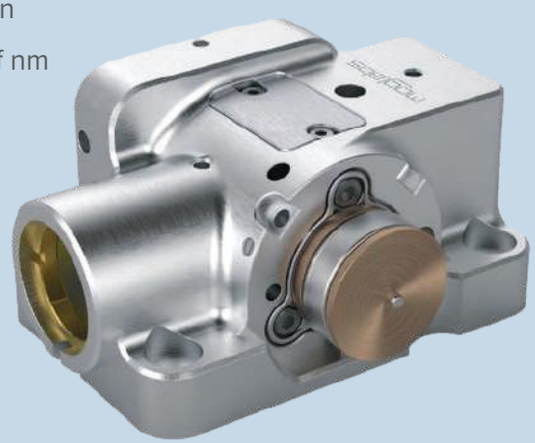
- Wavelength 370-1080nm
- Output power up to 1W, depending on the wavelength
- High stability wire-cut flexure alignment with simple optimisation procedure
- User-replaceable amplifier diode
- Astigmatic correction



Motorised Cateye Laser

The CEM motorised cateye laser is a revolutionary advance in the tuneable laser market, providing computer control of laser wavelengths. Sophisticated software control allows the automatic scanning of wavelengths to create continuous coverage over tens of nanometres.

- 368-1612nm
- Digital wavelength control to MHz precision
- Continuous wavelength scans over tens of nm
- Filter-based tuning with cateye reflection
- Inherently self-aligning
- Acoustically inert
- Narrow Linewidth



A manual tuning option is also available.

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Cutting Edge Optronics (CEO) is a leading manufacturer of diode-pumped solid-state lasers (DPSSLs), high power laser diode arrays, and diode-pumped laser gain modules.

Gigashot , Pulsed Laser System

The Gigashot HE laser system is a high-energy, short pulse diode-pumped solid-state (DPSS) Nd:YLF laser system. High efficiency, ultra-long life quasi-continuous-wave (QCW) pump diodes allow the laser to operate for many billions of shots.

- 10J @ 1053nm
- 5J @ 527nm
- < 10nsec, 10Hz
- Diode pumped
- Low maintenance
- High efficiency
- Long life diode bars
- Output beam characteristics maintained over operating power range
- eDrive™ control electronics with digital remote control
- Near field flat top beam profile

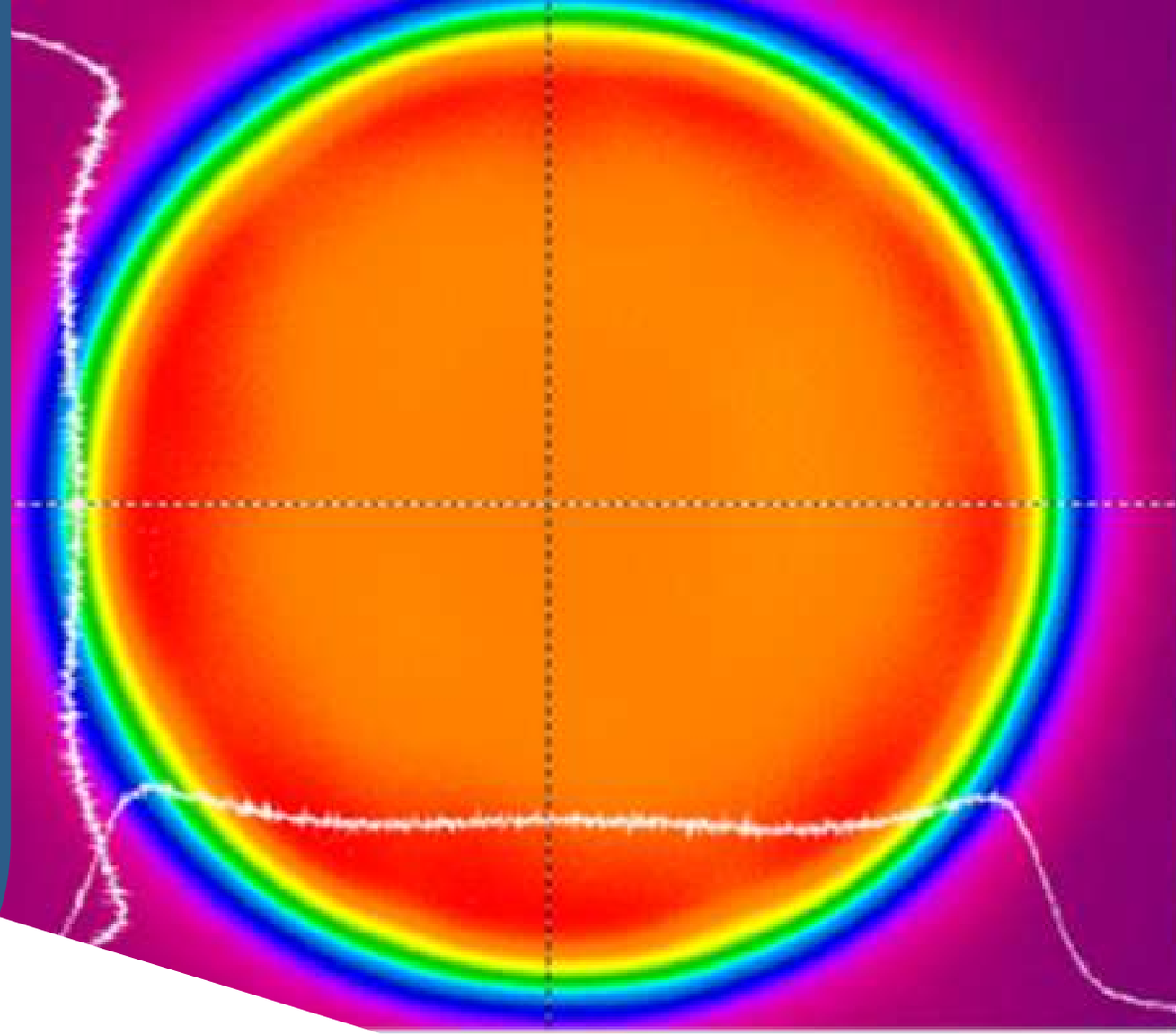
PIV Laser System

The Patara-HP PIV dual oscillator diode pumped solid-state (DPSS) laser system is purpose built for Particle Image Velocimetry (PIV) applications. The independently controllable laser oscillators can be configured with Nd:YAG for high average power or Nd:YLF for high pulse energy applications.

- Dual independent oscillator design
- Optimized for PIV
- Up to 50mJ @ 1kHz, YLF 527nm per oscillator
- > 200W @ 10kHz, YAG 532nm per oscillator
- Superior pulse energy stability, matched for perfect correlation
- eDrive™ control electronics with digital remote control

Laser Gain Modules

Laser resonator and laser amplifier modules are the engines that drive DPSS laser systems. With a variety of gain medium, rod diameter, rod length and diode bar count options, these gain modules have served as a workhorse for important applications.



	RBAT	REA
Rod Sizes (diameter, both CW & QCW pumped) (mm)	2-4	4 – 32
Max CW Power (W)	150	650
Long Pulsed Energy (J)	0.5	8
Material Type	YAG & YLF	YAG & YLF

NKT Photonics

NKT Photonics are the world leader in high quality optical fiber and laser technology.

The Koheras fiber lasers are ultra-low noise fiber lasers. Based on a DFB design, these lasers deliver an unprecedented level of phase and intensity noise along with mode-hop free, single frequency output. One of the key advantages of the DFB fiber laser technology is the freedom to choose the operating wavelength with an accuracy of up to 2 decimal places. Due to the excellent beam quality, frequency conversion can efficiently bring many prominent applications within reach.

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Koheras BASIK

- Wavelengths in the 1µm and 1.5µm range
- Ultra-low phase noise, narrow linewidth
- Stable single-frequency operation
- Wide wavelength tuning
- Integrated fast wavelength modulation up to 8GHz
- Industrial OEM packaging
- Multi-channel system or stand-alone

Koheras MIKRO

- Up to 40mW at 1.5µm
- Compact OEM footprint
- Robust single frequency operation
- Low phase noise and narrow linewidth
- High wavelength stability
- PM and fast frequency tuning option

Koheras BOOSTIK

- Up to 2W output
- Narrow linewidth operation
- Use in ACOUSTICK or stand-alone
- Robust and maintenance free
- Industrial OEM packaging

Koheras BOOSTIK HP

- Up to 15W output power at 1 or 1.5µm
- Single frequency, narrow linewidth
- Ultra low frequency & intensity noise
- Excellent beam quality
- Robust and maintenance free
- Wide wavelength tuning

Koheras ADJUSTIK

- Industry leading low phase noise
- Extremely narrow linewidth
- Stable single-frequency operation
- Wide wavelength tuning
- Easy to use benchtop system
- Robust and maintenance free

Koheras HARMONIK

- Available at wavelengths 317, 399, 532, 556, 638, 770, 780, 813, 840, and 1064nm
- Up to 10W output power
- Sub-kHz Linewidth
- Ultra-low frequency and intensity noise
- Wide wavelength tuning
- Excellent beam quality, M^2<1.1
- Fiber delivery option

Model	Standard Wavelength (nm)	Wavelength Ranges (nm)	OEM Module	Rack Mount	Output Power (W)
Koheras BASIK OEM	1550.12 1064.00	1535-1580/ 1030-1120	✓		0.01-0.04
Koheras BASIK MIKRO	1550.12	1535-1580	✓		0.01-0.04
Koheras ADJUSTIK	1550.12 1064.00	1535-1580/ 1030-1120		✓	0.01-0.04
Koheras ADJUSTICK HP	1550.12 1064.00	1545-1565/ 1060-1075		✓	0.2-2
Koheras BOOSTIK	1550.12	1545-1565	✓		
Koheras BOOSTIK HP	1550.12 1064.00	1550-1570/ 1050-1090		✓	2-15
Koheras ACOUSTIK		1535-1580/ 1030-1120		✓	0.01-0.04
Koheras HARMONIK	775-780	317-840nm 1064nm		✓	7

SuperK Series

The SuperK series is an industry-leading range of turn-key supercontinuum white light lasers used by the most innovative companies in bio-imaging, semiconductor inspection, sorting, device characterisation, and scientific instrumentation. The sources are robust and reliable, designed for heavy use, and can replace multiple single-line lasers as well as broadband sources such as ASE sources, SLEDs, and lamps.

Model	Visible Power Level (W)	Total Power Level (W)	Repetition Rate (MHz)	Variable Rep Rate
SuperK FIANIUM	0.6-2	2.2-6.5	78	✓
SuperK EVO	0.04	1	20	
SuperK EVO HP	0.03-3	0.1-10	20-30	
SuperK COMPACT	0.02	0.1	0.001-0.02	✓
SuperK OCT	0.4-2	2-8	312	

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SuperK Fianium

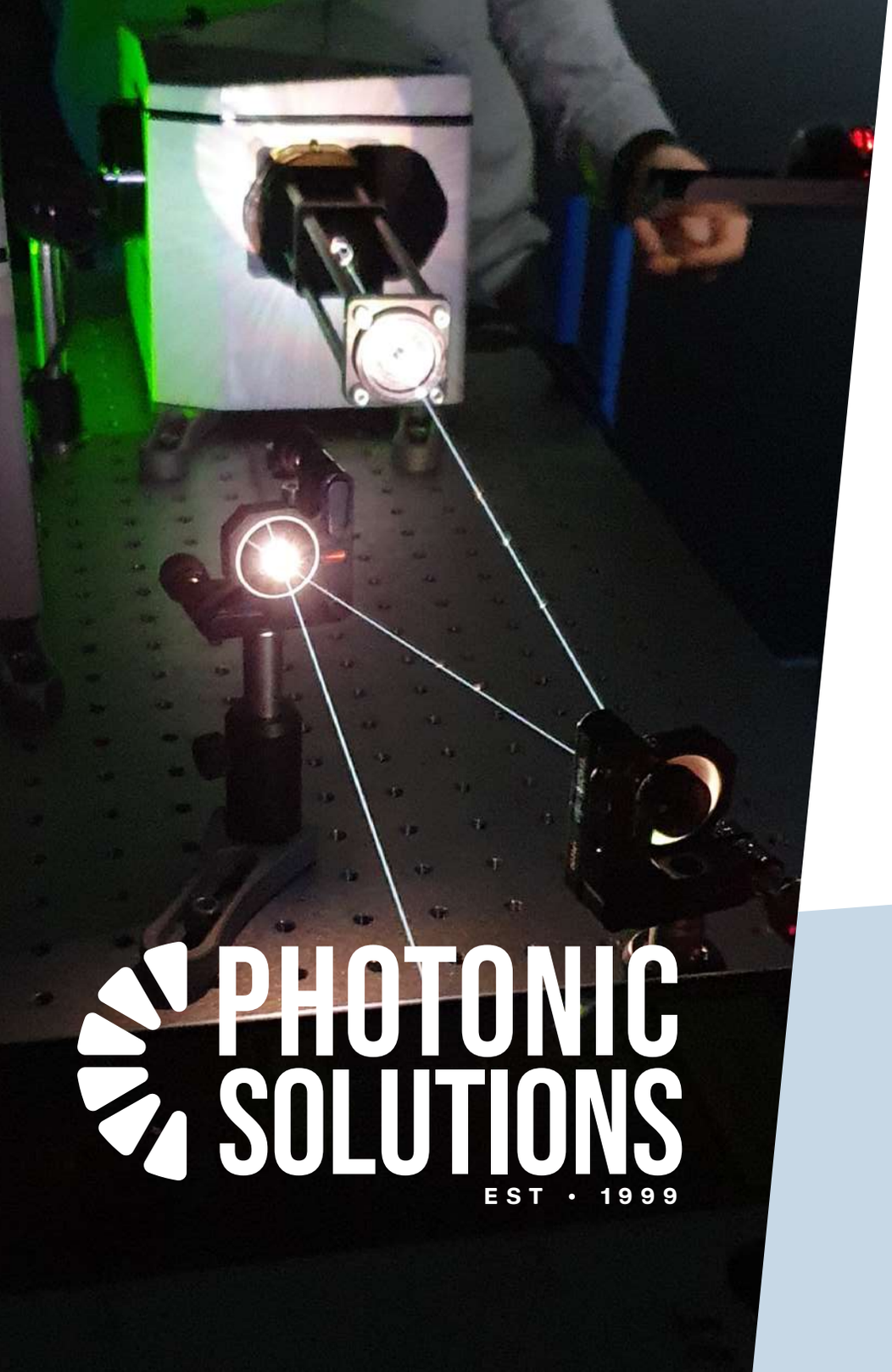
- 390-2400nm single mode output
- Robust and maintenance free
- Flexible trigger out and power locking
- On-the-fly variable repetition rate
- Software Development Kit (SDK)

SuperK COMPACT

- High brightness and long lifetime
- Maintenance free 24/7 operation
- Variable repetition rate
- Input pulse trigger
- Visible to IR light in one module
- Cost-efficient broadband source

SuperK EVO

- Cost efficient industrial laser platform
- High brightness and repetition rate
- Robust and compact industrial design
- Free software development kit
- Maintenance free 24/7 operation



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SuperK CHROMATUNE

The World's broadest tunable laser, giving you an unmatched 400-1000nm tuning range.

The CHROMATUNE fiber laser ensures excellent reliability and a lifetime of thousands of hours. There is no maintenance, alignment, or adjustment required and, it's easy to use.

- Tunable from 400-1000nm
- Constant output power
- On-the-fly variable repetition rate
- Alignment & maintenance free
- Software Development Kit (SDK)
- Plug & Play accessories

mirSense

mirSense manufactures ITAR free off-the-shelf and custom Industrial Quantum Cascade Lasers (QCL) and QCL-based spectrometer modules for industrial & defense applications.

The QCL is a compact, lightweight, and robust solid-state laser source emitting in the mid-infrared.

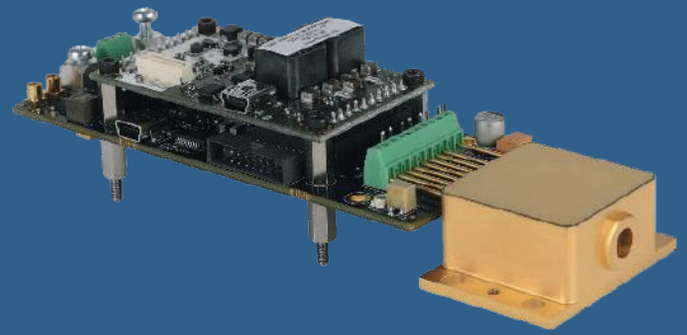
POWERMIR – ITAR free MIR high-power QCL systems

The PowerMir product line is high-power pulsed Fabry Perot Quantum Cascade Laser range (QCL) based on high-performance proprietary technology. The lasers emit in the 2 transmission bands of the atmosphere (MWIR: 3-5µm and LWIR: 8-12µm).

- Plug-and-play system perfect to use in a lab
- Stand-alone system including laser head, driver, heat exchanger
- Simultaneously control two different laser heads

OEM Board (POEM)

- QCL current driver coupled to an HHL laser package
- Compact & powerful
- Controlled via GUI or direct serial control



System Configurations

- Laser chip with an HHL Package
- Built-in TEC and Thermistor
- Collimating Lens

IN-HOUSE SERVICE

We keep a fully functional laser testing lab used for service and repair at our Edinburgh headquarters. This facility gives our customers access to experts with various skill sets and enables a more flexible problem-solving approach. It is well-equipped with the necessary testing and measurement tools.

Many of our products now offer remote access control of their software interface, this means we can provide rapid diagnosis, operational service and guidance on such products quickly and efficiently.

Allowing users a simple and efficient ‘Check Before Proceeding’ protocol gives our product specialists the ‘decision pathways’ users follow and offer further support when required.

TRAINING

Following the training, one-to-one phone and email support are available, and we can return to your location for additional training if necessary. Response times are typically, 24 hours for telephone and email support and 2-5 working days for an on-site service visit.

SPARE PARTS AND CONSUMABLES

We stock a large inventory of major components, minimizing repair time. Including, but not limited to Nd:YAG rods, Pockel cells, mirrors, lenses, and electronic PCBs. Consumables include flashlamps, de-Ionized water filters, laser dyes and dye filters, most of which can be ordered via our webshop - photonicshop.co.uk

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Sciencetech Inc. extensive range of solar simulators is regarded as best in class, offering standard and highly configurable steady-state and flash solar simulators.

Tunable Light Sources

Computer-controlled tunable light sources from Sciencetech provide monochromatic light from 300nm to 1800nm (extended ranges from 180nm to 10µm available with customisations). Depending on your application requirements, all components, including the light source and monochromator, can be changed to suit the desired wavelength range, optical resolution and power level.

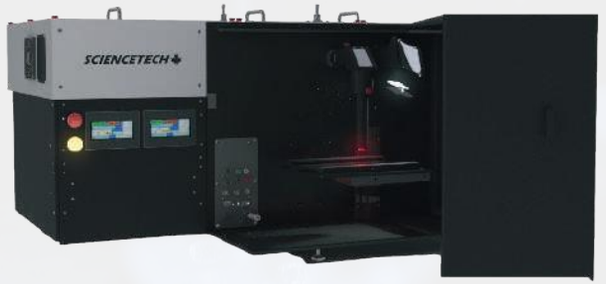
- Touch screen power supply
- Six-position filter wheel
- Software Controlled
- Optical resolution from 20-0.2nm

Photovoltaic Testing Equipment

Quantum Efficiency/IPCE Measurement Systems

With the PTS family of Quantum Efficiency Systems, researchers can measure Current Voltage characteristics (IV), Internal Quantum Efficiency (IQE) and External Quantum Efficiency (EQE) for any photovoltaic device. These systems are uniquely configured for Terrestrial PV testing, Extra-terrestrial PV testing and Concentrated photovoltaic (CPV). A variety of accessory modules are available to provide positive sample positioning, temperature control, and electrical probing capabilities.

- Complete turn-key PV efficiency measurement solution
- Configurations including Constant Photocurrent (CPM) with single or dual beam (DBM)
- Photothermal Deflection (PTD & Steady State Photoconductivity – SSP)



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Solar Simulators

Solar simulators from Scientech closely match the characteristics of sunlight such as the spectral match, spatial non-uniformity, and temporal stability of the simulated output beam. Achieving Class AAA certification even in large target areas up to 45x45cm. Depending on the application, we can offer a variety of solar simulators with an illumination area and power that suits your needs. All models offer standard compliance with the most current standards from the ASTM, IEC and JIS.

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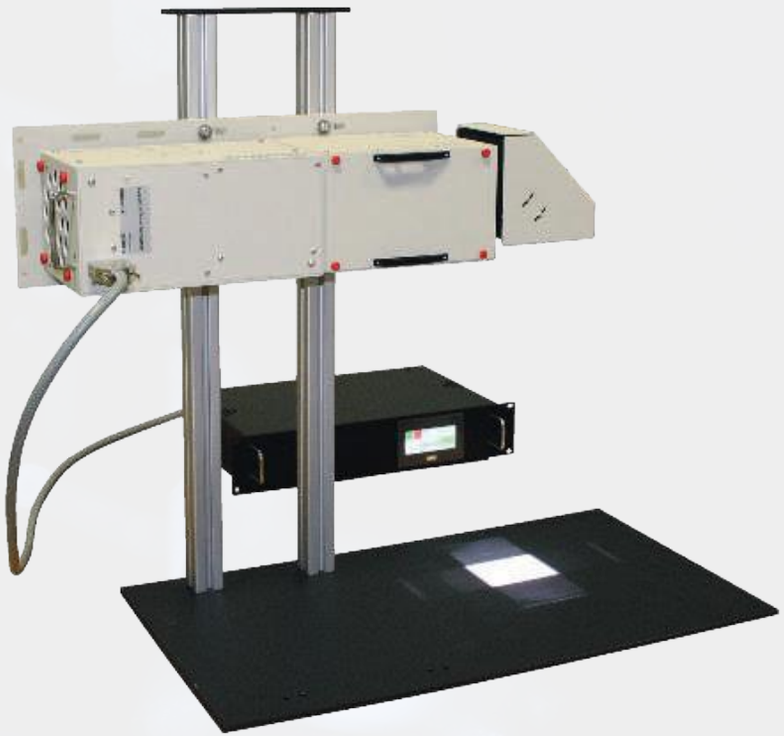
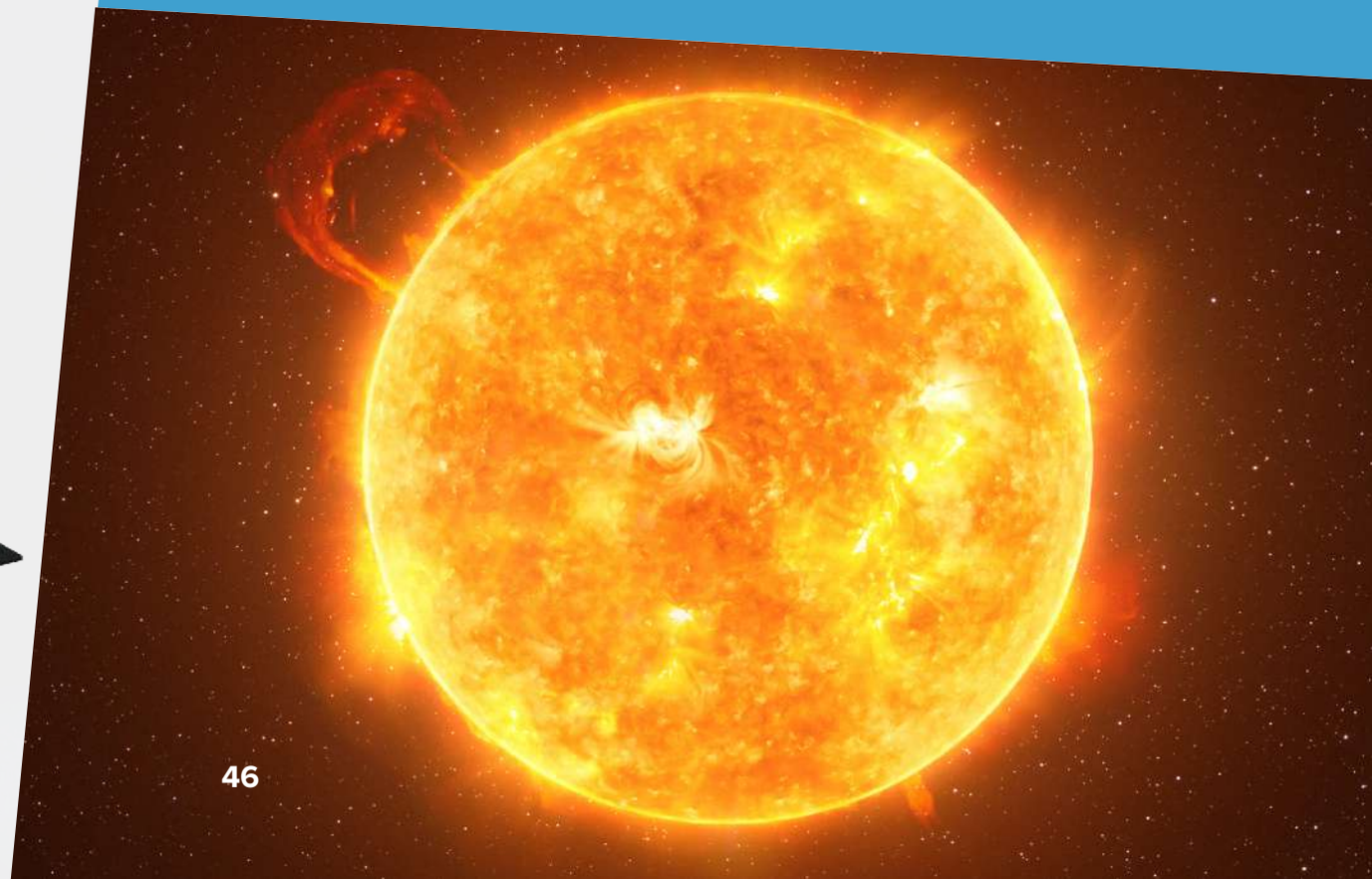


Small Area Solar Simulators

The SciSun series is designed with a small footprint in mind. They are easy to use, economically priced and technically superior.

- Up to 2 suns (AM 1.5G)
- Class A uniformity over 50x50mm square
- Plug & Play operation



Ultra High Efficiency (UHE) Solar Simulators

The UHE systems are capable of far more efficiency and power unit than previously possible. All this without sacrificing temporal stability, spatial uniformity, or spectral matching.

- Industry leading efficiency
- Class AAA
- Radiance angle of +/- 1.5° half angle
- Target size up to 300x300mm
- Turn key operation

Highly Collimated

This solar simulator series is based on a Fresnel lens to collimate the light beam from the arc lamp source to infinity, resulting in highly collimated illumination of the target spot.

- Highly collimated bean of 0.5° half angle
- Illumination target area 10-45cm

Large Area Solar Simulators

LASI single unit offers 0.5x0.5m illumination area and operates with Xe arc lamp with a solar colour temperature of 6,000K. Combine multiple LASI units to illuminate large areas. For example a 48-unit array can be arranged to illuminate an area of 6x2m or a 6x6m array of units (36) illuminates an area of 3x3m

Fiberised Solar Simulators

The LightLine series of fiberized solar simulators are a revolution in the simulator industry. With the LightLine you can direct the Class AAA solar light anywhere you wish with the standard size fiber. Now you can bring the solar simulator to your sample.

- Up to 18 suns intensity
- Easy to use touchscreen controls
- Up to 50x50mm target

Custom Solar Simulators

We can offer a customised solution that meets your unique research demands. We tailor Solar Simulators to illuminate large areas, cover full or modified solar spectrums in accordance with ASTM, and IEC standards or give sun-like collimation angles.

- Collimation half angle as small as 0.35° with AAA classifications
- Full automation and temperature monitoring
- Large area IR solar simulator 1.5x1.5m, 700-1100nm

ARC Lamp Sources

Continuous Arc Lamp Sources

Research xenon (Xe) arc lamps

- 230-2500nm
- 75-7000W sources
- Focused or collimated beam
- Adjustable power supply with touch screen interface

Quartz Tungsten Halogen (QTH) Lamps

- Broad band smooth emission – 350-4000nm
- 50-1000W sources
- Long life and cost-effective

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G2V

G2V Optics is developing and building the most advanced LED solar simulation on the market. They continue to raise the bar with innovative features that enable better, faster solar testing of materials and devices.

Pico - Small Area LED Solar Simulator

Precisely replicate terrestrial or extra-terrestrial Solar Spectra with the click of a button. G2V Optics created the Pico LED small area solar simulator to provide truly controllable illumination.

- ONE-CLICK SUN - enables users to replicate irradiance and spectrum based on geography, season, and time of day.
- Exceed Class A Spectral Match by a factor of 5 with Spectral Mismatch of <5%
- Class A Spatial Non-Uniformity' < 2% in a 2.5x2.5cm area
- Class A Temperal Instability
- IV upgrade medule
- Low-resolution EQE upgrade module

Sunbrick - Large Area LED Solar Simulator

A large area LED solar simulator fit for any space, harnessing high-precision solar simulation.

With its advanced LED-driven illumination, the Sunbrick makes solar simulation for large areas easy, quick, and cost-effective. LED technology eliminates the need for bulb replacement or field calibration.

All available in Class AAA:

- BASE - 400-1100nm Spectral Range
- BASE UV - 350-1200nm Spectral Range
- BASE NIR - 400-1500nm Spectral Range
- BASE NIR - 400-1500nm Spectral Range, Boosted Power

LIGHT CONVERSION

Light Conversion has world wide recognition for their femtosecond laser systems and their time-resolved spectroscopy systems. These systems are at home in an ultrafast laser laboratory or an industrial micromachining environment.

The HARPIA comprehensive spectroscopy system performs a variety of sophisticated time-resolved spectroscopic measurements in a compact footprint. The system offers an intuitive user experience and easy maintenance to meet the needs of today's scientific applications.

HARPIA

- Market-leading sensitivity
- 330nm-24µm spectral range
- Probe delay ranges from 2-8ns
- Pump pulse energies down to nJ
- Cryostat and peristaltic pump support

Main Unit	Module	Application
HARPIA | TA		Transient absorption and reflection in bulk mode.
	HARPIA | MM	Transient absorption & reflection in microscopy mode.
	HARPIA | TB	Multi-pulse transient absorption & reflection
		Femtosecond stimulated Raman scattering (FSRS)
		Z-scan
HARPIA | TG		Transient grating spectroscopy
		Single wavelength transient absorption

mirSense

uniMir - Single Mode DFB QCL

The UniMir line of narrow linewidth Quantum Cascade Lasers (QCL Series) are the perfect lasers for gas detection applications. Offering ground-breaking new wavelengths, including 11.3, 13.4, 14 and 14.9µm, these rugged, lightweight, ultra-compact QCLs produce 10's of mW of CW power, and are available in HHL and turnkey configurations

- Very tight linewidth that drives the very high sensitivity of gas sensing
- CW operation delivering mW levels of output power at room temperature
- Pulsed operation for a larger tuning range
- Power consumption for integration in portable gas analysers
- IV upgrade module
- Very stable over time with good Allan deviation results when integrated inside a gas analyser

licel

lidar computing and electronics

The Licel product range includes an Optical Transient Recorder for LIDAR and photomultiplier modules. A gated PMT module aimed at the LIDAR market is also available

sensIR

SensIR is a leading manufacturer of robust, high performance and innovative spectroscopic imaging solutions. They produce OEM modules for VNIR, SWIR and MWIR applications, and real-time spectral imagers. They also provide turnkey solutions for mineral analysis.

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SWIR – 1000nm to 2500nm

NIR - 900nm to 1700nm

VNIR – 350nm to 1000nm

Model	Spectral Range (nm)	Dispersion (nm/mm)	Spectral Sampling (nm/px)	Spatial Sampling (px)	Spectral Resolution (nm, 50um slit)	Image Size spectral x spatial (nm)	RMS Spot Size (µm)	F#	Slit Size (mm)	Optical input	Grating efficiency
VNIR	400 -1000	165	1.15	700	6	3.6x5.0	RMS spot size <10 µm	2	6x.05	Telecentric	85% @ 600nm
NIR	900-1700	112	3.36	300	6	7.6x9.6	RMS spot size <10 µm	2	9x.05	Telecentric	85% @1300nm
SWIR	1000-2500	156	2.34	500	7	9.6x7.6	RMS spot size <10 µm	2	7x.05	Telecentric	86% @ 1750nm

NIREOS

Nireos are a leading manufacturer of high-performance and innovative devices for spectroscopy. The product portfolio includes FTIR interferometers and photodetectors providing the highest accuracy and sensitivity.

GEMINI Interferometer - Broadband spectroscopy with high throughput

The GEMINI interferometer is a novel and compact device that ensures very high robustness and stability between the two generated replicas of light. The device's exceptional performance can be used in a wide variety of applications, such as time- and frequency-resolved fluorescence, coherent Raman, pump-probe, two-dimensional spectroscopy, and studies on single molecules.

- High throughput that allows high sensitivities
- ≈1 attosecond stability between the two replicas of light
- Scan range selectable by the user
- Compact and low-cost
- Insensitive to vibrations

GEMINI-2D INTERFEROMETER

Two dimensional electronic spectroscopy made easy

The GEMINI-2D turns your transient absorption spectrometer into a state-of-the-art two-dimensional electronic spectroscopy setup. With unrivalled stability and robustness, it generates two collinear and phase-locked replicas of your femtosecond laser pulses.

- High throughput that allows high sensitivities
- ≈1 attosecond stability between the two replicas of light
- Scan range selectable by the user
- Compact & insensitive to vibrations

SPIDER Amplified Photodetector & ADC

SPIDER is an amplified Si-InGaAs photodetector with programmable gain and an embedded 24bit data acquisition system. The employed two-colour detector provides a straightforward beam alignment and a wide spectral response, ranging from 320-1700nm.

- Amplified Detector & Analog-to-Digital Converter in a Unique Device
- Broad spectral coverage with a single-pixel element
- High Sensitivity (pico-Watt range)
- High Dynamic Range (109:1)
- Plug & Play software and DLLs available

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OPTOSKY

Optosky has been manufacturing miniature spectrometers for over 20 years. They are committed to leading technological innovation in miniature spectroscopy, with particular emphasis on Raman applications.

Series	Spectral Range (nm)	Detector	Resolution	Slit Width (µm)	Optical Resolution (slit & spectral range dependent) (nm)
ATP1000	200-1100	1204 px linear CMOS 512 px linear CMOS	16-bit ADC	5, 10, 25, 50, 100, 150 or 200	0.5–5 ATP1000 0.2-5 ATP1010
ATP2000	200-1100	2048 px linear CMOS	16 bit, 2MHz (ATP2000P/ATP2002), 16 bit, 10MHz (ATP2000H)		0.2-5
ATP3000 High Sensitivity	180-1100	2048 px linear CCD (ATP3000), 4096 px linear CCD (ATP 3040)	16-bit ADC, 10MHZ		0.01-2
ATP5000 Deep UV	180-1100	Back thinned CCD	18-bit		0.01-3
ATP6500 Scientific Grade	180-1100	1044 x 64 px CCD cooled to -20°C	18 bit 570 KHz A/D converter	5, 10, 25, 50, 100 or 200	0.01-4
ATP8000	900-2600 (custom ranges available)	256 x 512px InGaAs Array	18-bit ADC		5-50

NeoSpectra™

NeoSpectra sensing solutions are an economical range of miniature spectral sensors and scanners that can be used in a wide variety of material sensing applications. The solution offers performance comparable to laboratory based spectrometers but at dramatically smaller sizes and lower costs.

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NeoSpectra-Scanner portable NIR handheld spectrometer

- 6mm diameter of collected light
- Wavelength range 1250-2500nm
- 16nm resolution
- Wireless connectivity
- Measurements can be taken above the sample, in point and shoot mode and below the scanner
- IP65 ingress protection
- 178x91x62mm
- 1kg weight

ISTEQ's main focus is on the development and manufacturing of plasma light sources, spectroscopy and microscopy equipment for spectral regions ranging from X-ray to Infrared.

XWS-30 Compact Broadband Plasma Light Source

This product is ideal if you need a super compact broadband light source with low heat dissipation while keeping the plasma brightness high.

- Compact 'all-in-one' source
- Very compact 149x166x145mm, no external chiller
- Output configuration – Free space or FCU
- Full system control by laptop/pc via USB-RS 485 adapter

XWS-65 – Broadband Plasma Light Source

The XWS-65 has been specifically developed for customers who need a powerful light source with high spectral brightness and high output power (free space or fiber coupled)

- Available for retroreflector (for single port output)
- Available in dual port configuration
- Output configuration: free space or FCU
- Available with an air-cooled or water-cooled optical head
- External source control and parameters monitoring by laptop/pc via RJ45 (ethernet, web interface)
- Com-port (RS-232)

XWS-X High UV Broadband Plasma Light Source

Developed for customers who need a powerful light source with high UV generation.

- Available for retroreflector (for single port output)
- Available in dual port configuration
- Output configuration: free space or FCU
- Available with an air-cooled or water-cooled optical head
- Source control and parameters monitoring by laptop/pc via RJ45 (ethernet, web interface)
  Com-port (RS-232)

	XWS-30	XWS-65	XWS-X
Spectral range 190-2500nm UV configuration	✓	✓	✓
Spectral range 250-2500nm OFR configuration	✓	✓	✓
Max spectral brightness for UV configuration (avg for 350-550nm), mW/(mm².nm.sr), min/avg/max	38/43/48	60/65/68	120/125/130
Max spectral brightness for OFR configuration (avg for 350 -550nm), mW/(mm².nm.sr), min/avg/max	38/43/48	50/56/60	
Output power Free space (W)	Up to 1	Up to 1.8	Up to 1.5
Output power via fiber 600µm, mW min/avg/max	300/319/350	510/555/600	550/600/650
Emitting body size for UV configuration (spectral range 350-550nm, µm)	310x480	360x600	285x485
Lifetime (hours)	10,000	10,000	10,000
Temporal and spatial stability	STD<0.15%	STD<0.15%	STD<0.05%
Lamp medium	Xenon	Xenon	Xenon
Optional Configurations			
Free space light output (default)	✓	✓	✓
Retroreflector (single port output only)		✓	✓
Dual port output		✓	✓
FCU light output	✓	✓	✓
Air-cooled optical head	✓	✓	✓
Optical Head		✓	✓

As a leading provider in hyperspectral imaging in the visible and infrared spectrum, Photon etc. offers a wide range of products including infrared cameras, hyperspectral imaging systems, preclinical imagers, and tunable filters.

INFRARED AND SWIR CAMERAS

Choose from the extensive range of SWIR and IR cameras including complete HgCdTe (MCT) cameras with sensitivity out to 2.9um and high-end, scientific-grade InGaAs camera with a resolution of 640x512px.

Zephir 1.7 Deep Cooled, InGaAs SWIR Camera

ZephIR 1.7 is Photon etc.'s near-infrared InGaAs low-noise camera, deep-cooled at -80°C and highly sensitive from 0.9-1.7µm.

Zephir 2.5 HgCdTe (MCT) eSWIR Camera

The ZephIR 2.5 is Photon etc's 320x256px camera sensitive up to 2500nm. The camera operates at up to >2500fps with hardware-coded ROI reduction.

Zephir 2.9 MCT SWIR Camera

The ZephIR 2.9 is Photon etc's 320x256 px camera sensitive up to 2900nm. The camera operates at up to >2500fps with hardware-coded ROI reduction.

Alize 1.7 NIR InGaAs Camera

The Alizé 1.7 is a high-end, scientific grade, 640x512 pixels resolution, InGaAs camera that marries performance with reliability.

	Zephir 1.7x	Zephir 1.7s	Zephir 2.5	Zephir 2.9	Alize 1.7x	Alize 1.7s
Focal Plane (FPA)	InGaAs	InGaAs	HbCdTe	HbCdTe	InGaAs	InGaAs
FPA Size (Px)	640x512	640x512	320x256	320x256	640x512	640x512
Pixel Size (µm)	15	15	30	30	15	15
Spectral range (µm) (QE > 10%)	0.45 – 1.70	0.95 – 1.70	0.85 – 2.5	0.85 – 29	0.45 – 1.70	0.95 – 1.70
FPA Operating Temp (°C)	-80	-80	-80	-80	-50	-50
Frame rate in USB 3.0 (fps)	High Low 110 220	Up to 250 full frame 1900 for a 128x128 ROI	Up to 340 full frame 2000 for a 64x64 ROI	Up to 340 full frame 2200 for a 64x64 ROI	High Low 110 220	Up to 250 full frame 1900 for a 128x128 ROI
Digitisation (bits)	13	14	14	14	13	13
Quantum Efficiency	Up to 70%	Up to 70%	Up to 80%	Up to 85%	Up to 70%	Up to 70%

L-EOS Push broom hyperspectral scanner

Using a totally reflective spectrometer at its core, it has fewer interfaces, therefore less light losses, no chromatism and very low aberrations. It is combined with Photon etc.'s scientific-grade infrared cameras and objective lenses specifically designed for infrared spectroscopy.

	L-EOS 1.7	L-EOS 2.5	L-EOS 2.8
Spectra Range (nm)	900-1650	900-2500	1000-2800
Photon etc's cameras	InGaAs Zephir 1.7 or Alize 1.7	MCT Zephir 2.5	MCT Zephir 2.9
Spatial Resolution (µm)	22 (1.5 px)	30 (1 px)	30 (1 px)
Dispersion Spectral Sampling (nm/px)	1.3	5	5.6
Spectral Channels	640	320	320
Spatial Channels	512	256	256
Spectral Resolution (nm/px)	3 (2px)	7.5 (1.5px)	9 (px)
Sensor Resolutions	512x640	256x320	256x320
Pixel Pitch	15	30	30
Maximum Frame Rate	250	340	340

- Optimised from 980-2800nm
- Tunable continuously over the entire spectral range
- Non-dispersive technology
- High performance InGaAs and HgCdTe camera (very low noise)
- Control and analysis software

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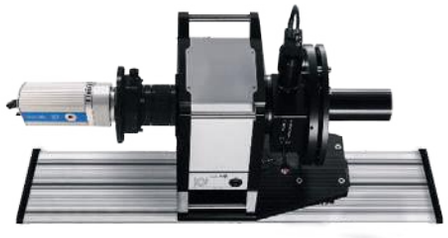
HYPERSPECTRAL WIDE-FIELD CAMERAS

S-EOS

A global hyperspectral camera that offers the unique power of HgCdTe infrared detectors coupled with rich spectral information to offer continuous tunability from 900-1620nm or from 900-2500nm.

V-EOS

Complete and detailed information with full-resolution images over a wavelength range from 400-1000nm. V-EOS will redefine the way you perform spectral analysis.



GRAND-EOS

GRAND-EOS platform combines a hyperspectral microscopy system with a wide-field hyperspectral imaging platform, giving access to micro and macro modes on a spectral scale covering 400-1000nm for the VIS version and 900-1620nm for the SWIR version.

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	S-EOS 1.7	S-EOS 2.5	V-EOS	Grand-EOS
Spectral Range (nm)	900-1650	900-2500	400-1000	400-2600
Spectral Resolution (nm)	<4	<5	<2	<4
Camera	InGaAs Zephir or Alize	1.7 MCT Zephir 2.5	sCMOS	sCMOS
Spectral Channels	Continuously Tunable			
Standard Field of View	20x20mm to 160x160mm (other FOV available request)			

Instruments

The Mountain Instruments monochromator has been specially developed and optimised for the laser-pumped light sources of the XWS series from ISTEQ.

The extremely high luminance of these light sources is particularly well suited for generating monochromatic light in the wavelength range of 200-2200nm (UV/VIS/NIR). Bandwidths from 1-20nm are possible. The light is collected directly from the lamp's plasma with an aperture of f/1.5, without using an additional entrance slit. This makes this tunable light source very efficient.

Optical Input	ISTEQ light source XWS-30, XWS-65 or XWC-R directly coupled
Optical Output	Optical quartz fiber, SMA (standard) or FC, 100-1000µm core diameter
Wavelength range (nm)	190-2200*
Aperture	f/1.5
Bandwidth (nm)	1-20 FWHM*
Output power	Up to 800µW (grating at blaze wavelength, 6nm bandwidth and 400µm fiber)
Reproducibility	Typ. 0.1nm
Scanning speed	40-100nm/s*
Control Interface	USB/RS-232, LabVIEW™ - Based GUI, various external control options
Dimensions and weight	46.3x35.3x18.7cm – 13kg

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Lightnovo

Lightnovo's vision is to become the leading developer and provider of Raman spectroscopy and Raman microscopy solutions for research-grade, industrial and consumer applications.

Established in 2019, Lightnovo have developed a patented mirrorless Raman technology that forms the core technology of all their instruments, and which allows for an automatic calibration of the unstabilised laser wavelength drift. This technology has allowed Lightnovo to produce and commercialise the World's smallest, handheld Raman spectrometer amongst other ground-breaking Raman instruments.

miniRaman Spectrometer

miniRaman is the World's smallest Raman spectrometer with high sensitivity for the most sophisticated Raman applications. Measuring only 112x39x34mm (LxWxH) and weighing 400g, the spectrometer can integrate up to two lasers at wavelengths 660nm and 785nm.

Feature vs Model	miniRaman Standard M PowerM SERS M	miniRaman Power Dual M	miniRaman Standard Dual M	RG Raman 405 RG Raman 532 RG Raman 633 RG Raman 785
Laser Wavelength (nm)	785	660 and 785		405 532 633 785
Power at Sample (mW)	5-50 15-150 0.5-5	1-32 (660) 15-150 (785)	1-32 (660) 5-50 (785)	0.1-30 0.1-150 0.1-50 0.1-100
Spectral Range (cm^{-1})	400-2700	2700-4500 (660) 400-2700 (785)		500-3700 500-3700 500-3700 50-2500
Spectral Resolution (cm^{-1})	7-15 (slit size dependent, slit size can be customised)			3-5 3-5 3-5 2-4
Signal-to-noise ratio	500:1 1000:1 100:1	1000:1 800:1	500:1 800:1	1000:1 1200:1 900:1
Physical Dimensions (mm)	112x38x34 (LxWxH)			145x120x50 (LxWxH)
Weight (g)	400 (optional 200g in aluminium housing)			600

RG Raman Spectrometer

RG Raman is an extremely compact research-grade Raman spectrometer that is perfectly suited to demanding Raman spectroscopy applications that requires high spectral resolution, extremely stable laser power, high sensitivity and broad spectral range (from low frequency to high frequency Raman shift). There are four different models of RG Raman spectrometer depending on laser wavelength (405, 532, 633 and 785nm).

Broadcom is based in San Jose, California, and is a global technology leader in semiconductor and infrastructure software solutions.

Its extensive product portfolio includes optical components, sensors and spectrometers. These spectrometers are compact, modular devices for UV-VIS-NIR measurements between 190 and 1700nm, and are particularly well suited for industrial applications thanks to their consistent performance. Broadcom's spectrometers are used in chemical and biomedical analysis, light and color analysis, environmental monitoring, food safety and pharmaceutical analysis, among others. In addition, they are often integrated into OEM processes due to their compact size.

QtubeSpectrometer – round process UV spectrometer

Mini process spectrometer module for tight integration directly in process pipes.
Spectral range 190-1000nm in one device with optimized UV performance.

Qmini – Miniature VIS spectrometer

This miniature spectrometer is available in six wavelength configurations optimised for industrial integration and situations where integration space is tight.
Spectral range UV-VIS-NIR 190-1100nm, resolution to 0.5nm.

Qwave – Compact VIS spectrometer

This compact spectrometer has the largest footprint of all Broadcom spectrometer and benefits from high optical performance, resolution and sensitivity.
Spectral range UV-VIS-NIR 190-1100nm, resolution to 0.3nm.

Qneo – NIR spectrometer

Pocket size NIR industrial spectrometer for PAT and POC.
Spectral range 950-1700nm

	Qwave UV	Qwave VIS	Qwave NIR	Qwave UV	Qwave VIS	Qwave NIR	Qwave WIDE-UV	Qwave WIDE-VIS	Qwave WIDE VIS/NIR	Qtube	Qneo
Spectral Range (nm)	220-390	350-880	700-1030	220-400	370-750	730-1080	225-1000 (optimised at 300nm)	225-1000 (optimised at 500nm)	480-1100	190-1000	950-1700
Entrance Slit (µm)	20			20						20	30
Spectral Resolution (FWHM) nm	0.6	0.3	0.5	0.5	0.8	0.8	1.5	1.5	1.5	<2	8
Dynamic Range	2000:1			1300:1						1000:1	12000:1
NA	0:1			0:1						0.1	0.18
Detector	3648 pixel linear Si CCD			2500 pixel linear Si CCD						2500 pixel linear Si CCD	256 pixel uncooled linear InGaAs sensor
Dimensions (mm)	89.5 x 68 x 19.5			64 x 42 x 14.5						35 x 70	60 x 50 x 19

APE offers a range of world-leading picosecond and femtosecond OPOs, ultrashort laser pulse diagnostics and tunable wavelength conversion devices.

The portfolio includes OPO systems, harmonic generation (HarmoniXX series), autocorrelators for pulse width measurements and spectrometers, measuring and characterising femtosecond and picosecond laser pulses.

deltaEmerald – Dual colour SRS

The deltaEmerald allows simultaneous SRS imaging of two vibrational bands with its revolutionary dual colour SRS (DC-SRS) scheme. Aimed at users at the forefront of SRS microscopy, it provides the best signal-to-noise performance and the capability of background subtraction as well as simultaneous imaging of two vibrational bands.

- Innovative SRS scheme for simultaneous excitation of two vibrational band
- Tunable Pump and both Stokes pulses are spatially and temporally overlapped
- Spectral distance of Stokes 85 cm^{-1}
- Proven OPO technology with shot noise limited performance with -162dBc/Hz above 1MHz
- Additional femtosecond output at 1030m, for optimum SHG and TPF excitation

picoEmerald

The easy-to-use and truly hands-free tunable picosecond light source. Ideal for SRS and CARS, offering three temporally and spatially overlapped picosecond pulse trains to cover the full fingerprint region and beyond:

- Pulsed
- Wavelength 700-1950nm
- Power 0 to 700mW
- Repetition rate 80MHz
- Pulsewidth 2ps
- Tunable

Carmina for AFM-IR and sSNOM

Carmina is a mid-infrared (mid-IR) light source. It combines scattering scanning nearfield optical microscopy (s-SNOM) and atomic force microscope infrared spectroscopy (AFM-IR) giving a remarkable mid-IR light source. Fully automated and broadly tunable IR laser source it has been specifically designed for integration with Scattering SNOM and AFM-IR microscopes.

- Pulsed
- Wavelength 2.15-15µm
- Power 5-30mW
- Repetition rate 0.05-40.5MHz
- Tunable

Carpe Microscopy Autocorrelator

The Carpe autocorrelator measures the pulse duration at both the sample location and the input of the microscope. A comparison of the pulse widths obtained at these two spots enables you to calculate the pulse broadening effect. This effect is caused by the dispersion of the microscope optics but also depends to a large extent on the pulse width of the incoming laser beam. The compact instrument is just inserted into the beam between the laser and microscope. It requires no changes in the setup and does not interfere with the measuring beam. Adjustment and menu controlled operations are very easy.

- Pulsewidth measurement at the sample position
- Easy alignment
- Option for power measurement and pulsewidth

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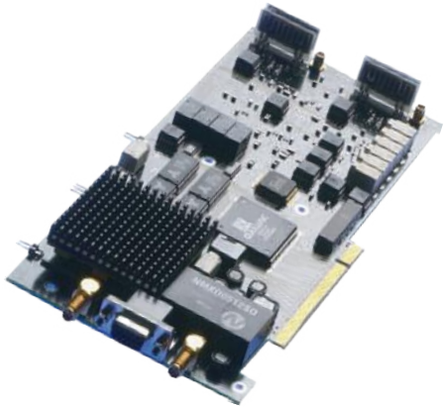
Becker & Hickl are the technology leaders in Photon Counting. Their TCSPC products are complemented by picosecond diode lasers, detector modules, multi-spectral detector assemblies and experiment control modules. All B&H TCSPC modules use a multi-dimensional TCSPC process and all the SPC modules can be used for classic fluorescence decay applications as well as for fluorescence lifetime imaging (FLIM), multi-wavelength FLIM, simultaneous fluorescence and phosphorescence

TCSPC Cards

All B&H TCSPC modules use a multi-dimensional TCSPC process as well as a high-speed high-resolution AC/ADC principle. The SPC modules can be used for classic fluorescence decay applications as well as for fluorescence lifetime imaging (FLIM), multi-wavelength FLIM, simultaneous fluorescence and phosphorescence lifetime.



	SPC-QC-104	SPC-180N SPC-180NX SPC-180NXX	SPC-130IN SPC-130INX SPC-130INXX	SPC-150N SPC-150NX SPC-150NXX	SPC-130EMN	SPC-160 SPC-160PCIe
Interface	PCIe	PCIe	PCIe	PCI	PCI	PCI/PCIe
Time Channel Width	4 ps	813 fs 405 fs 203 fs	813 fs 405 fs 203 fs	813 fs 405 fs 203 fs	813 fs	813 fs
Used for	Fluor. Decay FLIM, PLIM Phot.Correl. Sing. Molec. FCS	Fluor. Decay FLIM, PLIM Phot. Correl. Sing. Molec. FCS	Fluor. Decay NIRS Phot.Correl. Sing. Molec. FCS	Fluor Decay FLIM, PLIM Phot. Correl. Sing. Molec. FCS	Fluor. Decay NIRS Phot.Correl. Sing. Molec. FCS	Fluor. Decay FLIM, PLIM Phot. Correl. Sing. Molec. FCS
Timing Precision (Jitter, RMS) (ps)	<20	2.5 1.6 1.1	2.5 1.6 1.1	2.5 1.6 1.1	2.5	2.5
Peak Count Rate (MHz)	120	12	10	12.5		
Abs Timing Stability (RMS) (ps)	<5			<0.5		
General Recording Modes	Classic TCSPC, FLIM, FCS, HBT, Time Tag	Classic TCSPC, FLIM, FCS, HBT, Time Tag	Classic TCSPC, FCS, HBT, Time Tag	Classic TCSPC, FLIM, FCS, HBT , Time Tag	Classic TCSPC, FCS, HBT, Time Tag	Classic TCSPC, FLIM, FCS, HBT, Time Tag
Detectors per channel	Up to 16			Up to 16		
Parallel Modules	1			Up to 4 or 32		
Multi-Module Packages		SPC-182N SPC-183N SPC-184N	SPC-132IN SPC-133IN SPC-134IN	SPC-152N SPC-153N SPC-154N	SPC-132-EMN SPC-133-EMN SPC-134-EMN	SPC-162 SPC-163 SPC-164

Laser Scanning FLIM Microscopes

Becker & Hickl's DCS-120 is a complete laser scanning microscope for fluorescence lifetime imaging (FLIM). The systems use bh's multi-dimensional TCSPC FLIM technology in combination with fast laser scanning and confocal detection or multi-photon excitation. DCS-120 systems are available for inverted and upright microscopes and can be used to upgrade any conventional microscope with scanning and FLIM recording. Three models of DCS-120 are available

DCS-120 – complete confocal FLIM system

- Includes microscope and up to two ps diode lasers
- Scanning by fast galvanometer mirrors
- Two confocal detection channels
- Two fully parallel TCSPC FLIM channels
- Time channel width down to 405fs
- Detection of lifetime <25ps

DCS-120 MACRO

- Available for FLIM of centimetre-size objects
- Scan field up to 15mm diameter
- UV enhanced optics,
- Tunable excitation by supercontinuum laser with AOTF

DCS-120 MP

For multiphoton excitation with Ti:Sa lasers and femtosecond fibre lasers, featuring two non-descanned detection channels and full laser control integrated in systems software. The system also works with tuneable excitation sources.

FLIM upgrade kits for LSMs

As technology leader in equipment and techniques for single photon counting, Becker & Hickl offers a wide range of high-grade Fluorescence Lifetime Imaging (FLIM) systems for laser scanning microscopes since 1998. FLIM systems for Zeiss, Nikon, Olympus and Leica LSMs along with FLIM upgrades to piezo-scanning systems and STED microscopes.

Light Conversion is a world leader in femtosecond laser technology and has recently released microscopy-dedicated femtosecond laser sources that cover applications in functional neuroimaging, optogenetics, and deep imaging using three-photon and two-photon imaging.

CRONUS 2P

A three channel wavelength tunable femtosecond laser providing watt-level three synchronised outputs with high repetition rate, short pulse duration, and GDD control, making it the ultimate source for nonlinear microscopy. The two independently tunable outputs, operating separately or simultaneously, cover 680-960nm and 960-1300nm, respectively, while the third is fixed at 1025nm and is accessible in parallel.

- Three multi-Watt level outputs with a high repetition rate
- Two independently tunable and one fixed output
- Fully integrated and automated GDD control
- Industrial-grade design
- Superior output stability

CRONUS 2P

	Output A	Output B	Output C
Tuning Range (nm)	680-960	960-1300	1025
Output Power (W)	>3 @ 920nm	>2.5 @ 1100nm	>2.5
Pulse Duration (fs)	<160		
Beam Quality	TEM00; M_2 <1.2		
Polarisation	Linear, horizontal		
Long-term power stability (%)	<1		

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CRONUS 3P

A laser source developed specifically for advanced nonlinear microscopy. It provides µJ-level pulses down to 50fs at repetition rates of up to 2MHz and is tunable in the short-wavelength infrared (SWIR) range from 1.25-1.8 µm, thus covering the biological transparency windows at 1.3µm and 1.7µm for three-photon microscopy.

- High pulse energy, high repetition rate, and high average power
- 1250-1800nm tuning range
- <50fs pulse duration
- Fully integrated and automated GDD control
- Industrial-grade design
- Superior output stability

Tuning Range (nm)	1250-1800	
Repetition Rate	Single-shot to 2MHz	
	1300nm	1700nm
Pulse Duration (fs)	<50	<65
Output Power @ 1MHz (mW)	>1100	>800
GDD control range	-4000 to +9000 fs2	-12000 to +3500 fs2
Long-term power stability (%)	<1	
Pulse-to-pulse energy stability (%)	<1	

Lightnovo

Lightnovo's range of Raman microscopes incorporates their patented in-built reference channel technology that is integrated into their Raman spectrometers. This patented technology ensures that their microscopes have very high throughput, perfect wavenumber accuracy and automatic Raman intensity calibration.

MiniRaman Microscope

The MiniRaman microscope is the world's smallest confocal Raman microscope. Each microscope integrates the MiniRaman spectrometer, which performs Raman shift and Raman intensity calibration during every spectrum acquisition. The MiniRaman microscope can be used in upright microscopy and inverted microscopy configurations and is additionally equipped with transmitted visible light microscopy on a separate camera sensor. This instrumental setup allows for both sample viewing using the optical microscopy capabilities and performing measurements by Raman spectroscopy simultaneously.

- Single 785nm or dual 660nm and 785nm laser
- Spectral range: 400-2700cm^{-1} for 785nm laser and 2700-4500cm^{-1} for 660nm laser
- Power at sample up to 150mW at 785nm, 32mW at 660nm
- Spectral resoluiton 7-15cm^{-1}
- Signal to noise ratio up to 1000:1
- PC (Windows 7, 10) and smartphone (Android)
- Weight 7kg

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RGRaman Microscope

RGRaman is a premium research-grade confocal Raman microscope for chemical and structural analysis. The RGRaman microscope is perfectly suited to any kind of demanding Raman spectroscopy application that requires high spectral and spatial resolution, long mapping range, extremely stable laser power, high sensitivity, and broad spectral range (from low frequency to high-frequency Raman shift). The RGRaman microscope can be equipped with either the MiniRaman spectrometer or the RGRaman spectrometer.

When equipped with RGRaman spectrometer

- Lasers 405, 562, 633 and 6785nm
- Power up to 150mW
- Spectral range 50-3700cm^{-1}
- Resolution 2-4cm^{-1}
- SNR 1000:1

When equipped with MiniRaman spectrometer

- Lasers 785nm or dual 660nm and 785nm
- Spectral range: 400-2700cm^{-1} for 785nm laser and 2700-4500cm^{-1} for 660nm laser
- Power at sample up to 150mW at 785nm, 32mW at 660nm
- Resolution 7-15cm^{-1}
- SNR 1000:1
- Weight 20kg

THOR System

THOR microscope is Lightnovo's top of the range Raman microscope. It features a mirrorless confocal raman technology based on high throughput transmittance diffraction optics with up to 85% efficiency from sample to the detector. THOR integrates up to four extremely stable lasers (405, 532, 633 and 785nm) and is equipped with motorized mechanics for switching between lasers, Raman filters, gratings, white light microscopy filters and other optical components. THOR can be upgraded for Quantitative Raman Imaging for Crystal Orientation (qRICO technology).

- 2D and 3D analysis
- Quantitative orientation mapping
- Confocal Raman microscopy
- Resonance Raman microscopy
- Resonance Raman orientation mapping

Photon etc.'s two decades of innovation in the field of optics has established the company as a key player in the field of hyperspectral imaging with all their hyperspectral imagers based on their unique Bragg Tunable Filter technology.

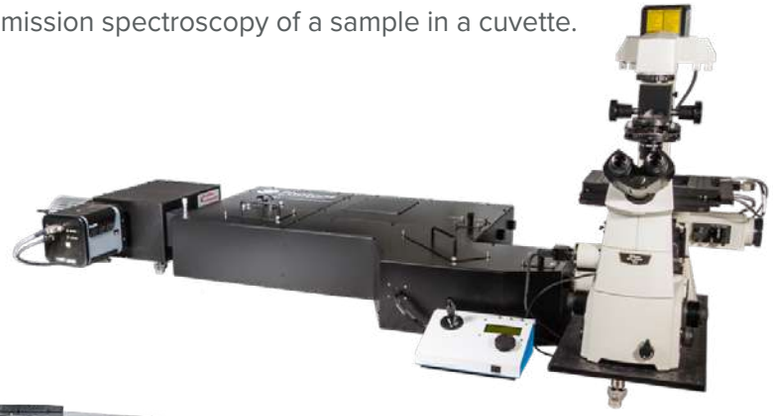
Within their portfolio of hyperspectral imagers you will find solutions for global hyperspectral microscopy delivering spectral and spatial information in the VIS to SWIR spectral ranges; solutions for global hyperspectral Raman microscopy; unique darkfield and brightfield global hyperspectral microscopes and also system for confocal hyperspectral imaging.

IMA Global hyperspectral microscope

IMA is a hyperspectral global microscope delivering spectral and spatial information in the VIS, NIR and/or SWIR spectral ranges (400-1620nm). This system rapidly produces large maps (up to 1x1mm and even more) of photoluminescence, fluorescence and electroluminescence, reflectance, and transmittance. Based on high throughput global-imaging filters, IMA is faster and more efficient than standard point-by-point or line-scan based systems.

CIMA Confocal Hyperspectral Microscope

CIMA is a hyperspectral confocal system sensitive from 400-1700nm. Spectral resolution can be as low as 0.2nm in the visible range, and 0.6nm in the infrared. CIMA pairs a galvanometer head and one of the fastest and most sensitive cameras on the market to yield an acquisition rate above 300 spectra per second. CIMA provides three acquisition modes: confocal hyperspectral imaging, multispectral fluorescence imaging, and emission spectroscopy of a sample in a cuvette.



LIMA Global Hyperspectral Microscope

LIMA uses a continuously tunable monochromatic, high power density laser light to illuminate the full field of view of a research-grade microscope and allow hyperspectral imaging from 400-1620nm, both in darkfield and brightfield imaging modes. The system provides high spectral resolution in the VIS, NIR, and SWIR combined with near-diffraction-limited spatial resolution. Ideal for darkfield, PLE, or standard brightfield reflectance.

RIMA Global Hyperspectral Raman Microscope

RIMA is a hyperspectral global microscope delivering spectral and spatial information. This system rapidly provides Raman maps over large areas (up to 1x1mm and even more). RIMA is faster and more efficient than standard point-by-point or line-scan based systems and offers a unique solution for spectral and spatial characterisation of advanced materials.

IR VIVO NIR-11 Preclinical Imager

Photon etc. are the only company to provide hyperspectral imaging in the second biological window (850-1600nm). Their IR VIVO is an infrared multi and hyperspectral wide field imager for small animal studies that benefits from reduced light scattering, absorption and auto-fluorescence by using a detection system in the near and short-wave infrared. IR VIVO takes advantage of the most recent developments in SWIR imaging with an ultra-low-noise InGaAs camera (Alizé 1.7 or ZephIR 1.7), novel homogeneous illumination and powerful analytical software to provide an unprecedented combination of fast, high resolution and deep imaging.

Get in touch

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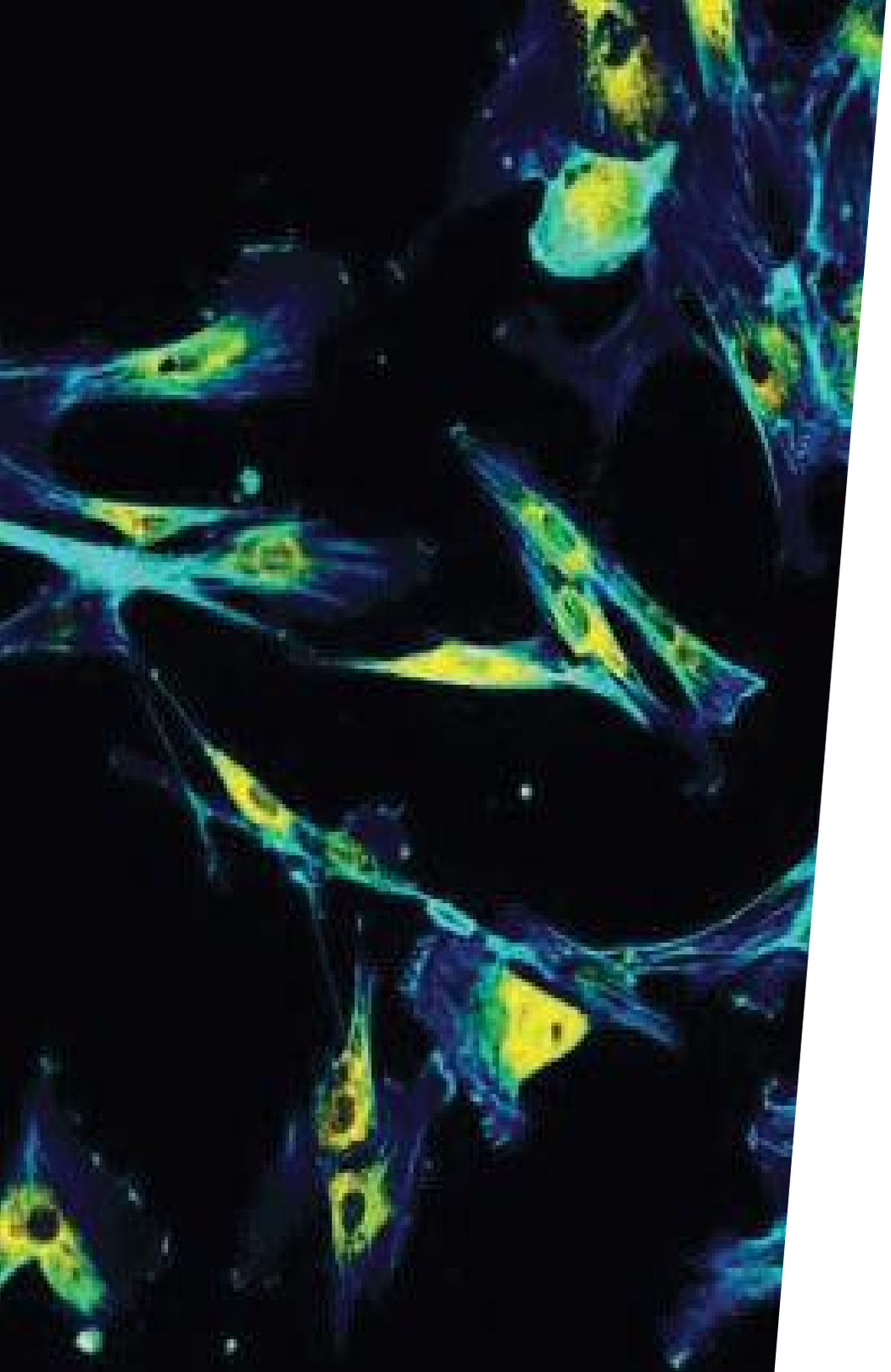
	IMA		LIMA			RIMA		CIMA	
	VIS	SWIR	VIS	SWIR	eSWIR	RIMA/53n/ RIMA 660	RIMA 785	VIS	IR
Spectral Range (nm)	400-1000	600-1620	400-1000	600-1620	1000-2500	190-4000cm^{-1}	190-2700cm^{-1}	400-1000	900-1700
Spectral Resolution (nm)	<2	<4	1.5-2.5	3-5	<5	<7cm^{-1}		<0.2	<0.6
Spatial Resolution	Sub-micron - limited by the microscope NA		Sub-micron - limited by the microscope NA			Sub-micron - limited by the microscope NA		Diffraction limited	
Camera	CCD, EMCCD, sCMOS	Photon etc. InGaAs camera (ZephIR™ 1.7 or Alizé™ 1.7)	sCMOS (optionally CCD, EMCCD)	ZephIR™ 1.7 or Alizé™ 1.7 (InGaAs)	ZephIR™ 2.5 HgCdTe)	Back-illuminated CCD	Back-illuminated deep-depletion CCD	Back-illuminated CCD or EMCCD	InGaAs linear array
Image Map (mm)	1x1		1x1			1x1		300µm x 300µm (20X objective) 100µm x 100µm (60X objective)	
Excitation Wavelength	Up to 3 lasers 405nm - 808nm		Continuously tunable laser			532nm, 660nm	785nm	980nm (other wavelengths available) 3 laser input ports UMP mercury lamp 130W	
Illumination Optics	Epifluorescence module, darkfield module		Diascopic or Epi illumination; Brightfield; Darkfield (oil and dry)						
Speed Scanning	150ms per wavelength		20 to 50ms stabilisation time (for step sizes 0.01 to 10nm)			150ms per wavenumber		>300 spectra/s	>100 spectra/s
Microscope	Uptight or inverted, scientific grade		Uptight or inverted, scientific grade			Uptight or inverted, scientific grade		Inverted scientific grade	



OPOTEK

Phocus™ Mobile

Based on the Ring-Cavity™ optical parametric oscillator (OPO) technology, Phocus Mobile represents the ideal light source for photoacoustic imaging applications that require high pulse energies and NIR wavelengths for deep penetration of biological tissue. High damage thresholds combined with minimal maintenance and turnkey operation reduce system down time and allow ease of operation.

The system provides a light sealed, transportable cart designed for deployment into pre-clinical environments. A customisable safety interlocked fiber bundle delivers light from the system to the instrumentation and prevents system operation without fiber attachment. Motorised harmonics and fiber bundle delivery provide a completely, hands free tunable laser system.

- Tunable laser system that is light-sealed, transportable cart designed for deployment into pre-clinical environments
- Unique, Ring-Cavity™ OPO design increases the OPO damage threshold while maintaining high efficiency in order to deliver short, nanosecond pulses

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New Scale Technologies

New Scale Technologies designs and manufactures small, precise, and smart motion modules that embed drive, control, and digital communications inside. These miniature motion systems are used in medical instruments, smartphones, extended reality devices, neural recording measurements, and automated metrology processes.

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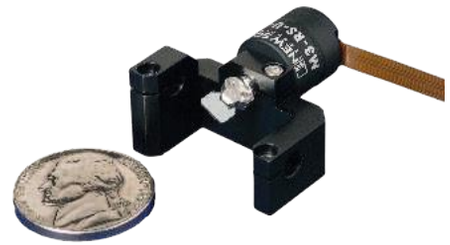
Motorised MicroPositioners

The M3 family of micropositioners bring disruptive features to your product development and experimental work in a truly miniature package. The success of these modules is down to the fully embedded driver electronics which results in a compact, plug-and-play positioning stage.



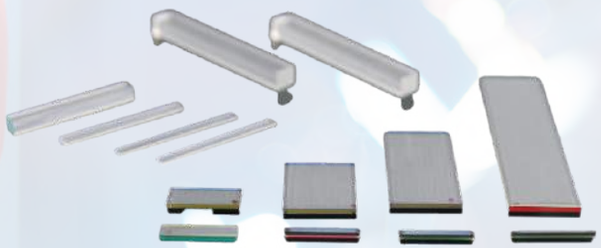
	M3-RS	M3-LS-1.8	M3-LS-3.4	M3-L	M3-FS	M3-F
Function	Rotary Stage	Linear Stage	Linear Stage	Linear Actuator	Lens Focusing	Lens Focusing
Travel	360°	6mm	15mm	6mm	1.5mm	1.5mm
Resolution (closed-loop)	0.025°/4µrad	500nm	500nm	500nm	500nm	500nm
Max Load	3g	20g	200g	20N	5g	5g
Speed	1100deg/s	5mm/s	>4mm/s	5mm/s	5mm/s	5mm/s

HC PHOTONICS CORP.

HC Photonics is the pioneer & technology leader of periodic poling (pp) technology. Specialising in commercial volume production of periodically-poled nonlinear crystals and the fiber pigtailed mixers for various laser applications from UV to Mid-IR (355nm-5μm)

PPXX (PPMgO:LN, PPMgO:LT) chips

PPXX (periodically poling lithium niobate/tantalate) technology is an efficient laser wavelength conversion technology, which enables the generation and conversion of new laser wavelengths via a material's nonlinearity X.



PPLN Enhanced Cavity Mixers

Cavity configuration is an alternative way to enhance nonlinear frequency conversion. These complete cavity mixer systems are highly adaptable for the generation of NIR and MIR wavelengths.

- Available configurations: External pump OPO (EP-OPO), Intra-cavity OPO (IC-OPO), Intra-cavity SFG (IC-SFG), Intra-cavity DFG (IC-DFG)
- Output wavelength from UV/Visible to NIR/MIR
- Mixing configuration: IC-OPO, IC-SFG, IC-SHG, IC-DFG, EP-OPO
- Available with integrated electronics
- Convenient, compact, robust, and versatile

PPXX Bulk and Waveguide Mixers

Plug & Play PPXX (PPLN,PPLT) waveguide mixers for various wavelength conversion applications. Devices can be designed to operate in continuous wave (CW) or quasi-CW configurations in wavelength ranges from the UV to mid IR.

- High conversion efficiency
- Excellent beam quality
- Fiber delivery
- Compact and robust
- Original design manufacture (ODM) for volume production

Zolix

ZOLIX are a leading manufacturer of fine mechanics and motorised micro-positioning stages. The range of optomechanics includes motorised and manual stages, optical mounts, optical tables, and breadboards. The range of optical mounts includes high-stability optical mounts, filter mounts, lens mounts, polariser mounts, posts, holders, clamps, rails, carriers, and other accessories.

Optical Tables

A wide variety of different levels of damping ranging from a rigid frame up to pneumatic vibration damping options. Various accessories are also offered, allowing for a customised work environment.

Alluxa

Alluxa is an ISO9001 certified ITAR registered manufacturer of high-performance optical filters and thin film coatings with their advanced SIRRUS Plasma Deposition process.

Ultra Series Optical Filters and Windows

Visit our webshop www.photonicshop.co.uk to view the full range

ULTRA and ULTRA Narrow series bandpass filters

Alluxa is the world leader in ultra-narrowband filters. They remain unchallenged in terms of achieving greater than 90% transmission along with sub-nanometre bandwidths, wide range out-of-band blocking and steep edges.

Notch Filters

The deep blocking, tight wavelength control, steep edges, and wide range transmission of ULTRA Series thin-film notch filters all allow for precision blocking of lasers or other light sources, without sacrificing the quality of target signals.

Dichroic Filters and Beamsplitter

The steep edges, maximum transmission, and maximum reflection of ULTRA Series thin film dichroic filters all translate into minimal loss of light intensity and optical instrument performance. Each ULTRA Series dichroic filter, polychroic filter, dichroic beamsplitter or beam combiner is resistant to laser damage and can be designed to work at any angle.

Custom Coatings

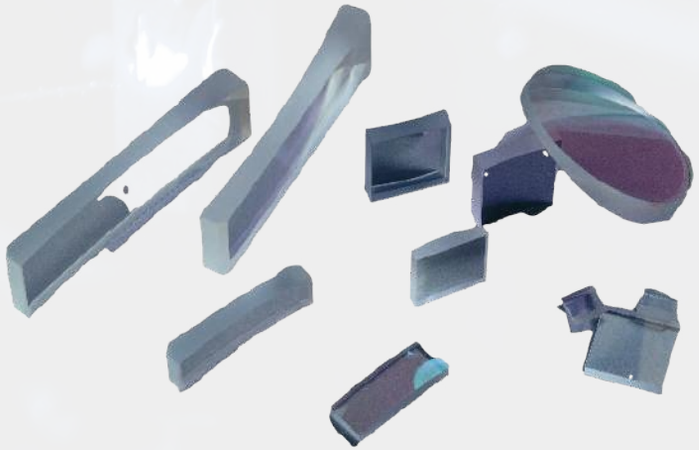
Together with Alluxa's engineering team, we will work with you to design custom optical filters and thin film coatings for your OEM system.

Dielectric Mirrors

The ULTRA series of high-reflectivity dielectric mirrors provide close to 100% reflection over a broad or precise range of wavelengths. Each hard-coated, thin film dielectric mirror is resistant to laser damage and all will boost instrument performance by preserving light source intensity.

CASIX

CASIX Designs, grows, manufactures, and supplies high-quality crystals and precision optical products, lenses, coatings and precision glass solutions for optical communications, instrumentation, surveying, and scientific and medical markets.



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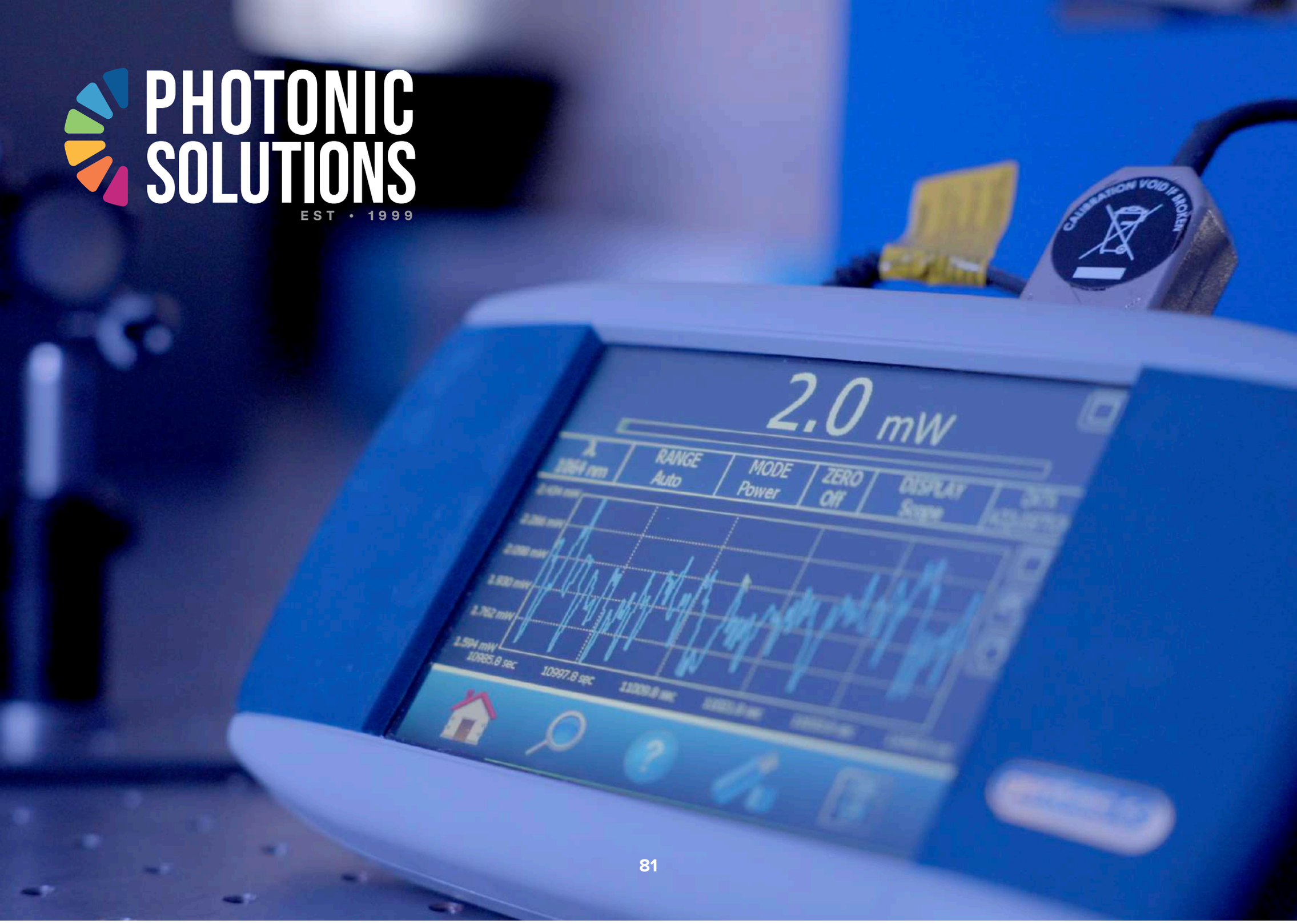
Laser Optics

- Laser Grade prisms
- Output Couplers
- Laser Mirrors
- Waveplates
- Polarisers
- Singlet Lenses
- Achromatic Lenses
- Cylindrical Lenses
- Laser Beam Expanders
- Windows
- Beamsplitters

Crystal Products

- Laser Crystals – Nd:YVO_4, Nd:YAG, Nd:$GdVO_4$, Cr:YAG
- Non linear optical crystals – KTP, LBO, BBO, $LiNbO_3$
- Birefringent Crystals – YVO_4, a-BBO, Calcite
- Infra Red Crystals – Si, Ge
- Waveguide Crystals – PP-MgSLT
- Diode pumped laser microchips – Nd:YVO_4/KTP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2.0 mW
RANGE
Auto
MODE
Power
ZERO
Off
DISPLAY
Scope
CALIBRATION VOID IF BROKEN

moglabs

The portfolio from MOGLabs includes tunable Cateye and Littrow diode lasers, laser electronics, optical amplifiers, and wavemeters. Resulting from years of active laboratory development by research students and scientists, they balance outstanding performance, superb features, high-quality design, excellent ergonomics, and moderate cost.

MWM Wavemeter

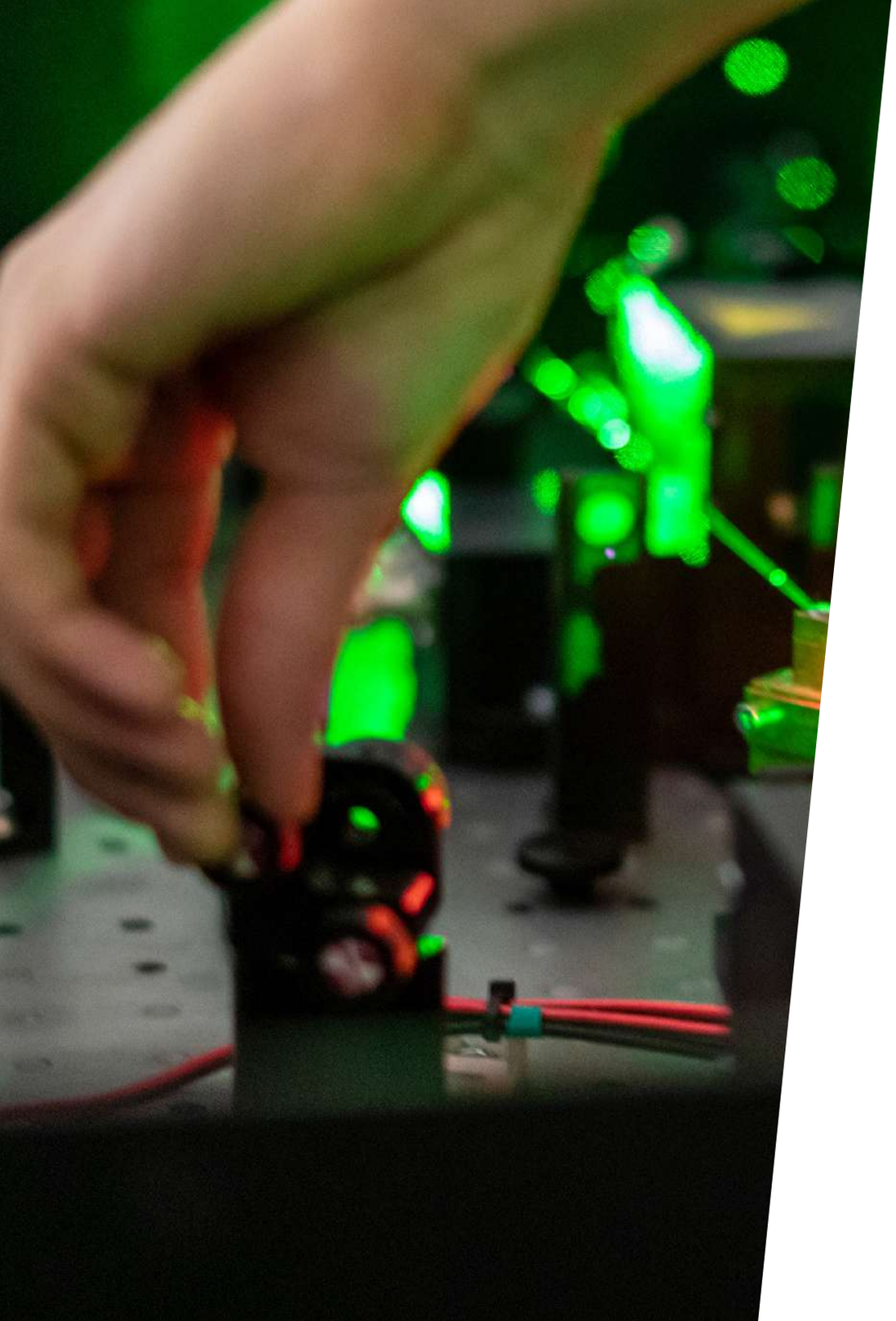
A compact and economical laser wavelength measurement device, with an on-unit display, and ethernet/USB connectivity standard. This device clearly reveals multimode laser operation, making it particularly suitable for use with external cavity diode lasers and atom cooling and trapping experiments.

- Accuracy ±0.001nm
- Spectral resolution 0.02nm
- Wavelength readout resolution 100MHz (0.1pm)
- Any wavelength from 350nm to 1100nm available
- Picowatt input sensitivity
- Instantly identifies multimode input
- Rapid readout
- CW or pulsed laser input
- PID feedback laser wavelength stabilisation
- Ethernet and USB included as standard
- Compact, 165x85x70mm
- Self-contained, built-in display, can run from a battery

FZW Compact Wavemeter

A Standalone compact wavelength measurement device based on Fizeau interferometers, providing reliably accurate measurements over a wide range of wavelengths (400-1100nm) without recalibration. The measurement and calculation is performed on the device, with the result displayed on the screen, removing the need for a host computer. The small form factor makes it an easy-to-use analysis tool and can be powered either through USB or from a DC plugpack. It provides an analogue output for either wavelength monitoring or laser stabilization via a built-in tuneable PID controller.

- Absolute accuracy 600MHz
- Measurement precision 50MHz
- Up to 250 measurements/s
- Operation over 400-1100nm without recalibration
- Rapid on-device measurement, no host computer required!
- Integrated PID controller for wavelength stabilisation
- Interactive display for control and diagnostics
- Ethernet and USB interfaces
- Compact form-factor, 146x120x81mm



moglabs

Tapered Amplifier Controller

The MOGbox DLC202 laser diode controller is the world's first all-in-one controller for driving and frequency-locking an external cavity diode laser. Every model includes:

- Ultra-low noise diode current source, < 100pA/rtHz, DC to 1MHz
- Temperature controller with Peltier TEC driver
- Scan generator
- Two high-voltage piezo drivers
- Differential low-noise photodetector, 700kHz bandwidth
- Demodulator (lock-in amp)
- AC modulation source (250kHz, 50mA, e.g. for Zeeman dither coil)
- Servo feedback loop filter circuits
- Ergonomic controls, including 4.5 digit display, oscilloscope selectors
- In-laser connection & protection board with high bandwidth modulation
- Full set of cables and 120 page detailed user-manual

All in one box, based on a single 10-layer PCB
(plus the external photodetector and protection/
connection circuit board for the laser head).

pulseCheck Autocorrelators

pulseCheck autocorrelators can accurately measure pulses from < 10fs to 500ps for almost any wavelength range from 200nm to > 12µm

waveScan

A selection of precise laser spectrum analysers for measurement of wavelengths from 200nm to 6.3µm and with resolutions down to 0.05nm.

Pulse Characterisation

Spider - Spectral Phase Interferometry for Direct Electric Field Reconstruction

The spider family is designed for phase resolved ultrafast pulse measurements.

Spider IR

The Spider IR is a precision tool optimised for the complete spectral and temporal characterisation of laser pulses in the infrared.

Spider FC

The FC Spider (Few Cycle Spider) provides spectral and temporal characterisation of ultrashort laser pulses down to below 5fs. It covers both the red and near-infrared range, and visible wavelength region with the FC Spider VIS.

Sound & Bright offers a range of cutting-edge laser-based ultrasound systems, with market-leading sensitivity and noise reduction, for Non-Destructive Testing applications ranging from laboratory research and development to industry.

Temp 2D – Multi-component receiver

The multi-component laser receiver is capable of simultaneously measuring two components of the surface displacement, the out-of-plane, and the in-plane motions, using a single laser probe and a single collecting optic. This system is capable of reconstructing the complete ultrasonic field.

- Multi-Component Receiver
- High Efficiency Optical Design
- Measurement Precision
- Unaffected by Low Frequency Acoustic Noise
- Signal Indicators

Temp 1D – Ultra High-Frequency Receiver

This system can detect surface displacements resulting from the propagation of UHF ultrasounds, up to GHz. The system measures the spatial component normal to the surface of the target tested.

- Ultra-High Frequency
- High Efficiency Optical Design
- Measurement Precision
- Unaffected by low Frequency Acoustic Noise
- Signal Indicators

The Quartet - Multi Purpose Receiver

The multi-purpose laser receiver is suited for a wide range of acoustic and ultrasonic applications from the laboratory to the factory and is available in the visible or infrared.

- Robust & Versatile
- Fiberised Optical Head
- Measurement precision
- High sensitivity on all surface types and materials
- Inspection on rapidly moving objects
- Not wavelength dependent
- Signal indicators

Zurich Instruments

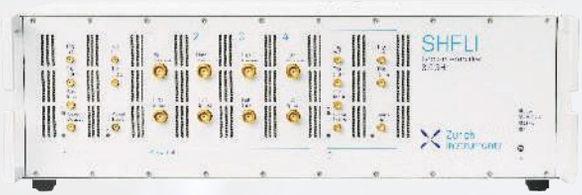
Zurich Instruments is a test and measurement company headquartered in Zurich, Switzerland, developing and selling measurement instruments along with premium customer support in key markets around the world.

Lock-in Amplifiers

Lock-in amplifiers are an essential part of research laboratories in areas such as optics and photonics, nanotechnology and materials science, quantum technologies, scanning probe microscopy and sensing

SHFLI 8.5 GHz

- Frequency range: DC - 8.5GHz
- Minimum demodulator time constant: 14ns
- 2 independent lock-in units with signal gnerators
- 4 independent demodulators per lock-in unit
- 4 high-speed and 4 high-precision auxiliary outputs
- LabOne® toolset



GHFLI 1.8 GHz

- Frequency range: DC - 1.8GHz
- Minimum demodulator time constant: 14ns
- 2 independent lock-in units with signal generators
- 4 independent demodulators per lock-in unit
- 4 high-speed and 4 high-precision auxiliary outputs

MFLI 500kHz/5MHz

- DC - 500kHz, 60MSa/s, 16bits
- Optional upgrade to 5MHz
- Current and differential voltage inputs
- AC line and DC supply (battery) operation
- USB 2.0 and 1GbE high-speed connections
- Plug & Play with embedded LabOne® Web Server
- LabOne toolset including Scope, Sweeper, and Spectrum Analyzer

UHFLI 600 MHz

- 2 independent lock-in units
- 2 high-performance signal generators
- 4 independent harmonics per lock-in unit
- High-resolution 12-bit scope with 65k samples
- Frequency Response Analyzer (FRA)
- FFT Spectrum Analyzer
- LabOne® toolset

HF2LI 50 MHz

- DC - 50MHz, 210MSa/s
- 2 independent lock-in units, 2 signal generators
- 1 fundamental and 2 harmonics per lock-in unit
- 4 auxiliary outputs, 2 auxiliary inputs
- USB 2.0, 480Mbit/s
- LabOne® toolset including Scope, Sweeper, and Spectrum Analyzer

Quantum Composers is a leading manufacturer of digital delay pulse generators to meet the needs of any application. 9520 and 9530 series – up to eight independent channels offering 250ps resolution, 50ps jitter.

Sapphire and Emerald Pulse Generators

The Emerald 9250 is the newest addition to the range of Digital Delay Pulse Generators. This unit will come standard with a 280ppb TCXO oscillator, giving you the performance you demand 5ps timing resolution.

- 15ps rms jitter
- 6 memory slots
- Up to 4 channel outputs
- USB standard communication, Bluetooth optional
- Up to 20MHz external trigger rate

gentec-eo
PARTNERS for ACCURACY

Gentec Electro-Optics are specialists in laser beam and terahertz source measurement and analysis, offering the broadest range of off-the-shelf and custom solutions.

Laser Power and Energy Monitors

The Maestro monitor is compatible with both power and energy meters, including thermopiles, optical detectors, and pyroelectric detectors. The Maestro includes a display and PC interface.

The Tuner monitor reads power meters and features the fastest digital needle display on the market of less than a 1 second response time.

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Power Detectors

Get accurate measurements with fast response times with Gentec's range of thermopile or pyroelectric power meters. Available with various absorbers and demonstrating the highest damage threshold shown by devices of this type. Gentec Power Heads are suitable for a wide range of applications, requiring accurate measurement capability from nanowatt to multi-kilowatt power levels.

- Modular concept with different cooling modules
- Fast rise times of less than 1.3 seconds
- Single shot energy up to 200J
- High durability absorber
- High damage threshold up to 100GW/cm^2

Energy Detectors

Gentec's pyroelectric energy meters cover a very wide range, going from nanojoules to several tens of joules per pulse.

- Energy up to 85J
- Power up to 25W
- Repetition rates up to 300Hz
- Attenuator and DB15-BNC adapter available

ID Quantique are a global leader in Quantum-Safe Security and Quantum Sensing, providing innovative solutions for industrial, commercial and research applications in medical/environmental instrumentation, quantum optics, aerospace and defence applications.

ID900 Time Controller

The ID900 Time Controller is designed for flexibility, and it aims to efficiently and reliably solve a large number of problems e§he modern laboratory. It performs the functions of several devices: Time-tagger, delay generator, pattern generator, counter, and discriminator.

- 1GHz counter
- Fast data transfer: 100Mcps
- Up to 64 channels
- 4 inputs and outputs interconnected through reconfigurable logic
- Intuitive graphical user interface
- Programming languages: LabView, Python, Matlab, C/C
- High precision discriminator
- 4 input channels: -3V to 3V in 1mV steps
- 4 output channels: nuclear instrumentation module (NIM) and low voltage transistor logic (LVTTL)
- High timing resolution: 20ps full width half maximum (FWHM)
- External synchronisation

ID120 Visible Single-Photon Detector

ID120 series consists of compact and affordable single-photon detector modules, based on reliable silicon avalanche photodiodes that are sensitive in the visible spectral range.

- Silicon Avalanche Photodiode
- 350-1000nm
- Free-Running
- 80% Quantum Efficiency
- 200Hz Dark Count Rate
- 500um Active Area
- Integrated Counter

ID230 Infrared Single-Photon Detector

The ID230, the infrared single-photon counter with best-in-class dark count rate at telecom wavelengths and adjustable quantum efficiency of up to 25%. It is designed for applications which require asynchronous photon detection.

- InGaAs/InP APD
- 900-1700nm
- Free-Running
- Best dark count rate (<50Hz)
- 25% Quantum Efficiency
- 200ps Timing Resolution
- Singlemode or multimode fiber connection

NoIR
LaserShields®

NoIR is a leader in the eye safety industry developing a comprehensive range of safety eyewear for coherent and §he range offers high optical densities, high visibility, and a wide field of vision.

PHOTONIC SOLUTIONS

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Lasnix manufactures unique substrate-free infrared components: free-standing metal grids to control polarisation and power. The range of products has application areas in beam quality assurance, detector calibration, heterodyne filtering and in laboratory and OEM power meters amongst others. Since the grids have no substrate they do not deviate or offset the beam. Lasnix components span the near to far infrared (0.7-1200µm). They can handle up to 30kW and thus tame the strongest CO_2 laser beams on the market.

Polarisers/Variable attenuators for CO2 lasers

Lasnix Polarisers are precision thin film elements to perfectly polarise a CO_2 laser beam. The other beam parameters such as alignment stay unaffected. The polarisers are mounted in lightweight oriented frames for simple installation and ease of use. Remarkably high power handling up to 30W CW is possible.

- Simple installation
- Ease of use

Step Attenuators for IR lasers

LASNIX 102 step attenuators are designed for simple alignment and ease of use. They are precision instruments to reduce laser beam power. All other beam parameters stay unaffected. The 102 covers 8-36µm and can attenuate from 200W.

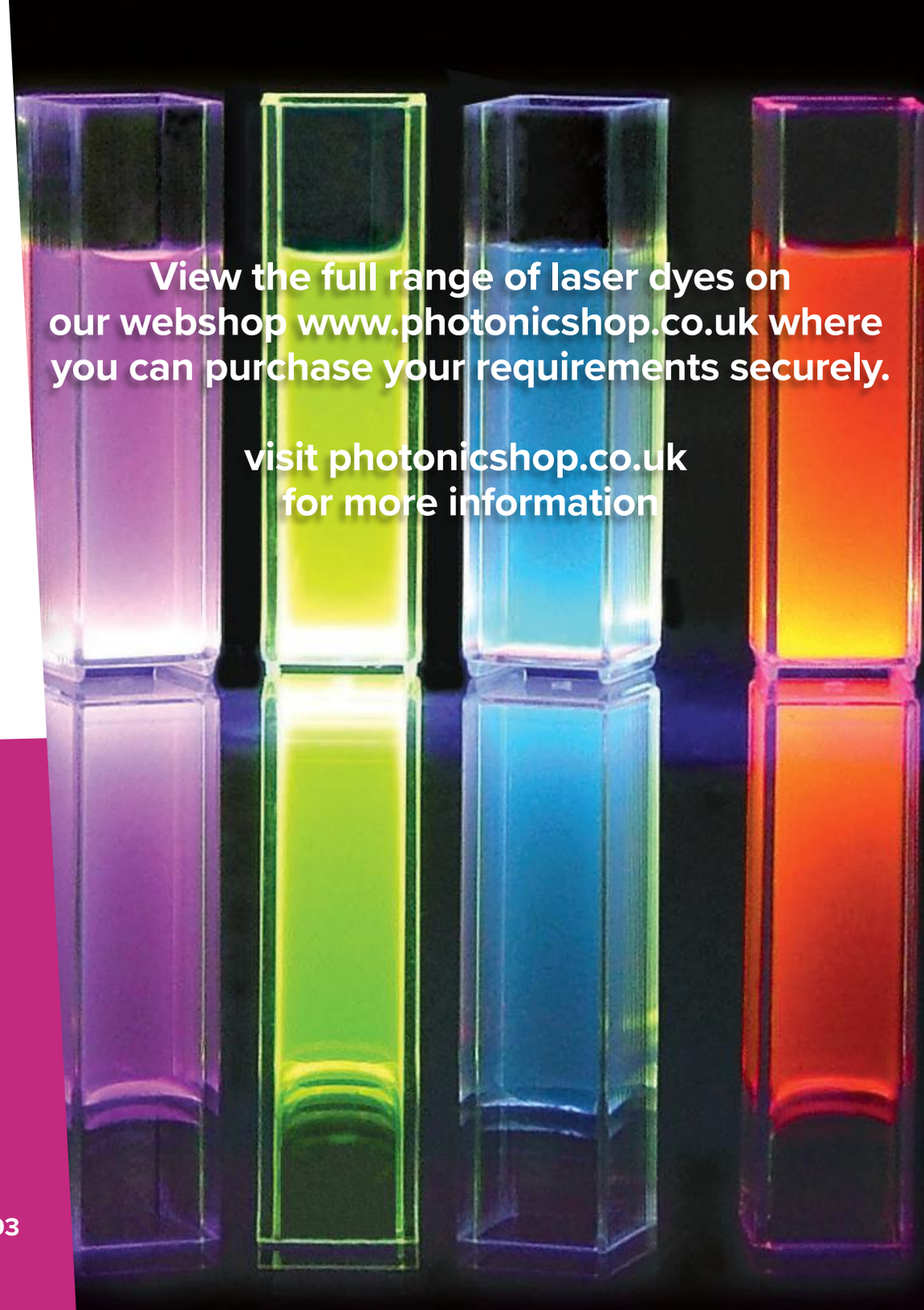
Power/Polarisation sensors for IR lasers

Lasnix power sensors contain a record fast thermopile and an integrating cavity that accepts 50W CW input. The response time of 1/100 seconds is much shorter than in any traditional power meter. No battery is required. The output is true DC analogue and reads into any multimeter, scope or ADC computer board. Incoming laser radiation is diffused in the cavity before it reaches the thermopile; thus the response is highly independent of the beam shape and polarisation.

LUXOTTICA | Exciton

Exciton specialises in supplying the highest quality and range of laser dyes. The laser dyes cover a wide spectral range and provide the optimum lasing efficiency for a given mode of excitation.

We strive to keep the majority of Exciton dyes in stock for next day delivery. If however, the dyes are not in stock our leadtime is typically three working days.



PHOTONIC SOLUTIONS
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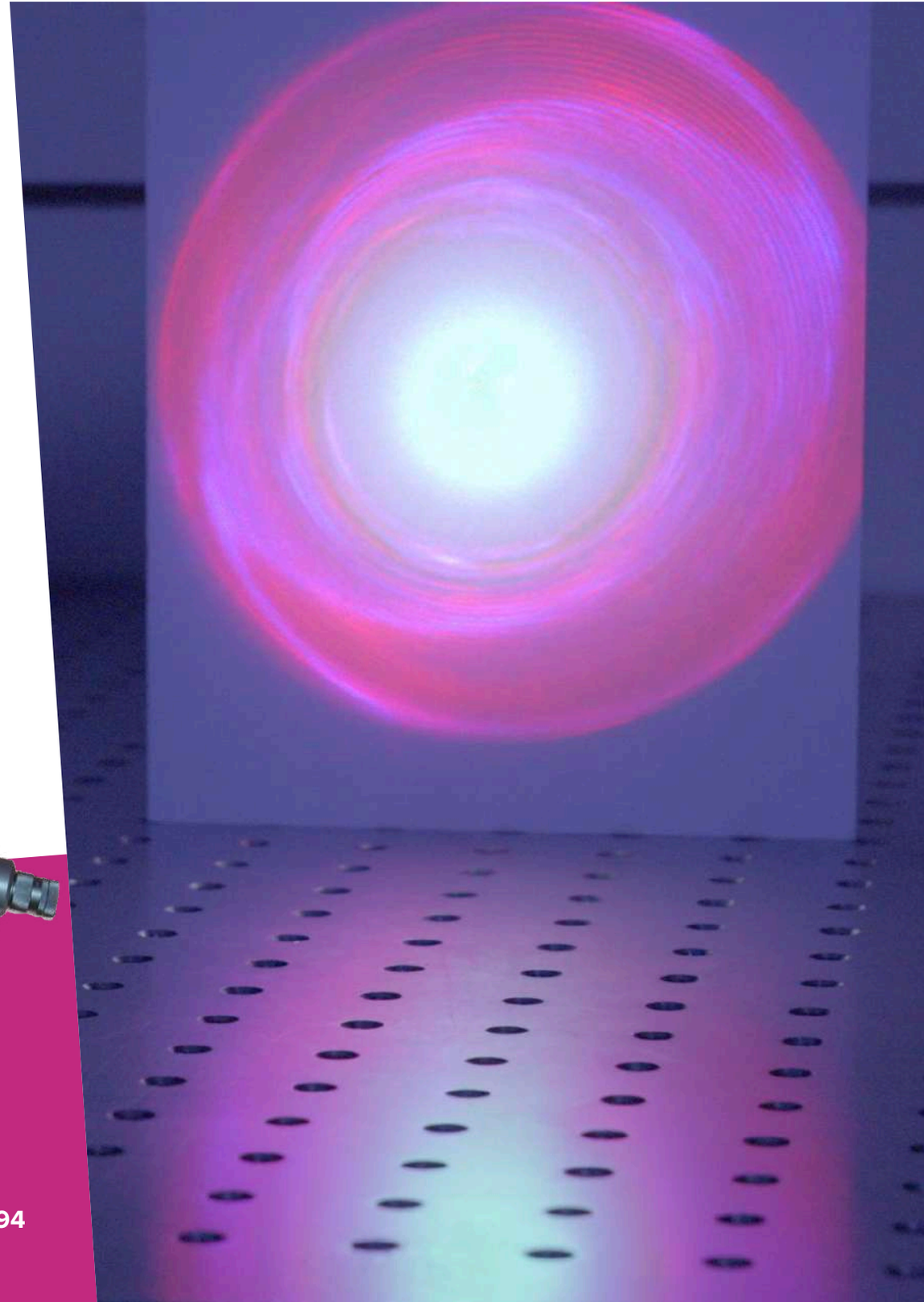
Power Technology incorporated

Power Technology Inc designs and manufactures laser diode products for OEM analytical, biomedical, semiconductor inspection, defence, security, machine vision and many other applications. Wavelengths from 375nm to 1650nm, temperature stabilised modules, beam circularisation, CW, pulsed and modulated outputs.

Power Technology offer a range of infrared viewers for alignment, thermal imaging, and observation. Five different models of IR viewers are available with different resolutions and fields of view, depending on your requirements. Models available IRVH, IRVM, IRVE, IRV1 and IRV2.
An extensive range of options are available, including OEM integration, adaption to a microscope and camera integration

- Range of different resolutions available
- Different fields of view available



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We are founding members of Allied Photonics, a group of private companies that share similar beliefs and values. Each of our members operates independently in their own country in the field of photonics. Strategies are based on the needs and trends of local markets and each member's goal is to provide best-in-class products and services, whilst ensuring the key benefits of a smaller organisation's flexibility and responsiveness.

Our members are based in the United Kingdom, France, Italy, Germany, Benelux Region, Spain and Nordic Region.

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You have the ideas, we have the technologies to bring them to life.

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