Unico NEW

1-Color Gain-Switched Picosecond Laser

- Compact, stand-alone, affordable
- ps- and ns-Pulsed, Continuous wave (CW) and fast CW switching operation modes
- Triggerable internally and externally, up to 200 MHz
- Fully computer controlled
- 40 % coupling efficiency (single-mode PM fiber) for all available colors

Applications

- For materials science, life science and chemical research
- Photoluminescence and fluorescence lifetime measurements
- Quantum yield measurements
- Time-resolved microscopy and single molecule detection (FLIM, FRET, PIE-FRET, FCS)

Introducing our state-of-the-art Gain-Switched Picosecond Laser, a compact, stand-alone solution designed to meet the rigorous demands of life science and materials science applications. This laser system is engineered to deliver precise, high-quality pulses in the picosecond range, making it an ideal tool for time-resolved fluorescence spectroscopy and imaging. Our laser system is designed to be both compact and self-contained, ensuring easy integration into various experimental setups with a minimal footprint. The laser delivers a single, stable wavelength, ensuring consistent performance and reliability for your specific application need. Choose from several wavelengths which are essential for a wide range of applications in life sciences and material sciences.

Specifications

Optical output	
Available wavelength[1]	375, 405, 450, 485, 515, 640 nm
Polarization	linear, vertical
Polarization Extinction Ratio (PER)	typ. > 30:1 (> 15 dB)
Power stability (12 hours) (ΔT (ambient) < 0.5 K)	< 3 % rms
Average beam dimension[2]	1.0 ± 0.30 mm
Average beam circularity	> 0.3
Transversale mode M^2	< 1.5
Coupling efficiency (single-mode PM fiber)	> 40%
Other optical specs (power, pulse, spectra)	See tab wavelength (link)

These tables are updated on a regular basis based on data of recently manufactured laser heads. Other specifications such as shorter pulse widths or higher powers than listed might be possible depending on the performance of diodes on stock. Please contact us for more information. All measurements shown may be subject to a 10 % calibration error. Each laser head undergoes an extensive burn-in test to ensure long-term stability and is shipped with a comprehensive set of test data. This test data is kept in our database, which already holds records of more than 18 years.

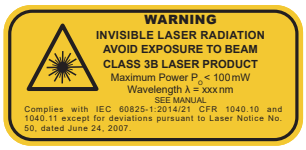
Repetition rates	
Internal	
Range	User selectable 1 kHz to 200 MHz 1000 increments of 1 kHz from 1 to 999 kHz 200 increments of 1 MHz from 1 to 200 MHz
External	
Range	single shot to 200 MHz
Trigger level	-1V ... +1V into 50 Ohm
Trigger voltage	-3V to +5V into 50 Ohm
Jitter	< 12 ps (rms)
Connector	SMA
Synchronization output	
Amplitude	< -800 mV into 50 Ohm (NIM)
Connector	SMA
Gating	
Rise / Fall Time	< 3 ns
ON Time (or inverted: OFF Time)	freely adjustable from 10 ns to 1 ms
OFF Time (or inverted: ON Time)	freely adjustable factor from 1 to 255 of ON (or OFF) Time
Impedance	10 kOhms with pull-up 50 Ohms with pull-down
Connector	SMA
Dimension	
Dimensions (W X H X L) mm	75 x 83 x 140 mm
Weight	1 kg
Operation	
Temperature range	10 – 35 °C
Humidity range	< 80 % (non condensing)
Maximum power consumption	< 30 W
Interface	
PC Interface	USB 2.0
Connector	USB-C
Operating system	Windows™ 10 and 11

[1] Typical value in Pulsed mode. A slight shift to longer wavelengths in CW mode.
[2] Measured at 1 m distance from laser aperture

Wavelengths

Wavelength (± 10) [nm]	Type Stand alone	Pulse width[1] (FWHM) [ps] @ 80 MHz	avg. power Narrow Pulse [mW] @ 80 MHz	avg. power[2] Broad Pulse [mW] @ 80 MHz	avg. power[2] Broad Pulse [mW] @ 200 MHz	avg. power CW [mW]
375	Unico-375	< 120	1.0	3.5	10	20
405	Unico-405	< 80	1.5	4.0	10	50
450	Unico-450	< 130	1.0	3.5	10	50
485	Unico-485	< 130	1.5	3.5	10	50
515	Unico-515	< 170	1.5	4.0	10	50
640	Unico-640	< 100	2.0	4.5	10	50

[1] Shortest pulse width at Narrow Pulse operation mode
Pulses are deconvoluted with 30 ps detection IRF. Shorter pulse widths are available on demand.
[2] A pulse broadening up to 500 ps FWHM is possible at maximum intensity setting



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