

Prima

NEW

3-color picosecond laser

- 3-color picosecond laser (450, 515, 640 nm)
- Compact, stand alone, affordable
- Pulsed and CW operation, fast cw switching
- Suitable for measuring Fluorescence lifetime (ns) and Photoluminescence lifetime (μs -ms)
- Triggerable internally and externally, up to 200 MHz
- Fully computer controlled



Applications

- Material science & chemical research
- Lifescience
- Photoluminescence lifetime and quantum yield measurements
- Fluorescence lifetime measurements
- Time-resolved microscopy & single molecule detection (FLIM, FRET, PIE-FRET, FCS)



Prima is a solution for researchers who need more than one wavelength don't have space in the lab measure a short decay time (ns) and a long one (μs -ms) deal with materials that have a poor luminescence quantum yield would like to avoid daily alignment and laser maintenance.

Specifications

Optical output			
Available wavelengths ¹	450	515	640
Max. pulsed power ²	10	10	10
Pulse duration	< 120	< 200	< 150
Max cw power	50	50	50
Beam dimension ³	0.55 ± 0.10	0.60 ± 0.10	0.8 ± 0.20
Beam circularity	typ > 0.5	typ > 0.5	typ > 0.5
Polarization	typ. linear		
Polarization Extinction Ratio (PER)	typ. > 1:10 (> 10 dB)		
Spectral width FWHM (pulsed)	4 nm	6 nm	2 nm
Spectral width FWHM (CW)	< 1 nm		

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	0 Hz to 200 MHz
Trigger level	-1V ... +5V into 50 Ohm
Jitter	< 20 ps
Connector	SMA
Synchronization output	
Amplitude	< -800 mV into 50 Ohm (NIM)
Connector	SMA
Gating	
Rise/Fall Time	< 3 ns
ON Time Gate	freely adjustable from < 10 ns to 1 ms
OFF Time Gate (as a factor of ON Time Gate)	freely adjustable from 1 to 255
Impedance	10 kOhms with pull-up 50 Ohms with pull-down
Connector	SMA
Dimensions	
Size (h × w × l)	75 × 83 × 140 mm
Weight	approx. 1 kg
Operation	
Temperature range	10 - 35 °C
Rel. humidity	< 80 % (non condensing)
Maximum power consumption	< 30 W
Interface	
PC interface	USB 2.0
Connector	USB-C
Operating system	Windows™ 10

¹ Typical value in pulsed mode. A slight shift to longer wavelengths in cw mode.

² This is the maximum average power at maximum intensity setting and max repetition rate. A pulse broadening up to 500 ps FWHM is possible at maximum intensity setting.

³ Measured at 1 m distance from laser aperture

