

# EPL SERIES

Picosecond Pulsed Diode Lasers



The EPL picosecond pulsed diode lasers are a family of high performance, cost effective excitation sources for fluorescence lifetime measurements.

In Time-Correlated Single Photon Counting (TCSPC) they bridge the gap between the nanosecond flashlamp and expensive mode-locked Titanium sapphire femtosecond lasers. In addition, their external trigger capability enables their use as excitation sources in Multi-Channel Scaling (MCS) mode.

The EPL lasers are pre-adjusted for an optimum pulse width, with particular attention paid to reducing a secondary shoulder characteristic of picosecond diode lasers. The output has a typical pulse width of less than 100 ps.

The EPL lasers are robust, maintenance free, easy to operate and have proprietary beam conditioning optics.

## KEY FEATURES

- + Optimised for TCSPC
- + 15 pre-set repetition frequencies from 2.5 KHz to 20 MHz
- + External trigger capability
- + Spectrally purified output
- + Fully integrated & compact design
- + Extremely low RF radiation
- + Optimised collimated beam
- + Drive electronics included



# SPECIFICATIONS

Model (EPL-)	375	405	445	450	475	485	510	635	655	670	785	800	980
Nominal Wavelength (nm)	375	405	445	450	475	485	510	635	655	670	785	800	975
Wavelength Range (nm)	370-380	400-410	438-448	440-455	465-480	475-490	505-515	630-640	650-660	665-675	780-790	795-805	965-985
Linewidth (nm)	< 1.5	< 2.0	< 3.0	< 3.0	< 4.5	< 6.5	< 5.0	< 2.5	< 2.5	< 2.5	< 4.0	< 6.0	< 5.0
Max. Pulse Width @10 MHz (ps)	85	75	95	100	90	120	90	85	85	80	85	110	80
Typical Pulse Width @10 MHz (ps)	60	55	85	90	80	100	85	65	65	55	70	95	60
Typical Average Power @20 MHz (mW)	0.15	0.11	0.15	0.18	0.15	0.1	0.13	0.07	0.15	0.15	0.12	0.15	0.14
Min. Average Power @20 MHz (mW)	0.1	0.08	0.1	0.1	0.1	0.06	0.1	0.04	0.12	0.1	0.09	0.1	0.06
Typical Peak Power @10 MHz (mW)	140	110	50	50	80	35	80	30	120	130	115	100	85
Min. Peak Power @10 MHz (mW)	80	80	35	25	65	20	60	25	80	75	80	60	30

Laser Class	Class 3R (EPL-405 to EPL-670) or Class 3B (EPL-375, 785, 800, 900)
Repetition Rate	MHz: 20, 10, 5, 2      kHz: 1000, 500, 200, 100, 50, 25, 20, 12.5, 10, 5, 2.5
Bias Supply	15 Vdc +/- 5%, 15W (2.1mm DC jack)
Trigger Output	SMA, NIM Standard
Interlock Input	Hirose HR10A-7P-4P(73), (Link pin 1 and pin 2 to ground – interlock healthy)
Trigger Input	Hirose HR10A-7P-4P(73), (Signal pin 4 and ground pin 3)
Trigger Input Signal	TTL > 50 ns pulse. Trigger on rising edge. 0.0 V < Low level < 0.5 V, 2.5 V < High level < 5 V
Key Switch	Yes
Beam Quality	Near field dimensions: ≤4.75 mm (fast axis), ≤1.75 mm (slow axis) Divergence:                    ≤1.5 mrad (fast axis), ≤0.75 mrad (slow axis)
Spectral Conditioning	Built-in filter to minimise out-of-band emission (no external spectral filtering needed)
Physical Dimensions	Overall: 168 mm length x 64 mm x 64 mm Collimator tube: ø 30 mm x 38 mm
Tapped Holes for Stud Mount	2 x M6
Weight	800 g

Other wavelengths available upon request.

## CLASS 3R/3B LASER PRODUCT

Avoid exposure to beam. Light emitted by the source may be harmful to the human eye and to skin. Please obey laser safety regulations. This product complies with the US federal laser product performance standards.



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