

CPDL-Q

Compact Diode Lasers for Integration

Applications

- Time-resolved measurement
- Fluorescence lifetime
- Diffusion measurements
- Testing & Semiconductor Diagnostic
- Metrology & Ranging (LiDAR)
- Seeding



PicoQuant's CPDL-Q Series consists of a range of the compact stand alone lasers suited for OEM integration. They are based on our well established picosecond pulsed diode laser technologies and can be operated via command line interface. Easy integration is possible utilizing either a vast range of internal available repetition frequencies (1 kHz – 200 MHz) or externally from single shot up to 200 MHz. Additionally, a flexible way of optical gating allows for the generation of pulsed bursts or fast switched CW operation with rise/fall times below 3 ns.

Specifications

Optical output	
Power stability within 8h	< 1% (rms)
Warm-up time for power and pulse shape stabilisation	< 2 min
Optical Rise / Fall Time (Gating)	< 3 ns
Beam circularity	0.5...1.0
Transversale Mode M ²	≤ 1.4
Beam dimension ²	0.8 ± 0.30 mm
Polarization	linear, vertical
Polarization Extinction Ratio (PER)	> 30:1 (typical >100:1)
Coupling efficiency (Single-mode PM fiber)	> 40%
Operation	
Internal Repetition rate	1 kHz to 999 kHz (step size 1 kHz) 1 MHz to 200 MHz (step size 1 MHz)
External range	0 Hz to 200 MHz

External trigger level	-1V ... +5V into 50 Ohm
Timing Jitter	< 12 ps (rms)
Trigger out	NIM
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
Temperature range	15 – 35 °C
Humidity range	< 80% (non condensing)
Dimension	
Dimensions (W X H X L) mm	40 x 40 x 160
Weight	0.31 kg
Interface	
Connector	Molex-Micro-Fit 2x7

Wavelengths

Wavelength (± 6) [nm]	Type OEM Stand alone	Pulse width ¹ (FWHM) [ps]	avg. power ² Narrow Pulse [mW]	avg. power ³ Broad Pulse [mW]	Max CW power [mW]
405	CPDL-Q-405	110 ± 20	3	10	50
450	CPDL-Q-450	80 ± 15	3	10	50
485	CPDL-Q-485	110 ± 20	3	10	50
515	CPDL-Q-515	130 ± 30	3	10	50
640	CPDL-Q-640	80 ± 15	3	10	50

- ¹ Shortest pulse width at optimal intensity setting above laser threshold (standard factory setting). Pulses are deconvoluted with 30 ps detection IRF. Shorter pulse widths are available on demand.
- ² This is the maximum average power at Narrow Pulse mode setting and max. repetition rate.
- ³ This is the maximum average power at Broad Pulse mode setting and max. repetition rate. A pulse broadening up to 500 ps FWHM is possible at maximum intensity setting.



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