

# CPDL-Q NEW

# **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	< 2 min			
stabilisation				
Optical Rise / Fall Time (Gating)	< 3 ns			
Beam circularity	0.51.0			
Transversale Mode M <sup>2</sup>	≤ 1.4			
Beam dimension <sup>2</sup>	0.8 ± 0.30 mm			
Polarisation	linear, vertical			
Polarization Extinction Ratio (PER)	> 30:1 (typical >100:1)			
Coupling efficiency (single-mode pm fibre)	> 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			

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 depening on the performance of diodes on stock. Please contact us for more information. All measurements shown may be subject to a 10 % callibration 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.

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]	<b>Type</b> OEM Stand alone	Pulse width <sup>1</sup> (FWHM) [ps]	avg. power <sup>2</sup> Narrow Pulse [mW]	avg. power <sup>3</sup> 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
488	CPDL-Q-488	110 ± 20	3	10	50
515	CPDLQ-515	130 ± 30	3	10	50
640	CPDL-Q-640	80 ± 15	3	10	50

<sup>1</sup> 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.
- <sup>2</sup> This is the maximum average power at Narrow Pulse mode setting and max repetition rate.
- <sup>3</sup> 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.



Phone	+49-(0)30-1208820-0
Telefax	+49-(0)30-1208820-90
Email	info@picoquant.com
Web	www.picoquant.com

PicoQuant GmbH Rudower Chaussee 29 (IGZ) 12489 Berlin Germany

All Information given here is reliable to our best knowledge. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearances are subject to change without notice. Trademarks or corporate names are used for explanation and identification, to the owner's benefit and without intent to infringe.