

# Diode Pumped Sub-Nanosecond Actively Q-Switched Laser

## MPL15100-DP

### FEATURES

- > More than **0.5 mJ** pulse energy at **1064 nm**
- > Short pulse duration **< 700 ps**
- > Variable up to **100 Hz** repetition rate
- > **532 nm, 355 nm, 266 nm** wavelengths as standard option
- > Actively Q-Switched
- > High Peak Power **0.8 MW**
- > Guaranteed **> 3 Gshot** lifetime
- > Other wavelengths (e.g. 1053 nm, 1342 nm, 671 nm, 447 nm) are available

### APPLICATIONS

- > LIBS
- > Marking
- > Nonlinear optics
- > Seeding laser amplifiers
- > Pollution monitoring
- > Remote sensing
- > Ignition of gas mixtures

**MPL15100** series robust DPSS actively Q-switched sub-nanosecond lasers deliver multi-kW peak powers, less than 1 ns pulse duration at 100 Hz repetition rate. Short laser cavity with is fixed on thermo-stabilized and controlled baseplate which gives extremely stable output parameters performance. Small footprint is welcome point for integration into OEM lasers. Sub-nanosecond pulse duration of < 700 ps, high pulse energy more than 1 mJ, variable repetition rate from 1 Hz to 100 Hz covers broad spectrum of applications starting from LIBS to supercontinuum generation. Standard optional harmonics generator to green (532 nm) and ultraviolet (355 nm, 266 nm) is also available.



## Specifications <sup>1)</sup>

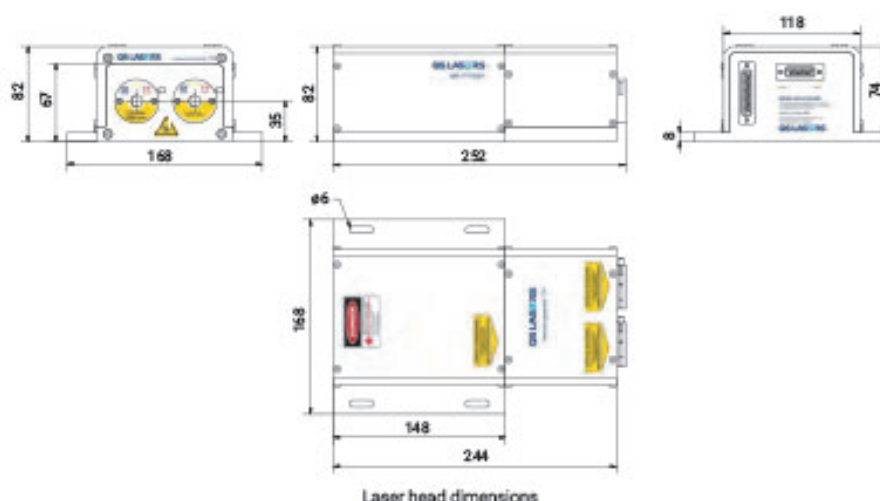
MODEL	MPL15100-DP
<b>Pulse energy</b>	
1064 nm	0.5 mJ
532 nm	0.25 mJ
355 nm	0.15 mJ
266 nm	0.1 mJ
<b>Pulse to pulse energy stability (RMS)</b>	
1064 nm	< 0.5 % <sup>2)</sup>
532 nm	< 2.5 % <sup>2)</sup>
355 nm	< 3.5 % <sup>2)</sup>
266 nm	< 5.0 % <sup>2)</sup>
Typical pulse duration	< 700 ps <sup>3)</sup>
Power drift	± 3.0 % <sup>4)</sup>
Pulse repetition rate <sup>5)</sup>	1 – 100 Hz
Beam spatial profile	Close to Gaussian
Beam divergence <sup>6)</sup>	< 4 mrad
Polarization	Linear, horizontal at 1064 nm
Spectral linewidth	SLM
Beam pointing stability <sup>7)</sup>	< 50 µrad
Typical beam diameter <sup>8)</sup>	1.2 mm
Optical jitter	< 0.5 ns <sup>9)</sup>

### DIMENSIONS

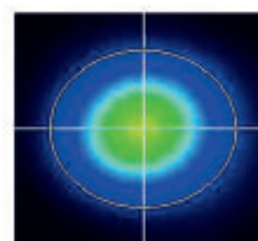
Laser head (W×L×H)	168 × 252 × 82 mm
Controller unit (W×L×H)	257 × 271 × 153 mm
Cable cord length	1 m

### OPERATING REQUIREMENTS

Cooling requirements	air cooled
Ambient temperature	15 – 30 °C
Relative humidity	10 – 80 % (non-condensing)
Mains voltage	100 – 240 VAC, single phase, 50 – 60 Hz
Power consumption	< 10 W



- <sup>1)</sup> Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm.
- <sup>2)</sup> Averaged from 60 seconds time interval.
- <sup>3)</sup> FWHM level at 1064 nm. Shorter pulse duration (< 350 ps) is available by request. Please inquire for detailed specifications.
- <sup>4)</sup> Over 8-hour period after max 5 minutes of warm-up when ambient temperature variation is less than ±2 °C.
- <sup>5)</sup> Factory-set pulse repetition rate is fixed at max repetition rate. Higher repetition rates are available, please inquire for details.
- <sup>6)</sup> Full angle measured at the 1/e<sup>2</sup> level.
- <sup>7)</sup> RMS value measured from 1000 shots.
- <sup>8)</sup> Beam diameter is measured 20 cm from laser output at the 1/e<sup>2</sup> level.
- <sup>9)</sup> In respect to Q-switch triggering rising edge pulse.



Typical beam intensity profile (20 cm from laser output) of MPL15100 series lasers.