

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 ¹⁾

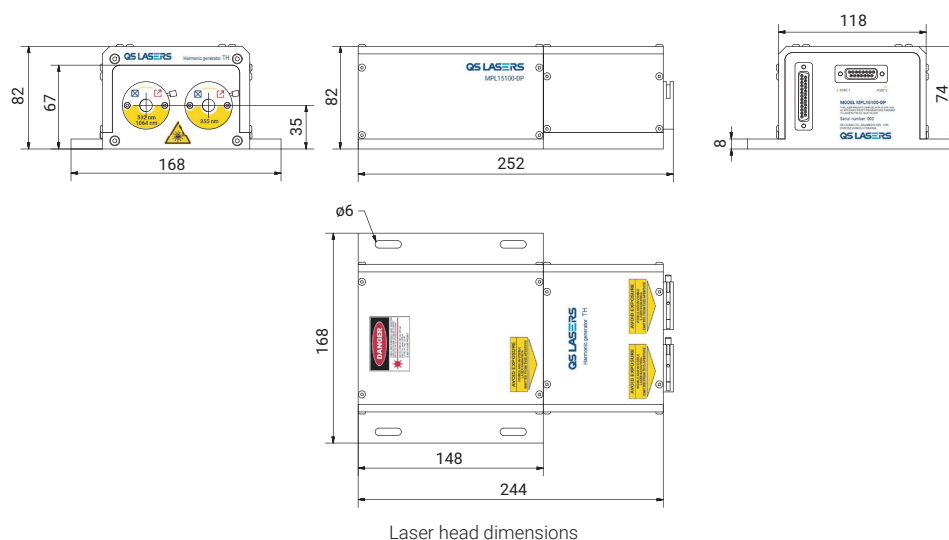
MODEL	MPL15100-DP
Pulse energy	
1064 nm	0.5 mJ
532 nm	0.25 mJ
355 nm	0.15 mJ
266 nm	0.1 mJ
Pulse to pulse energy stability (RMS)	
1064 nm	< 0.5 % ²⁾
532 nm	< 2.5 % ²⁾
355 nm	< 3.5 % ²⁾
266 nm	< 5.0 % ²⁾
Typical pulse duration	< 700 ps ³⁾
Power drift	± 3.0 % ⁴⁾
Pulse repetition rate ⁵⁾	1 – 100 Hz
Beam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

DIMENSIONS

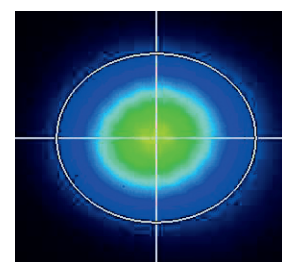
Laser head (W×L×H)	168 × 252 × 82 mm
Controller unit (W×L×H)	257 × 271 × 153 mm
Cable cord length	1 m

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



- ¹⁾ Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm.
- ²⁾ Averaged from 60 seconds time interval.
- ³⁾ FWHM level at 1064 nm. Shorter pulse duration (< 350 ps) is available by request. Please inquire for detailed specifications.
- ⁴⁾ Over 8-hour period after max 5 minutes of warm-up when ambient temperature variation is less than ±2 °C.
- ⁵⁾ Factory-set pulse repetition rate is fixed at max repetition rate. Higher repetition rates are available, please inquire for details.
- ⁶⁾ Full angle measured at the 1/e² level.
- ⁷⁾ RMS value measured from 1000 shots.
- ⁸⁾ Beam diameter is measured 20 cm from laser output at the 1/e² level.
- ⁹⁾ In respect to Q-switch triggering rising edge pulse.



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