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 pptics
- 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.

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QS LASERS

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.*

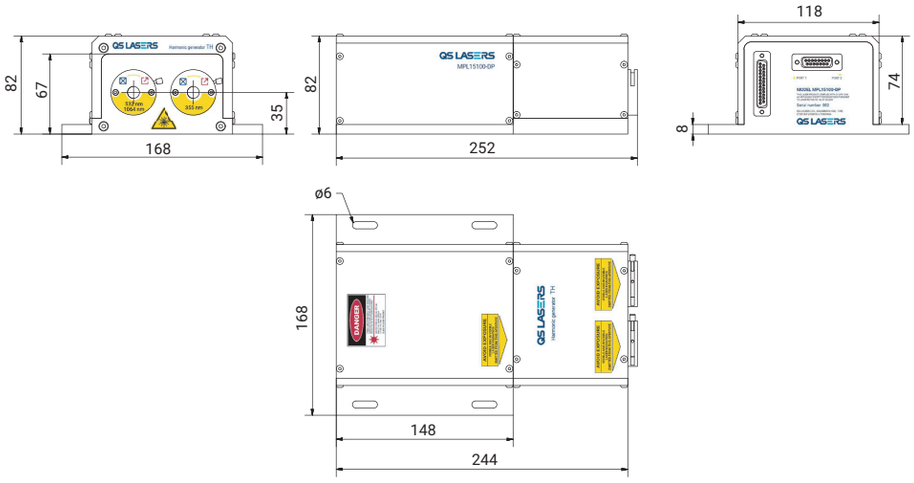
5) *Factory-set pulse repetition rate is fixed at max repetition rate. Higher repetition rates are available, please inquire for details.*

6) *Full angle measured at the $1/e^2$ level.*

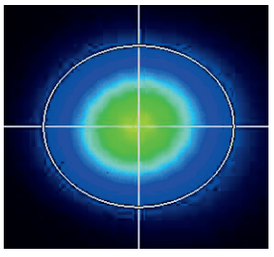
7) *RMS value measured from 1000 shots.*

8) *Beam diameter is measured 20 cm from laser output at the $1/e^2$ level.*

9) *In respect to Q-switch triggering rising edge pulse.*



Laser head dimensions



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

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