

# Diode Pumped Nanosecond Passively Q-Switched Laser

## MNL1342

### FEATURES

- > More than **100  $\mu$ J** pulse energy at **1342 nm**
- > Short pulse duration **< 3 ns**
- > **1000 Hz** repetition rate
- > Ultra-compact
- > Passively Q-switched
- > Average power **100 mW**
- > 671 nm, 447 nm standard options

### APPLICATIONS

- > OLED repair
- > DNA Analysis
- > Remote sensing
- > Quality control

**MNL1342** series DPSS passively Q-switched short pulse nanosecond laser designed for industrial and medical needs like OLED repair, photo-acoustic, etc. deliver high peak powers at 1000 Hz repetition rate. Innovative laser cavity and harmonics unit with stabilized temperature control delivers stable output parameters. Small footprint is welcome point for integration into OEM systems. Short nanosecond pulse duration of < 2 ns, high pulse energy more than 100  $\mu$ J, high repetition rate from up to 1000 Hz covers broad range of applications where 1.3  $\mu$ m wavelengths are needed. Standard optional harmonics to red (671 nm) and blue (447 nm) is available.



# Specifications <sup>1)</sup>

MODEL	MNL1342
Pulse energy	
at 1342 nm	100 $\mu$ J
at 671 nm	50 $\mu$ J
at 447 nm	25 $\mu$ J
at 336 nm	10 $\mu$ J
Typical pulse duration	< 2 ns <sup>2)</sup>
Pulse to pulse energy stability (RMS)	
at 1342 nm	< 1 % <sup>3)</sup>
at 671 nm	< 2.5 % <sup>3)</sup>
at 447 nm	< 3.5 % <sup>3)</sup>
at 336 nm	< 5.0 % <sup>3)</sup>
Power drift	$\pm$ 3.0 % <sup>4)</sup>
Pulse repetition rate <sup>5)</sup>	1000 Hz
Beam profile	Bell shaped
Beam divergence <sup>6)</sup>	< 6 mrad
Polarization	Linear, horizontal at 1342 nm
Spectral Linewidth	SLM
Beam pointing stability <sup>7)</sup>	< 40 $\mu$ rad
Typical beam diameter <sup>8)</sup>	1.5 mm
Jitter	$\sim$ 2 $\mu$ s RMS <sup>9)</sup>

## DIMENSIONS

Laser head (W×L×H)	138 × 295 × 53 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 (non-condensing)	10 – 80 %
Mains voltage	90 – 230 VAC, single phase, 47 – 63 Hz <sup>10)</sup>
Power consumption	< 50 W

<sup>1)</sup> Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1342 nm.

<sup>2)</sup> FWHM level at 1342 nm. Shorter pulse duration is available by request. Please inquire for detailed specifications.

<sup>3)</sup> Averaged from 60 seconds time interval in 5 series.

<sup>4)</sup> Over 8-hour period after max 5 minutes of warm-up when ambient temperature variation is less than  $\pm$ 2 °C.

<sup>5)</sup> Factory-set pulse repetition rate is fixed at max repetition rate. Other repetition rates are available, please inquire for details.

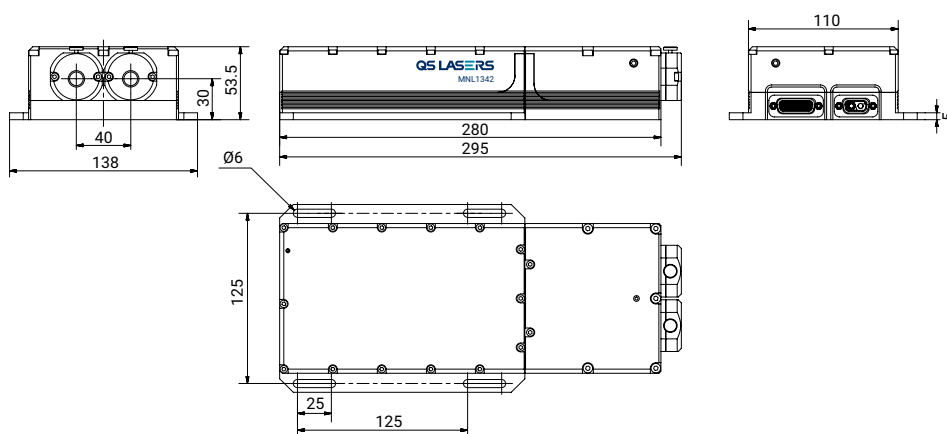
<sup>6)</sup> Full angle measured at the 1/e<sup>2</sup> level.

<sup>7)</sup> RMS value measured from 1000 shots.

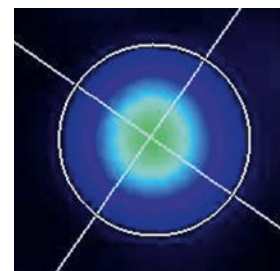
<sup>8)</sup> Beam diameter is measured 20 cm from laser output at the 1/e<sup>2</sup> level.

<sup>9)</sup> In respect to Q-switch triggering rising edge pulse.

<sup>10)</sup> Laser can be powered from appropriate 12 VDC power source. Inquire for details.



MNL1342 laser head dimensions with attached harmonics unit (in mm)



Typical beam intensity profile (20 cm from laser output) of MNL1342 series lasers