Diode Pumped Picosecond Passively Q-Switched Laser

MPL2210

FEATURES

- More than **2 mJ** pulse energy at **1064 nm**
- Short pulse duration **< 250-270 ps**
- **1 – 100 Hz** repetition rate
- Ultra-compact
- Passively Q-switched
- Average power **200 mW**
- High peak power **> 7 MW**
- Guaranteed **> 3 Gshot** lifetime
- Other wavelengths (e.g. 532 nm, 355 nm, 266 nm) are available

APPLICATIONS

- Seeder for amplifiers
- Skincare
- Laser-induced breakdown spectroscopy (LIBS)
- Time resolved fluorescence measurements
- DNA analysis
- Pollution monitoring
- Remote sensing
- Supercontinuum generation
- Ignition of gas mixtures

MPL2210 series DPSS passively Q-switched picosecond laser deliver high peak powers **> 7 MW** at **100 Hz** repetition rate. Short laser cavity 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 **< 250-270 ps**, high pulse energy more than **2 mJ**, variable repetition rate from 1 Hz to 100 Hz covers many applications like pollution monitoring, DNA analysis, supercontinuum generation and many others.
Due to short pulse duration and high pulse energy laser delivers high peak power which is up to 7 MW. Optional conversion to green (532 nm) and ultraviolet (355 nm, 266 nm) is also available.

Stand alone with harmonics option

OEM

QS LASERS

Specifications [1)]

MODEL	MPL2210
Pulse energy	
at 1064 nm	2 mJ
at 532 nm	1 mJ
at 355 nm	0.5 mJ
at 266 nm	0.25 mJ
Typical pulse duration	< 250 ps - 270 ps [2)]
Pulse to pulse energy stability (RMS)	
at 1064 nm	< 1.0 % [3)]
at 532 nm	< 2.0 % [3)]
at 355 nm	< 3.0 % [3)]
at 266 nm	< 4.0 % [3)]
Power drift	± 3.0 % [4)]
Pulse repetition rate [5)]	1 – 100 Hz
Beam profile	close to Gaussian
Beam divergence [6)]	< 6 mrad
Polarization	linear, horizontal at 1064 nm
Spectral linewidth	SLM
Beam pointing stability [7)]	< 10 µrad
Typical beam diameter [8)]	1.5 mm
Optical jitter	~ 2 µs RMS [9)]
DIMENSIONS	
Laser head (W×L×H)	125 × 295 × 76 mm (with harmonics)
	99 × 174 × 45.5 mm (OEM version)
Controller unit (W×L×H)	257 × 271 × 153 mm
	75 × 200 × 70 mm (OEM version)
OPERATING REQUIREMENTS	
Cooling requirements	TEC
Ambient temperature	20 – 25 ºC
Relative humidity	10 – 80 % (non-condensing)
Mains voltage	100 – 230 VAC, single phase, 50 – 60 Hz [10)]
Power consumption	< 20 W

1) *Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm.*

2) *FWHM level at 1064 nm.*

3) *Averaged from 60 seconds time interval in 5 series.*

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 10 Hz repetition rate. Higher repetition rates are available, please inquire for more details.*

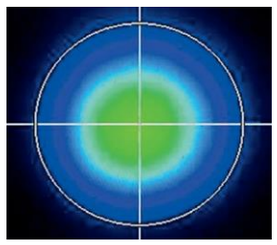
6) *Full angle measured at the $1/e^2$ level. Lower beam divergence is available upon request, please inquire for more details.*

7) *RMS value measured from 1000 shots.*

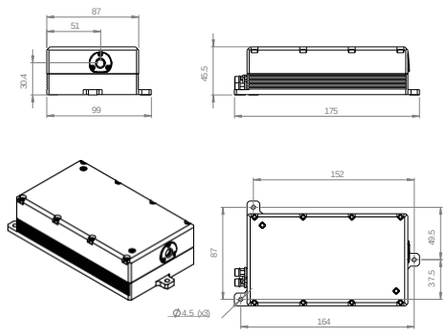
8) *Beam diameter is measured 20 cm from laser output at the $1/e^2$ level.*

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

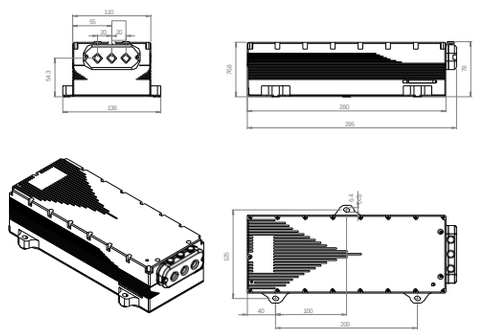
10) *Laser can be powered from appropriate 12 VDC power source. Inquire for details.*



Typical beam intensity profile (20 cm from laser output) of MPL2210 series lasers



MPL2210 series laser head dimensions OEM version (in mm)



MPL2210 series laser head dimensions (in mm)

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Diode Pumped Picosecond Passively Q-Switched Lasers

MPL2310 / MPL2510

FEATURES

- More than **2 mJ** pulse energy at **1064 nm**
- Short pulse duration **< 500 ps**
- **1 – 100 Hz** repetition rate
- Ultra-compact
- Passively Q-switched
- Average power **200 mW**
- High peak power **> 4 MW**
- Guaranteed **> 3 Gshot** lifetime
- Other wavelengths (e.g. 532 nm, 355 nm) are available

APPLICATIONS

- Seeder for amplifiers
- Skincare
- Laser-induced breakdown spectroscopy (LIBS)
- Time resolved fluorescence measurements
- DNA analysis
- Pollution monitoring
- Remote sensing
- Supercontinuum generation

Ignition of gas mixtures

MPL2310 series DPSS passively Q-switched picosecond lasers deliver high peak powers **> 5 MW** at **100 Hz** repetition rate. Short laser cavity 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 **< 350 ps**, high pulse energy more than **2 mJ**, variable repetition rate from 1 Hz to 100 Hz covers many applications like pollution monitoring, DNA analysis, supercontinuum generation and many others.

Due to short pulse duration and high pulse energy laser delivers high peak power which is up to 5 MW. Optional conversion to green (532 nm) and ultraviolet (355 nm, 266 nm) is also available.

Stand alone with harmonics option

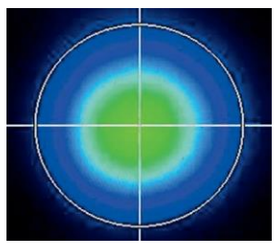
OEM

QS LASERS

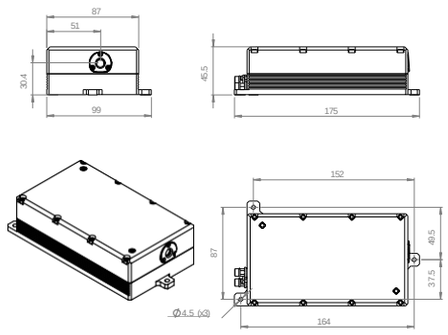
Specifications [1)]

MODEL	MPL2310 / MPL2510	MPL1310 / MPL1510
Pulse energy		
at 1064 nm	2 mJ	1 mJ
at 532 nm	1 mJ	0.5 mJ
at 355 nm	0.5 mJ	0.25 mJ
at 266 nm	0.25 mJ	0.15 mJ
Typical pulse duration	<350 ps/ <500 ps [2)]	
Pulse to pulse energy stability (RMS)		
at 1064 nm	< 1.0 % [3)]	
at 532 nm	< 2.0 % [3)]	
at 355 nm	< 3.0 % [3)]	
at 266 nm	< 4.0 % [3)]	
Power drift	± 3.0 % [4)]	
Pulse repetition rate [5)]	1 – 100 Hz	
Beam profile	close to Gaussian	
Beam divergence [6)]	< 6 mrad	
Polarization	linear, horizontal at 1064 nm	
Spectral linewidth	SLM	
Beam pointing stability [7)]	< 10 µrad	
Typical beam diameter [8)]	1.5 mm	
Optical jitter	~ 2 µs RMS [9)]	
DIMENSIONS		
Laser head (W×L×H)	125 × 295 × 76 mm (with harmonics)	
	99 × 174 × 45.5 mm (OEM version)	
Controller unit (W×L×H)	257 × 271 × 15 mm 75 × 200 × 70 mm (OEM version)	
OPERATING REQUIREMENTS		
Cooling requirements	air cooled	
Ambient temperature	15 – 30 ºC	
Relative humidity	10 – 80 % (non-condensing)	
Mains voltage	100 – 230 VAC, single phase, 50 – 60 Hz [10)]	
Power consumption	< 20 W	< 10 W

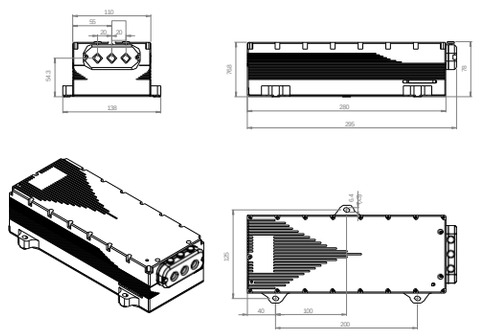
1) *Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm.*
2) *FWHM level at 1064 nm. Averaged from 60 seconds time interval in 5 series.*
3) *Over 8-hour period after max 5 minutes of warm-up when ambient temperature variation is less than ±2 °C.*
4) *Factory-set pulse repetition rate is fixed at 100 Hz repetition rate. Higher repetition rates are available, please inquire for more details.*
5) *Full angle measured at the $1/e^2$ level. Lower beam divergence is available upon request, please inquire for more details.*
6) *RMS value measured from 1000 shots.*
7) *Beam diameter is measured 20 cm from laser output at the $1/e^2$ level.*
8) *In respect to Q-switch triggering rising edge pulse.*
9) *Laser can be powered from appropriate 12 VDC power source. Inquire for details.*



Typical beam intensity profile (20 cm from laser output) of MPL2310 series lasers



MPL2310 series laser head dimensions OEM version (in mm)



MPL2310 series laser head dimensions (in mm)

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Diode Pumped Sub-Nanosecond Actively Q-Switched Laser

MPL15100

FEATURES

- More than **0.5 mJ** pulse energy at **1064 nm**
- Short pulse duration **< 700 ps**
- Up to **1 kHz** repetition rate
- **532 nm, 355 nm, 266 nm** wavelengths as standard option
- Actively Q-Switched
- Peak Power **0.7 MW**
- Other wavelengths (e.g. 532 nm, 355 nm, 266 nm) are available

APPLICATIONS

- Spectroscopy
- Marking
- MALDI
- Seeding laser amplifiers
- Pollution Monitoring
- Remote sensing

MPL15100 series robust DPSS actively Q-switched sub-nanosecond lasers deliver multi-kW peak powers, less than 1 ns pulse duration at 1 kHz repetition rate. Short innovative laser cavity with is fixed on thermo-stabilized 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 with near transform limited spectral linewidth at repetition rates up to 1 kHz with low timing jitter of < 200 ps and energies more than 500 µJ covers broad spectrum of applications starting from LIBS, laser induced fluorescence to many others. Standard optional harmonics generator to green (532 nm) and ultraviolet (355 nm, 266 nm) is also available.

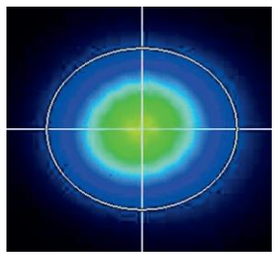
Stand alone with harmonics

QS LASERS

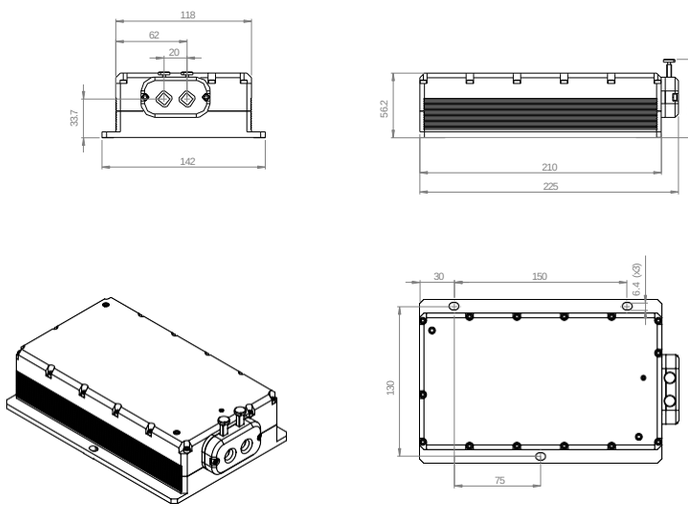
Specifications [1)]

MODEL	MPL15100	MPL15100-1K
Pulse energy:		
at 1064 nm	0.5 mJ	
at 532 nm	0.25 mJ	
at 355 nm	0.15 mJ	
at 266 nm	0.1 mJ	
Typical pulse duration	< 700 ps [2)]	
Pulse to pulse energy stability (RMS):		
at 1064 nm	< 0.5 % [3)]	
at 532 nm	< 1.0 % [3)]	
at 355 nm	< 1.5 % [3)]	
at 266 nm	< 2.0 % [3)]	
Power drift	± 3.0 % [4)]	
Pulse repetition rate [5)]	100 Hz	1 kHz
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	< 0.2 ns [9)]	
DIMENSIONS		
Laser head (W×L×H)	163 × 295 × 53.5 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	< 100 W

1) *Due to continuous improvements all specifications are subject to change. Unless stated otherwise all specifications are measured at 1064 nm.*
2) *FWHM level at 1064 nm.*
3) *Averaged from 60 seconds time interval.*
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



MPL15100 laser head dimensions with attached harmonics unit (in mm)

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