

FDSS 532-Q

Diode Pumped Passively Q-Switched Solid State Laser

- 532 nm
- Pulsed (≤ 1.3 ns)
- $> 42 \mu\text{J}$
- Up to 20 kHz
- External and Internal Trigger
- Free Beam or Fiber Coupling
- Single Pulse Operation



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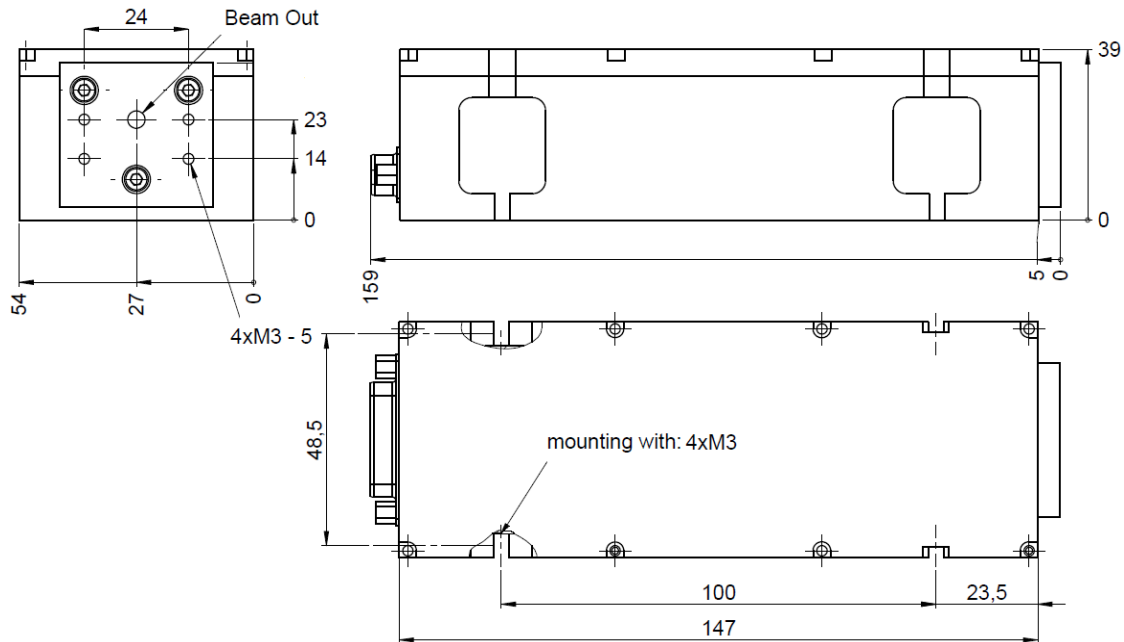
Optical Data		FDSS532-Q1	FDSS532-Q2	FDSS532-Q3	FDSS532-Q4_1k
	Wavelength	532 nm			
	Pulse Energy	> 2 μJ @ 15 kHz	> 6 μJ @ 10 kHz	> 20 μJ @ 1 kHz	> 42 μJ @ 1 kHz
	Peak Power	> 1.5 kW @15kHz	> 4.5 kW @10kHz	> 15 kW @ 1kHz	> 30 kW @ 1 kHz
	Pulse Repetition Rate	≤ 20 kHz	≤ 10 kHz	≤ 2.5 kHz	≤ 1 kHz
	Pulse Width, FWHM	≤ 1.3 ns			
	Polarization Ratio	> 100:1 vertical			
	Pulse Energy Drift ¹⁾	< ± 5 %	< ± 5 %	< ± 5 %	< ± 5 %
	Pulse-To-Pulse RMS ²⁾	< 3% @15kHz	< 2% @10kHz	< 2% @1kHz	< 2% @1kHz
Laser Classification	3B / IIIb	3B / IIIb	3B / IIIb	3B / IIIb	
Optical Output	Spatial Mode	TEM ₀₀ (Main Axis Divergence Ratio < 1.3)			
	Beam Divergence, 2Θ	< 3.5 mrad	< 3.5 mrad	< 5.0 mrad	< 4.5 mrad
	Beam Diameter	250 ± 50 μm	260 ± 50 μm	400 ± 100 μm	400 ± 100 μm
Electrical Data	Power Consumption	15 W (max.40 W)	17 W (max.40 W)	20 W (max.70 W)	40 W (70 W)
	Operating Voltage	12 V DC			
	Line Voltage	90 - 265 V AC			
	Marking	CE			
Interfaces	RS 232, USB				
	External Trigger (TTL, rising edge) single shot (pulse on demand) – max. repetition rate				
	Interface for TTL-control and power monitor				
Miscellaneous	Warm-up Time	< 5 min			
	Operating Temperature	18 - 38 °C			
Options	Stand-alone system (incl. key-switch, heat-sink, manual shutter; CDRH compliant)				
	Synchronization signal output (rise time < 2 ns)				
	Fiber coupling for fiber with core diameter > 70 μm (Q4 ≥ 100μm)				
	Manual shutter or electrical beam blocker				
	External beam expander (e.g. 3x)				
	Manual or electrical attenuator on request				
	Manual or electrical driven wavelength switch 532 nm / 1064 nm Closed loop operation for pulse energy on request				

¹⁾ Drift over 6 hours, energy averaged over 10 sec after 5 min of continuous operation, temperature variation $\pm 3 \text{ }^{\circ}\text{C}$ and $< 3 \text{ }^{\circ}\text{C}/\text{hour}$.

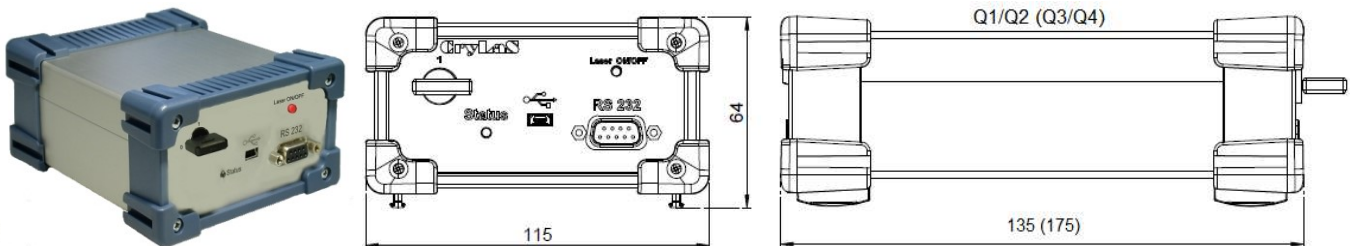
²⁾ RMS over 1000 pulses after 5 min of continuous operation.

Dimensions

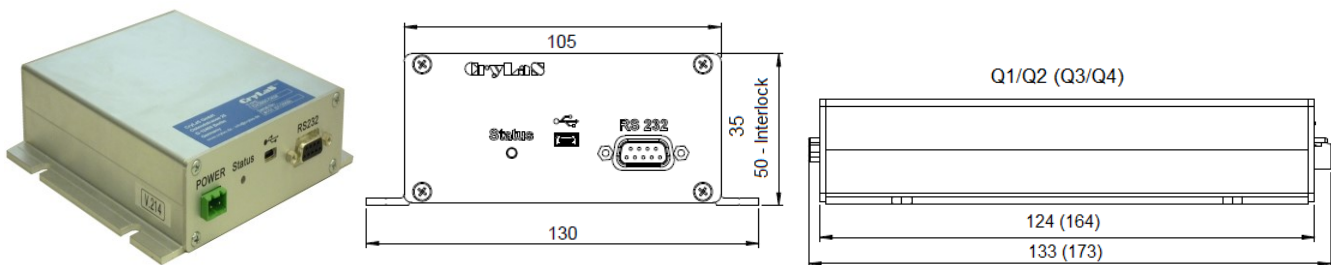
Laser Head: 159 x 54 x 39 mm



Controller Stand-Alone: Q1, Q2: 135 x 115 x 64 mm; Q3, Q4: 175 x 115 x 64 mm



Controller OEM: Q1, Q2: 133 x 130 x 35/50 mm; Q3, Q4: 173 x 130 x 35/50 mm



Laser Safety Label

The FDSS 532-Q lasers are class 3B / IIb according to IEC 60825-1:2014

wavelength: 532 nm max. output: 10 µJ pulse duration: < 1.5 ns max. repetition rate: 22 kHz Complies with IEC 60825-1:2014 Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001	wavelength: 532 nm max. output: 25 µJ pulse duration: < 1.5 ns max. repetition rate: 11 kHz Complies with IEC 60825-1:2014 Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001	wavelength: 532 nm max. output: 100 µJ pulse duration: < 1.5 ns max. repetition rate: 2.7 kHz Complies with IEC 60825-1:2014 Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001	wavelength: 532 nm max. output: 150 µJ pulse duration: < 1.5 ns max. repetition rate: 1.2 kHz Complies with IEC 60825-1:2014 Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001	WARNING - VISIBLE LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3B LASER PRODUCT
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Q1 series

Q2 series

Q3 series

Q4 series

