

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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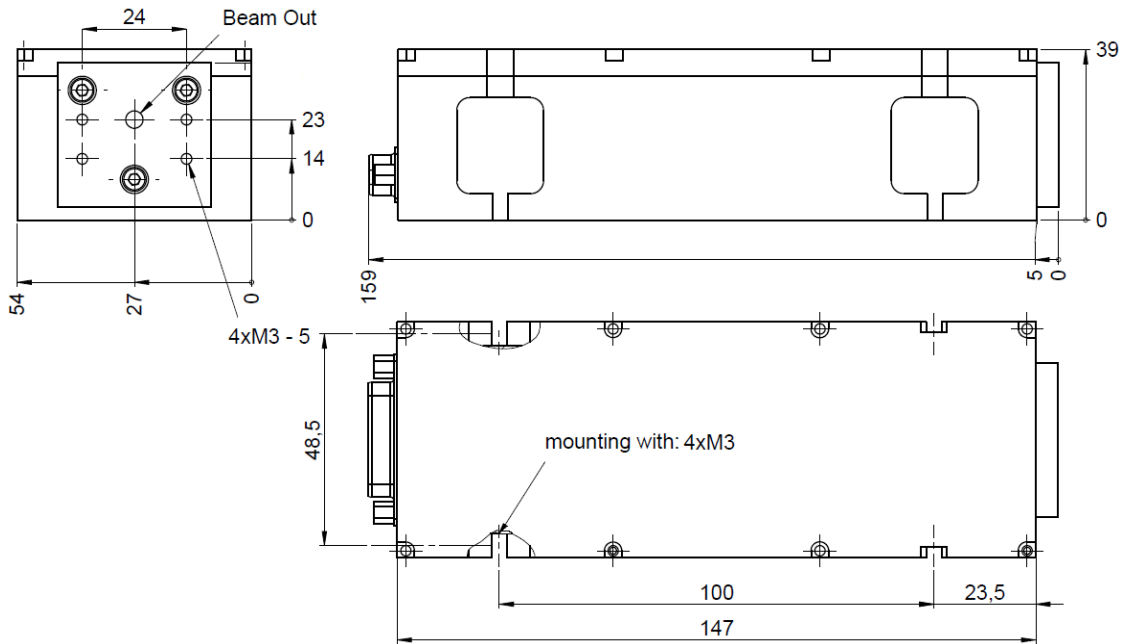
Optical Data		FDSS532-Q1	FDSS532-Q2	FDSS532-Q3	FDSS532-Q4_1k
	Wavelength	532 nm			
	Pulse Energy	$> 2 \mu\text{J} @ 15 \text{ kHz}$	$> 6 \mu\text{J} @ 10 \text{ kHz}$	$> 20 \mu\text{J} @ 1 \text{ kHz}$	$> 42 \mu\text{J} @ 1 \text{ kHz}$
	Peak Power	$> 1.5 \text{ kW} @ 15 \text{ kHz}$	$> 4.5 \text{ kW} @ 10 \text{ kHz}$	$> 15 \text{ kW} @ 1 \text{ kHz}$	$> 30 \text{ kW} @ 1 \text{ kHz}$
	Pulse Repetition Rate	$\leq 20 \text{ kHz}$	$\leq 10 \text{ kHz}$	$\leq 2.5 \text{ kHz}$	$\leq 1 \text{ kHz}$
	Pulse Width, FWHM	$\leq 1.3 \text{ ns}$			
	Polarization Ratio	$> 100:1$ vertical			
	Pulse Energy Drift ¹⁾	$< \pm 5 \%$	$< \pm 5 \%$	$< \pm 5 \%$	$< \pm 5 \%$
	Pulse-To-Pulse RMS ²⁾	$< 3\% @ 15 \text{ kHz}$	$< 2\% @ 10 \text{ kHz}$	$< 2\% @ 1 \text{ kHz}$	$< 2\% @ 1 \text{ kHz}$
	Laser Classification	3B / IIIb	3B / IIIb	3B / IIIb	3B / IIIb
Optical Output	Spatial Mode	TEM ₀₀ (Main Axis Divergence Ratio < 1.3)			
	Beam Divergence, 2 θ	$< 3.5 \text{ mrad}$	$< 3.5 \text{ mrad}$	$< 5.0 \text{ mrad}$	$< 4.5 \text{ mrad}$
	Beam Diameter	$250 \pm 50 \mu\text{m}$	$260 \pm 50 \mu\text{m}$	$400 \pm 100 \mu\text{m}$	$400 \pm 100 \mu\text{m}$
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	$< 5 \text{ min}$			
	Operating Temperature	18 - 38 °C			
Options	Stand-alone system (incl. key-switch, heat-sink, manual shutter; CDRH compliant)				
	Synchronization signal output (rise time $< 2 \text{ ns}$)				
	Fiber coupling for fiber with core diameter $> 70 \mu\text{m}$ (Q4 $\geq 100 \mu\text{m}$)				
	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 $< 3 \text{ }^\circ\text{C}/\text{hour}$.

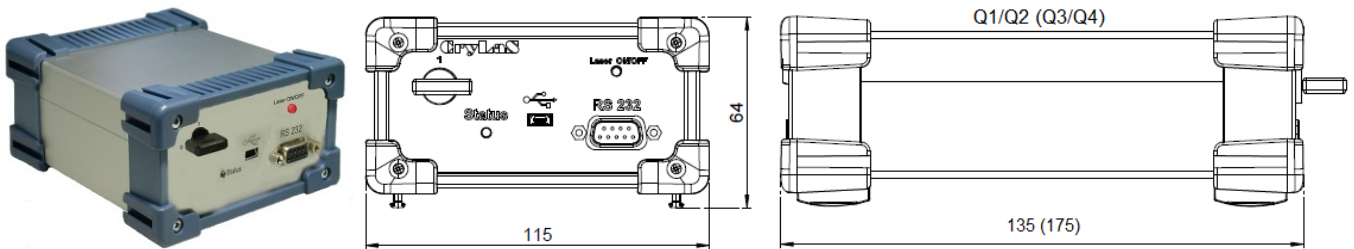
²⁾ RMS over 1000 pulses after 5 min of continuous operation.

Dimensions

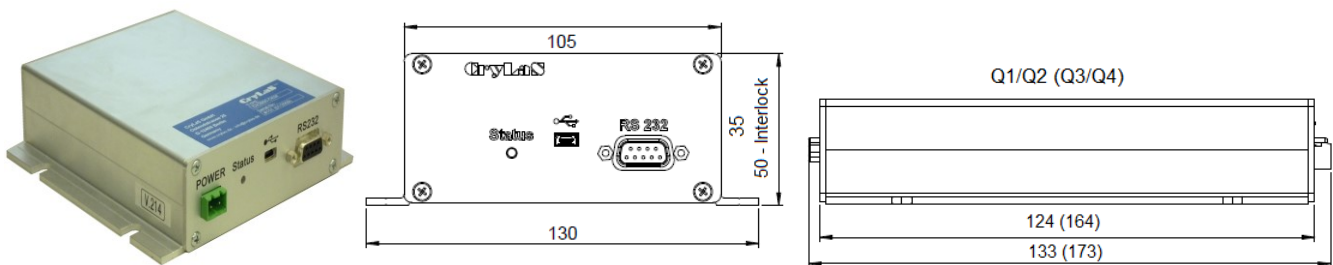
Laser Head: 159 x 54 x 39 mm



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 / IIIb according to IEC 60825-1:2014

<p>wavelength: 532 nm max. output: 10 µJ pulse duration: < 1.5 ns max. repetition rate: 22 kHz</p> <p>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</p>	<p>wavelength: 532 nm max. output: 25 µJ pulse duration: < 1.5 ns max. repetition rate: 11 kHz</p> <p>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</p>	<p>wavelength: 532 nm max. output: 100 µJ pulse duration: < 1.5 ns max. repetition rate: 2.7 kHz</p> <p>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</p>	<p>wavelength: 532 nm max. output: 150 µJ pulse duration: < 1.5 ns max. repetition rate: 1.2 kHz</p> <p>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</p>	<p>WARNING - VISIBLE LASER RADIATION AVOID EXPOSURE TO BEAM</p> <p>CLASS 3B LASER PRODUCT</p>
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Q1 series

Q2 series

Q3 series

Q4 series

