

FQSS 213-Q

Diode Pumped Passively Q-Switched Solid State Laser

- 213 nm
- Pulsed (≤ 1.0 ns)
- Up to 2.5 μ J
- Up to 20 kHz
- External and Internal Trigger
- Free Beam
- Single Pulse Operation



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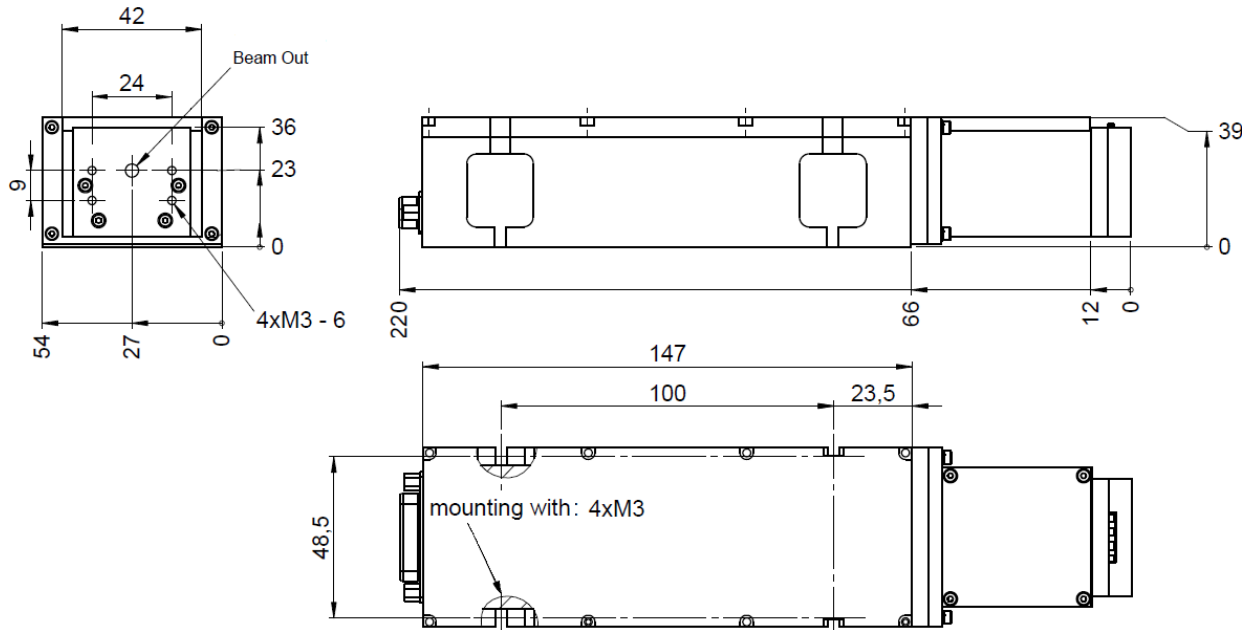
Optical Data		FQSS213-Q1	FQSS213-Q2	FQSS213-Q3	FQSS213-Q4_1k
	Wavelength	213 nm			
	Pulse Energy	> 0.05 μJ @15kHz	> 0.1 μJ @10kHz	> 1.5 μJ @1kHz	> 2.5 μJ @1kHz
	Peak Power	> 0.05 kW @15kHz	> 0.1 kW @10kHz	> 1.5 kW @1kHz	> 2.5 kW @1kHz
	Pulse Repetition Rate	≤ 20 kHz	≤ 10 kHz	≤ 2.5 kHz	≤ 1 kHz
	Pulse Width, FWHM	≤ 1.0 ns			
	Polarization Ratio	> 100:1 horizontal			
	Pulse Energy Drift ¹⁾	< ± 5 %	< ± 5 %	< ± 5 %	< ± 5 %
	Pulse-To-Pulse RMS ²⁾	< 4% @15kHz	< 2% @10kHz	< 2% @1kHz	< 2% @1kHz
	Laser Classification	4 / IV	4 / IV	4 / IV	4 / IV
Optical Output	Spatial Mode	TEM ₀₀ (Main Axis Divergence Ratio < 3.5)			
	Beam Divergence, 2Θ	< 2.0 mrad	< 2.0 mrad	< 2.5 mrad	< 3.0 mrad
	Beam Diameter	400 ± 200 μm	400 ± 200 μm	450 ± 200 μm	450 ± 200 μm
Electrical Data	Power Consumption	15 W (max.40 W)	17 W (max.40 W)	20 W (max.70 W)	22 W (max.80 W)
	Operating Voltage	12 V DC			
	Line Voltage	90 - 240 V AC (50 – 60 Hz)			
	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			
	266nm satellite	The satellite's pulse energy is < 0.1 μJ and the angular deviation from the 213 nm laser beam is approx. 0.9 degrees.			
Options	Stand-alone system (incl. key-switch, heat-sink and manual shutter; CDRH compliant)				
	Synchronization signal output (rise time < 2 ns)				
	Manual shutter or electrical beam blocker				
	External beam expander (e.g. 3x) on request				

¹⁾ Drift over 6 hours, energy averaged over 10 sec after 5 min of continuous operation, temperature variation ± 3 °C and < 3 °C/hour.

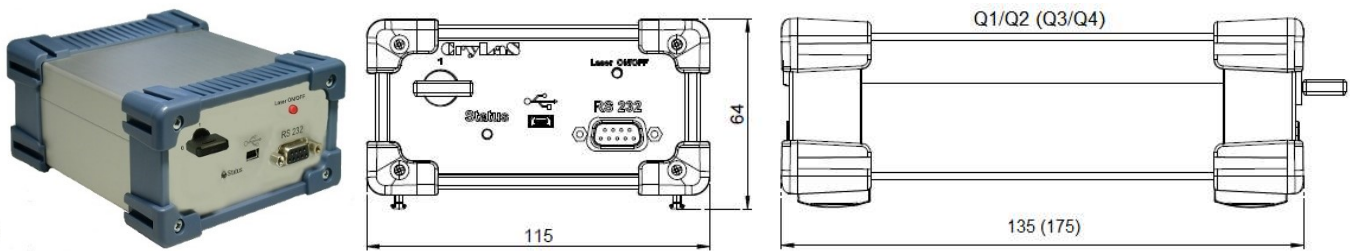
²⁾ RMS over 1000 pulses after 5 min of continuous operation.

Dimensions

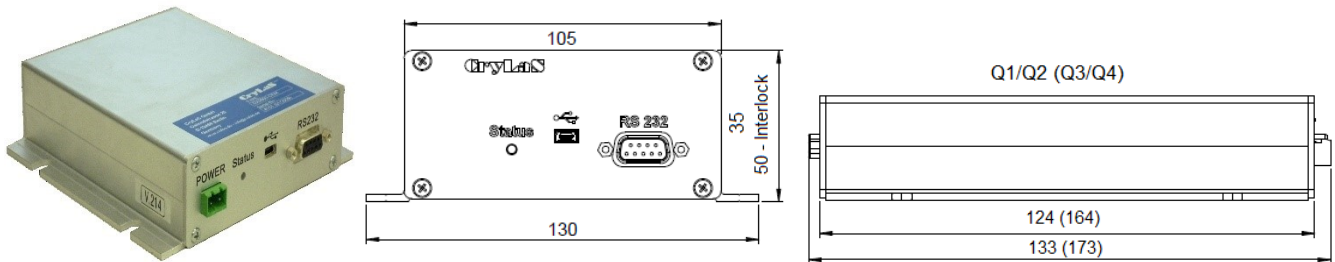
Laser Head: 220 x 54 x 39 mm



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 FQSS 213-Q lasers are class 4 / IV according to IEC 60825-1:2014

wavelength: 213 nm max. output: 1 µJ pulse duration: < 1.2 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: 213 nm max. output: 2 µJ pulse duration: < 1.2 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: 213 nm max. output: 6 µJ pulse duration: < 1.2 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: 213 nm max. output: 10 µJ pulse duration: < 1.2 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	DANGER - INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT
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Q1 series

Q2 series

Q3 series

Q4 serie

