

FREE SPACE QOMO LASER SERIES

The QOMO Laser platform integrates a laser head and electronics into a single compact package design, to deliver low noise, stable and peak optical performance. Qomo is available at various wavelengths, to address a wide range of Life Science applications that span the Biotechnology, Medical and Scientific markets.



FEATURES

- Superior power stability
- Perfect beam quality
- Low noise
- High reliability
- Integrated control electronics
- Compact size

APPLICATIONS

- Flow cytometry
- DNA sequencing
- Medical imaging
- Microscopy
- Laser-induced fluorescence
- Spectroscopy

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Product Specifications⁽⁰⁾

Optical						
Wavelength ⁽¹⁾	Central wavelength	405 ±5 nm	488 ±5 nm	532 ±1nm	638 ±5 nm	660 ±5 nm
Output Power ⁽²⁾	Output power (mW)	50, 100, 150	50, 100, 150	50, 100,150	50, 100, 150	50, 100
	2 hr stability (2 hr, ΔT: ±3°C)	<1%	<1%	<1%	<1%	<1%
	8 hr stability (8 hr, ΔT: ±3°C)	<2%	<2%	<2%	<2%	<2%
Beam Parameters	Spatial mode	TEM00	TEM00	TEM00	TEM00	TEM00
	M2 (beam quality)	≤1.2	≤1.2	≤1.1	≤1.2	≤1.2
	Beam asymmetry	<1:1.2	<1:1.2	<1:1.1	<1:1.2	<1:1.2
	Beam diameter @ 1/e2 (mm)	0.8 ±0.1	0.8 ±0.1	0.8 ±0.1	0.8 ±0.1	0.9 ±0.1
	Full beam divergence (mrad)	≤1.2	≤1.2	≤1.2	≤1.2	≤1.2
Noise	RMS (20 Hz–10 MHz)	<0.3%	<0.3%	<0.3% ⁽³⁾	<0.3%	<0.3%
	Peak-to-peak (20 Hz–10 MHz)	<1%	<1%	<1%3	<1%	<1%
Pointing Stability	Over 2 hours after warm-up and ΔT: ±3°C (μrad)	≤30	≤30	≤30	≤30	≤30
	Over temp. (μrad/°C)	≤5	≤5	≤5	≤5	≤5
Polarization	Polarization extinction ratio	>100:1	>100:1	>100:1	>100:1	>100:1
	Direction	Vertical, <±5°	Vertical, <±5°	Vertical, <±5°	Vertical, <±5°	Vertical, <±5°

Electrical						
Laser Drive Modes ⁽⁴⁾		CW, analog and digital modulation, and PC control				
Digital Modulation	Bandwidth (MHz)	10	10	N.A	10	10
	Rise time (10% to 90%) (nsec)	<5	<5	N.A	<5	<5
	Fall time (10% to 90%) (nsec)	<5	<5	N.A	<5	<5
Analog Modulation	Bandwidth (kHz)	500	500	N.A	500	500
	Rise time (10% to 90%) (nsec)	<200	<200	N.A	<200	<200
	Fall time (10% to 90%) (nsec)	<200	<200	N.A	<200	<200
		3b	3b	3b	3b	3b
ESD Protection		Level 4	Level 4	Level 4	Level 4	Level 4
Power Consumption	Operating voltage	12 V standard				
	Power consumption (W)	Typical 5 Watts, Max. 13Watts				

Mechanical	
Laser Dimension (excluding shutter)	70 mm × 40 mm × 38 mm

Environmental		
Operating Conditions	Laser head baseplate temperature	10°C~40°C
	Non-operation condition	-20°C~60°C
	Relative humidity	<90% non-condensing
	Warm-up time (from cold start)	<5 min

(0) All specifications above are at rated output power

(1) Laser-to-laser wavelength tolerance

(2) Output power is variable in CW Mode from 10% to 100% of rated power

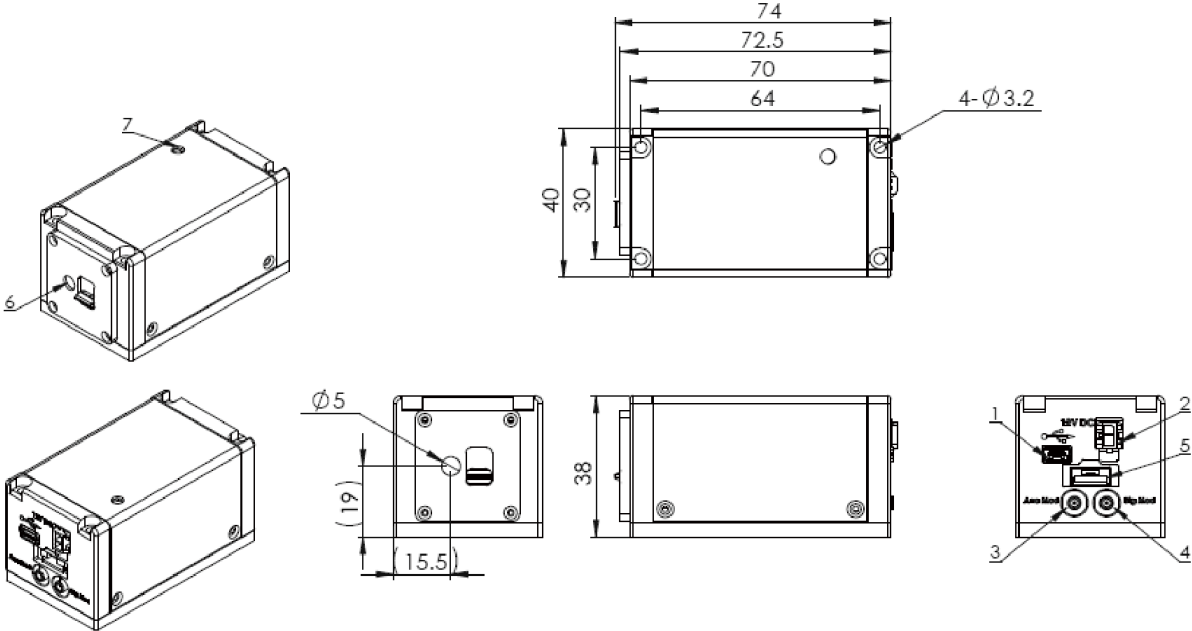
(3) At nominal power level

(4) Qomo 532nm laser drive mode is only available for CW and ON/OFF operation

(5) Coherent follows a policy of continuous improvement on all products we provide to customers. Specifications are subject to change without notice.

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Mechanical Drawing



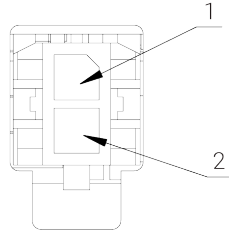
Item	Name	Functions
1	Mini-USB connector	Mini-USB B type, communication
2	Power connector	12 V DC, power supply
3 *	Analog modulator	SMB, analog signal input
4 *	Digital modulator	SMB, digital signal input
5	Control I/O	8-pin I/O connector, laser status, slow digital modulation
6	Laser aperture	Laser beam output position
7	Status indicator	LED indicator, indicates laser status

* Qomo 532nm laser doesn't have these high-speed modulation connectors

Electrical Interface Definition

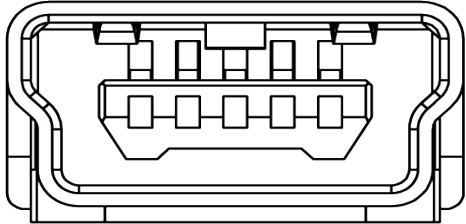
1. Power connector refers to Molex 43025-0200

Pin	Signal Name
1	+12 V DC Power
2	GND

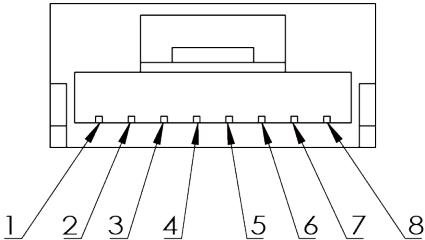


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2. Mini-USB connector: Molex USB 2.0 mini socket



3. Control I/O: BM08B-NSHSS-TBT connector from JST



Pin#	PN	Type	Directio	Description
1	Error signal	LVTTL*	Out	Indicates laser error status Low: laser OK High: laser error Output impedance is <200 Ohm
2	Enable	LVTTL*	In	Laser enable * Low disable, high enable, default disable
3	Interlock	LVTTL*	In	Low: enable (shut down power supply) High: disable (default)
4	Power Monitor	Analog	Out	0-2 V represents 0-100% of the laser output power
5	Power Adjustment	Analog	In	0-5 V DC range represents 0~100% nominal power level
6		Null		Null
7		GND		GND
8		GND		GND

* High: >2 V; low: <0.8 V