CW Solid State Lasers

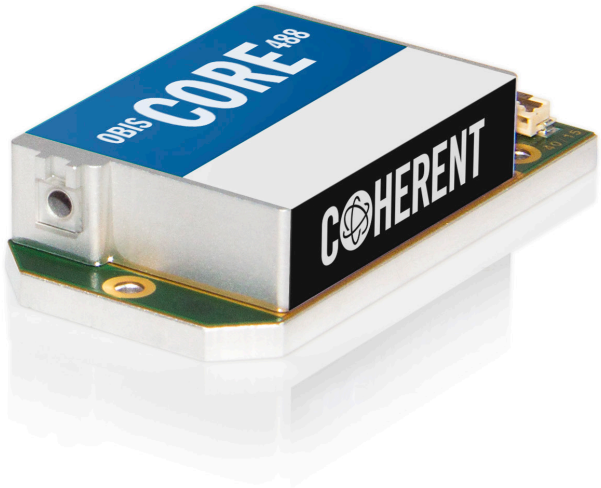
OBIS CORE LS

Next Generation Miniaturized OEM Laser Module

The Coherent OBIS CORE LS suite of products provide miniaturized building blocks for OEM instrument designers.

Consisting out of the Optically Pumped Semiconductor Laser (OPSL) technology core of OBIS LS laser with perfect beam parameters and proven reliability the CORE LS lasers are the low-risk choice for OEM instruments in life sciences applications.

If small laser foot print, low heat dissipation and perfect beam quality are required the OBIS CORE LS modules are the best fit for OEM i nstrument designers.



FEATURES

- Miniaturized for Integration
- Compact and powerful
- Perfect beam quality
- Low heat dissipation
- Up to 200 mW of laser power

APPLICATIONS

- Confocal Microscopy
- DNA Sequencing
- Flow Cytometry
- Medical Imaging and Instrumentation
- Opthalmology

COHERENT

Specifications	OBIS CORE			
	488LS	505LS	514LS	532LS
Wavelength[1] (nm)	488	505	514	532
Output Power[2] (mW)	20, 60, 80, 100, 150, 200	30, 100, 150	20, 100, 150	20, 50, 80, 100, 150, 200
Spatial Mode	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}
M^2 (Beam Quality)	≤1.1	≤1.1	≤1.1	≤1.1
Beam Asymmetry	≤1:1.1	≤1:1.1	≤1:1.1	≤1:1.1
Beam Diameter at $1/e^2$ (mm)	0.7 ±0.05	0.7 ±0.05	0.7 ±0.05	0.7 ±0.05
Beam Divergence (mrad, full-angle)	<1.2	<1.2	<1.2	<1.2
Pointing Stability (µrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30	<30
Pointing Stability Over Temperature (µrad/°C)	<5	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	<0.25	<0.25	<0.25	<0.25
Peak-to-Peak Noise (%) (20 Hz to 20 kHz)	≤1	≤1	≤1	≤1
Long-Term Power Stability (%) (8 hours, ±3°C)	≤2	≤2	≤2	≤2
Warm-Up Time[3] (minutes) (from cold start)	≤5	≤5	≤5	≤5
Polarization Ratio	Minimum 100:1, Vertical ±5°			
Laser Drive Modes	CW, Analog Modulation, Digital Modulation, Computer Control			
Digital Modulation Maximum Bandwidth (kHz) Rise Time (10% to 90%) (ms) Fall Time (10% to 90%) (µs) Extinction Ratio	 1 <1 <100 on/no emission	 1 <1 <100 on/no emission	 1 <1 <100 on/no emission	 1 <1 <100 on/no emission
Analog Modulation Maximum Bandwidth (kHz) Rise Time (10% to 90%) (ms) Fall Time (10% to 90%) (µs)	 1 <1 <1	 1 <1 <1	 1 <1 <1	 1 <1 <1
Dynamic Power Range (%)	20 to 110	20 to 110	20 to 110	20 to 110
Static Alignment Tolerances Beam Position from Reference[4] (mm) Beam Angle[4] (mrad) Beam Waist Position at Exit Window (mm)	 <0.5 <2.5 ±215	 <0.5 <2.5 ±215	 <0.5 <2.5 ±215	 <0.5 <2.5 ±215
Laser Safety Classification	3b	3b	3b	3b
Power Consumption (W)	Typical 5 to 8, Max. 12			
Laser Head Baseplate Temp. (Max., °C)	40	40	40	40
CORE LS Controller Baseplate Temp. (Max., °C)	55	55	55	55
Heat Dissipation of Laser Head[5] (W)	Typical 2 to 4, Max. 5			
Heat Dissipation of CORE LS Controller[5] (W)	Typical 3 to 5, Max. 6			
Ambient Temperature[6] Operating Condition[7] (°C) Non-Operating Condition (°C)	 15 to 40 -20 to +60	 15 to 40 -20 to +60	 15 to 40 -20 to +60	 15 to 40 -20 to +60
Shock Tolerance (g) (6 ms)	30	30	30	30

1. Laser-to-laser tolerance. All CORE LS versions ±2 nm.
2. Residual laser emission at 808 nm fundamental within beam at 100 mm distance <0.1 mW.
3. For LS versions typical power-on delay 3 minute.
4. See mechanical drawing for exit beam location.
5. Heat load depends on laser power level. Heat dissipation through baseplate of laser head or controller.
6. Non-Condensing.
7. CORE LS laser head baseplate temperature needs to be maintained at ≤40°C.

Specifications	OBIS CORE		
	552LS	561LS	594LS
Wavelength[1] (nm)	552	561	594
Output Power[2] (mW)	20, 60, 80, 100, 150	20, 50, 80, 100, 150, 200	20, 60, 100
Spatial Mode	TEM_{00}	TEM_{00}	TEM_{00}
M^2 (Beam Quality)	≤1.1	≤1.1	≤1.1
Beam Asymmetry	≤1:1.1	≤1:1.1	≤1:1.1
Beam Diameter at $1/e^2$ (mm)	0.7 ±0.05	0.7 ±0.05	0.7 ±0.05
Beam Divergence (mrad, full-angle)	<1.2	<1.2	<1.2
Pointing Stability (µrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30
Pointing Stability Over Temperature (µrad/°C)	<5	<5	<5
RMS Noise (%) (20 Hz to 20 MHz)	<0.25	<0.25	<0.25
Peak-to-Peak Noise (%) (20 Hz to 20 kHz)	≤1	≤1	≤1
Long-Term Power Stability (%) (8 hours, ±3°C)	≤2	≤2	≤2
Warm-Up Time[3] (minutes) (from cold start)	≤5	≤5	≤5
Polarization Ratio	Minimum 100:1, Vertical ±5°		
Laser Drive Modes	CW, Analog Modulation, Digital Modulation, Computer Control		
Digital Modulation Maximum Bandwidth (kHz) Rise Time (10% to 90%) (ms) Fall Time (10% to 90%) (µs) Extinction Ratio	 1 <1 <100 on/no emission	 1 <1 <100 on/no emission	 1 <1 <100 on/no emission
Analog Modulation Maximum Bandwidth (kHz) Rise Time (10% to 90%) (ms) Fall Time (10% to 90%) (µs)	 1 <1 <1	 1 <1 <1	 1 <1 <1
Dynamic Power Range (%)	20 to 110	20 to 110	20 to 110
Static Alignment Tolerances Beam Position from Reference[4] (mm) Beam Angle[4] (mrad) Beam Waist Position at Exit Window (mm)	 <0.5 <2.5 ±215	 <0.5 <2.5 ±215	 <0.5 <2.5 ±215
Laser Safety Classification	3b	3b	3b
Power Consumption (W)	Typical 5 to 8, Max. 12		
Laser Head Baseplate Temp. (Max., °C)	40	40	40
CORE LS Controller Baseplate Temp. (Max., °C)	55	55	55
Heat Dissipation of Laser Head[5] (W)	Typical 2 to 4, Max. 5		
Heat Dissipation of CORE LS Controller[5] (W)	Typical 3 to 5, Max. 6		
Ambient Temperature[6] Operating Condition[7] (°C) Non-Operating Condition (°C)	 15 to 40 -20 to +60	 15 to 40 -20 to +60	 15 to 40 -20 to +60
Shock Tolerance (g) (6 ms)	30	30	30

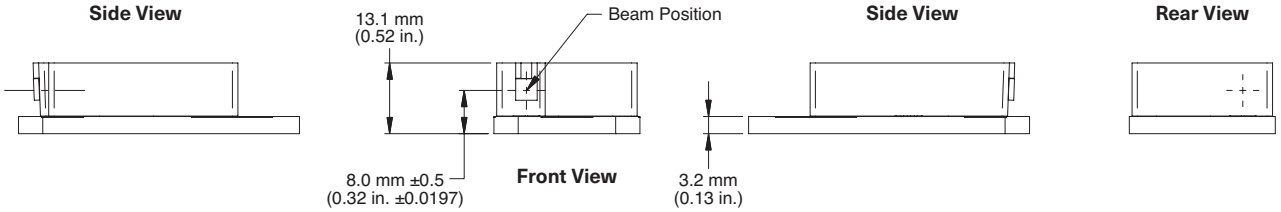
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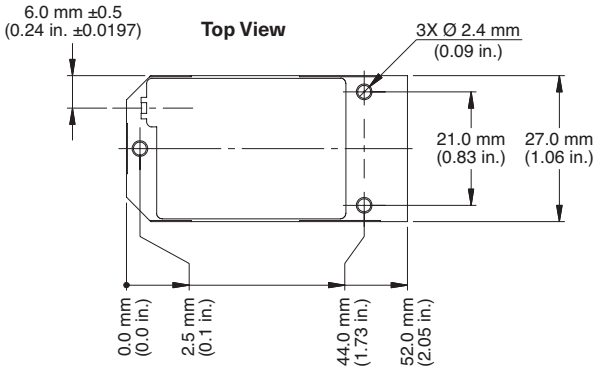
Utility and Environmental Requirements	
Operating Voltage[1] (VDC)	12 ±2
Dimensions (L x W x H)	
Laser Head (mm)	52 x 27 x 13 mm (2.05 x 1.06 x 0.51 in.)
CORE LS Controller Kit (mm)	115 x 33 x 16 mm (4.53 x 1.30 x 0.63 in.)
Cable, Laser Head to Controller (mm) (3 different lengths available)	150, 300, 500 mm (5.91, 11.81, 19.69 in.)
Weights	
Laser Head	22 g (0.05 lbs.)
CORE LS Controller Kit	81 g (0.18 lbs.)

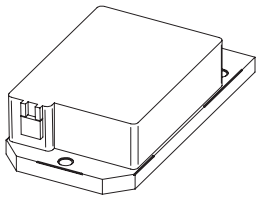
1. DC power supply has to meet the following requirements: power > 12W; ripple <5% peak-to-peak; line regulation <0.5%. The power supply must comply with SELV and LPS regulations.

Mechanical Specifications

OBIS CORE LS

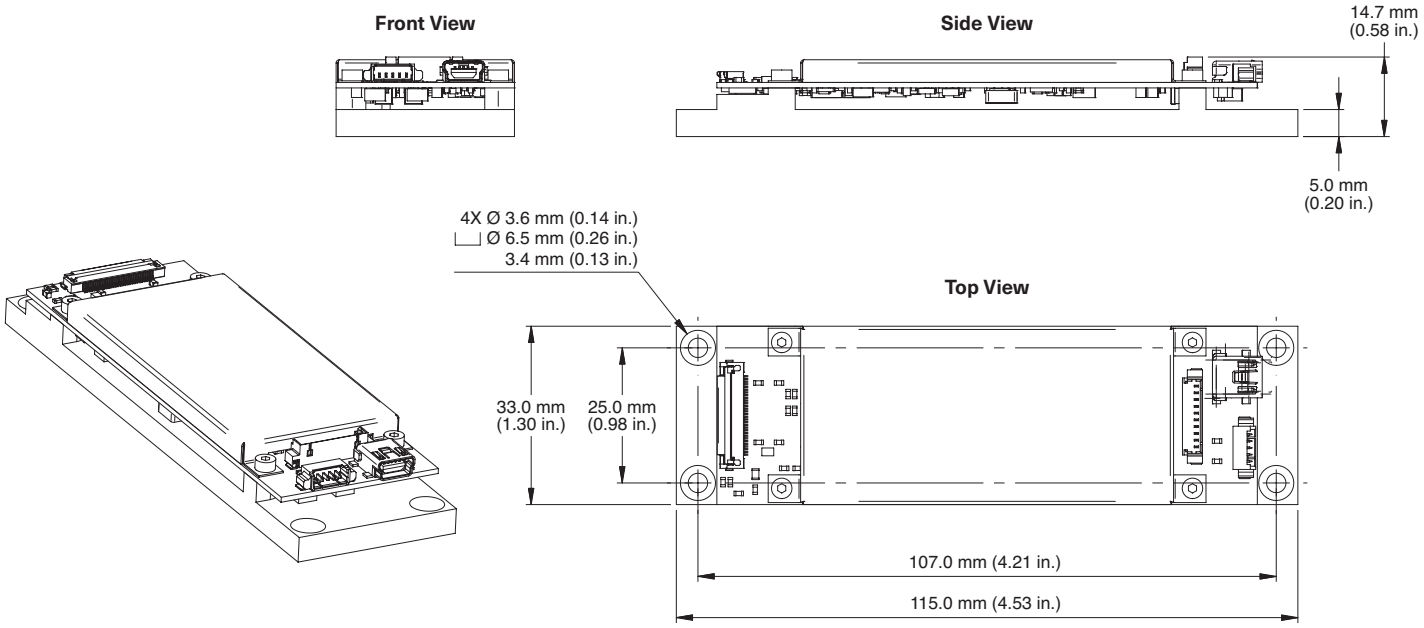






Mechanical Specifications

OBIS CORE LS Controller



CE ISO 9001 Registered



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For more information
www.coherent.com