COHERENT

OBIS CORE LS

Next Generation Miniaturized OEM Laser Module

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

OBIS CORE LS Features:

- **Miniaturized for Integration**
- **Compact and powerful**
- **Perfect beam quality**
- **Low heat dissipation**
- **Up to 150 mW of laser power**

OBIS CORE LS Applications:

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

Superior Reliability & Performance

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System Specifications	OBIS CORE 488 LS	OBIS CORE 532 LS	OBIS CORE 552 LS	OBIS CORE 561 LS	OBIS CORE 594 LS
Wavelength[1] (nm)	488	532	552	561	594
Output Power[2] (mW)	20, 60, 80, 100, 150	20, 50, 80, 100, 150	20, 60, 80, 100, 150	20, 50, 80, 100, 150	20, 60, 100
Spatial Mode	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}
M^2 (Beam Quality)	≤1.1	≤1.1	≤1.1	≤1.1	≤1.1
Beam Asymmetry	≤1:1.1	≤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	0.7 ±0.05
Beam Divergence (mrad, full-angle)	<1.2	<1.2	<1.2	<1.2	<1.3
Pointing Stability (µrad) (over 2 hours after warm-up and ±3°C)	<30	<30	<30	<30	<30
Pointing Stability Over Temperature (µrad/°C)	<5	<5	<5	<5	<5
RMS Noise (%)(20 Hz to 20 MHz)	≤0.25	≤0.25	≤0.25	≤0.25	≤0.25
Peak-to-Peak Noise (%)(20 Hz to 20 kHz)	<1	<1	<1	<1	<1
Long-Term Power Stability (%)(8 hours, ±3°C)	<2	<2	<2	<2	<2
Warm-Up Time[3] (minutes)(from cold start)	<5	<5	<5	<5	<5
Polarization Ratio	Minimum 100:1, Vertical ±5°	Minimum 100:1, Vertical ±5°	Minimum 100:1, Vertical ±5°	Minimum 100:1, Vertical ±5°	Minimum 100:1, Vertical ±5°
Laser Drive Modes	CW, Analog Modulation, Digital Modulation, Computer Control				
Digital Modulation					
Maximum Bandwidth (kHz)	1	1	1	1	1
Rise Time (10% to 90%)(ms)	<1	<1	<1	<1	<1
Fall Time (10% to 90%)(µs)	<100	<100	<100	<100	<100
Extinction Ratio	on/no emission	on/no emission	on/no emission	on/no emission	on/no emission
Analog Modulation					
Maximum Bandwidth (kHz)	1	1	1	1	1
Rise Time (10% to 90%)(ms)	<1	<1	<1	<1	<1
Fall Time (10% to 90%)(ms)	<1	<1	<1	<1	<1
Dynamic Power Range (%)	20 to 110	20 to 110	20 to 110	20 to 110	20 to 110
Static Alignment Tolerances					
Beam Position from Reference[4] (mm)	<0.5	<0.5	<0.5	<0.5	<0.5
Beam Angle[4] (mrad)	<2.5	<2.5	<2.5	<2.5	<2.5
Beam Waist Position at Exit Window (mm)	±215	±215	±215	±215	±215
Laser Safety Classification	3b	3b	3b	3b	3b
Power Consumption (W)	Typical 5 to 8, Max. 12	Typical 5 to 8, Max. 12	Typical 5 to 8, Max. 12	Typical 5 to 8, Max. 12	Typical 5 to 8, Max. 12
Laser Head Baseplate Temperature (Max., °C)	40	40	40	40	40
CORE LS Controller Baseplate Temperature (Max., °C)	55	55	55	55	55
Heat Dissipation of Laser Head[5] (W)	Typical 2 to 4, Max. 5	Typical 2 to 4, Max. 5	Typical 2 to 4, Max. 5	Typical 2 to 4, Max. 5	Typical 2 to 4, Max. 5
Heat Dissipation of CORE LS Controller[5] (W)	Typical 3 to 5, Max. 6	Typical 3 to 5, Max. 6	Typical 3 to 5, Max. 6	Typical 3 to 5, Max. 6	Typical 3 to 5, Max. 6
Ambient Temperature[6]					
Operating Condition[7] (°C)	15 to 40	15 to 40	15 to 40	15 to 40	15 to 40
Non-Operating Condition (°C)	-20 to +60	-20 to +60	-20 to +60	-20 to +60	-20 to +60
Shock Tolerance (g)(6 ms)	30	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 throught baseplate of laser head or controller.
[6] Non-Condensing.
[7] CORE LS laser head baseplate temperature needs to be maintained at ≤40°C

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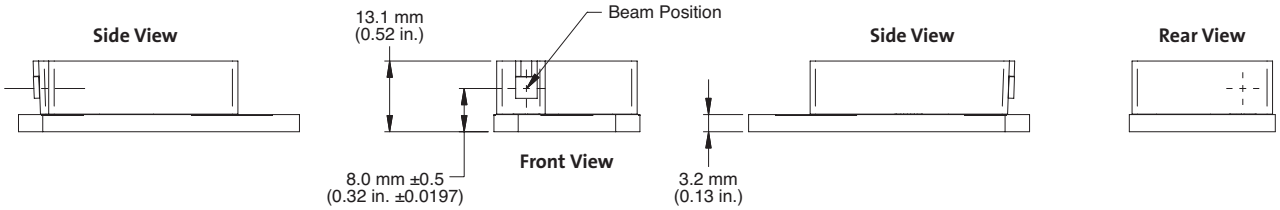
Utility and Environmental Requirements

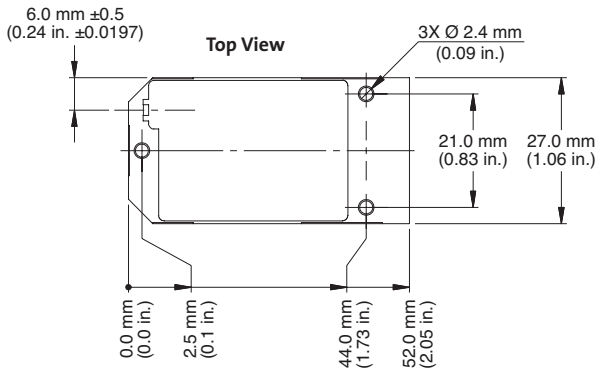
Operating Voltage[1] (VDC)	12 ±2
Dimensions (L x W x H)	
Laser Head (mm)	52 x 27 x 13 mm (2.05 x 1.06 x 0.51 in.)
CORE LS Controller Kit (mm)	115 x 33 x 16 mm (4.53 x 1.30 x 0.63 in.)
Cable, Laser Head to Controller (mm) (3 different lengths available)	150, 300, 500 mm (5.91, 11.81, 19.69 in.)
Weights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

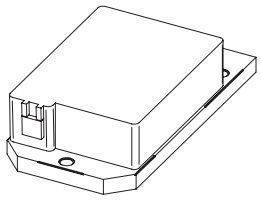
[1] DC power supply has to meet the following requirements: power >12W; ripple <5% peak-to-peak; line regulation <0.5%. The power supply must comply with SELV and LPS regulations.

Mechanical Specifications

OBIS CORE LS







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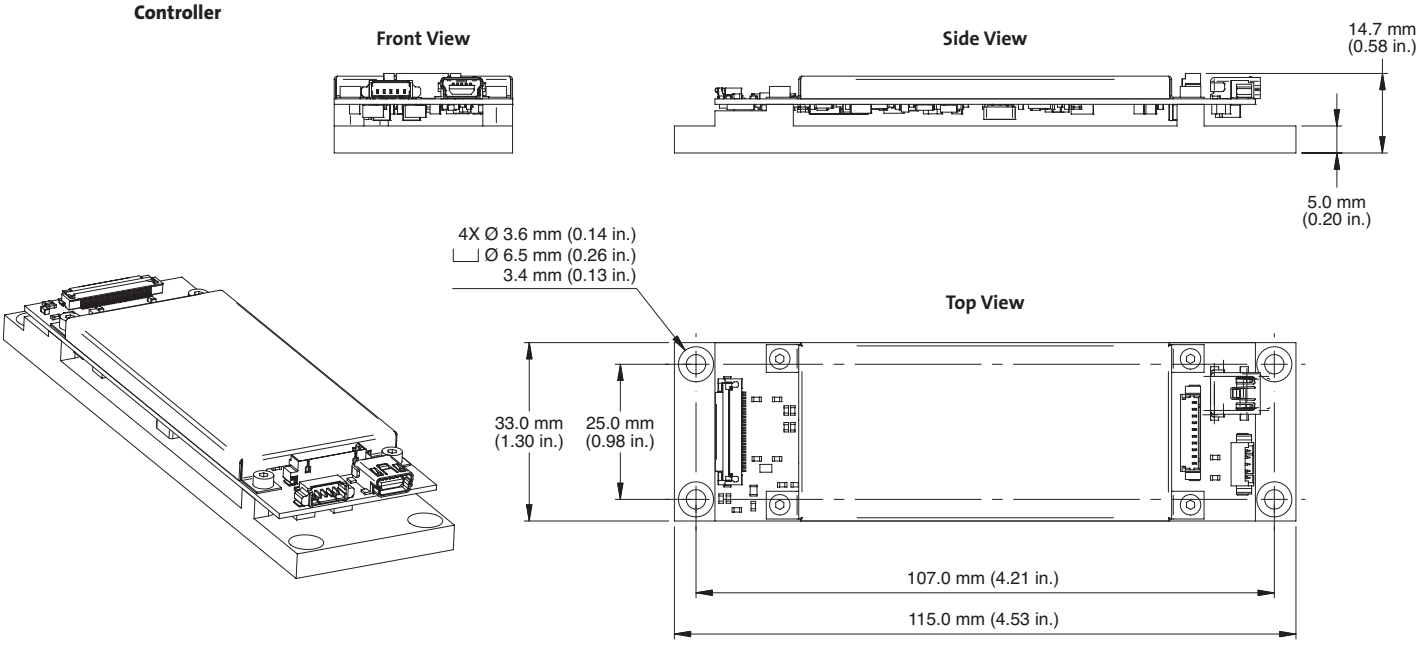
Mechanical Specifications

OBIS CORE LS Controller



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all OBIS CORE LS Lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.

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