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LASER LAB SOURCE

manufactured by  **COHERENT**

Turn-Key Blue Laser Diode Source System 473nm, 50mW Fiber-Coupled Output

INDUSTRY LEADING BEAM QUALITY & STABILITY
spatial mode TEM_{00} | RMS noise $\leq 0.2\%$



SIMPLE, ALL INCLUSIVE TURN-KEY OPERATION
laser price includes current/temp controller & all cables

OBIS LX 473nm 50mW **SKU: 1193830**

- o Laser Diode Reliability, and Fast Modulation
- o Single-Mode, Polarization-Maintaining Fiber with Enhanced Reliability FC/APC Connector
- o Fast and Easy Setup, Turn-Key Operation
- o Analog and Digital Modulation Capable
- o Remotely Operated via USB and RS-232 Interface, Software Included



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BEST-IN-CLASS BLUE LASER SOURCE

Coherent's industry-leading blue laser diode laser technology delivers outstanding beam quality and output stability, and provides the best-in-class laser reliability and performance. These laser systems are shipped ready-to-run with the power supply and remote controller, and all the required cables and accessories.

INDUSTRY-LEADING OUTPUT QUALITY

The hallmarks of the OBIS laser system design are best-in-class low noise performance, high stability and beam quality, and long-term reliability. The benefits to your application may include: enhanced measurement accuracy, reduced measurement error, reduced coefficient of variation, and laser-sharp microscope images.

OBIS LASER MODULE CONTROL UNIT (INCLUDED)



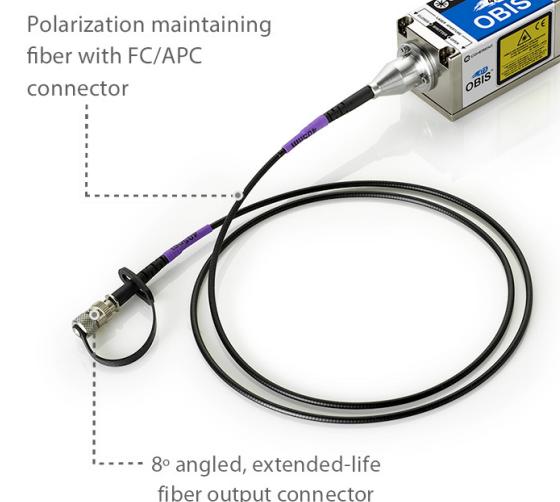
COMPACT REMOTE CONTROLLER

The OBIS system includes a compact, full-featured laser module controller. The controller can be operated full-time via USB connection to a computer, and once configured the controller can operate the laser module in stand-alone mode.

LONG-TERM SYSTEM RELIABILITY BY DESIGN

The OBIS controller integrates multiple internal safety features to ensure a long operating lifetime, and external safety features to help protect the user during laser operation. The front panel of the OBIS controller includes visual indicators: Fault indicator, Laser Ready, and Laser On. A connector is included for driving a cooling fan, and the laser head can be mounted to the OBIS heatsink for easily configured temperature stabilization.

LASER MODULE



ENHANCED HIGH-RELIABILITY FIBER OUTPUT

The fiber output face is angled at 8° to prevent back-reflection. Since it designed for enhanced high reliability over a long operating lifetime, it is not suitable for connection to standard FC/APC fiber patchcord connectors.

VERSATILE MODULATION CAPABILITY

The OBIS laser system can be operated in CW mode, or modulated with analog signals and digital signals. The laser can be modulated to full-off output, ensuring no photons are emitted. LS modules can be modulated to full-off output using the digital modulation mode. The LX modules can be modulated to full-off using the analog modulation mode with a Blanking Enabled feature.



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UNMATCHED TURN-KEY CONVENIENCE

The OBIS turn-key system is truly complete, and includes everything necessary to be up and running within minutes of unboxing the system: the remote controller, power supply, I/O cable to connect the controller to the laser head, controller mounting hardware, color coded labels for instant controller identification in multi-wavelength systems, and the controller software on a flash drive.

EASILY BUILD MULTI-WAVELENGTH SYSTEMS

The OBIS laser systems are ideal for applications that require multiple wavelengths. The controllers are securely stack-mounted using the included mounting hardware, and the USB connectivity provides stress-free operation of multiple systems from a single computer. The days of piecing together lasers from multiple different manufacturers are over, replaced by the cost-saving convenience of the OBIS series.

SIMPLIFY MULTI-WAVELENGTH SYSTEMS

control multiple controllers simultaneously using Coherent's software and the convenience of USB



multiple controllers can be securely stacked using the included mounting hardware

Several solutions are available for applications requiring up to six lasers - refer to the accessories section of this datasheet, and inquire with us for help finding the perfect solution.

A TRUE TURN-KEY SOLUTION



the full kit includes: mounting hardware, laser controller, cables, power supply, and color-coded labels to instantly identify controllers in multi-wavelength applications

OBIS LASER CONTROLLER REAR PANEL

Input from 12VDC power supply;
power supply included

RS232 & USB
I/O connectors



Output to laser module;
1 meter connecting
cable included

SMA connectors;
digital & analog
modulation inputs



OBIS LX 473nm 50mW COMPLETE PERFORMANCE SPECIFICATIONS

OUTPUT SPECIFICATIONS

- Wavelength: 473 nm (± 5 nm)
- Wavelength Color: Blue
- Output Power: 50 mW, User Adjustable
- Technology: Laser Diode
- Warm-Up Time: 5 min
- Laser Drive Modes: CW, Analog Modulation, Digital Modulation and Computer Control

OPTICAL FIBER SPECIFICATIONS

- Fiber Numerical Aperture (NA) ($1/e^2$): 0.05
- Fiber Output Connector: FC/APC, 8° Angled
- Fiber Cable Type: 3mm Mono Coil
- Fiber Cable Length: 1 m (min)
- Fiber Core Diameter: 3.5 μ m
- Minimum Fiber Bend Radius: 51 mm
- Maximum Fiber Tensile Load: 1 kg (2.2 lb)
- The Extended-Life APC output connector is 8° angled to prevent back-reflection and is not suitable for patchcord-to-patchcord connections

OPTICAL BEAM AND OUTPUT SPECIFICATIONS

- M^2 Beam Quality: ≤ 1.1 (*Beam Quality at 90/10 Clip Levels*)
- Beam Asymmetry: $\leq 1:1.1$
- Spatial Mode: TEM₀₀
- RMS Noise, 20 Hz to 20 MHz: $\leq 0.2\%$
- Peak to Peak Noise, 20 Hz to 20 kHz: $\leq 2\%$
- Long Term Power Stability (8 hrs, $\pm 3^\circ\text{C}$): $< 2\%$
- Long Term Output Power Average: $\leq 4/1000\%$
- Polarization Ratio: Minimum 100:1



MODULATION SPECIFICATIONS

- **Digital Modulation**
- Digital Modulation Connector: SMB Connector, 0 V to 3 V, 50 Ω input impedance
- Maximum Bandwidth: 150 MHz
- Rise Time (10% to 90%): < 2 nsec
- Fall Time (90% to 10%): < 2 nsec
- Modulation Extinction Ratio: >1,000,000:1 at 0 Hz, >250:1 at 150 MHz
- **Analog Modulation**
- Analog Modulation Connector: SMB Connector, 0V to 5V, 50 Ω or 2000 Ω input impedance
- Maximum Bandwidth: 500 kHz
- Rise Time (10% to 90%): < 700 nsec
- Fall Time (90% to 10%): < 700 nsec
- Modulation Extinction Ratio: >1,000,000:1

GENERAL SPECIFICATIONS

- Laser Safety Classification: 3b
- ESD Protection: EN61326-1
- Power Consumption: 5 W (typ), 13 W (max)
- Max Laser Head Baseplate Temperature: 50°C (LX versions)
- Max Laser Head Baseplate Temperature: 40°C (LS versions)
- Operating Temperature: 10°C to 50°C (non condensing)
- Storage Temperature: -20°C to 60°C (non condensing)

UTILITY AND ENVIRONMENTAL REQUIREMENTS

- Operating Voltage: 12 VDC
- Safety: Key-Switch and Interlock Connection
- Laser Head Dimensions: 70 x 40 x 38 mm (2.75 x 1.57 x 1.5 in.)
- OBIS Remote Dimensions: 105 x 68 x 36 mm (4.13 x 2.68 x 1.42 in.)
- DC Power Supply Dimensions: 105 x 42 x 33 mm (4.13 x 1.65 x 1.3 in.)
- Laser Head Weight: 0.23 kg (0.5 lb)
- OBIS Remote Weight: 0.23 kg (0.5 lb)
- DC Power Supply Weight: 0.36 kg (0.79 lbs.)
- USB Control Interconnection: USB 2.0, Mini-B
- RS-232 Control Interconnection: RS-232, 11.2 k
- Remote to Laser Connection: 1 m Cable, included

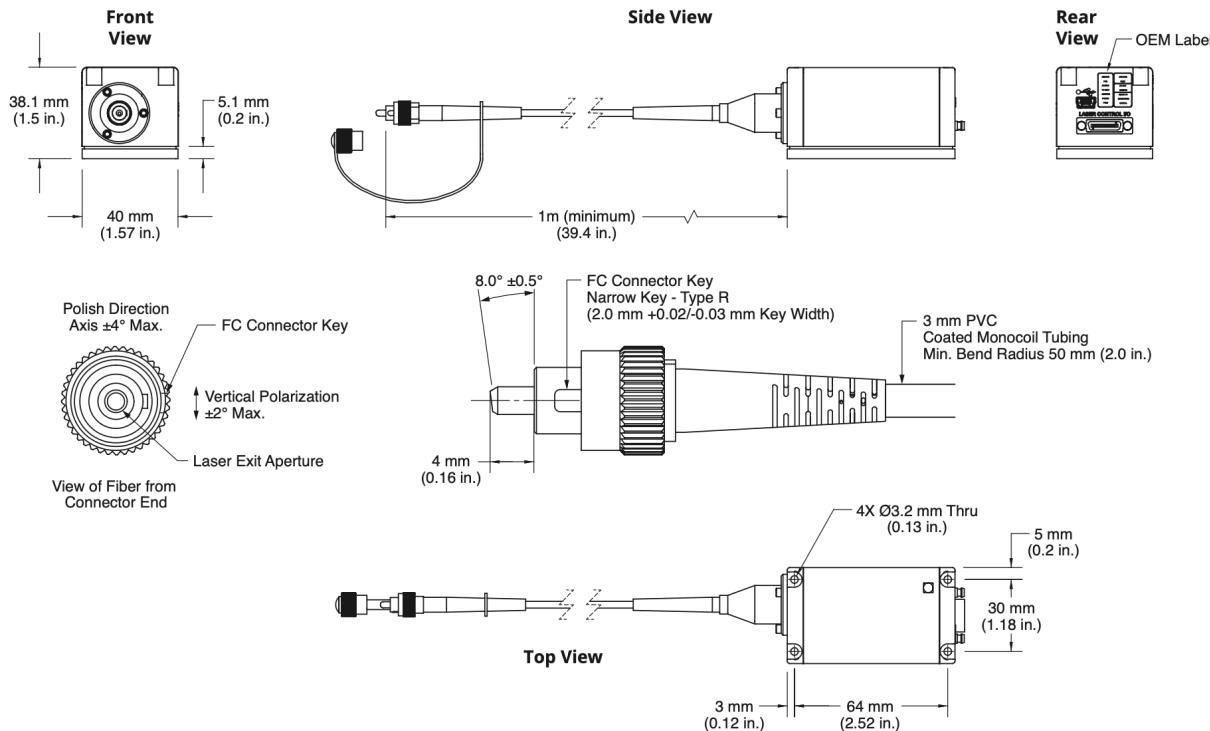


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OBIS LX FIBER-COUPLED LASER DIODE SOURCE MODULE DIMENSIONS





OBIS SYSTEM OPTIONS AND ACCESSORIES

The OBIS laser systems are available with a wide range of accessories to expand the functionality of the systems and improve your productivity.

FAN-COOLED HEATSINK

The fan-cooled heatsink provides an inexpensive and effective way to mount the OBIS laser in a wide range of applications, and remove waste heat for stable output. The 12 V fan connects directly to the fan control output on the OBIS laser head.



SIX-LASER SIMPLE REMOTE CONTROLLER

A basic six-laser controller is available for CW applications where simplified benchtop control is required. The lasers can be controlled via illuminated on/off switches, and the laser heads can be interfaced by the USB connections on the heads.



FULL-FEATURED SIX-LASER REMOTE CONTROLLER

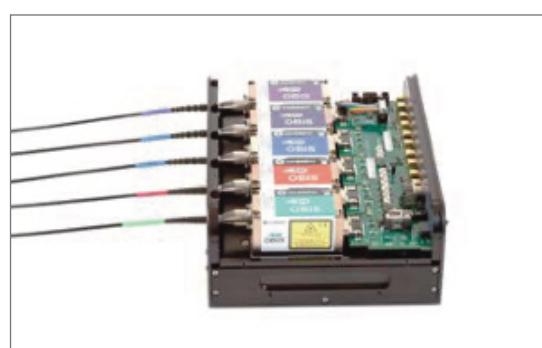
The full-featured scientific benchtop controller provides independent control of up to six LS/LX laser heads, and includes modulation inputs on the instrument front face.

The controller is operated via the front-panel touch screen, USB, RS-232, or Ethernet interface.



INTEGRATED FIVE-LASER SYSTEM

The five-laser mounting system provides thermal management, cooling fans, analog and digital modulation inputs, and computer control interface all in one convenient box. The five-laser system streamlines development and deployment of multi-wavelength analytical systems by combining all the critical control functions in one compact format.



PRODUCT SALES AND SERVICE:

Unlimited phone and email support is provided for products purchased through Laser Lab Source. Orders for this product are fulfilled by Laser Lab Source in North America and select international regions. It is manufactured by Coherent, California, USA.

PRODUCT WARRANTY:

This product is sold with a full one-year warranty. It is warrantied to be free from defects in material and/or workmanship for a period of one year from the date of shipment.



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