

OBIS™ LX Single Frequency (SF) Quick Start Guide



Laser Safety

Because of its special properties, laser light poses safety hazards not associated with light from conventional sources. The safe use of lasers requires that all laser users—and everyone near the laser system—are aware of the dangers involved.

The safe use of the laser depends upon the user being familiar with the instrument and the properties of coherent, intense beams of light.



DANGER!
Direct eye contact with the output beam from the laser causes serious damage and possible blindness.

Laser beams can ignite volatile substances such as alcohol, gasoline, ether and other solvents, and can damage light-sensitive elements in video cameras, photomultipliers and photodiodes.

Reflected beams may also cause damage.

Laser Back Reflection

The OBIS XF SF laser diode does not incorporate an optical isolator, so may be highly susceptible to extraneous optical feedback. This can cause damage that may result in a loss of power, reduction to the life of the laser, or a loss of spectral characteristics such as center wavelength and line-width.

It is highly recommended that you use an optical isolator and ensure that all reflective surfaces in the optical path are angled to avoid direct feedback into the laser.

- Turn power level down to 5-10% of nominal before beginning alignment procedure. Do not focus the light output on any highly reflective surface.
- When using wavelength-selective filters with narrow wavelength pass bands, do not align at normal incidence to the beam.
- Use caution when aligning the laser; for example, when sweeping the beam back across the laser during alignment. If such action is unavoidable, use a sufficient OD filter (or isolator) at the output of the laser during the alignment process.

Sufficient optical feedback to the laser overcomes the grating-induced stabilization, which unlocks and shifts the wavelength of the laser beyond the pass band of the filter. This dramatically increases the reflected intensity back into the laser and can cause damage.

Laser Safety Precautions

You are advised to follow these **safety precautions**:

- Observe all safety precautions in the operator's manual.
- Extreme caution should be exercised when using solvents in the area of the laser.
- Limit access to the laser to qualified users who are familiar with laser safety practices and who are aware of the dangers involved.
- Never look directly into the laser light source or at scattered laser light from any reflective surface. Never sight down the beam into the source.
- Maintain experimental setups at low heights to prevent inadvertent beam-eye encounter at eye level.

- As a precaution against accidental exposure to the output beam or its reflection, individuals using the system should wear laser safety glasses as required by the wavelength being generated.

WARNING!

While laser safety glasses protect eyes from potentially damaging exposure, glasses may block light at the laser wavelengths, and that prevents the operator from seeing the beam. Use extreme caution even while wearing safety glasses.



- Use the laser in an enclosed room. Laser light remains collimated over long distances and presents a potential hazard if not confined.
- Post warning signs in the area of the laser beam to alert individuals present.
- Advise all individuals using the laser of these precautions. It is good practice to operate the laser in a room with controlled and restricted access.

Electrical Safety

The OBIS laser does not contain hazardous voltages.

Do not disassemble the enclosure. There are no user-serviceable components inside. All units are designed to be operated as assembled. The warranty will be voided if the enclosure is disassembled.

Electrostatic charges as high as 4000 volts easily collect on the human body and equipment when handling a device during installation or use and can discharge without detection.



CAUTION!
Take correct ESD precautions during installation and operation to prevent damage or performance degradation.

Although the laser has input protection, permanent damage can occur on devices subjected to high-energy electrostatic discharges.

OBIS Laser Installation

This section describes how to set up the OBIS laser to run in Continuous Wave (CW) current mode without a Remote box. In this configuration, the OBIS laser is intended for use in OEM equipment

The user is responsible for compliance with all applicable laser safety regulations.



CAUTION!
The OBIS automatically starts laser emission after DC power is supplied.

For more information about modulation, interfacing, installation, heatsinking, and packaging, see the *OBIS LX/LS Operator's Manual* (P/N 1184163).

Install Software

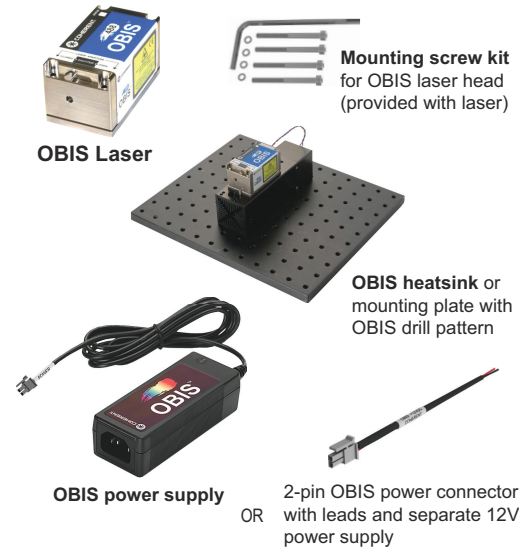
Install the software on your PC or laptop before you set up and power on the laser.

- Download the *Coherent Connection* software (which also contains all the necessary drivers) from the Coherent website:
<https://www.coherent.com/resources>
- Close all programs.
- On your PC, double-click this file to start the installation process:
`Coherent_Connection_Setup.exe`
- Follow the on-screen instructions to complete software installation.

Required Materials

An optical plate with mounting holes spaced ~1" apart **is not** a valid mounting surface without the use of an OBIS Heat Sink. See the *OBIS LX/LS Operator's Manual* (P/N 1184163) for detailed instructions about Heat Sink requirements and options for mounting the laser.

A mini-USB cable is also needed to connect the OBIS to a host workstation.

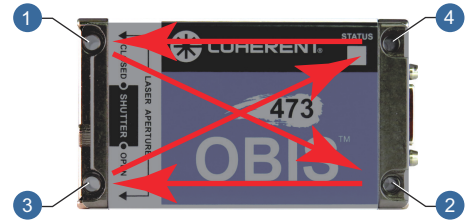


Install the Laser

- 1 Remove the yellow "OEM Use Only" label from the back of the OBIS to access the 12V OEM supply connector.



- 2 Using the 2.5 mm hex wrench, tighten the screws in a diagonal pattern.

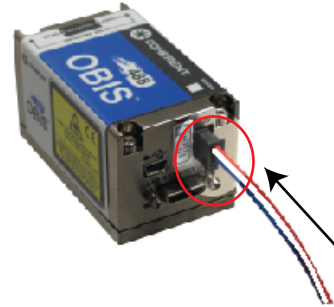


Torque the mounting screws to 0.25 N·m (35.4 oz·in.) in a 1-2-3-4 sequence: Use the same diagonal pattern for the last torque setting of 1 N·m (141.6 oz·in.).

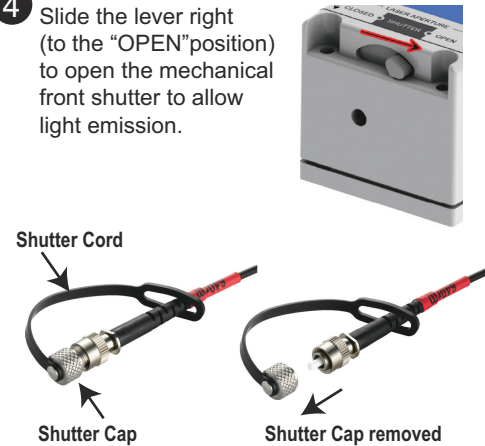


WARNING!
DO NOT use thermal grease or thermal compounds. The use of thermal grease or compounds voids the Coherent warranty.

- 3 Insert the 12 VDC OBIS Power Supply connector into the power connector on the back panel of the OBIS LX SF laser.



- 4 Slide the lever right (to the “OPEN” position) to open the mechanical front shutter to allow light emission.



- 5 Apply 12 VDC power to the OBIS.

OBIS starts emitting light after it is thermally stabilized. During stabilization, the LED indicator on top of the laser blinks green.

When stabilized, the LED indicator changes to shining white and laser emission starts. Light emission starts at the last power set point.



If emission does not start within 5 minutes and the LED indicator on top displays in blue, the Auto Start feature is likely not activated. This means the laser has stabilized thermally but is waiting for a command to start emission.

- 6 • Connect the OBIS laser to a PC using a USB Type A-to-USB Type Mini B cable.

• Verify that the OBIS is properly connected to its 12 VDC power supply.

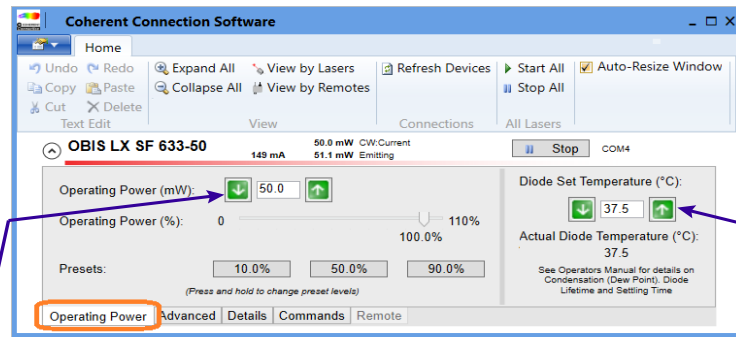
- Start the Coherent Connection software:
- **Main tab:** Turn the OBIS laser on and off manually.
 - **Advanced tab:** Activate Auto Start by checking the “Laser Auto Start” check box.
 - **Operating Power tab:** Change the Power set point.

When Auto Start is enabled, the laser automatically starts light emission after DC power is reconnected and thermal stability is reached.

Configure Settings

Use the Operating Power tab to fine-tune the laser's wavelength through:

- Adjusting the diode temperature.
- Adjusting the diode current by adjusting the operating power.
- Or a combination of both.



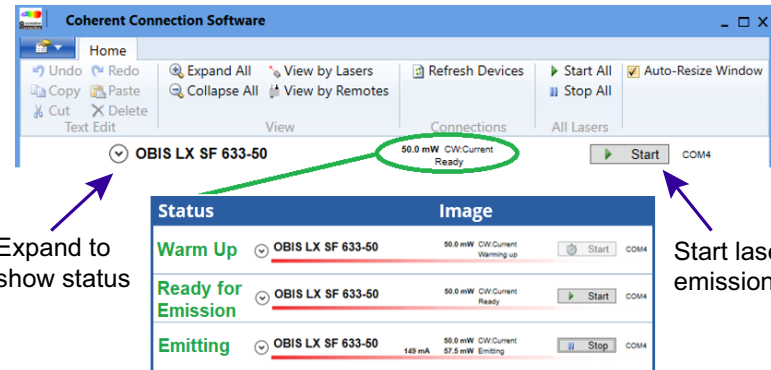
Increment power level by 1mW
(or) Enter power level manually
(by 1 decimal place)

Increment diode temp by 0.1°C
(or) Enter diode temperature
manually from 20°C to 40°C

The following screen shows the status of the laser:



IMPORTANT!
Ensure that the laser is running in
“CW:Current” (constant current mode).



Expand to
show status

Start laser
emission

部件名称 Part Name	有害物质 Hazardous Substances					20 RoHS
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	
印刷电路板组装 PCB Assembly	X	O	O	O	O	O

本表格依据SJ/T 11364的规定编制
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

Shop.Coherent.com is the official e-commerce website for lasers, energy meters and sensors, fiber optics, and accessories.



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