

Fiber Coupled Laser Module Operation Manual



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1 Safety Precautions

This instruction manual explains how to use the Fiber Coupled Laser Module.

Before use, please read this manual thoroughly. After reading, keep it together with the product for reference when necessary. Please retain packaging material in the event the unit is stored or shipped in the future.

1.1 Explanation of Warning symbols

The meaning of the symbols used in this manual and attached to the product follows.

Warning messages are intended to prevent accidents to operating personnel such as burns and electrical shocks.

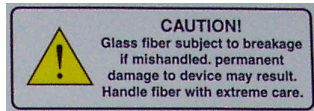
Caution messages are intended to prevent damage to the module.



Precaution for handling electrostatic sensitive devices



Laser emission port, DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.



Glass fiber subject to breakage if mishandled. Please handle fiber with extreme care.

Warranty void if removed

Warranty void if removed. Do not open the module.



Warning

To prevent permanent damage, observe these precautions:

1. Protect against electrostatic discharge.
2. Avoid external damage to the enclosure.
3. For manual control modules, use the provided power supply. Higher or lower voltages than specified will void the warranty.
4. Do not drop the module or operate it at extreme temperatures or humidity.

2 Application and Features

2.1 Applications

This device is a compact fiber coupled laser module for high precision equipment. It plays a pivotal role in testing or manufacturing, and can be used in various applications such as Flow Cytometry, Confocal Microscopy, Protein Crystallography, DNA Sequence, Semiconductor Defect Detection, Thin Film Analysis; High Density Data Storage, and Raman Spectroscopy.

2.2 Standard Features

- Plug & Play
- ESD Protection
- Adjustable Output Power
- LD Current Protection
- Temperature Stabilized
- Compact Size

2.3 Optional Features

- TTL Modulation (SMA Connector)

3 Diagrams

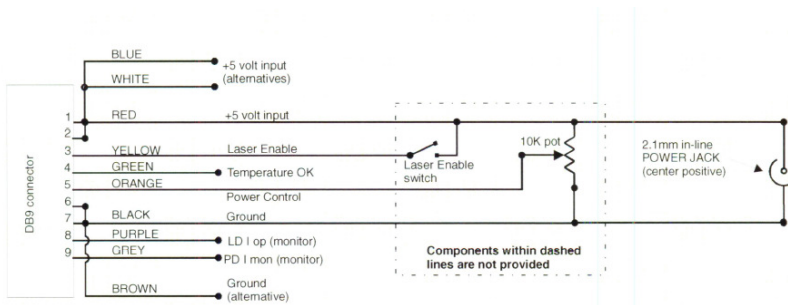


Figure 1 – Wiring Diagram – Wire Harness

Pin	Function
1,2	+5 Volts DC (+/- 0.25V) Input, Max current 2.5A
3	Laser Enable
4	Temperature OK
5	Power Control
6,7	Ground
8	LD I Op (monitor)
9	PD I mon (monitor)

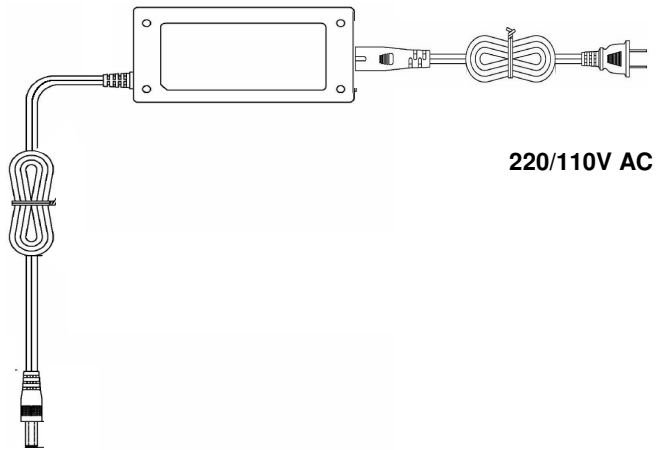


Figure 2 - AC-DC Adapter

4 Operating Procedures

4.1 Operation

1. Turn on unit by applying power. The lower LED will illuminate indicating power has been applied. The LCD will state a message “STARTING” for a period of 30 seconds. The message will change to “LASER OFF” immediately afterwards.
2. Enable the interlock by applying 5VDC to pin 3. If using the supplied wire harness, connect pin3 to pin 1 or 2 of the DB9 connector, see Figure 1. 10 Sec later the upper LED will illuminate and the LCD indicate “LASER ON”. Interlock maintains laser temperature when disabled. DO NOT EXCEED 5VDC.
3. Adjust power level by applying external analog signal voltage to pin 5 of the DB9 connector. 0 volts corresponds with maximum optical power while 5 volts corresponds to minimum power. 0-5V can be obtained by connecting a potentiometer across the pin 1, 5 and 7 (5V, Power Control, Ground) as shown in Figure 1. This pin could be modulated at a maximum rate of 100kHz.
4. ~5V between pin 4 and ground indicates temperature is at normal condition
5. Pin 8 provides voltage proportional to the laser diode operating current (10mV/mA)
6. Pin 9 provides voltage proportional to photo diode current (1V/mA) if applicable.
7. For best results allow 30 minutes after the laser has been turned on for the unit to warm-up.

4.2 Optional Digital Modulation

1. In addition to the above procedure, connect SMA receptacle side opposite from the LCD
2. SMA-BNC connector should be connected to a CMOS compatible digital signal. Nominal voltage range is 0 – 5V. Voltage less than 1.5V considered logic low and anything greater than 3.5V considered logic high signal. Signal should not be less than 0V or greater than 5V. Voltage between 1.5 and 3.5 are indeterminate and should be only encountered during transitions.

5 Maintenance

5.1 Maintenance and Inspection

Routine maintenance is not required. If the unit appears to be operating incorrectly or with low output power, check the following:

- Inspect the enclosure for scratches, dings, dents, or other signs of damage due to falling.
- Verify that the module enclosure has not been opened and the factory seal is intact.
- Inspect the fiber and loose tube for twists, kinks, or a break.
- Ensure that the operating environment is within specifications.

5.2 Operating & Storage

The operating and storage environment must be as follows:

- Operating temperature between 10 and 40 °C.
- Storage temperature between 0 and 50 °C.
- Non-condensing humidity levels.
- Electrostatic-free.
- No violent impacts or excessive vibration.

6 Service

6.1 Repair

If the module fails during use, check the items in section 5.1 before requesting an RMA.

Defective modules that are beyond the warranty period will be repaired at cost, if possible. A RMA must be requested before sending it to us. When shipping, please use a box at least five times as large as the module with enough packaging material to prevent any movement of the module within the box.

6.2 For Information or Enquiries

If you need information regarding purchase or repair, or for any other Sales related questions, please contact the dealer or selling agent from which the module was purchased.

6.3 Contacting Ondax

Ondax, Inc.
850 E. Duarte Rd.
Monrovia, CA 91016
Tel: 626-357-9600
Fax: 626-357-9321
Web: <http://www.ondax.com>
Email: sales@ondax.com