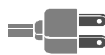


VLM Operation Guidelines

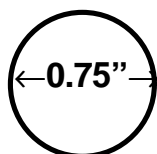
Coherent Laser Modules are built to the highest standards in the industry with the industries best laser diodes. Under normal operating conditions the expected lifetime exceeds 10 years of continuous operation. If you have experienced a laser module failure, please consider the following to improve the performance and lifetime of the product:



Electrical

There are four main considerations for electrical operation:

1. Operating Voltage: Do NOT exceed the recommended operating voltage. Recommended operating voltages for the VLM are as follows depending on the outside diameter of the module. The VLM runs cooler and more efficient at the lower voltage.



Industrial Housing
5 to 12 VDC



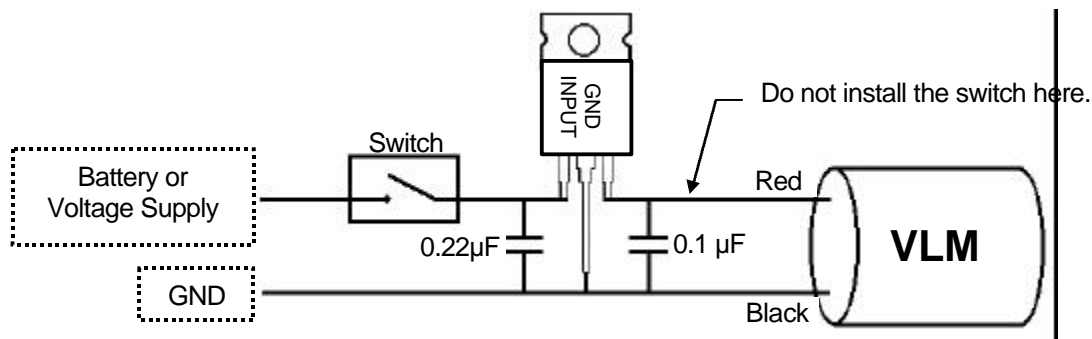
VLM2™
5 to 10 VDC



VLM3™
3 to 6 VDC



2. Spikes and Transients: The VLM laser module is susceptible to spikes and transients like any other electronic device. The most common source of spikes and transients are improper switching of the power to the module. Do not place a switch directly in line with the module.
3. Regulator: Coherent recommends that a regulator, typically a 7805 or equivalent, be connected between the power supply and the VLM to filter out any transients. Suggest Regulators include National Semiconductor LM7805, LM340-5.0 or equivalent.



Typical installation with regulator and filter.

Short Circuit: The case of the laser module is at +5V. Therefore, it is important not to short out the permanently damaged by a short circuit to the case.

Coherent power supplies offer well-regulated DC output. Two power supplies to choose from:

5 VDC, 1.5A
 Catalog # 31-1001
 P/N 0222-024-50



Lab Power Supply
 250ma

P/N 0221-710-01





Temperature – Heat Sink

There are four main considerations for operation and environment:

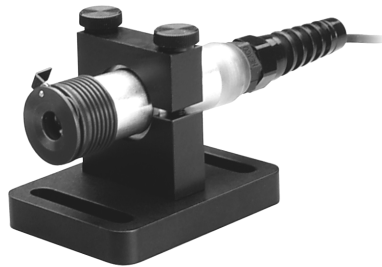
1. The most common laser failure is due to high operating temperature. The lifetime of the module is reduced in half for every 8°C increase in laser operating temperature. Operating the laser at 8°C cooler will double the lifetime of the module.
2. The case temperature of the laser module should not exceed 40°C (104°F). A proper heat sink should be used to transfer the heat away from the laser module.
3. Operating the laser at the lowest recommended operating voltage and at the lowest operating temperature will significantly increase the lifetime of the product. Do not operate the laser at temperatures below -10°C.
4. Store the laser between -40°C and 80°C.



Coherent mounts offer both heat sinking and alignment features. Several mounts to choose from:

Variable-angle Mount
Choose from VLM2,
VLM3, and Industrial
Laser diameters.

4 Axis Mount
Catalog # 53-1939



Handling

There are three main considerations for handling the laser module:

1. Caution. ESD (Electro-Static Discharge) sensitive device. Electrostatic charges as high as 4000 volts readily accumulate on the human body and equipment and can discharge without detection. Although the VLM features ESD protection circuitry, permanent damage may occur on devices subjected to high-energy discharges. Therefore, proper ESD precautions are recommended to avoid premature failure of the laser module.
2. Open the laser module packaging at an ESD protected workstation. Install the laser module with ESD protected tooling and personnel.
3. Transport and ship the module in ESD protected packaging. Do not ship or handle the laser module without a static protected container.

By observing the electrical, temperature, and handling concerns for the VLM laser modules the product should provide years of quality performance. Please let us know if you have comments or questions.

MAIL:



Instruments Sales Dept.
2303 Lindbergh Street
Auburn, CA 95602-9595

FAX: (530) 889-5353



Tech Support: (530) 888-5015

