LDM150 Userguide

Product Overview

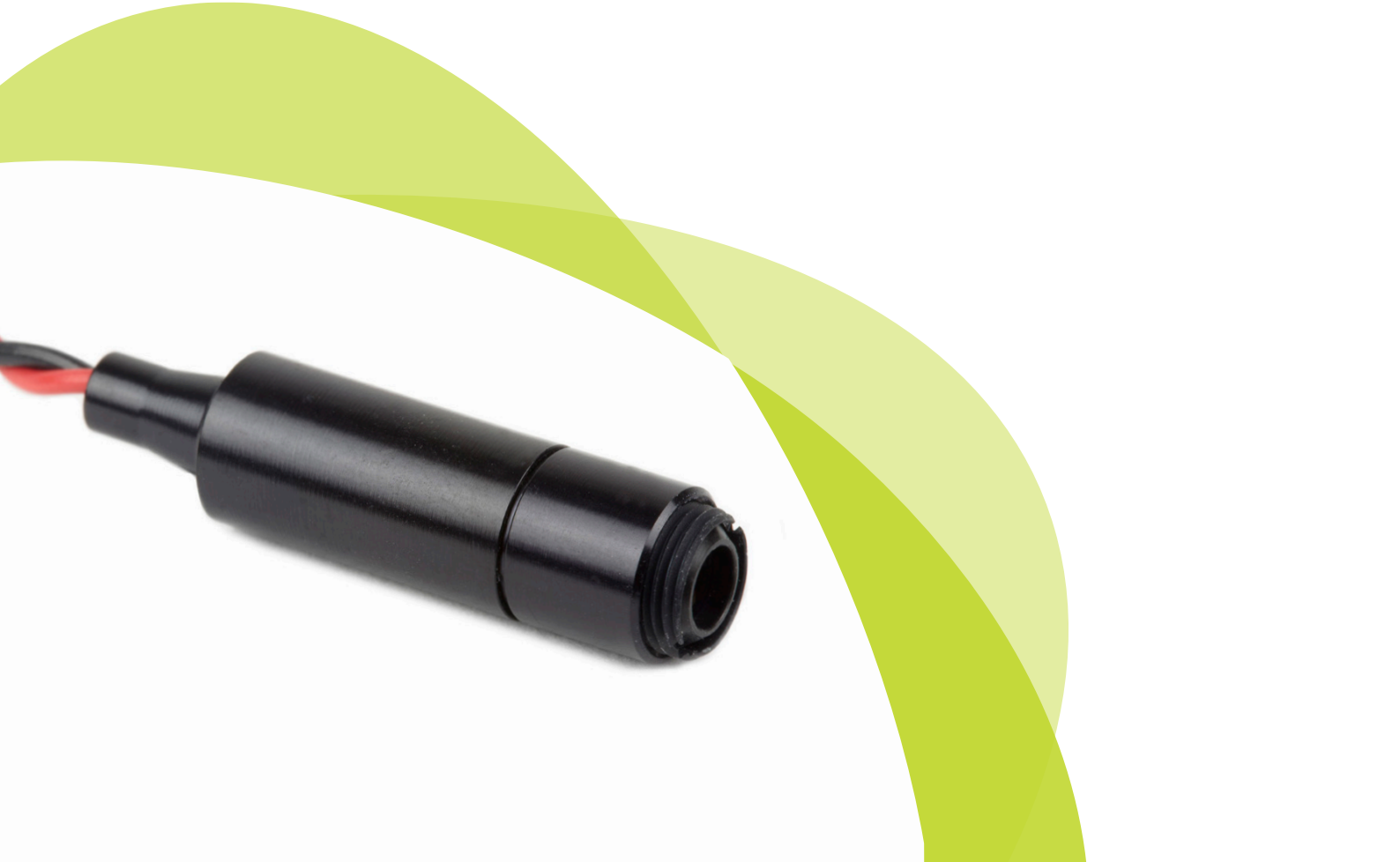
Thanks for purchasing the LDM150, a laser diode module with the smallest housing diameter in the Global Laser catalogue (7mm). It's highly compact footprint is beneficial in applications with tight space constraints.

Wavelengths of green (520nm) and red (635, 650nm) are available with output powers up to 5mW. The green model emits light that appears more than 2X brighter to the human eye than the equivalent power in 635nm. As a result, you're more likely to see these projections against dark materials, in high ambient light levels, or from long distances.

An optional TTL modulation input is available allowing you to drive your laser using a digital voltage signal. You can then change the mark-to-space ratio to control the mean intensity of the output beam, modulate the laser with coded information, or synchronise the laser with an external measurement device such as a photodetector or camera.

Housed in a ruggedised metallic body, the LDM150 is recommended for discreet integration into OEM equipment.

If you have any problems or require help when using the LDM150 please contact us through sales@globallasertech.com or call your local representative.



Product Operation

The LDM150 is available in two variants, a CW model fitted with two input wires or a TTL-enabled model fitted with three wires.

A. CW Model

To operate laser in CW mode the Red and Black leads should be connected to the following:

	Green Models	Red Models
Red Lead	10 Vdc ±5%	+3.3 to 5 Vdc
Black Lead	0 Vdc	0 Vdc

B: LDM150 with TTL Enable Input

A common requirement for applications which use photo detectors, cameras and other non-visual sensing is the ability to rapidly switch the laser output ON and OFF. Simply applying and removing the supply voltage is rarely satisfactory and in certain cases can result in diode failure. This is because laser diodes are very sensitive to voltage spikes and surges that are often the result of uncontrolled supply switching.

To overcome this limitation the LDM150 can be installed with a third input wire that enables reliable and predictable laser TTL modulation. A logic LOW level turns the output completely OFF. However, applying logic HIGH turns the laser ON after a control input delay. This sets the maximum rate at which the module can switch fully ON and OFF.

To operate the laser in this way connect the input wires in the below configuration:

	Green Models	Red Models
Red Lead	10 Vdc ±5%	+3.3 to 5 Vdc
Black Lead	0 Vdc	0 Vdc
Blue Lead	TTL Input (Connect to supply if using is CW Mode)	

Focus Adjustment

The focus of the laser can be adjusted by using the supplied focus key (as shown in diagram B). Should you need to adjust the focus please follow the instructions below:

1. Insert focus key into laser barrel and align with focus control grooves.
2. Turn the focus key until desired focus is achieved.

Mounting & Heatsinking

The lifetime and stability of your laser can be optimised when mounted on a suitable heat sink. This allows the case temperature to be kept within its specified range. Failure to properly heat sink your laser device could result in shortened lifetime or failure of the diode. As a general guideline, the lifetime of a laser diode decreases by a factor of two (approx.) for every ten degree increase in operating temperature.

Mounting the LDM150 in the Heavy Duty Clamp (See Drawing C)

1. Secure the clamp to a surface. There are two methods:
   a. Screw an M5 stud to the bottom of the base, or
   b. Remove the base by removing 2 x grub screw B with the supplied Allen key, then thread an M5 cap screw through the top of the base. Then re-attach the base to the body of the clamp
2. Loosen Allen screw A with the supplied Allen key
3. Slide your laser into the mounting hole and then tighten Allen screw A
4. Loosen grub screw A
5. Adjust the vertical angle of your laser and then tighten grub screw A
6. Loosen 2 x grub screw B. This will allow the main body of the mount to be rotated independently of the base
7. Adjust the horizontal angle of your laser and then tighten 2 x grub screw B

Cleaning The Optics

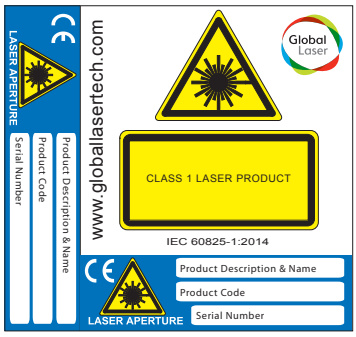
If the laser spot becomes fuzzy or unclear, please follow the below instructions:

1. Check the laser is in focus.
2. Remove contaminants with a compressed air duster.
3. Contact Global Laser or your local representative if you still have issues.

Note: Handle optics with care using powder-free latex or nitrile gloves. These prevent the transfer of oils and debris from hands to optics.

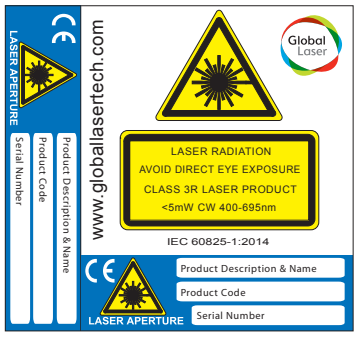
Safety & Classification

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1 2014, which should be consulted prior to designing or using any laser product. The following labels are supplied for attachment to the customer's equipment, but responsibility for compliance with the standard remains with the user.



Class 1 Laser Label

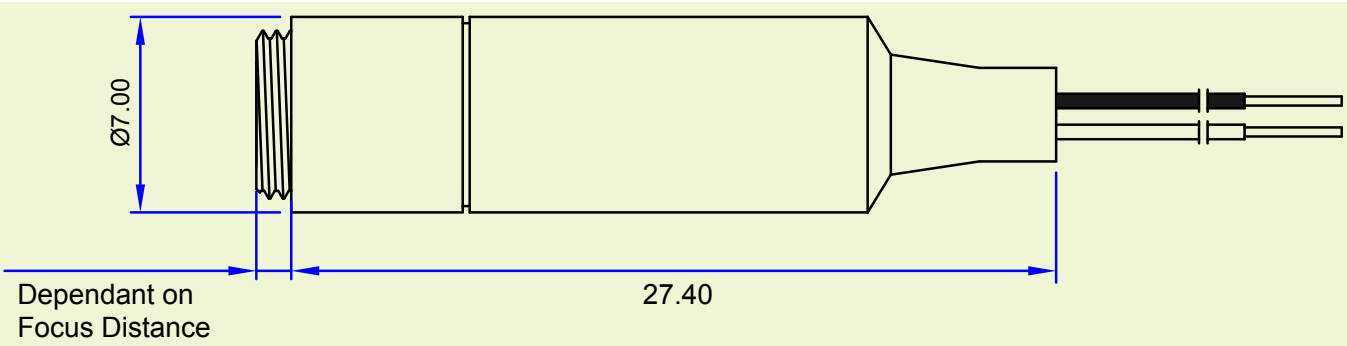
Class 2 Laser Label



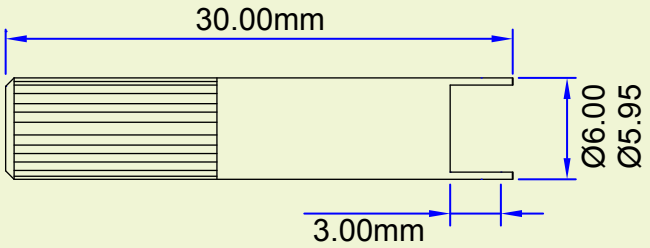
Class 3R Laser Label

Mechanical Dimensions

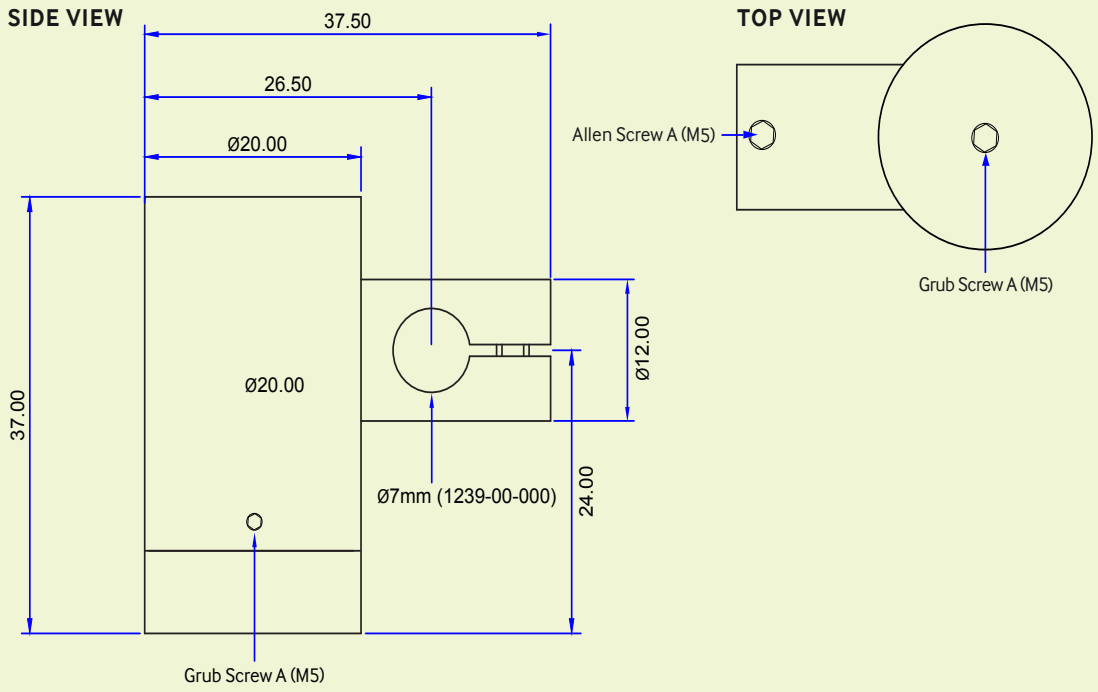
A) LDM150



B) Focus Key



C) Heavy Duty Mounting Clamp



Drawings are not to scale. For more detailed drawings of the mounting clamps please refer to the Accessories Datasheet.

Please Note: Global Laser reserve the right to change descriptions and specifications without notice.

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