IMATRONIC

A Global Laser Brand

Versatile Module

The Versatile Module

The VM (Versatile Module) from Imatronic provides a high quality and cost effect OEM solution to a wide range of applications including Machine Vision, Inspection, Alignment and Positioning.

The module is a compact 11mm diameter and features output powers of 1 & 3 mW in both 650 & 635nm with the benefit of an isolated housing and reverse polarity protection as standard. An A/R coated user adjustable collimating lens produces an elliptical output beam which can be focussed to produce fine spots. A TTL enable input is also included as standard which allow the user to switch the laser on and off with a TTL logic level signal.

Further versatility is provided by the wide range of external optics available which simply screws into the end of the laser module, allowing the user to quickly and efficiently switch from one projection to another. The range includes Homogeneous lines and cross's and diffractive patterns.

A optional heavy duty clamp (HDC) allows the user to secure the laser and has parallel and vertical adjustment which allows the user to aim the laser in any required direction or angle. The robust aluminium construction also assists in conducting heat away from the laser body as well as preventing movement due to shock and vibration. The base plate of the HDC has a series of threaded holes to allow the HDC to be securely fastened to stable surfaces.

Specifications

Product Specification					
Imatronic Part Number		5002-47	5002-48	5002-45	5002-46
Model		VM 650nm, 1mW	VM 650nm, 3mW	VM 635nm, 1mW	VM 635nm, 3mW
Output Power (mW)		0.9	3	0.9	3
Wavelength (nm)		650	650	635	635
Laser Class		2	3R	2	3R
Operating Voltage (Vdc)		3.5 to 5.0			
Operating Current (mA)		20-35		30-50	
Operating Case Temperature (°C)		-10 to +45			
Storage Temperature (°C)		-10 to +80			
Beam Size At Aperture (mm)		3 by 1			
Beam Divergence (mrad)		<0.5			
Bore Sighting (mrad)		≤10			
User Adjustable Focus		**Yes**			
MTTF at 25°C (Hours)		>100,000		>29,000	
Power Stability Over Temperature Range (Typ)		6%			
Mass (g)		8			
Dimensions (mm)		Ø11 x 37			
Housings		Anodised Aluminum			
Isolated Body		Yes			
Lead Length (mm)		230			
Connector Type		Flying Leads			
Input Leads	**Red Lead**	+Ve			
	Black Lead	0V			
	Blue Lead	TTL Enable			
Frequency Range (Khz)		≤1			
Typical Rise & Fall Time (µs)		1			

NOTES
All specifications are typical @ 25°C

Modulation

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 the destruction of the module. This is because laser diodes are very sensitive to spikes and surges, which are often the result of uncontrolled supply switching. To overcome this limitation, the VM is supplied with an additional inputs via a third input wire that controls the output of the laser module in a reliable and predictable way.

TTL Enable Input

Some applications require a simple, slow speed ON/OFF switching. The VM eliminates the requirement to provide an external switching device by providing a logic compatible enable input, capable of operating from low power logic and micro-processors. In this OFF condition, the module draws virtually no current and no light is emitted. Bandwidth is typically ≤1Khz. If not using this function connect the lead to supply or the laser will not switch on.

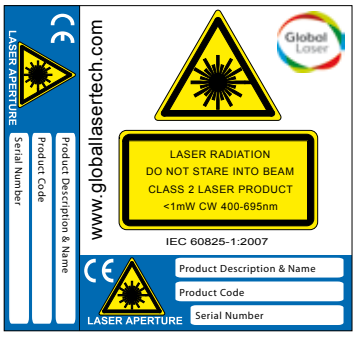
Optional Projection Lenses

A range of projection lens which convert the beam into a pattern are also available for the VM. The Interchangeable line and cross lens assembly's consists of a moulded acrylic multi-rod lens element . The lens produces a cross/line with an intensity distribution is gaussian in the width and homogeneous in the line. The homogeneous line produces a line with high uniformity at shorter working distances, however due to the effects of divergence the uniformity levels will decrease over longer working distance. The Grid lens assembly consists of a diffractive optical element (DOE) lens. The lens produces a 4 x 4 grid pattern with typical full fan angle of 4.57 degree and the intensity distribution is Gaussian in the width and homogeneous in the line. The distance between each line in the grid pattern in typical 1.18 degrees The DOE produces a pattern with high uniformity at shorter working distances, however due to the effects of divergence the uniformity levels will decrease over longer working distance. The lens assembly to simply screw into the VM and converts the output beam into the listed pattern .

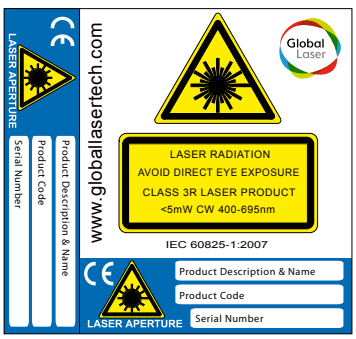
Product Specification					
Imatronic Part Number	1125-227	1125-225	1125-228	1125-226	1125-229
Model	Interchangeable Line Lens Optic 33°	Interchangeable Line Lens Optic 60°	Interchangeable Line Lens Optic 105°	Interchangeable Cross Lens Optic 60°	Interchangeable 4x4 Grid Optic 4.57°
Projection	Line			Cross	4 x 4 Grid
Typical Fan Angle (°)	33	60	100	60	4.57
Interbeam Angle (°)	N/A				1.18

Laser Safety

Our Lasers are compliant to IEC 60825-1 2007 standards. The lasers will fall within one of the following classifications depending on power, wavelength and fan angle. An example of the labels supplied with the units are shown below.



Class 2 Laser Label



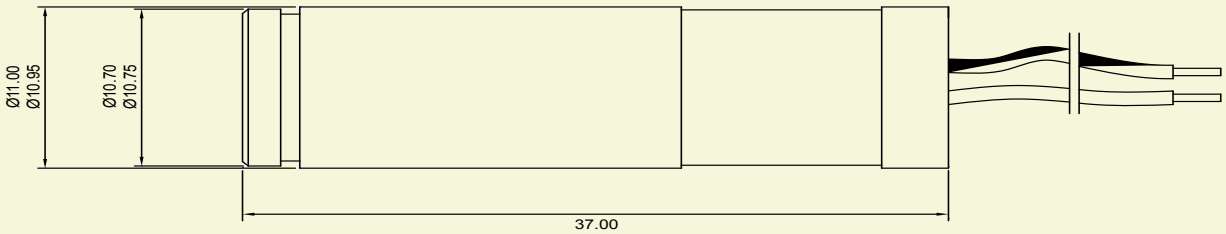
Class 3R Laser Label

Quality & Warranty

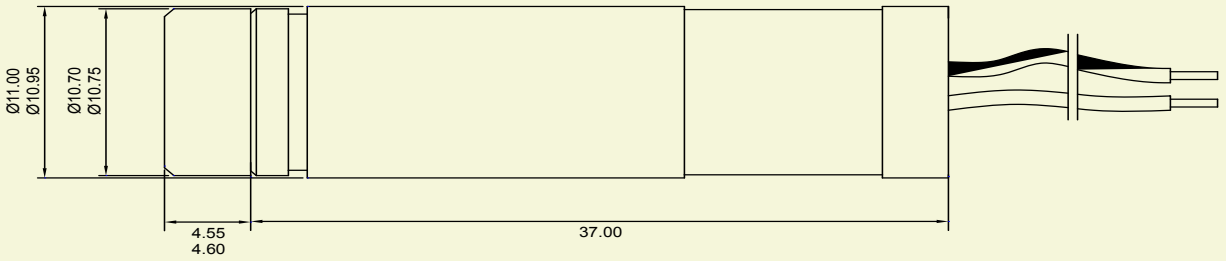
The VM is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

Mechanical Drawings

VM Outline



VM Fitted With External Optic



Drawings not to scale

Please note: Imatronic reserve the right to change descriptions and specifications without notice.

ISO9001 Certified

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