

# Imatronic Laser Diode Modules

## Features

- Wide range of industry standard package sizes
- Off the shelf immediate delivery
- Wide range of output powers and wavelengths
- Dots, lines & crosses output projections available
- Low Voltage DC Operation
- Rugged Construction
- User Adjustable Focusing Lens
- Reverse Polarity Protection
- Compliant with European and U.S Legislation



## Applications

- Alignment and Positioning
- Bar Code Readers
- Dimensional Scanning
- Metrology Event Detection
- Robot Control
- Target Designation
- Edge Detection
- Analysis
- Security
- Optical Fibre Testing
- Entertainment (Laser Gaming)

The Imatronic range of laser diode modules are self contained OEM laser modules that emit dots, lines or crosses. They are designed for industrial applications and offer superior ruggedness within a range of industry standard package sizes. Package sizes range from the ultra small 7 mm diameter LDM150 product to the 25 mm (1 inch) diameter LDL175 laser. Internal connection of the laser diode to the module housing ensures good heat-sinking and longer laser lifetimes.

A wide range of laser diodes are available with wavelengths from visible red 635 nm to infra-red 850 nm with powers up to 5 mW. The in-built user adjustable lenses provide a range of elliptical and circular dots as well as lines and adjustable crosses. The in-built driver board provides stable power control over a wide operating temperature range.

The Imatronic range of lasers are generally available from stock for immediate delivery



## PRODUCT OVERVIEW

### LDM150 (dot projection)

The LDM150 is an extremely compact laser module with a housing diameter of only 7 mm. The laser is the smallest in the Imatronic range and suited for applications where space is critical.

Diameter:	7 mm
Length:	25 mm

### SIGMA (dot projection)

The Sigma laser is a compact laser diode module that is easy to use and is cost effective, it is suitable for many applications including prototyping, feasibility studies, educational and experimental use..

Diameter:	10.4 mm
Length:	16.5 mm

### LDM115 (dot projection with optional line optics)

The LDM115 can be used as a direct replacement for Helium Neon lasers for many applications. Available in an industry standard 11 mm diameter housing.

Diameter:	11 mm
Length:	37 mm

### LLM115 (line projection)

The LLM line laser emits a bright line pattern. It is designed for industrial applications and offers superior ruggedness and miniature size (11mm diameter). Therefore making this laser suitable for applications of alignment by eye or camera.

Diameter:	11 mm
Length:	37 mm

### LCG115 (cross projection)

The LCG115 cross line generator provides 2 intersecting lines. The angle between the lines may be adjusted to any value between 0° and 90°. This can be used to produce accurate cross line references even when the laser is not mounted at exactly 90° to the surface. Therefore making this laser suitable for applications of alignment by eye or camera.

Diameter:	11 mm
Length:	37 mm

### LDL175 (dot projection)

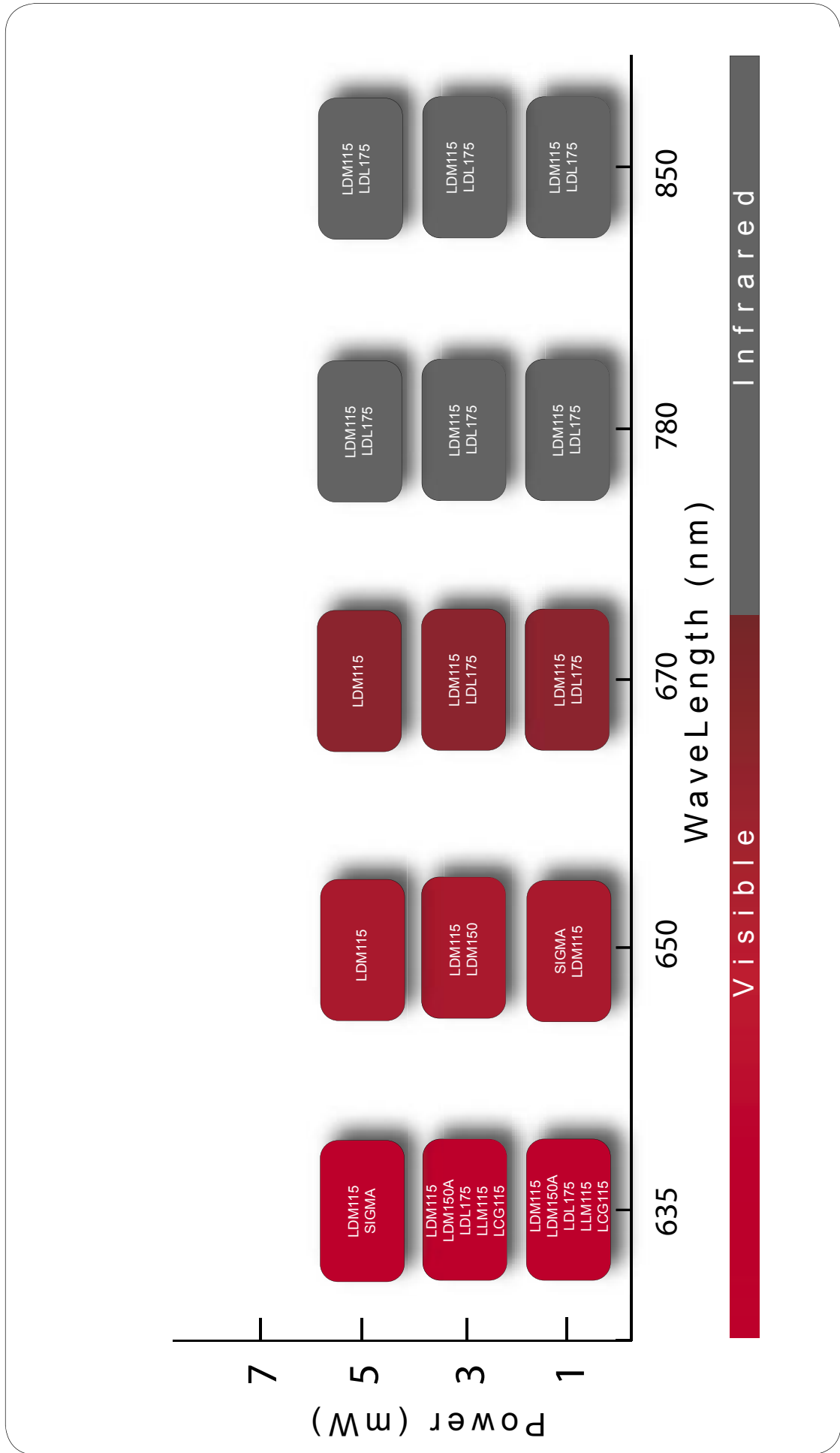
The LDL175 laser module is a stand-alone compact laser system emitting wavelengths from 635 nm to 850 nm. It features a dc power jack input, on/off switch, LED indicator and safety shutter. The infra red version at 850 nm also features an interlock. Designed for industrial and laboratory use and available in a 25 mm (1 inch) housing for use with industry standard 1 inch optical mounts.

Diameter:	25 mm
Length:	58 mm



## PRODUCT MATRIX

Customised Versions:- If the power or wavelength is not listed then please contact your local distributor or Global Laser directly.



## LENS INFORMATION

The Imatronic laser modules are available in the following lens types.

G Lens type	<p>Glass lens</p> <p>The glass lens is a high quality lens producing fine spots. The lens provides high stability over extremes of temperature and is immune to damage such as scratches.</p>
P Lens type	<p>Plastic lens</p> <p>The long focus plastic lens with a low numerical aperture yields good quality circular collimated beams over larger distances.</p>
A Lens type	<p>Aspheric Plastic Lens</p> <p>High performance general purpose lens producing good quality spots. Suitable for the range of small body modules only (LDM150 and Sigma).</p>

## OPTICAL INFORMATION

	G Lens	P Lens	A Lens
Focus Range	35 mm to infinity	150 mm to infinity	50 mm to infinity
Beam Size @ aperture	4 x 2 mm *	5 x 5 mm *	3 x 1 mm *
Beam divergence	<0.5 mrad	<0.5 mrad	< 0.5 mrad
Beam position	< 25 mrad	< 25 mrad	< 25 mrad

## OPTIONAL OPTICAL EXTRAS

The LDM115 has the option of a LGO lens which allows the LDM115 to emit a line projection. The LGO is designed to simply slip over the end of the LDM115 and is secured in place by tightening a small locking screw. The focus position of the line is adjusted by rotating the lens on the LDM115 module prior to the installation of the LGO to give a highly defined thin line of laser light.



LGO115 fitted to LDM115

### LGO SPECIFICATIONS

Fan Angle	15, 28, 40, 60 and 120 degrees
Operational Wavelength	630 nm to 850 nm
Typical Line Width at 1 metre	0.75 mm
Length	24 mm
Diameter	17 mm
Mass	10 grams
Length with LDM	51 mm
Diameter with LDM115	17 mm
Mass with LDM115	19.5 grams

## ELECTRICAL INFORMATION

	LDM115	LDM150	LDL175
Supply Voltage (red lead)	+3.5 Vdc to + 5.0 Vdc	+3.5 Vdc to + 5.0 Vdc	+3.5 Vdc to + 5.0 Vdc
Supply Voltage (black lead)	0 Vdc	0 Vdc	0 Vdc
Typical operating current	30 to 70 mA *	30 to 90 mA *	30 to 70 mA *
Connector type	flying leads	flying leads	2.5 mm dc jack

	LLM115	LCG115	SIGMA
Supply Voltage (red lead)	+3.5 Vdc to + 5.0 Vdc	+3.5 Vdc to + 5.0 Vdc	+3.5 Vdc to + 5.0 Vdc
Supply Voltage (black lead)	0Vdc	0 Vdc	0 Vdc
Operating current	40 to 50 mA *	40 to 50 mA *	40 to 50 mA *
Connector type	flying leads	flying leads	flying leads

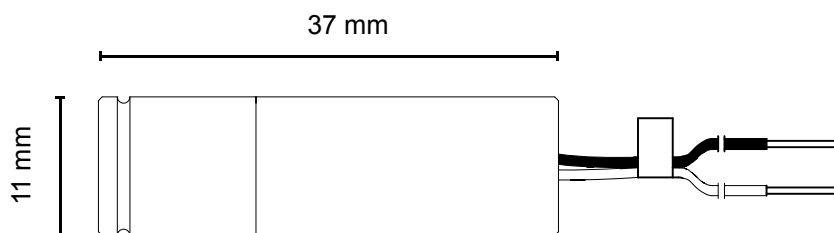
\* = varies with model

**DIMENSIONAL INFORMATION**

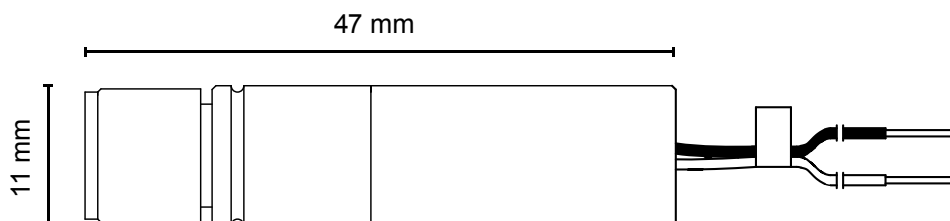
	<b>LDM115</b> <i>* Glass Lens ** Plastic Lens</i>	<b>LDM150</b>	<b>LDL175</b>
Mass	9.5* to 10.5** grams	5 grams	55 grams
Dimensions	11 mm dia x 37* or 47** mm	7 mm dia x 25 mm	25 mm dia x 58 mm
Housing Material	Black anodised aluminium	Black anodised aluminium	Black anodised aluminium
Isolated Body	yes	yes	no
Input Leads	2	2	1 via dc jack
Lead length	200 mm	200 mm	200mm

	<b>LLM115</b>	<b>LCG115</b>	<b>SIGMA</b>
Mass	20 grams	20 grams	10 grams
Dimensions	11 mm dia x 37 mm	11 mm dia x 37 mm	10.4 mm dia x 16.5 mm
Housing Material	Black anodised aluminium	Black anodised aluminium	Brass
Isolated Body	yes	yes	yes
Input Leads	2	2	2
Lead length	200 mm	200 mm	200 mm

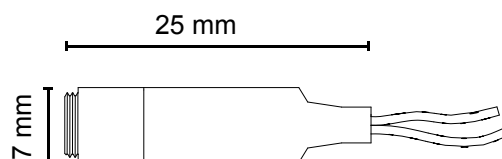
**MECHANICAL DIMENSIONS**



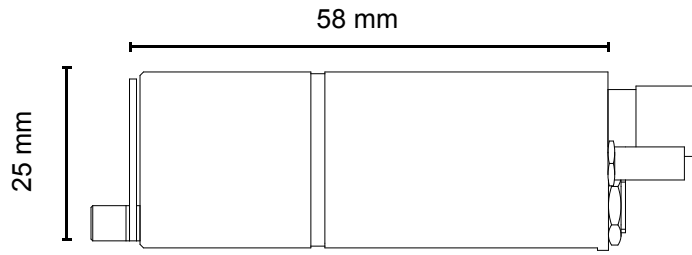
**LDM115G**



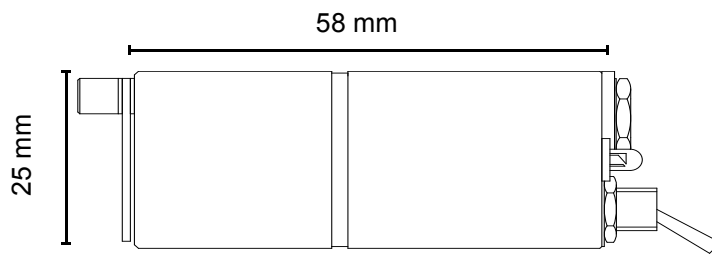
**LDM115P**



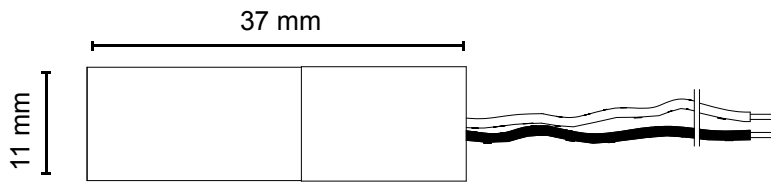
**LDM150**



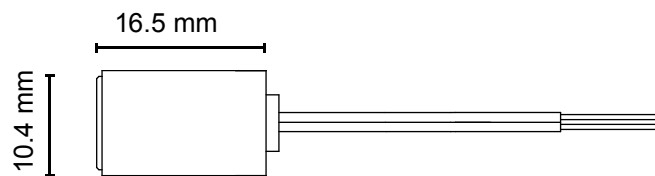
**LDL175 850 nm VERSION (WITH INTERLOCK)**



**LDL175**



**LCG AND LLM**



**SIGMA**

## ENVIRONMENTAL INFORMATION

	LDM115	LDM150	LDL175
Operating Temperature	-10°C to +50°C *	-10°C to +50°C *	-10°C to +50°C *
Storage Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Operating Humidity (%RH)	90	90	90
MTTF at 25°C	>20,000 hours	>20,000 hours	>20,000 hours

	LLM115	LCG115	SIGMA
Operating Temperature	-10°C to +40°C *	-10°C to +50°C *	-10°C to +40°C *
Storage Temperature	-40°C to +80°C	-40°C to +85°C	-40°C to +85°C
Operating Humidity (%RH)	90	90	90
MTTF at 25°C	>20,000 hours	>20,000 hours	>15,000 hours

\* = varies with model

## LASER SAFETY

Our lasers are compliant to IEC 60825-1 standards. The lasers fall within one of the following classifications depending on power and wavelength. The examples of the labels supplied with the units are shown below.



OEM Laser Label



Class 2 Laser Label



Class 3R Laser Label

## QUALITY & WARRANTY

The Imatronic range is supplied with a 12 month parts and labour warranty. And our manufacturing operations are certified to ISO9001.



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



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For further information about the imatronic range you can contact your local distributor or you can contact Global Laser in the UK.

Your Local Distributor Is: