

**iM**ATRONIC  
*A Global Laser Brand*

**Gated Cameo**

# Gated Cameo

The Gated Cameo is a miniature laser diode module that has a threaded barrel for easy bulkhead mounting which ensures good thermal contact between module and heat sink. This new concept in laser module design allows a laser diode, an adjustable collimating lens and a drive circuit to be incorporated within a body which is just 23mm long and all without compromising the performance.

The Gated Cameo offers high output power stability with transient and polarity protection, as well as electrical isolation between diode and case. It has a latching connector that improves reliability. An A/R coated user adjustable collimating lens produces an elliptical output beam which can be focused to produce fine spots. It also features a third TTL modulation input which allows the user to turn the input on and off with a bandwidth of  $\geq 100\text{KHz}$ . A fourth wire which controls the slow speed enable input allows the user to switch the laser on and off from interlocks and switch's

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.



# Specifications

| Product Specification                               |   |  |                                     |  |
|---|---|--|-------------------------------------|--|
| <b>Imatronic Part Number</b>                        | 1266-03   | 1266-04                                | 1266-01                             | 1266-02  |
| <b>Model</b>  | Gated Cameo<br>650nm 1mW, A<br>Lens             | Gated Cameo<br>650nm 3mW, A<br>Lens    | Gated Cameo<br>635nm 1mW, A<br>Lens | Gated Cameo<br>635nm 3mW, A<br>Lens            |
| <b>Output Power (mW)</b>                            | 0.8   | 2.8                                    | 0.8                                 | 2.8  |
| <b>Wavelength (nm)</b>                              | 650   | 650                                    | 635                                 | 635  |
| <b>Laser Class</b>                                  | 2   | 3R                                     | 2                                   | 3R   |
| <b>Operating Voltage (Vdc)</b>                      | 3.3 to 5.0                                      |  |                                     |  |
| <b>Operating Current (mA)</b>                       | 20-35   |  | 30-50                               |  |
| <b>Operating Case Temperature (°C)</b>              | -10 to +45                                      |  |                                     |  |
| <b>Storage Temperature (°C)</b>                     | -10 to +80                                      |  |                                     |  |
| <b>Beam Size At Aperture (mm)</b>                   | 3 by 1  |  |                                     |  |
| <b>Beam Divergence (mrad)</b>                       | <0.5  |  |                                     |  |
| <b>Bore Sighting (mrad)</b>                         | ≤10   |  |                                     |  |
| <b>User Adjustable Focus</b>                        | Yes   |  |                                     |  |
| <b>MTTF at 25°C (Hours)</b>                         | >100,000  |  | >29,000                             |  |
| <b>Power Stability Over Temperature Range (Typ)</b> | ±1.5%   |  |                                     |  |
| <b>Mass (g)</b>                                     | 12.6  |  |                                     |  |
| <b>Dimensions (mm)</b>                              | 14x14 Diameter by 24 Long                       |  |                                     |  |
| <b>Housings</b>                                     | Brass M12 Threaded Front and Black Plastic Back |  |                                     |  |
| <b>Isolated Body</b>                                | Yes   |  |                                     |  |
| <b>Connector Type</b>                               | JST PHR4 4 Pin                                  |  |                                     |  |
| <b>Lead Length (mm)</b>                             | 500   |  |                                     |  |
| <b>Input Leads</b>                                  | <b>Red Lead</b>                                 | +Ve                                    |                                     |  |
|   | <b>Black Lead</b>                               | 0V                                     |                                     |  |
|   | <b>Yellow Lead</b>                              | TTL Modulation: Off = <50mV / On = >2V |                                     |  |
|   | <b>Blue Lead</b>                                | TTL Enable: Off = <0.4V / On = >2V     |                                     |  |
| <b>TTL Modulation<br/>(Yellow Lead)</b>             | <b>Frequency Range (Khz)</b>                    | ≥100                                   |                                     |  |
|   | <b>Typical Rise &amp; Fall Time (µs)</b>        | ≤5                                     |                                     |  |
| <b>TTL Enable</b>                                   | <b>Input Delay (ms)</b>                         | 2                                      |                                     |  |
|   |   |  |                                     | NOTES<br>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 Gated Cameo is supplied with two additional inputs via a third input wire that controls the output of the laser module in a reliable and predictable way.

## **TTL Modulation input (Yellow Wire)**

A logic LOW level turns the output completely OFF. However, applying a 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. Bandwidth is typically  $\geq 100\text{KHz}$ .

## **TTL Enable Input**

Some applications require a simple, slow speed ON/OFF switching. The Gated Cameo 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.

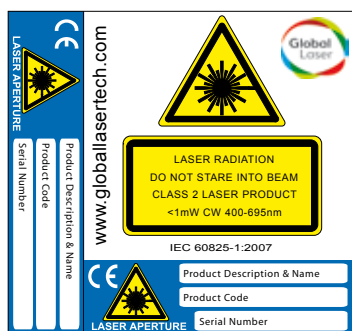
# Optional Projection Lenses

A range of projection lens which convert the beam into a pattern are also available for the Gated Cameo. 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 which 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 Gated Cameo and converts the output beam into the listed pattern.

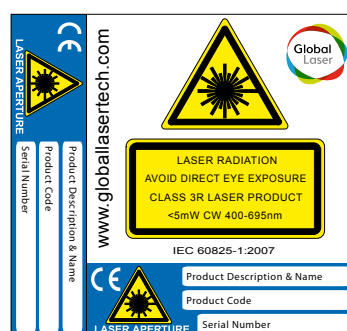
| Imatronic Part Number        | 1125-227                            | 1125-225                            | 1125-228                             | 1125-226                             | 1125-229                             |
|------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| <b>Model</b>                 | 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° |
| <b>Projection</b>            | Line                                |                                     |                                      | Cross                                | 4 x 4 Grid                           |
| <b>Typical Fan Angle (°)</b> | 33                                  | 60                                  | 100                                  | 60                                   | 4.57                                 |
| <b>Interbeam Angle (°)</b>   | 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



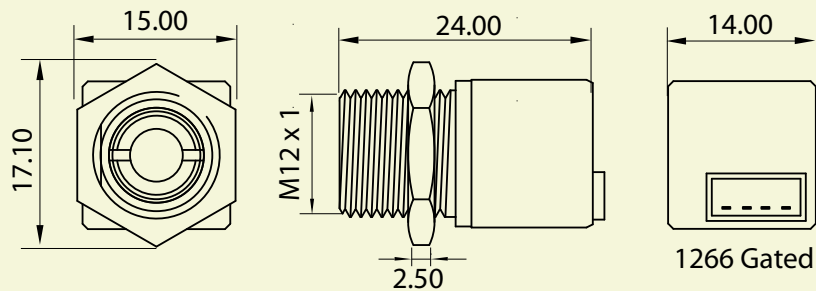
Class 3R Laser Label

# Quality & Warranty

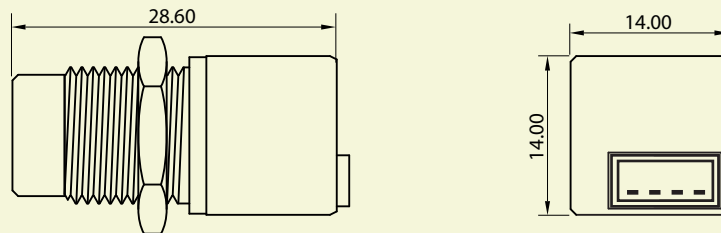
The Gated Cameo is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

# Mechanical Drawings

## Gated Cameo Diode Laser Module



## Gated Cameo Laser Diode Module with Projection Lens Fitted



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



ISO9001 Certified

9025-05-059 Rev 1



For further information about any of our products please contact your local distributor or you can contact Global Laser in the UK. Your Local Distributor Is:

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