



Thread Mountable Cameo

premier & acculase modulatable/ machine vision lyte-mv/dragonfly green/
imatronic/laserlyte/laserlyte-flex/guideline/hawkeye detector/
firefly green/firefly green mini/**thread mountable cameo**/15mm blue/
survelase/survelase maxi/beta tx/bluelyte/varilite lc/dca/microblock/
accessories/projection lenses/energy efficient/customised solutions.

Thread Mountable Cameo.

The Cameo is a unique, versatile, high quality industrial laser module widely used in alignment applications. Available in two models, either the CW version or the Gated version. The Gated version incorporates a TTL modulatable input capable of 100Khz.

The electrically isolated threaded mount houses an industrial grade laser diode, adjustable collimating lens and protected connectorised drive electronics.

A comprehensive range of collimating and external lenses are available for the Cameo, making it suitable for a wide range of requirements. The threaded barrel helps to simplify mounting and also ensures a good thermal contact between the module and the mount.



Selection Guide

This catalogue covers our thread mountable Cameo range and is broken down into various sections. Please use the guide below to go straight to the relevant section.

| Section | Product | Description |
|---------|----------------|---------------------------------------------------------------------------------------------------------|
| S.1 | Cameo | General information about the Cameo laser module, its features and benefits. |
| S.2 | Gated Cameo | As above but, covering the modulatable version of the Cameo. |
| S.3 | Lens Options | An in depth overview of the lensing options available, including projections patterns. |
| S.4 | Specifications | Complete comparison of the technical data of both Cameo versions. |
| S.5 | Modulation | This section gives an overview and application guide to the modulation capabilities of the Gated Cameo. |
| S.6 | Mounting | Here you will find a basic guide on how convenient it is to mount the Cameo laser module. |

S1. Cameo.

The main features of the Cameo:-


- Versatile thread mountable industrial laser module
- Compact length for restricted areas
- User focusable
- Reliable connector construction
- Isolated metal case
- Simple to mount
- Wide range of lens options

S2. Gated Cameo.

Offers the following additional features

- Third wire input to facilitate rapid switching/gating
- Switching speeds up to 100kHz
- Operates directly from TTL logic levels
- Effective in wide variety of light conditions
- Controlled gating minimises power consumption and extends life
- Low speed enable input

The Cameo is one of the most compact laser modules available in the laser market and has the same lifetime as much larger lasers (> 25,000 hrs)



The thread mounting of the Cameo

S3. Lens Options.

| | C2 Lens | S Lens | HG Lens | A Lens |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------|----------------------------|---------------------------------------------|
| Description | 2 mm aperture lens | Standard collimating lens | High quality aspheric lens | Collimating lens for external optics models |
| Beam Size at aperture (mm) | 2 | 5 by 1.5 | 5.5 by 2.5 | * |
| Beam size at nearest focus (μm) | < 50 | < 20 by 40 | < 45 | * |
| Typical full angle (mrad) | 0.35 | 0.5 by 0.2 | 0.2 | * |
| Minimum focus distance (mm) | 25 | 25 | 50 | * |
| * = the beam specification of this model is dependant on the external lens that it is used with | | | | |
| Please note we have a number of other collimating lens options. If the listed lens do not meet your requirements please call us | | | | |

External Optics

The Cameo and Gated Cameo range are available with a range of external optics to produce a wide range of lines, crosses and other patterns. To order, select the power and wavelength you require from the list of models fitted with an "A" lens and state which external optics you require. Please note that the external optics cannot be fitted with the S, C2 or HG lens assemblies.

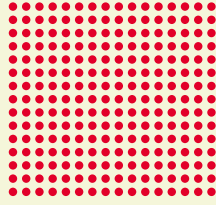
| | |
|---------------------------|-----------------------------------------------------------|
| L8 Line Lens | Gaussian line with a typical full fan angle of 16 degrees |
| L4 Line Lens | Gaussian line with a typical full fan angle of 8 degrees |
| Large Cross | Homogeneous cross with a fan angle of 60 degrees |
| Small Cross | DOE cross with fan angle of 8.8degrees |
| Short Line | Homogeneous line with a fan angle of 60 degrees |
| Long Line | Homogeneous line with a fan angle of 90 degrees |
| Long Line with Dot | Gaussian long line (100 degrees) with centre dot |

Projection Options

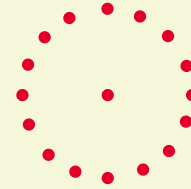
A range of diffractive optical elements are available (DOE) to provide various patterns such as cross, circles & dot matrix for applications such as 3D Mapping, surface texture analysis, alignment & general machine vision applications. Please see projection lens datasheet for further information.



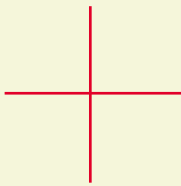
Circle with center dot



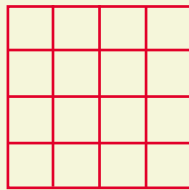
Dot Array



Dot Circle



Cross



Grid



Multiple Lines



S4. Specifications.

| | Cameo | Gated Cameo | |
|---------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------|---------------|
| Mechanical Information | | | |
| Width by Height (mm) | 14 by 14 | | |
| Length (mm) | 24 | | |
| Housing | Brass M12 thread front and black plastic back | | |
| Isolated Body | Yes | | |
| Input Leads | 2 Leads, / Red (+Ve) / Green (0 V) | 4 Leads, / Red (+Ve) / Black (0 V) / Yellow (Control) / Blue (Enable Switch) | |
| Lead Length (mm) | 500 | | |
| Optical Information | | | |
| Wavelength (nm) | Power's (mW)* | | |
| Lens Option | C2 Lens | S/HG Lens | A Lens |
| 635 | 1, 3 | 1, 3, 6 | 1, 3, 6 |
| 650 | 1, 3 | 1, 3, 6 | 1, 3, 6 |
| 670 | 1, 3 | 1, 3, 6 | 1, 3, 6 |
| 785 | 1 | 1, 3, 6 | 1, 3, 6 |
| 850 | 1 | 1, 3, 6 | 1, 3, 6 |
| Custom wavelengths and powers | Please call for with requirements | | |
| Typical Power Stability over temp range (%) | ±1.5 | | |
| Bore Sighting (mrad) | ≤ 10 | | |
| Pointing Stability (μrad) | 10 | | |
| Environmental Information | | | |
| Operating Case Temperature (°C) | -10 to +45 ** | | |
| Storage Temperature (°C) | -40 to +80 | | |
| Operating Humidity (%RH) | 90 (non condensing) | | |
| MTTF @ 25°C (hrs) | 25,000** | | |
| Dynamic Output | | | |
| Control input rise / fall time (μs) | N/A | ≤ 5 | |
| Enable Input delay time (ms) | N/A | 2 | |
| Electrical Specifications | | | |
| Input Voltage +ve (Vdc) | 3.3 to 5.0 | | |
| Input Voltage -ve (V) | 0 | | |
| Control Lead Yellow | N/A | off = < 50 mV / on = > 2.0 V | |
| Enable Lead Blue | N/A | off = < 0.4 V / on > 2.0 V | |
| Connector Type | JST 2 Pin | JST 4 Pin | |
| Reverse Polarity Protection | Yes | | |
| Operating Current (mA) | 30 to 80 ** | | |

NOTES
 *Not all output powers are available with all lens options
 **Varies with laser diode type
 All specifications are typical @ 25°C

S5. Modulation.

Below is a application guide of how the modulation capabilities of the Gated Cameo are used.

- Introduction

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 1260 Gated Cameo has two additional inputs that are provided to control the output of the laser module in a reliable and predictable way.

- Control Input


A logic LOW level turns the output completely OFF(= $<5\%$). 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 = or $> 100\text{Khz}$.

- Enable Input

Some applications require a simple, slow speed ON/OFF switching. The 1260 series 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.

S6. Mounting.

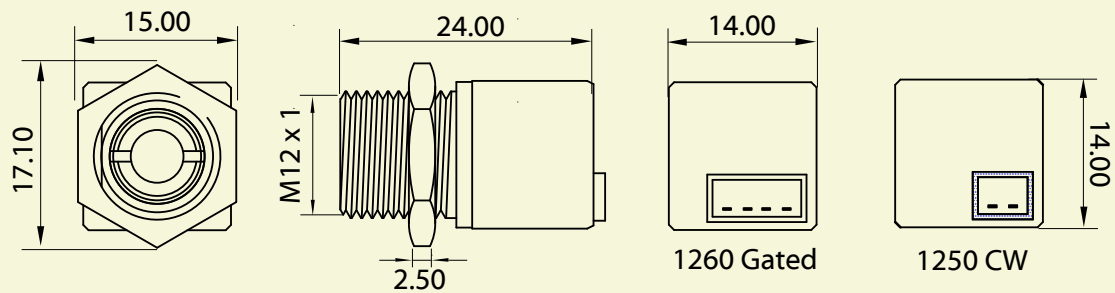
The M12 x 1 threaded body provides a stable and convenient mounting method which also provides effective cooling of the laser diode to maximise the operating life. The metal body should be in good thermal contact with the mount, which should not be allowed to exceed the maximum case temperature



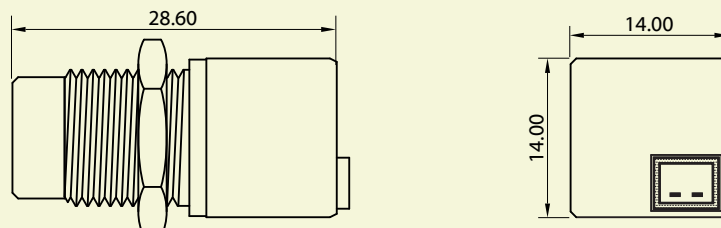
For More information about any of our
other products please visit our website
@ www.globallasertech.com

Mechanical Dimensions

Cameo Laser Module

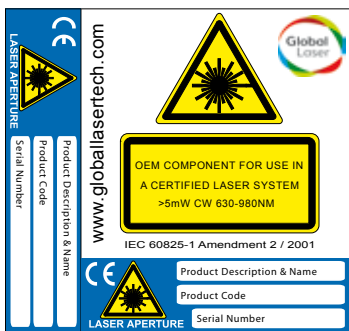


Cameo Laser Module with Projection Lens fitted

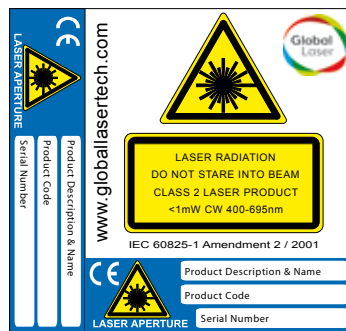


Laser Safety

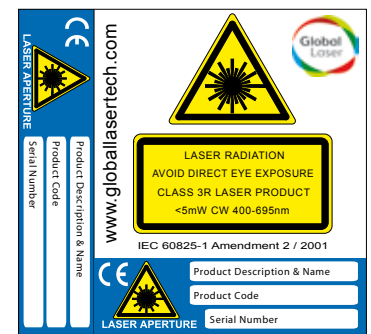
Our lasers are compliant to IEC 60825-1 standards. The lasers fall within one of the following classifications depending on power and wavelength.



OEM Laser Label



Class 2 Laser Label



Class 3R Laser Label

Quality & Warranty

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

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

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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