



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 diode 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 diode 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.
S.4	Projection Options	An in depth overview of the projections options available.
S.5	Specifications	Complete comparison of the technical data of both Cameo versions.
S.6	Modulation	An overview and application guide to the modulation capabilities of the Gated Cameo.
S.7	Mounting	A basic guide on how convenient it is to mount the Cameo laser diode module.
S.8	Mechanical Dimensions	Detailed technical drawing of the Cameo Range.

S1. Cameo

The main features of the Cameo:-

- Versatile thread mountable industrial laser diode 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)



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 lenses do not meet your requirements please call us.				

Gaussian Line Optics

The gaussian line optics produces a line with gaussian distribution in both axis. This results in a line with high intensity's levels in the centre of the line, the downside is that power levels decrease towards the ends of the line. The Long line + Dot consists of a gaussian line with a centre gaussian dot. This is useful for alignment and positioning of buttons/button holes in the textile industry.

Pattern	Fan Angle
L4 Line	8°
L8 Line	16°
Long Line + Dot	100°

Homogeneous Optics

The homogeneous line optics produce a line where the intensity distribution is gaussian in the width and homogeneous in the line. The homogeneous distribution consists of many gaussian beams combined. This produces a line with high uniformity levels at shorter working distances, however due to the effects of divergence the uniformity levels will decrease over longer working distances. For the best result it is recommended that the line is set perpendicular to the eclipse of the output beam of the laser diode module. The homogeneous cross optic works on the same principal, but with two lines, one perpendicular to the other.

Pattern	Fan Angle
Lines	4.2°
	18°
	33°
	40°
	60°
	90°
	105°
Cross	60°



S4. Projection Options

Diffraction optical elements (DOE) split a single gaussian input beam into projections consisting of many gaussian beams. Due to the large number of beams in the patterns the intensity is often uniform in the length at shorter working distances, however due to the effects of divergence the uniformity levels will decrease over longer working distance. The intensity distribution in the width is gaussian. A common occurrence is for the centre dot (zero order) of the pattern to have a high intensity than the other dots which make up the pattern. This is often due to the designed wavelength of the DOE not matching the wavelength of the input beam. The fan and interbeam angle will also change with wavelength. A lower wavelength value than the wavelength that the angle has been specified at will cause the angles to decrease. A higher wavelength value than the wavelength that the angle has been specified at will cause the angles to increase.

Pattern	Description
Cross	Fan Angles of 5, 10, 15, 25, 37, 45, 60°
Multiple Lines	5, 7, 11, 25 & 65 Lines
Dot Matrix	11 by 11, 13 by 13, 16 by 16, 17 by 17, 21 by 21, 51 by 51
Solid Circle	34° Fan angle
Dot Circle	1:16 Dots & 1:72 Dots
Multi Circle	5 Circles
Dot Line	1:5, 1:9 & 1:19
Grid	4 by 4 & 51 by 51
Line	Fan Angles of 5 & 40°
Viewfinder	7 different types
<i>Summary of available patterns (For more details see our "Projection Options Datasheet")</i>	

S5. 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			

S6. 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 diode module in a reliable and predictable way.

- Control Input

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

- Enable Input

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

S7. Mounting

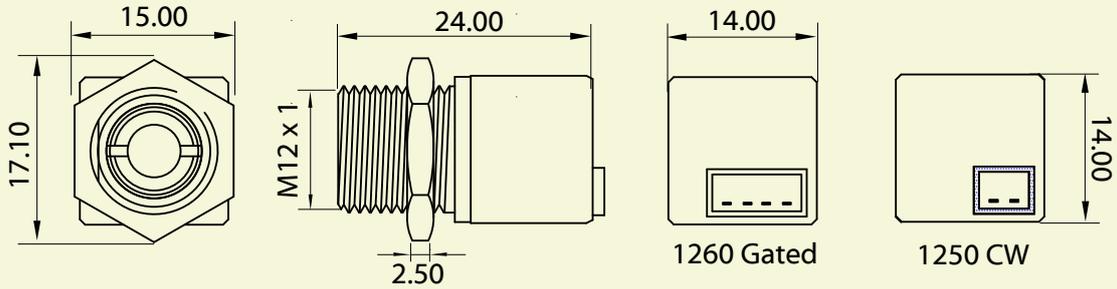
The M12 x 1 threaded body provides a stable and convenient mounting method which also provides effective cooling of the laser diode to maximise the operating life. The metal body should be in good thermal contact with the mount, which should not be allowed to exceed the maximum case temperature



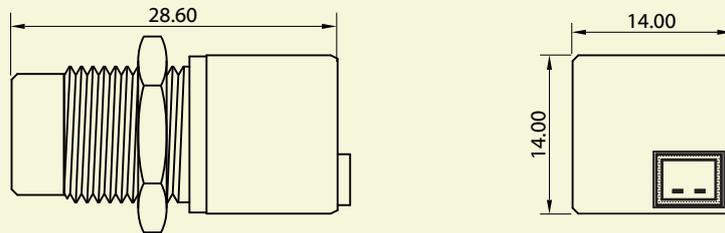
For more information about any of our
other products please visit our website
@ www.globallasertech.com

S8. Mechanical Dimensions

Cameo Diode Laser Module

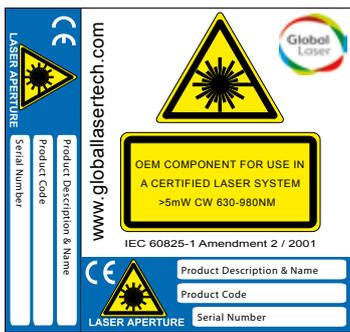


Cameo Laser Diode Module with Projection Lens Fitted

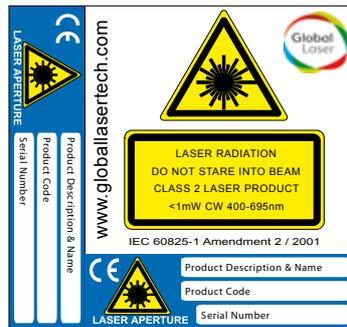


Laser Safety

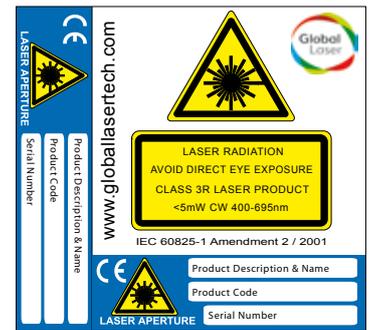
Our lasers are compliant to IEC 60825-1 standards. The lasers fall within one of the following classifications depending on power and wavelength.



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.

Notes

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:

T: +44 (0)1495 212213
F: +44 (0)1495 214004
E: sales@globallasertech.com
www.globallasertech.com

Global Laser Ltd, Cwmtillery Industrial Estate
Abertillery, Gwent NP13 1LZ UK