



Thread Mountable Gated Cameo Laser Diode Module

Thread Mountable Gated Cameo

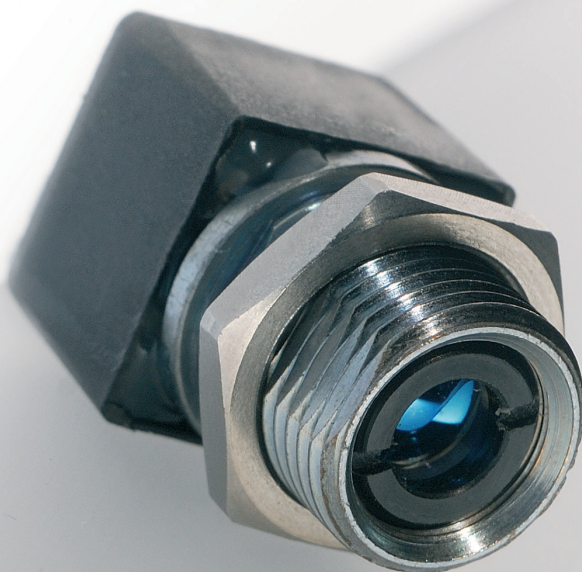
The Gated Cameo is a miniature laser diode module that has a threaded barrel for easy bulkhead mounting which ensures good thermal contact between module and heat sink. This new concept in laser module design allows a laser diode, an adjustable collimating lens and a drive circuit to be incorporated within a body which is just 24mm 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.

Key Features:

- 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
- 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

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 and diffractive patterns.



Specifications

Product Specification				
RS Part Number	TBC	RS2107345	RS2107346	RS442-3299
Global Laser Part Number	1260-43-000	1266-26-000	1266-27-000	1260-02-000
Model	Gated Cameo 635nm, 0.36mW, C2 Lens	Gated Cameo 635nm, 0.8mW, A Lens	Gated Cameo 635nm, 2.8mW, A Lens	Gated Cameo 635nm, 3mW, S Lens
Output Power (mW)	0.36	0.8	0.8	3
Wavelength (nm)	635	635	635	635
Laser Class	1	2	3R	3R
Operating Voltage (Vdc)	3.3 to 5.0			
Operating Current (mA)	30			
Operating Case Temperature (°C)	-10 to +55			
Storage Temperature (°C)	-10 to +80			
Beam Size At Aperture (mm)	2	*	*	5 by 1.5
Beam Divergence (mrad)	0.35	*	*	<0.5
Minimum Focus Distance (mm)	25			
Bore Sighting (mrad)	≤10			
User Adjustable Focus	Yes			
MTTF at 25°C (Hours)	≥90,000		≥49,000	
Power Stability Over Temperature Range (Typ)	±1.5%			
Mass (g)	12.6			
Dimensions (mm)	14x14 Diameter by 24			
Housings	Brass M12 Threaded Front and Black Plastic Back			
Isolated Body	Yes			
Connector Type	JST PHR4 4 Pin			
Lead Length (mm)	500			
Input Leads	Red Lead	+Ve		
	Black Lead	0V		
	Yellow Lead	TTL Modulation: Off = <50mV / On = >2V		
	Blue Lead	TTL Enable: Off = <0.4V / On = >2V		
TTL Modulation (Yellow Lead)	Frequency Range (Khz)	≥100		
	Typical Rise & Fall Time (μs)	≤5		
TTL Enable	Input Delay (ms)	2		
NOTES All specifications are typical @ 25°C.				

Specifications

Product Specification				
RS Part Number	RS442-3306	RS442-3328	RS2107339	RS2107340
Global Laser Part Number	1260-03-000	1260-04-000	1260-36-000	1260-37-000
Model	Gated Cameo 650nm, 1mW, C2 Lens	Gated Cameo 650nm, 3mW, C2 Lens	Gated Cameo 780nm, 0.8mW, C2 Lens	Gated Cameo 780nm, 2.8mW, S Lens
Output Power (mW)	1	3	0.8	2.8
Wavelength (nm)	635	635	780	780
Laser Class	2	3R	3R	3R
Operating Voltage (Vdc)	3.3 to 5.0			
Operating Current (mA)	30			
Operating Case Temperature (°C)	-10 to +45		-10 to +55	
Storage Temperature (°C)	-10 to +80			
Beam Size At Aperture (mm)	2	5 by 1.5	2	5 by 1.5
Beam Divergence (mrad)	0.35	<0.5	0.35	<0.5
Minimum Focus Distance (mm)	25			
Bore Sighting (mrad)	≤10			
User Adjustable Focus	Yes			
MTTF at 25°C (Hours)	≥115,000		≥ 125,000	
Power Stability Over Temperature Range (Typ)	±1.5%			
Mass (g)	12.6			
Dimensions (mm)	14x14 Diameter by 24			
Housings	Brass M12 Threaded Front and Black Plastic Back			
Isolated Body	Yes			
Connector Type	JST PHR4 4 Pin			
Lead Length (mm)	500			
Input Leads	Red Lead	+Ve		
	Black Lead	0V		
	Yellow Lead	TTL Modulation: Off = <50mV / On = >2V		
	Blue Lead	TTL Enable: Off = <0.4V / On = >2V		
TTL Modulation (Yellow Lead)	Frequency Range (Khz)	≥100		
	Typical Rise & Fall Time (μs)	≤5		
TTL Enable	Input Delay (ms)	2		
NOTES				
All specifications are typical @ 25°C.				
* The beam specification of this model is dependant on the external lens that is used.				

Specifications

Product Specification				
RS Part Number	RS2107341	RS2107342	RS2107343	RS2107344
Global Laser Part Number	1260-38-000	1260-39-000	1260-40-000	1260-41-000
Model	Gated Cameo 850nm, 0.8mW, C2 Lens	Gated Cameo 850nm, 2.8mW, S Lens	Gated Cameo 980nm, 0.8mW, C2 Lens	Gated Cameo 980nm, 2.8mW, S Lens
Output Power (mW)	0.8	2.8	0.8	2.8
Wavelength (nm)	850	850	980	980
Laser Class	3R	3R	1	3R
Operating Voltage (Vdc)	3.3 to 5.0			
Operating Current (mA)	30		40	
Operating Case Temperature (°C)	-10 to +55			
Storage Temperature (°C)	-10 to +80			
Beam Size At Aperture (mm)	2	5 by 1.5	2	5 by 1.5
Beam Divergence (mrad)	0.35	<0.5	0.35	<0.5
Minimum Focus Distance (mm)	25			
Bore Sighting (mrad)	≤10			
User Adjustable Focus	Yes			
MTTF at 25°C (Hours)	≥90,000		≥49,000	
Power Stability Over Temperature Range (Typ)	±1.5%			
Mass (g)	12.6			
Dimensions (mm)	14x14 Diameter by 24			
Housings	Brass M12 Threaded Front and Black Plastic Back			
Isolated Body	Yes			
Connector Type	JST PHR4 4 Pin			
Lead Length (mm)	500			
Input Leads	Red Lead	+Ve		
	Black Lead	0V		
	Yellow Lead	TTL Modulation: Off = <50mV / On = >2V		
	Blue Lead	TTL Enable: Off = <0.4V / On = >2V		
TTL Modulation (Yellow Lead)	Frequency Range (Khz)	≥100		
	Typical Rise & Fall Time (μs)	≤5		
TTL Enable	Input Delay (ms)	2		
NOTES All specifications are typical @ 25°C.				

Optional Projection Lenses

Please note the below optics are designed to work with a Gated Cameo fitted with an “A” lens.

A range of projection lenses which convert the beam into a pattern are also available for the Gated Cameo. The interchangeable line and cross lens assemblies 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 4x4 grid pattern with typical full fan angle of 4.57° and the intensity distribution is Gaussian in the width and homogeneous in the line. The distance between each line in the grid pattern is typical 1.18°. 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 simply screws into the Gated Cameo and converts the output beam into the listed pattern.

Description	Global Laser Part Number	RS Part Number
8° Line	1125-999-000	RS2107335
16° Line	1125-500-000	RS2107332
18° Line	1125-375-000	RS1271548
30° Line	1125-376-000	RS1271548
60° Line	1125-220-000	RS697-3569
90° Line	1125-221-000	RS697-3572
100° Dot/Line	1125-224-000	RS697-3594
125° Line	1125-498-000	RS2107331
8° Cross	1125-222-000	RS6973579
60° Cross	1125-223-000	RS697-3581
100° Cross	1125-377-000	RS1271550
4x4 Grid	1125-374-000	RS1271547

For more information on any of these lenses please refer to their individual datasheets.

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

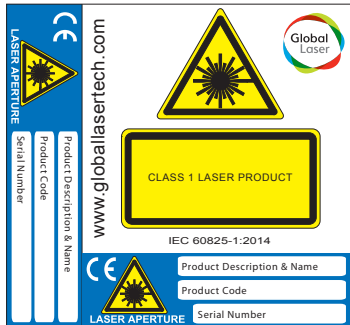
Some applications require a simple, slow speed ON/OFF switching. The 1260 Gated Cameo eliminates the requirement to provide an external switching device by providing a logic compatible enable input, capable of operating from low power logic and micro-processors. In this OFF condition, the module draws virtually no current and no light is emitted.

Mounting

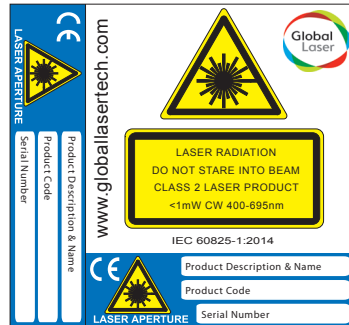
The M12 x 1 threaded body provides a stable and convenient mounting method which also provides effective cooling of the laser diode to maximise the operating life. The metal body should be in good thermal contact with the mount, which should not be allowed to exceed the maximum case temperature.

Laser Safety

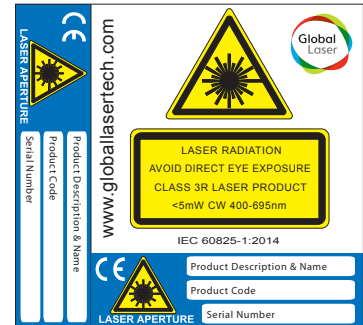
Our lasers are compliant to IEC 60825-1:2014 standards. The lasers fall within one of the following classifications depending on power and wavelength. Examples of the labels are shown below.



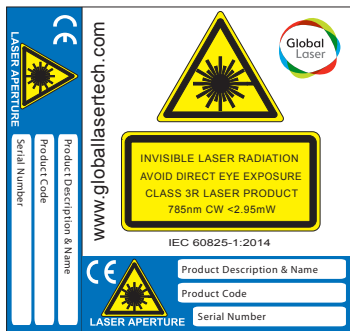
Class 1 Laser Label



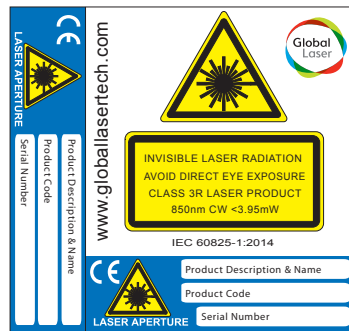
Class 2 Laser Label



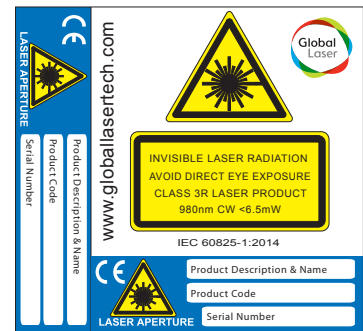
Class 3R Visible Laser Label



Class 3R 780nm Laser Label



Class 3R 850nm Laser Label



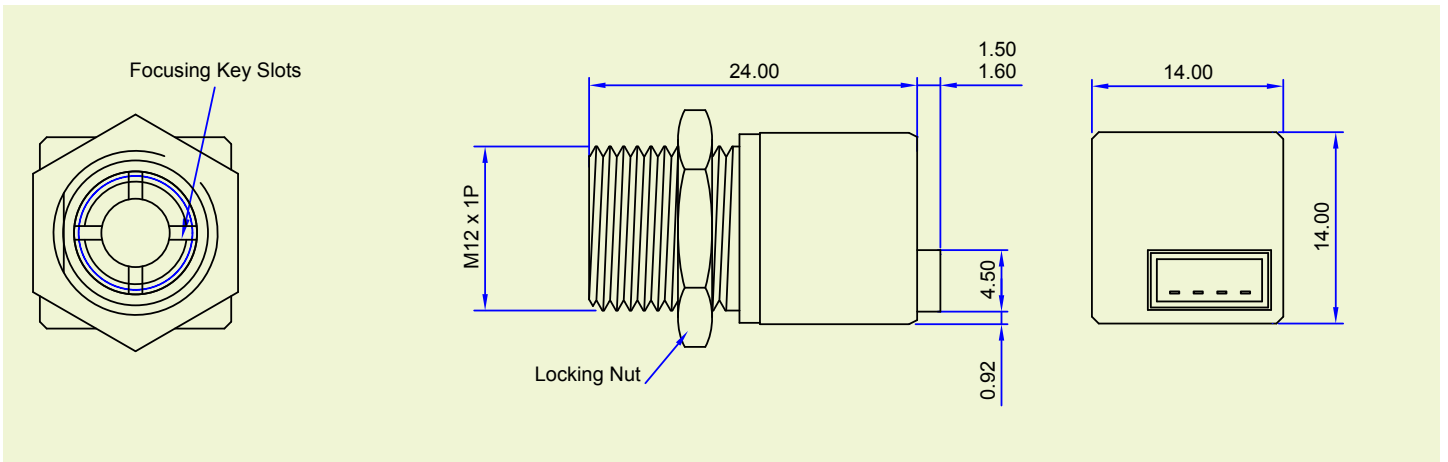
Class 3R 980nm Laser Label

Quality & Warranty

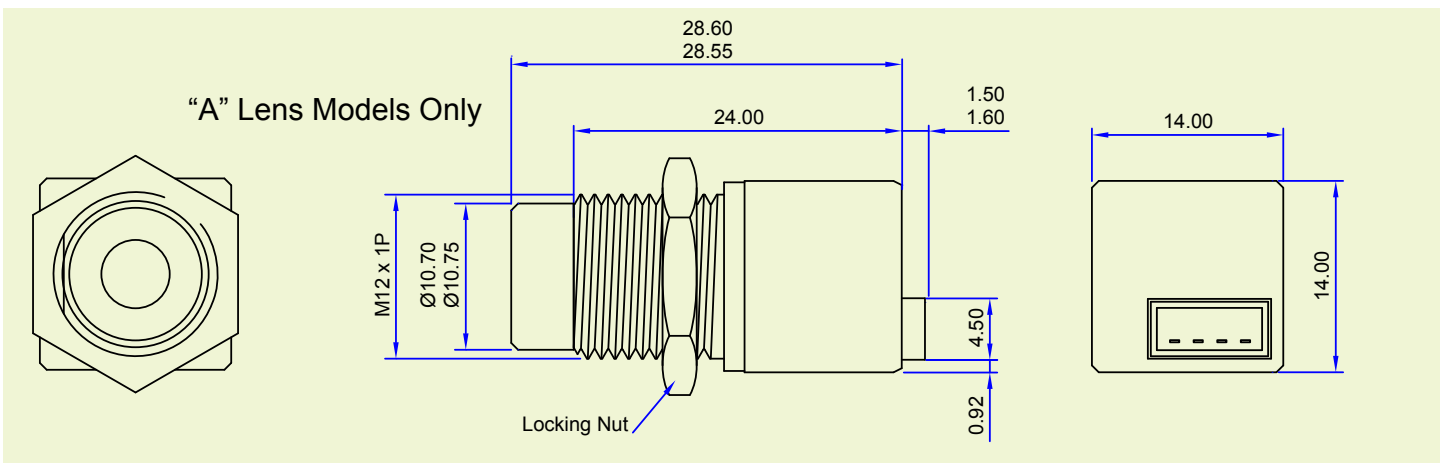
The Gated Cameo range is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001:2015.

Mechanical Dimensions

Gated Cameo Diode Laser Module



Gated Cameo Laser Diode Module with Projection Lens Fitted



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



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