Global Laser

Panel Laser

Panel Laser Overview

The Panel Laser is a surface mountable laser diode module. It provides the high level of optical and electrical performance afforded by the Premier PWM range of laser diode modules by Global Laser.

An OEM version can be integrated with the surface of an enclosed system or a wall in your production facility. An IP67-certified version is successfully used in outdoor motion sensing and event monitoring applications.

Unlike traditional laser diode modules, the Panel Laser utilises closed-loop modulation. This allows you to generate high repetition rates and negates the need for laser calibration.

The Panel Laser's built-in control circuit helps to deliver excellent output power stability over time and temperature. This allows you to consistently illuminate your target in a range of environmental conditions.

You can control the mean intensity of the output laser beam by either changing the mark to space ratio or modulating the laser from a TTL level input signal within the limits of the laser diode module's maximum rise and fall time (typically <0.5µs).

Designed for your convenience, the Panel Laser can be powered from an industry standard 5 Vdc power supply.

Key Features:

- Panel board OEM form factor
- Optional IP67 certified housing from protection from water, dust and debris
- Choice of lenses to provide circular/ elliptical beams or lines
- Pulse Width Modulation (PWM) internal drive board
- Electrically isolated
- Reverse polarity protection
- User adjustable focus
- LED to indicate ON/OFF status of laser
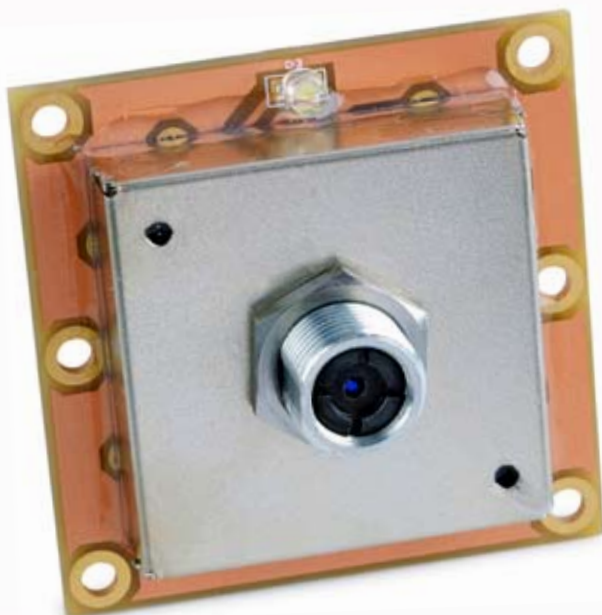
Form Factors

OEM

The OEM version of the Panel Laser is used for surface integration. It can be seamlessly attached to the surface of an enclosed system or the exposed wall in your production facility.

You don't need a clamp or holder to mount the Panel Laser. Instead, you can save workspace and reduce adjustment errors by simply fixing the Panel Laser directly to the required surface.

You can link the Panel Laser's control circuit to a number of components including a power supply, detector, or function generator. A "self-pulsing" version of the Panel Laser is also available, negating the need for a separate function generator.

The Panel Laser can be synchronised with Global Laser's Panel Detector or Synchronous Detector to create a beam break system for motion detection.

IP67-certified water-, dust-, and debris-proof housing

The IP67 version encases the above OEM Panel Laser in rigid housing that protects the electrical and optical components from water, dust, and debris. A secure transparent lid on the aperture side of the Panel Laser serves as a window that effectively transmits the output laser radiation.

Recommended for outdoor applications, the IP67 certified housing shields the OEM Panel Laser from harsh environments.

The IP67 Panel Laser can be successfully synchronised with the IP67 Panel Detector for outdoor motion detection, smoke/fog detection, and general event monitoring in security and transport.

Specification

	OEM Panel Laser	IP67 Panel Laser
Mechanical Information		
Weight (grams)	45	250
Diameter (mm)	20.9 x 50 x 50 (L x W x H)	65 x 82 x 80 (L x W x H)
Connector Type	4-pin JST	4-way Binder (male)
Isolated Body	Yes	
Optical Information		
Wavelength (nm)	635, 650 & 660	
Output Power (mW)	1 - 80*	
Power Stability (Over Temperature Range)	≤1%**	
Beam Shape	See Lens Options	
Focus	Adjustable	
Focus Distance	Collimated	
Environmental Information		
Operating Case Temperature (°C)	-10 to +45	
Storage Temperature (°C)	-10 to +80	
Ingress Protection	-	IP67
Electrical Specifications		
Input Voltage (V+) (Red Lead - pin 1)	5 ±5%	
Input Voltage (Black Lead - pin 2)	0	
Operating Current Drive Circuit (mA)	4 (Typ)	
Operating Current (mA)	50 (Typ) ***	
Reverse Polarity Protection	Yes	
Rise &Fall Time (Typ) (µs)	<0.5	
Frequency Range (Mhz)	DC to 1	
Modulation Voltage Range (Yellow Lead - pin 3)	TTL Low = Off TTL High = On	
TTL Enable (Blue Lead - pin 4)	<0.4 = off >2V= on	
Other		
MTTF (Hours) @ 25°C	≥29,000***	

NOTES
* - IP67 lid wavelength dependant transmission loss = ≈20%
** - Based on Premier 650nm 1mW C2 Lens
*** - Based on a Premier PWM 635nm, 1mW
All Specifications are typical @ 25 °C

Driver Type

Pulse Width Modulation TTL Digital Control

The TTL driver board allows the Panel Laser to be gated on and off, or pulse-width modulated at TTL voltage levels via the yellow control lead.

4th Pin - Enable Function

The Panel Laser has a 4th pin enable function which is responsive to TTL voltage levels and functions as an electronic switch to quickly turn the laser on and off without needing to disturb the power supply. A TTL level high turns the laser on and a TTL level low turns the laser off.

The enable function can also be used as a remote interlock by integrating the 4th pin with a door switch or a micro switch on a safety guard.

Lens Options

Standard Lenses:-

S Lens: Produces an elliptical collimated beam or focussed spot

Optional Collimating Lenses:-

C1 Lens: Aperture of 1mm that generates a circular collimated beam or focused spot.
C1.5 Lens: Aperture of 1.5mm that generates a circular collimated beam or focused spot.
C2 Lens: Aperture of 2mm that generates a circular collimated beam or focused spot.
C3 Lens: Aperture of 3mm that generates a circular collimated beam or focused spot.
HG Lens: High quality glass aspheric lens which produces a elliptical collimated beam or well-defined spot over longer working distance.

Power Options

| Wavelength	Power	Maximum Power Output With Lens	
		S & HG Lens	**C2 Lens**
635nm	1, 5, 10, 15, 20mW	20mW	10mW
650/660nm	1, 5, 10, 20, 30, 50, 80mW	80mW	30mW
Custom	Please call with your requirements		

NOTES:-
Wavelength tolerance can vary typically by ±10nm.
Power levels refer to the maximum diode output power. Output power will vary depending on optical configuration.
Not all wavelengths and powers are available with all lens options or driver PCB options.
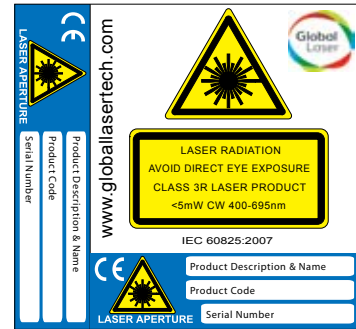
Laser Safety

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1 2007, which should be consulted prior to designing or using any laser product. The following labels are supplied for attachment to the customer's equipment, but responsibility for compliance with the standard remains with the user.
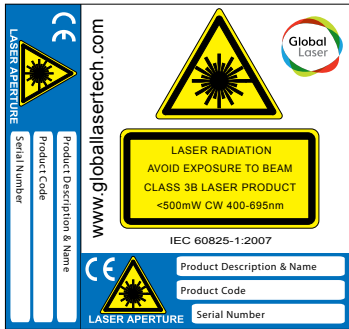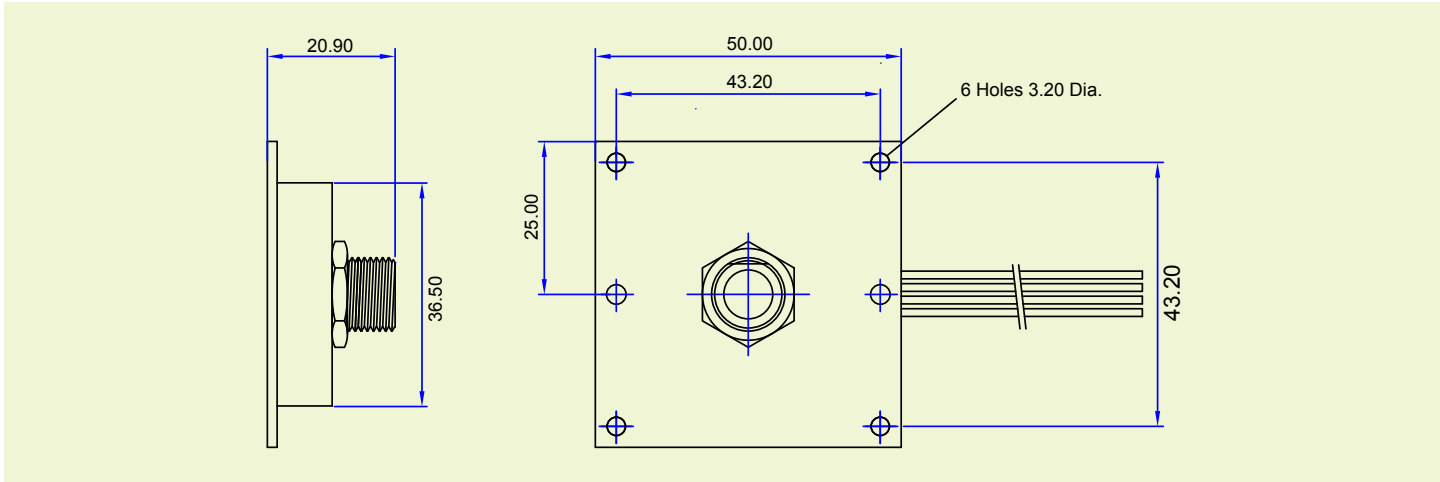

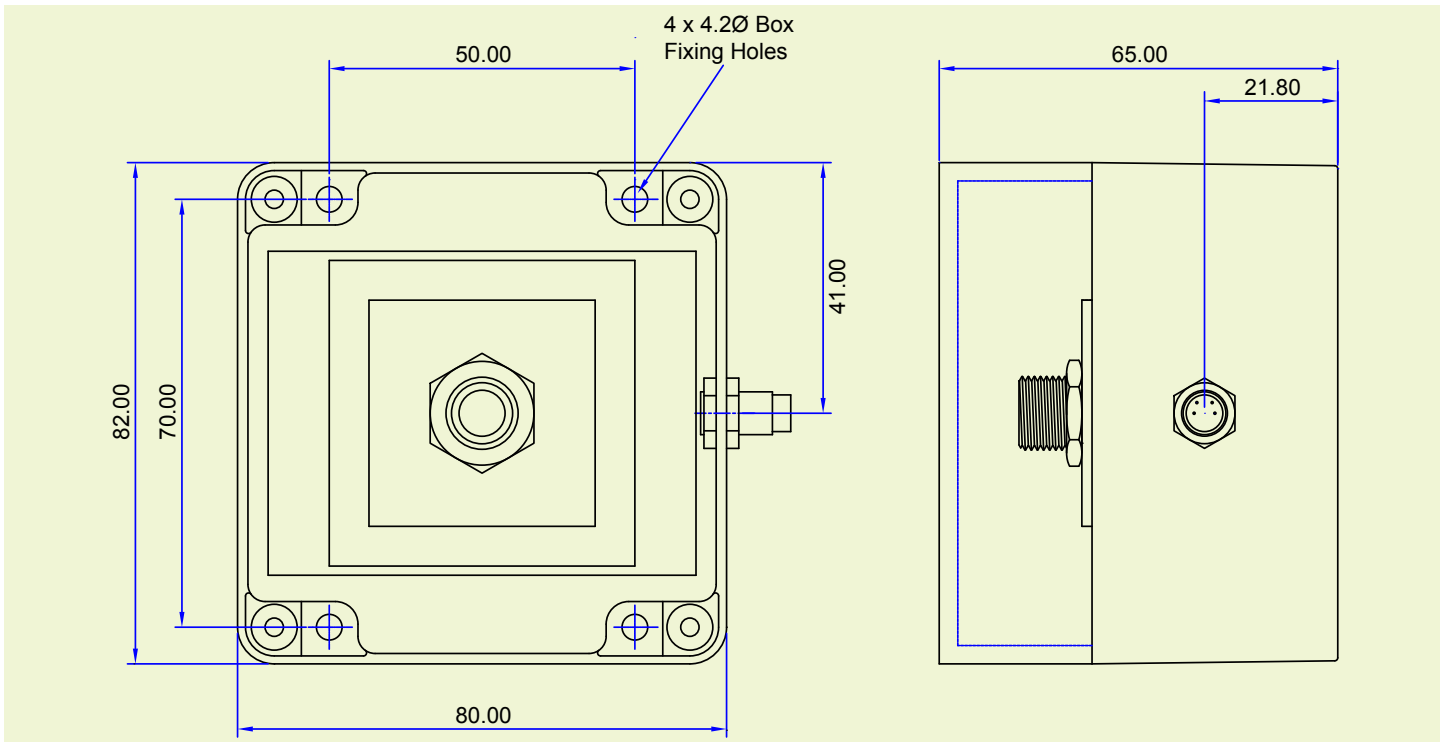Class 3B Laser Label
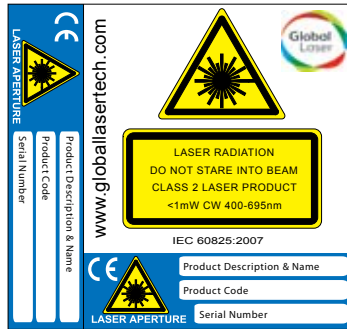
Class 2 Laser Label

Class 3R Laser Label

Mechanical Dimensions

OEM Laser Panel Outline

20.90
50.00
43.20
6 Holes 3.20 Dia.
25.00
36.50
43.20

IP67 Laser Panel Outline

50.00
4 x 4.2Ø Box
Fixing Holes
65.00
21.80
82.00
70.00
41.00
80.00

Drawings are not to scale

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

Global Laser

SYSTEM CERTIFICATION
ISO 9001:2000 SGS

ISO9001 Certified