



## Photon laser diode modules : 635-640nm

### Key features

- Visible light  $\lambda = 635\text{nm}$  to  $640\text{nm}$
- Output power  $0.9\text{mW}$  to  $40\text{mW}$
- Adjustable optics
- Compact and self-contained
- High reliability

### Applications

- Industrial alignment and positioning
- Barcode readers
- Medical fluorescence

### Options

PM: Photon Module

PMF: Photon Module with Flange

## Photon Laser Diode Modules : 635nm - 640nm

The Photon Laser Modules produce an elliptical output beam of  $3.5 \times 1.5\text{mm}$  ( $1/e^2$ ), with output powers from  $0.9\text{mW}$  to  $40\text{mW}$  at lasing wavelengths of  $635 - 640\text{nm}$ . Operating voltage is from  $2.7\text{V}$  to  $6\text{V}$  DC at operating currents from  $35\text{mA}$  to  $120\text{mA}$ .

Beam divergence is  $<0.6 \times 0.3\text{mrad}$  and operating temperature range is  $-10^\circ\text{C}$  to  $+50^\circ\text{C}$ .

The module consists of an aluminium housing, laser diode, drive circuit and collimating lens.

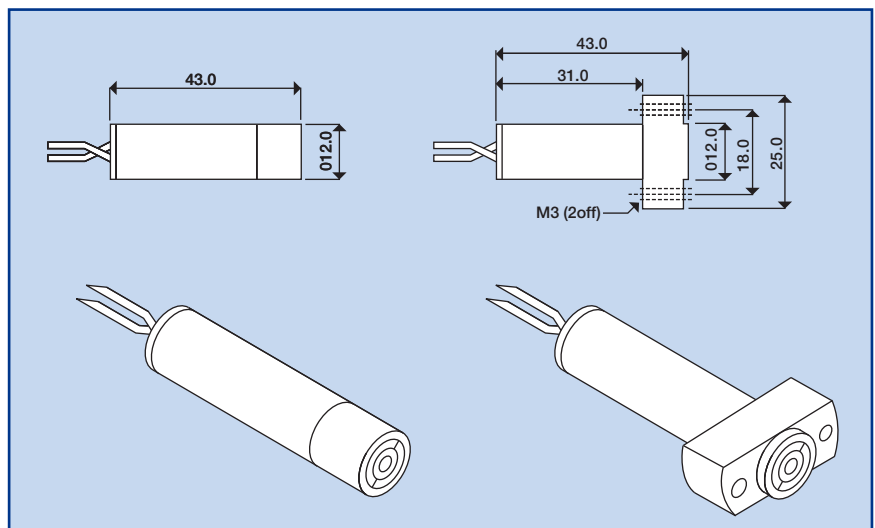
The Photon module can be supplied in various colours, (red, green, blue, black, violet), to assist

in wavelength or power identification.

The Photon PMF modules have a  $25\text{mm}$  mounting flange.

Electrical connections are made via external flying leads. The lens may be adjusted to produce either a collimated beam or focused spot. The standard lens may be replaced by other optical systems such as line generators.

The Photon range of laser diode modules has been designed as a complete laser diode solution for OEM use.



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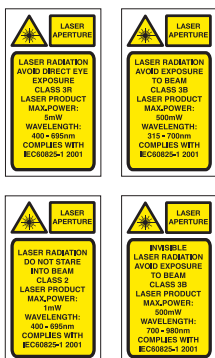
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# Photon laser diode modules : 635-640nm

## Specifications (typical @ tc = 25°C)

Part Number PM/PMF	101-P	201-P	301-P	401-P	501-P	601-P	701-P
Wavelength	635nm	635nm	635nm	635nm	635nm	638nm	640nm
Output Power	0.9mW	3.0mW	6.0mW	12.0mW	18.0mW	25.0mW	40.0mW
Power Stability	< 5%						
Beam Size (typ 1/e <sup>2</sup> )	3.5 x 1.5mm						
Beam Divergence (full angle)	0.6 x 0.3mrad						
Pointing Stability	<0.2mrad/°C						
Bore Sighting	<2.0°						
Operating Voltage	2.7-6.0V DC						
Operating Current (25°C)	35mA	65mA	80mA	90mA	90mA	100mA	120mA
Operating Temperature (non-condensing)	-10°C to +50°C						
Storage Temperature	-40°C to +85°C						
Housing Material	HE30 Anodised Aluminium						
Mechanical (mounting flange 25mm)	12mm ± 0.1mm diameter, 43mm length						
Flying Lead Length	300mm						



## Laser Safety

The light emitted from these devices has been set in accordance with IEC60825. However, staring into the beam, whether directly or indirectly, must be avoided. IEC60825 classifies laser products into three different categories depending on light emitted, wavelength and eye safety.

### CLASS II

“Caution”, visible laser light less than 1.0mW. Considered eye safe, normal exposure to this type of beam will not cause permanent damage to the retina.

### CLASS IIIA

“Danger”, visible laser light between 1.0mW and 5.0mW. Considered eye safe with caution. Focusing of this light into the eye could cause some damage.

### CLASS IIIB

“Danger”, infrared (IR), and high power visible lasers considered dangerous to the retina if exposed.

NB: It is important to note that while complying with the above classifications, unless otherwise stated, our laser diode products are not certified and are designed solely for use in OEM products. The way in which the device is used in the final product may alter its original design classification, and it is the responsibility of the OEM to ensure compliance with the relevant standards.

## Heat Sinking

If the case temperature of the laser diode exceeds its maximum specification, premature or catastrophic failure may occur. To ensure the maximum life of the laser diode, it is recommended that an additional electrically insulated heatsink, of at least 35 sq.cm. be used. Thermal transfer cream can be used to improve contact and heat dissipation. Do not restrict air circulation around the device.

## Power Connections

The Photon laser diode modules require a regulated input voltage of 2.7-6V DC. Connections are made via the 2 pre-tinned external flying leads, (red is positive, black is negative).

**WARNING:** The anodised housing is internally connected to the positive supply rail. Damage to the external anodised surfaces will result in the housing being at positive potential.

Specifications subject to change without notice. E&OE



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