

Photon Laser Diode Modules



The Photon laser diode module range has been designed as a complete solution for OEM use. This compact and self-contained design is available in a wide range of wavelengths and power levels, making it suitable for a broad range of applications. The range offers high reliability and is available with CW or TTL modulation. A 25mm flange is an option to allow for easier mounting.

Photon laser diode modules are available with elliptical or circular beams. Optics are adjustable to allow customer increased flexibility. Different coloured barrels are available for identification purposes. Line generating options are also available.

ProPhotonix has more than fifteen years of experience in providing lasers for some of the most demanding environments and can provide custom solutions for specific applications. For further information on how ProPhotonix can meet your solution requirements contact us.

Key Features

- Elliptical and circular beam, line generating optics available
- Compact & self contained design
- High reliability
- Adjustable optics
- Available in Wavelengths from 405nm to 850nm
- Output powers from 0.9mW to 85mW
- CW or TTL modulation options
- Available with a 25mm mounting flange

Key Applications

- Industrial Alignment & Positioning
- Fluorescence
- Industrial Inspection
- Low Level Laser Therapy
- Spectroscopy
- Sensors
- Particle Measurement

Product Specifications

Specifications	
Power Stability	<5%
Pointing Stability	<0.2mrad/°C
Bore Sighting	<2.0°
Operating voltage 635 - 850nm	2.7 - 6.0V DC
Operating voltage for 405nm modules	8.0 - 10.0V DC
Operating Temperature (non-condensing)	-10°C to + 50°C
Storage Temperature	-40°C to + 85°C
Housing Material	HE30 Anodised Aluminium
Flying Lead Length	300mm
Modulation 635 - 850nm	TTL 0HZ - 100kHz maximum, 0V=off 5V=on
Modulation 405nm modules	TTL 0HZ - 1kHz maximum, 0V=off 5V=on

Photon Line Module Specifications

Wavelength (nm)	Power (mW)	Max. Operating Current (mA)
405	0.9	60
	10	80
	15	80
	30	100
635	0.9	65
	5	90
638	10	100
640	20	120
650	0.9	45
	10	70
655	15	70
	30	150
670	0.9	45
	3	55
705	10	75
785	0.9	45
	5	60
830	10	75
	40	150
850	10	120

Fan Angles for Line Generating Optics

Fan Angles (°)
3°
12°
22°
30°

Elliptical Output Beam

Wavelength (nm)	Power (mW)	Max. Operating Current (mA)
405	0.9	50
	4	60
	25	80
	35	80
	60	100
635	0.9	35
	3	65
	6	80
	12	90
	18	90
638	25	100
640	40	120
650	0.9	45
	3	45
655	22	70
658	30	70
660	70	150
670	0.9	40
	3	45
	6	55
705	25	75
785	0.9	35
	3	45
	12	60
830	25	75
	85	150
850	25	120

Collimated Beam Size (typ @ 1m) : 4x2mm

Beam Divergence (typ @ 1m) : 0.6 x 0.3mrad

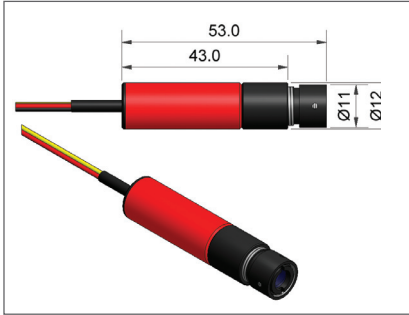
Circular Output Beam

Wavelength (nm)	Power (mW)	Max. Operating Current (mA)
405	0.9	50
	4	60
	25	80
	35	80
	60	100
635	0.9	35
	3	65
	6	80
	12	90
	18	90
638	25	100
640	40	120
650	0.9	45
	3	45

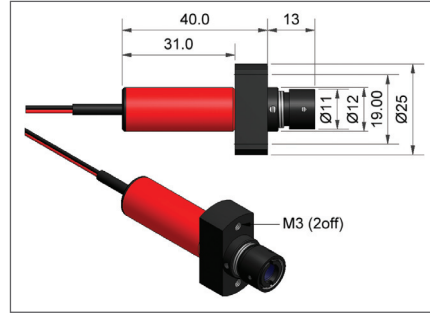
Collimated Beam Size (typ @ 1m) : 1.8mm

Beam Divergence (typ @ 1m) : 0.6mrad

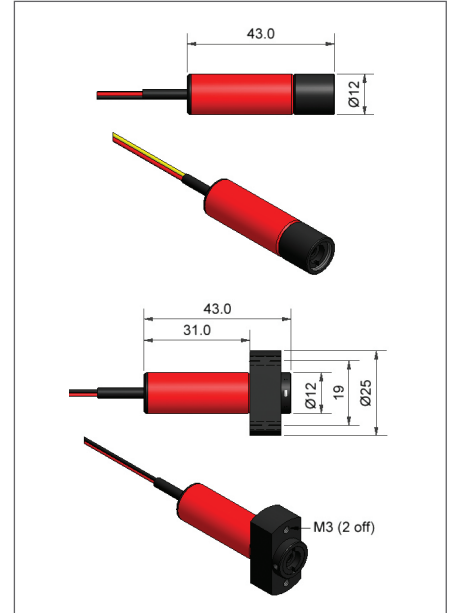
Line Generating Photon Module



Line Generating Photon Module with Flange



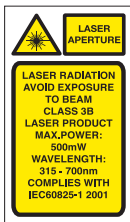
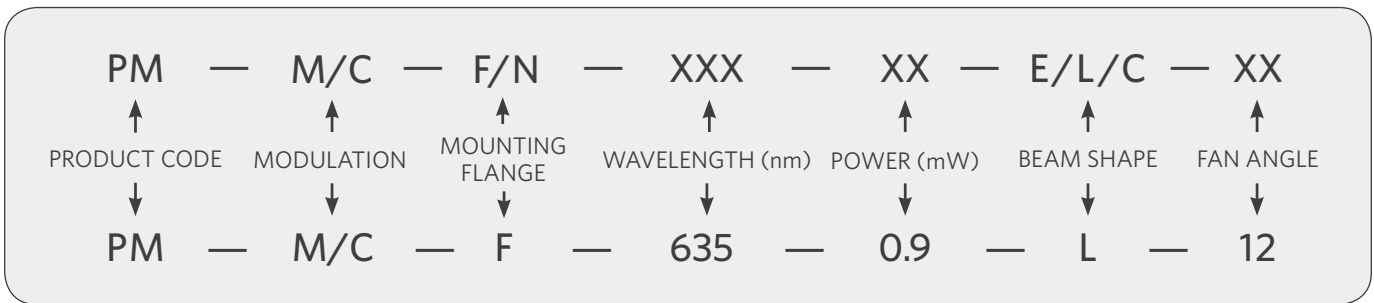
Photon Module without and with a Flange - Spot Optics



Part Numbers

To order your Photon Laser Diode Module use the product Code PM - Select Modulation (M - Modulation/C - CW) - Select Mounting Flange (F - Flange/N - No Flange) - Select Wavelength (XXX) - Select Power (XX) - Select Beam Shape (E - Elliptical/C - Circular/L - Line) - Select Fan Angle (XX) (*Fan Angle for Line and Cross Optics ; XX Spot*).

e.g PM - M - F - 635 - 0.9 - L - 12



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.

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 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 III: "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.

Power Connections

The Photon Plus laser diode modules require a regulated input voltage of 5V DC. Connections are made via the 2 pre-tinned external flying leads, (red is positive, black is negative). Modules with modulation have 3rd yellow wire.

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."

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.



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