

Miniature Laser Diode Collimators



650nm miniature laser diode collimators

These miniature laser diode collimators are specifically designed for applications requiring very high beam alignment accuracy. With the standard version giving a boresight error of 0.4° and the ultrahigh-precision version giving 0.05° , they are eminently suitable for even the most demanding of applications.

They have a lasing wavelength of 650nm, elliptical output beam of $2.7 \times 6\text{mm}$ at 5 metres, beam divergence of 0.5mrad max, collimated output power of 5mW max, pointing stability of $<0.2\text{mrad}/^\circ\text{C}$ and high bore sighting accuracy.

Operating current is 30mA , threshold current is 20mA and operating temperature range is from -10°C to $+70^\circ\text{C}$.

These miniature laser diode collimators have been designed as a complete low cost, high volume system for OEM use.

They consist of an anodised aluminium housing, 5.6mm diameter laser diode and collimating lens in a lightweight 6mm cylindrical package.

Electrical connections are made via the laser diode pins. The lens may be factory-set to produce either a collimated beam or focused spot.

Direct access to the laser diode and photodiode connections provide maximum flexibility in the configuration of the electrical interface. Drive electronics can be supplied if required. Other wavelengths and output powers are available on request.

Key Features

- Visible light $\lambda = 650\text{nm}$
- Collimated output power 5mW
- High boresight accuracy
- Elliptical output beam
- Pre-fitted 5.6mm dia. laser diode
- Factory-set collimated / focused output

Applications

- Industrial and automotive alignment
- Positioning and sensing
- Bar code scanning
- Process control
- Machine vision
- Targeting applications

Product Specifications

(T_c=25 °C)

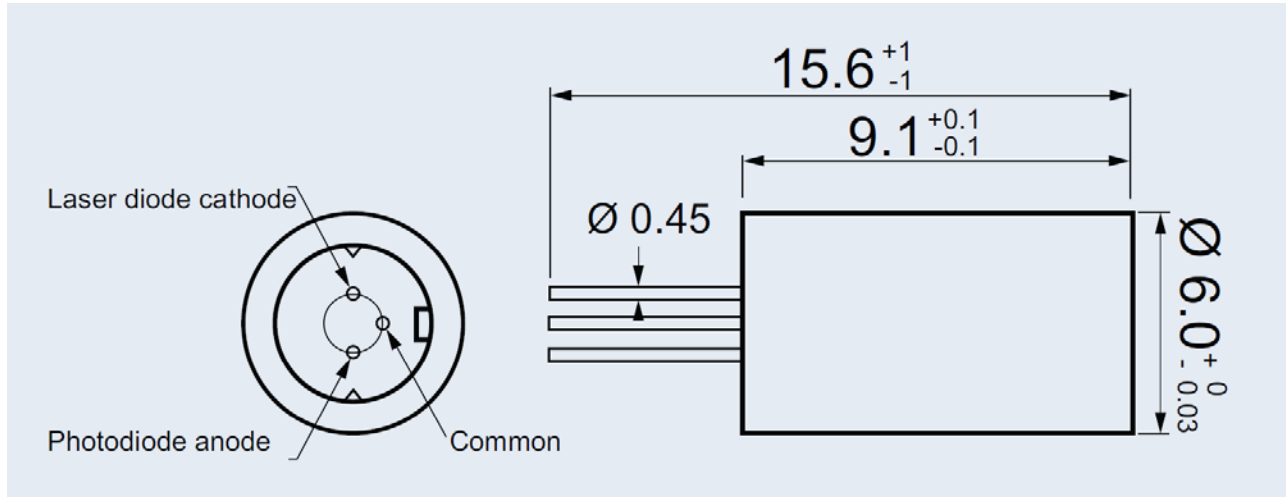
		Unit
Wavelength	650	nm
Collimated Output Power (max)	5	mW
Beam Size (1/e ² measured at 5m)	2.7 x 6.0	mm
Beam Divergence	0.5	mrاد
Pointing Stability	<0.2	mrاد/ °C
Bore Sighting (typ)	0.4 or 0.05	°
Threshold Current	20	mA
Operating Current	30	mA
Monitor Current	0.2	mA
Operating Temperature	-10 to + 70	°C
Storage Temperature	-40 to + 85	°C
Length (excluding laser diode pins)	9.1	mm
Diameter	6 + 0.00/-0.03	mm
Housing Material	Anodised Aluminum	

Ultra high precision version available with boresighting error of 0.05 °

Part Numbering

MIN - 650 - 5 - S	Standard bore-sighting (<0.4 °)
MIN - 650 - 5 - U	Ultra high precision bore-sighting (<0.05 °)

Dimensional Diagram



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.

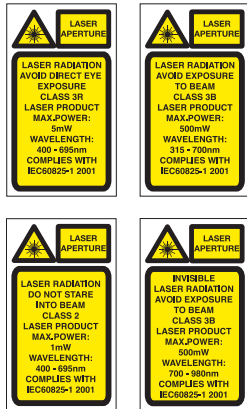
CLASS IIIIR

“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.



NB. Without the inclusion of laser drive circuits, the output powers cannot be set in accordance with EN60825 since they are designed for OEM use and not certified devices as defined in the specification. The manufacturer of the complete laser product is responsible for complying with the requirements of EN60825. Manufacturers of products using laser diode collimators should be fully familiarised with EN60825 before using such devices.

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. Specifications subject to change without notice. E&OE

Corporate

sales@prophotonix.com

Tel: +1 603-893-8778

Fax: +1 603-898-8851

LED Solutions

ledsales@prophotonix.com

Tel: +353-21-5001313

Fax: +353-21-4297749

Laser Solutions

lasersales@prophotonix.com

Tel: +44-1279-717170

Fax: +44-1279-717171

ProPhotonix and the ProPhotonix logo are trademarks of ProPhotonix, Inc. All other brand and product names are trademarks or registered trademarks of their respective holders. Copyright © May 2010 ProPhotonix, Inc. Printed in the USA. All rights reserved.