



# Electro Optical Components, Inc.

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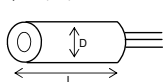
## Collimator IMK-0508-E-K-DL-650-5-50

IMM Part No.: 1106000001

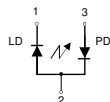
All data at Tc=25°C	Min.	Typ.	Max.
Wavelength	n.a.	655 nm	660 nm
Threshold current	n.a.	15 mA	20 mA
Operating current	n.a.	20 mA	22 mA
Operating voltage	n.a.	2,2 V	2,5 V
Monitor diode current	0,05 mA	0,1 mA	0,3 mA
Optical power	n.a.	4,3 mW	6 mW
Operating temperature	5 °C	n.a.	50 °C
Storage temperature	-25 °C	n.a.	70 °C
Beam diameter @ 1/e <sup>2</sup>		2,5 x 0,6 mm <sup>2</sup>	
Beam deviation			30 mrad
Beam divergence			1,5 mrad
Laser protection class	3B		
Lens type	plastic		
Casing	Aluminium, natural colour		
PINOUT	1		
Suitable laser diode control	IMS-WKL1-01, IMS-5/250-1		

Compliant with RoHS-requirements (2011/65/EU of 08.06.2011)

D (mm)	5
L (mm)	8
ISO 2768 f	



View from below



- power supply system

### Operating instructions

**Absolute maximum values:** Never operate the collimator – not even for a short time - above the maximum values. Otherwise an immediate damage or aging of the collimator will result, as well as a considerable reduction of its functional safety. Laser diode collimators can be damaged by current peaks generated by switching the power ON/OFF. Check the switch on characteristic of your current supply on current peaks and make sure the maximum values are not exceeded. The maximum values are specified for a casing temperature of 25°C. If the temperature rises, the power loss and the optical output power are reduced.

**Heat dissipation:** If the maximum operating temperature of the laser diode collimator is exceeded, an irreparable damage or destruction of the laser diode results. To ensure maximal durability of the laser diode, make sure an electrically insulated cooling surface of at least 24 cm<sup>2</sup> is available. The application of heat-conductive paste improves the contact and the heat dissipation. Do not obstruct the air circulation at the collimator.

**Voltage supply (avoid exceeding the specified voltage!):** Laser diodes require a driver circuit: either an automatic current control (ACC) for a constant amperage, or a (recommended) automatic power control (APC) for a constant optical output power. Only use a regulated galvanically separated voltage supply. State of the Art control boards or ICs for establish driver circuits can be purchased from IMM Photonics GmbH.

**Soldering conditions:** Maximum 260°C, 3 seconds, minimum length of PINS 1.6 mm.

**ESD directives:** Static charges and current peaks can damage or destroy the collimator. ESD safety precautions are required when handling them. Ground working environment, the tools, the soldering iron (1MΩ). Use ESD clothes, power supply with anti-interference filter, ESD transport container. Do not use near highly frequent power supplies because their inductive currents damage or destroy the laser diode collimators.

**Handling the collimation:** Do not process or deform the casing. Do not touch the lens. Minor soiling on the lens should be blown off with air. The durability of the laser diode depends on the temperature, the optical performance and the operating time. When mounting collimators, make sure they are replaceable. If several collimators are mounted into a block, they have to be electrically separated.

**Temperature characteristic:** Wave length and operating current rise with the temperature.

**Polarisation:** Laser diode collimators have a main polarisation direction. If any further polarised optical elements are used, please have this in mind.

**Catastrophic Optical Damage (COD):** If forward current, temperature or optical output power exceed the specified maximum values, the laser diode chip can melt when the COD level is reached. Red laser diodes that exceeded the COD continue emitting an optical power of 2 to 3 mW appearing to be OK. A COD is indicated by a split luminous spot or by an increase of the operating current.

**Measurement of the optical power output:** IMM recommends you to use the laser power measurement device IPM-100H B/N produced by IMM Photonics GmbH.

**Warning:** For laser diodes with PINOUT 1, the casing is internally connected to the positive supply voltage (Caution! Short-circuit). Do not expose the OEM module to high temperatures, severe mechanical vibrations, mechanical strain or high moisture. Prevent the module from being overstrained.

**Laser protection classes and safety precautions:** For the operation of laser devices, in principle the rules for accident prevention in accordance with American National Standard Institute's Standard for the Safe Use of Lasers (ANSI Z136.1-1993) have to be complied with. If the OEM module of the laser classes 3R and 3B is used in the commercial or public field, the operator has to report the operation in due time to the commercial regulatory authority and to the trade association by specifying the laser class in accordance with IEC 60825-1:2014, the laser performance and the emitted wavelength. These authorities can demand an examination of the laser devices by a technical expert. The operator must specify in writing a person in charge of laser protection who is responsible for safe operation and compliance with the safety precautions and supervises the operation. For the operation of the OEM module, by all means make sure that the laser beam is directed in a way that there are no persons in the projection area and that beams unintentionally reflected (e.g. by reflecting objects) cannot access to areas where there are people. Never look into the laser beam and never direct it to persons or animals. Laser radiation can cause injuries of the eyes and the skin. Never direct the laser beam on mirrors or other reflecting surfaces. The uncontrolled deviated beam might hit persons or animals. Operate the laser only in supervised areas. Keep the OEM module out of the reach of children. Make sure there is responsible supervision by skilled staff when OEM modules are operated in schools, training facilities, hobby and self-help workshops.

**Specifications can be changed without notice.**