



# Electro Optical Components, Inc.

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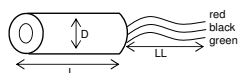
## IMM-1040-650-1-R-K-L

IMM Part No.: 1206000015

All data with Tc=25°C	Min.	Typ.	Max.
Wavelength	n.a.	655 nm	665 nm
Operating temperature	0 °C	25 °C	65 °C
Storage temperature	0 °C		65 °C
Beam diameter @ 1/e <sup>2</sup>		∅ 2 mm	
Beam divergence			0,5 mrad
Beam deviation		10 mrad	15 mrad
Optical output power		0,85 mW	0,99 mW
Operating voltage Vcc	4,5 V DC		5,5 V DC
Operating current			45 mA
Laser protection class	2 @ max. Popt		
Lens type	plastic		
Casing	Aluminium black anodized		
Beam setting	Collimated		

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

D (mm)	10
L (mm)	40
ISO 2768 F	
LL (mm)	150±20



### Operating instructions

#### Attention

Check maximum/minimum input voltage and polarity. Comply with safety instructions! Do not look into the laser beam! The laser warning has to be affixed on the device.

#### Heat dissipation

If the maximum operating temperature of the laser diode modules 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 35 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 laser diode modules.

#### Voltage supply (avoid exceeding the specified voltage!)

Laser diode modules require a regulated galvanically separated voltage supply DC with an operating voltage in accordance with the table above. Reverse voltage protection.

#### Handling of laser diode modules

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 laser diode

modules are mounted into a block, they have to be electrically separated. Do not use near highly frequent power supplies as their inductive currents damage or destroy the laser diode modules.

#### Warning

Do not expose the OEM module to high temperatures, severe mechanical vibrations, mechanical strain or high moisture. Prevent the laser diode modules from being overstrained.

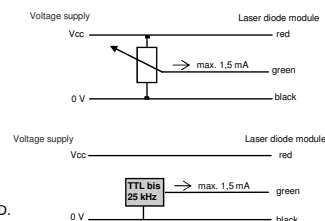
The optical output power of the laser diode modules is preset in accordance with IEC 60825. The anodised casing is internally connected to the positive supply voltage. Damages of the exterior anodic coating result in a positive voltage at the module casing (short-circuit possible).

#### Power connection

1. For continuous wave mode with maximum power:  
red on Vcc according to table -  
black and green on 0 V

2. Power regulation with the control input:  
red on Vcc according to table V – black on 0 V –  
green on wiper potentiometer

3. Modulation with the control input:  
red on Vcc according to table - black on 0 V -  
green modulation up to approx. 25 kHz;  
connect module GND to frequency generator GND.



#### 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.

Features: Modulation / performance adjustment via analog input