Collimated LEDs, 625 nm

Description

These Thorlabs Collimated LEDs each consist of a mounted LED and a lamphouse-port-compatible housing that contains an aspheric collimation optic. Each LED is mounted to the end of a heat sink equipped with internal SM1 (1.035"-40) threads. These Thorlabs LEDs need to be supplied with a constant current that must not exceed the specified maximum current. For specifications of each available version, please see the table below.

Specifications

Specification	Value
Color	Red
Nominal Wavelength[a]	625 nm
Bandwidth (FWHM)	17 nm
Emitter Size	1 mm x 1 mm
Maximum Current (CW)	1000 mA
Forward Voltage	2.5 V
Electrical Power	2500 mW
Typical Lifetime	>100 000 h
Operating Temperature (Non-Condensing)	0 to 40 °C
Storage Temperature	-40 to 70 °C
Risk Group[b]	RG2 - Moderate Risk Group

a. Value is approximate.
b. According to the Standard IEC 62471:2006, Photobiological Safety of Lamps and Lamp Systems

Item #	M625L4-C1	M625L4-C2	M625L4-C4	M625L4-C5
Total Beam Power[a,b]	630 mW	490 mW	690 mW	630 mW
Beam Diameter[a]	50 mm	37 mm	44 mm	43 mm
Compatible Microscopes	Olympus BX and IX	Leica DMI	Zeiss Axioskop	Nikon Eclipse

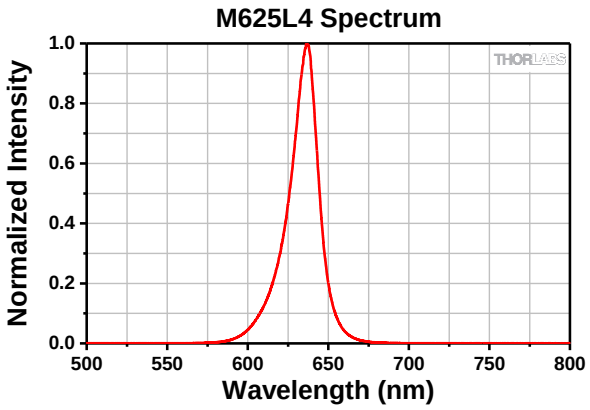
a. Values are approximate.
b. Measured at Maximum Current

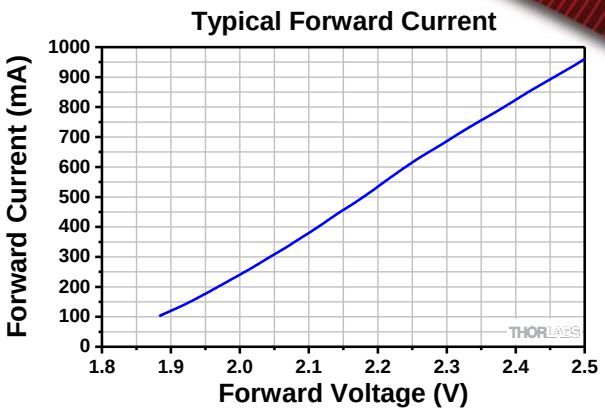
Operating Instructions

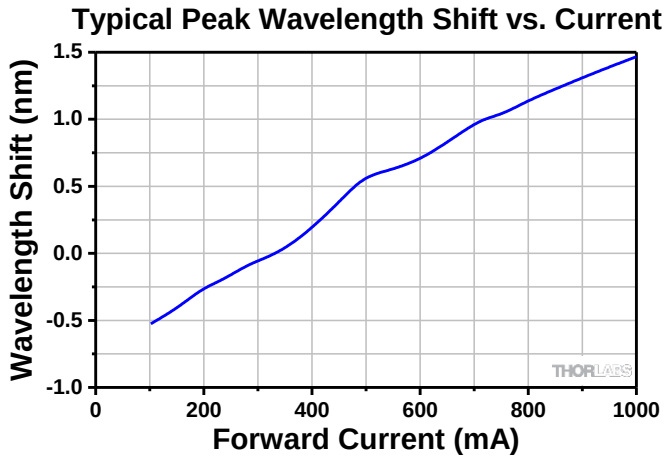
Be sure to provide air ventilation in order to avoid overheating, drops in optical power, and reduced lifetime. Be aware that each LED has a characteristic switch-on behavior, which depends on the LED properties and environment conditions. To supply sufficient heat dissipation, these LEDs have a unique thermal design that reduces the power decay to a minimum.

The drawing on page two shows the LED's male connector, which is a standard M8x1 sensor circular connector. Pins 1 and 2 are connected to the LED. Pins 3 and 4 are used for the internal EEPROM. This pin assignment is valid for all Thorlabs LED drivers. For use of third party LED drivers, please ensure the correct pin assignment.

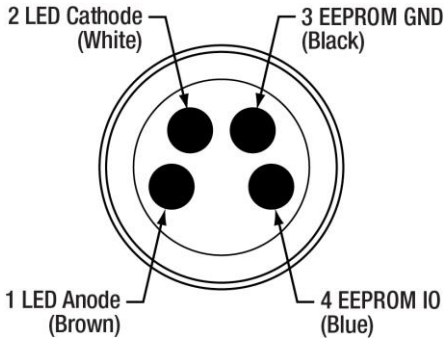
Performance Plots







Connector Pin Out



Power Supply

Please see the Thorlabs website for the available LED drivers. When selecting the LED driver, ensure that:

- The operating current never exceeds the Maximum Current specified in the LED Specification table.
- Sufficient forward voltage is supplied.

If you decide to use your own DC source, please ensure that the correct connection is made to Pins 1 and 2.

Maintenance and Service

These LEDs are not water resistant and must be protected from adverse weather conditions. To avoid damage, do not expose them to spray, liquids, or solvents. These LEDs do not contain any parts serviceable by the user and do not require regular user maintenance. Do not open the enclosures. If a malfunction occurs, contact Thorlabs for return instructions.

Warnings and Safety

During normal operation, the casing temperature may exceed ambient temperature by as much as 25 °C (45 °F). To prevent higher case temperatures, the product should be operated without anything hindering air movement around the convective cooling fins.

Please note that these LEDs are not suitable for household room illumination.

These LED must not be operated in explosive environments and should only be used with shielded connection cables.

All statements regarding safety of operation and technical data only apply when the unit is operated correctly according to its specifications. The safety of any system incorporating the equipment is the responsibility of the assembler of the system.

Inappropriate use of any Collimated Mounted LED product may result in permanent eye damage. To prevent injury, use this product in accordance with the International Standard “Photobiological Safety of Lamps & Lamp Systems” IEC 62471. This LED falls under the Risk Group RG2 – Moderate Risk Group in accordance to the standard IEC 62471:2006.

If using any of the here described LEDs in a microscope application as a replacement for a mercury vapor lamp, the same precautions should be taken.

UV/visible Radiation Warning Statement
This LED emits intense UV/visible radiation during operation. Do not look directly into the UV/visible light or look through the optical system during operation, as this can be harmful to the eyes, even for brief periods of exposure, due to the high intensity of the light. If viewing the UV/visible light directly is necessary, protective glasses must be worn to avoid eye damage.