Fiber-Coupled LED Source

400-980nm, up to 5mW, 200/400 µm fiber core size

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The FLED series provides fiber-coupled LED output up to 20 mW, offering a wide range of wavelength options from 280 nm to 980 nm. For proper thermal management, the unit must be mounted to a heat-sink base. The FLED requires a constant-current power supply, with the current not exceeding the specified maximum rating. The current source must be capable of delivering the necessary current at the specified forward voltage. An optional integrated driver is available for convenient operation.

Important: Due to its sensitivity to electrostatic discharge (ESD), the product does not come with the standard 6-month warranty if the customer uses their own driver.

Features

- High Reliability
- Low Coherent
- Polarization Insensitive
- Low Power Consumption
- Compact

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength Band (FWHM) [1], [4]	10	30	60	nm
Center Wavelength	280		980	nm
Coherence Length	9		14	µm
Maximum Current (CW) [1]	0.2	0.5	3	A
Typical Lifetime [1]		>1 000		hours
LED Output Power (Ø400 µm Fiber) [1], [4], [5]	1	3	5	mW
LED Output Power (Ø200 µm Fiber) [1], [4], [6]	0.5	1	2	mW
Compatible Connector [3]		SMA		
Operating Temperature	5		50	°C
Storage Temperature	-40		85	°C

Notes:

[1]. Measured at 25°C, longer wavelength has broader peak

[2]. According to the Standard IEC 62471:2006, Photobiological Safety of Lamps and Lamp Systems

[4]. When Driven with the Maximum Current

[5]. For Multimode Fiber with a Ø400 µm Core and 0.22 NA (Item # FG400AEA)

[6]. For Multimode Fiber with a Ø200 µm Core and 0.22 NA (Item # FG200AEA)

Applications

- Satellite Communication
- Network Channel Marking

Warning: **The device mounted on the PCB is an OEM module designed for system integration only, not for general uses. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in, and unpleasant electrical shock may also be felt. For laboratory use, please buy a protected Turnkey system.**

Rev 12/19/25

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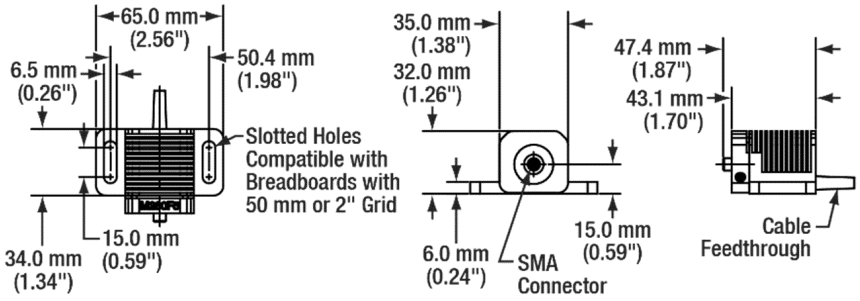
Mechanical Component Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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, this LED has 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.

Optical Fiber

Fiber connection to the LED must be made via an SMA fiber connector. We recommend using a multimode (MM) fiber. Optical power increases proportionally with the core diameter and nearly proportionally to the square of the NA.

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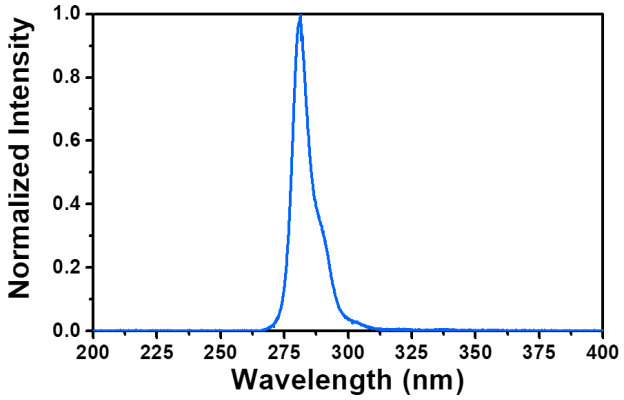
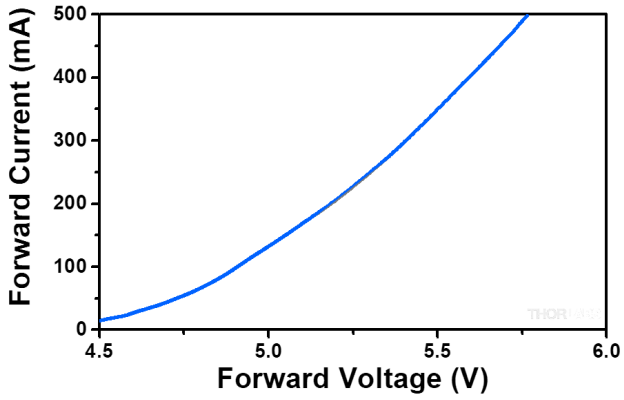
Typical Spectrums





Ordering Information

	☐☐☐	☐☐	☐	☐	☐	☐
Prefix	**Center Wavelength**	**Optical Power**	**Fiber Core**	**Fiber Length**	**Connector**	**Driver**
FLED-	280nm = 280 365nm = 365 400nm = 400 450nm = 450 495nm = 495 560nm = 560 620nm = 620 780nm = 780 850nm = 850 980nm = 980	0.2mW = 02 0.5mW = 05 1mW = 10 2mW = 20 3mW = 30 4mW = 40 5mW = 50 0.1mW = 01	200 µm = 2 400 µm = 4 600 µm = 6 1 mm = 1 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 Special = 0	SMA = 1 FC/PC = 2 Special = 0	Non = 1 Yes = 2 Special = 0

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Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness
Fibers with smaller core diameters (<5 µm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

Power Supply

- 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

Do not stick any items into the SMA connector aperture – you may damage the LED.
This LED is not water resistant and must be protected from adverse weather conditions. To avoid damage, do not expose it to spray, liquids, or solvents. This LED does not contain any parts serviceable by the user and does not require regular user maintenance. Do not open the enclosure.

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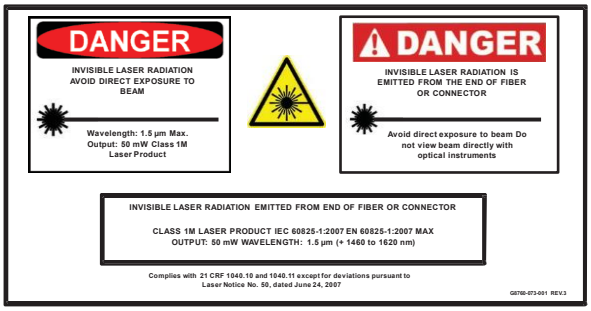
Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



* Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
* IEC is a registered trademark of the International Electrotechnical Commission.