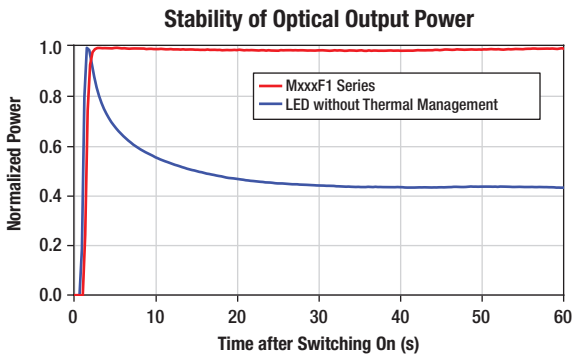
For current pricing, please see our website.

Fiber-Coupled High-Power LEDs (Page 1 of 2)

M625F1 with Ø400 µm Core Patch Cable
(Not Included)

Features

- UV, VIS, and NIR Models
- Stable Output Intensity by Optimized Thermal Management
- Long Lifetime
- Output can be Modulated (with Suitable Controller)
- Integrated EEPROM for Automated LED Settings
- SMA Connector



The graph above shows the decrease of Optical Output Power due to Increasing LED Temperature.

Each fiber-coupled LED consists of a single, high-power LED that is coupled to the fiber using a technique called butt-coupling. During this process, the fiber connector is positioned so that the end of the fiber is as close as possible to the emitter, thereby minimizing losses at the fiber input and maximizing output power. The coupling efficiency is primarily dependent on the core diameter and the numerical aperture (NA) of the connected fiber. Larger core diameters and higher NA values give rise to reduced losses and increased output power at the end of the fiber.

Each LED is equipped with an integrated EEPROM chip that stores information about the LED (e.g., current limit, wavelength, and forward voltage) that can be read by Thorlabs' DC2100 and DC4100 LED Controllers (See pages 1329 and 1328, respectively).

Optimized Thermal Management

These high-power, fiber-coupled LEDs possess good thermal stability properties. The large, passively cooled heat sink has direct contact to the metal core circuit board on which the LED is mounted. By doing so, the degradation of optical output power that can be attributed to increased LED junction temperature is minimized.

Pin Connection

The diagram to the right shows the male connector of the mounted LED assembly. It is a standard M8x1 sensor circular connector. Pins 1 and 2 are the connection to the LED. Pins 3 and 4 are used for the internal EEPROM. Please note that the EEPROM pins are not useable with a third-party LED driver.

Pin	Specification	Color
1	LED Anode	Brown
2	LED Cathode	White
3	EEPROM GND	Black
4	EEPROM I/O	Blue

Driver Options

LEDD1B

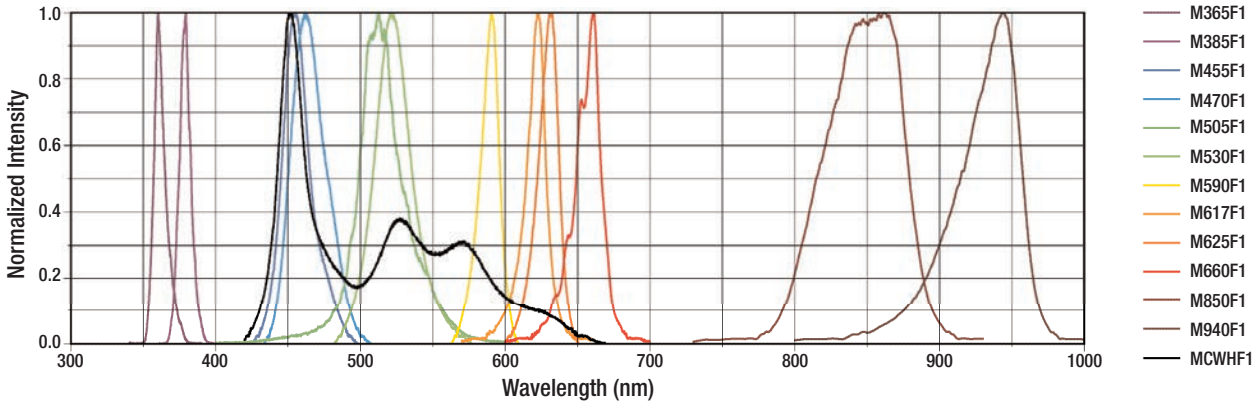
DC2100

DC4100

Compatible LED Drivers

FEATURE	LEDD1B	DC2100	DC4100
LED Driver Current Output	1.2 A (Max)	2.0 A (Max)	1.0 A Per Channel
Modulation Frequency Using External Input (Max)	5 kHz	100 kHz	100 kHz (Simultaneous Across all Channels)
Interface	Analog	USB 2.0	USB 2.0
Main Driver Features	Very Compact Footprint	Individual Pulse Width Control	Four Channels
EEPROM Compatible: Reads Out LED Data for LED Settings	No	Yes	Yes
LCD Display	No	Yes	Yes
Page	1329	1329	1328

Fiber-Coupled High-Power LEDs (Page 2 of 2)



LED Specifications

ITEM #	COLOR	DOMINANT WAVELENGTH	MINIMUM LED OUTPUT POWER*	TYPICAL LED OUTPUT POWER*	TEST CURRENT FOR LED POWER	MAXIMUM CURRENT CW	FORWARD VOLTAGE	HALFWIDTH	TYPICAL LIFETIME
M365F1	UV	365 nm	3.0 mW	4.1 mW	700 mA	700 mA	4.4 V	7.5 nm	>10,000 h
M385F1	UV	385 nm	9.0 mW	10.7 mW			4.3 V	10 nm	
M455F1	Royal Blue	455 nm	9.5 mW	11.0 mW	1000 mA	1000 mA	3.2 V	25 nm	>50,000 h
M470F1	Blue	470 nm	8.0 mW	10.1 mW			3.6 V		
M505F1	Cyan	505 nm	7.0 mW	8.0 mW			3.3 V	30 nm	
M530F1	Green	530 nm	4.0 mW	5.1 mW			3.6 V	33 nm	
M590F1	Amber	590 nm	2.5 mW	3.2 mW			2.5 V	18 nm	
M617F1	Orange	617 nm	11.0 mW	13.0 mW					
M625F1	Red	625 nm	8.0 mW	10.1 mW					
M660F1	Deep Red	660 nm	13.0 mW	14.5 mW			2.15 V	25 nm	
M850F1	IR	850 nm	8.5 mW	10.0 mW			1.5 V	30 nm	
M940F1	IR	940 nm	7.5 mW	8.5 mW			1.4 V	35 nm	
MCWHF1	Cold White	5600 K	9.5 mW	12.1 mW			3.6 V	N/A	

*for MM Fiber with Ø400 µm Core, 0.39 NA

Fiber-Coupled High-Power LEDs

ITEM #	$	£	€	RMB	DESCRIPTION
M365F1	$ 515.00	£ 370.80	€ 448,05	¥ 4,104.55	UV (365 nm) Fiber-Coupled High-Power LED, 700 mA
M385F1	$ 505.00	£ 363.60	€ 439,35	¥ 4,024.85	UV (385 nm) Fiber-Coupled High-Power LED, 700 mA
M455F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Royal Blue (455 nm) Fiber-Coupled High-Power LED, 1000 mA
M470F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Blue (470 nm) Fiber-Coupled High-Power LED, 1000 mA
M505F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Cyan (505 nm) Fiber-Coupled High-Power LED, 1000 mA
M530F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Green (530 nm) Fiber-Coupled High-Power LED, 1000 mA
M590F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Amber (590 nm) Fiber-Coupled High-Power LED, 1000 mA
M617F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Red Orange (617 nm) Fiber-Coupled High-Power LED, 1000 mA
M625F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Red (625 nm) Fiber-Coupled High-Power LED, 1000 mA
M660F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	Deep Red (660 nm) Fiber-Coupled High-Power LED, 1000 mA
M850F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	IR (850 nm) Fiber-Coupled High-Power LED, 1000 mA
M940F1	$ 366.00	£ 263.52	€ 318,42	¥ 2,917.02	IR (940 nm) Fiber-Coupled High-Power LED, 1000 mA
MCWHF1	$ 365.95	£ 263.48	€ 318,38	¥ 2,916.62	Cold White Fiber-Coupled High-Power LED, 1000 mA

Mounted LED Mating Connector

- Pico (M8) Receptacle
- Female 4-Pin for Front Mounting
- 0.5 m Long, 24AWG Wires
- M8 x 0.5 Panel Mount Thread
- IP 67 and NEMA 6P Rated

The CON8ML-4 connector can be used to mate mounted LEDs to user-supplied power supplies.

CON8ML-4
Shown Connected to the 4-Pin M8 Plug of Mounted LED

ITEM #	$	£	€	RMB	DESCRIPTION
CON8ML-4	$ 29.15	£ 20.99	€ 25,36	¥ 232.33	4-Pin Female Mating Connector for Mounted LEDs