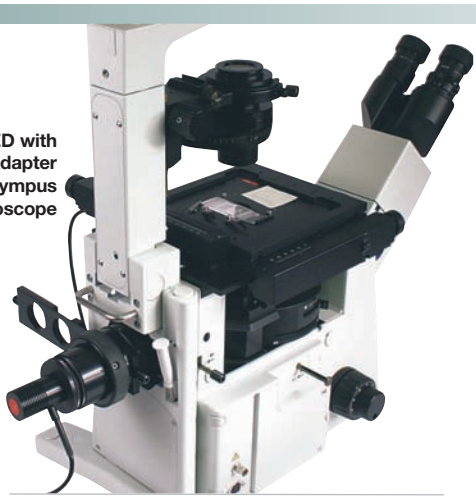
Mounted High-Power LEDs (Page 1 of 3)



Mounted LED with Collimation Adapter shown on an Olympus IX71 Microscope

Features

- Center Wavelengths from 365 nm to 940 nm and White Light
- Stable Output by Optimized Thermal Management
- UV, VIS, and NIR Models
- Internal SM1 (Ø1.035"-40) Threading
- Fits Inside a 30 mm Cage System
- Collimation Adapters Available Separately
- Integrated EEPROM Stores LED Data

M590L2
Shown with COP1A Collimator (Sold Separately)

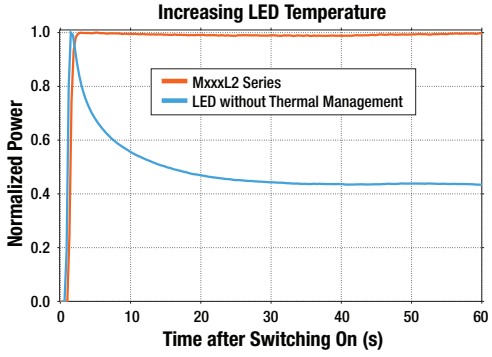
Thorlabs offers Mounted LEDs at 14 wavelengths within the 365 - 940 nm spectral range plus one white LED. Each mounted LED is available either uncollimated or collimated (see pages 1322 - 1323) and comes with an EEPROM chip that stores information such as the LED's current limit, wavelength, and forward voltage. In either case, a single high-power LED is mounted to the end of a heatsink with internal SM1 (Ø1.035"-40) threads, making it directly compatible with Thorlabs' SM1 series of lens tubes.

A low voltage, high current power cable is connected to the LED and has a feedout from the side of the heatsink tube. The end of the power cable is terminated in a circular 4-pin, M8 plug.

Optimized Thermal Management

These high-power mounted LEDs possess good thermal stability properties, and hence, degradation of optical output power due to increased LED temperature is not an issue.

Decrease of Optical Output Power due to Increasing LED Temperature



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 connections to the LED, whereas pins 3 and 4 are used for the internal EEPROM. Please note that this pin connection diagram is not valid if you are using an LED driver that was not purchased from Thorlabs.

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

LED Drivers

Thorlabs offers three LED Drivers [LEDD1B, DC2100, and DC4100 (requires DC4100-HUB)] that can be used with these mounted LEDs and offer maximum drive currents of 1.2 A, 2.0 A, and 1.0 A, respectively. As part of our T-Cube line, the LEDD1B driver is easy to use and offers a minimal footprint measuring 2.36" x 2.36" x 1.85" (60 mm x 60 mm x 47 mm). Since DC2100 and DC4100 can read the EEPROM chip in the mounted LED, these drivers have the advantage that they can automatically limit the maximum output current of the driver to protect the LED from damage.

Please See Our...

LED Driver Options

DC2100

LEDD1B

DC4100

The DC2100 and DC4100 are capable of reading the current limit from the EPROM chip of the connected LED, enabling plug-and-play operation.

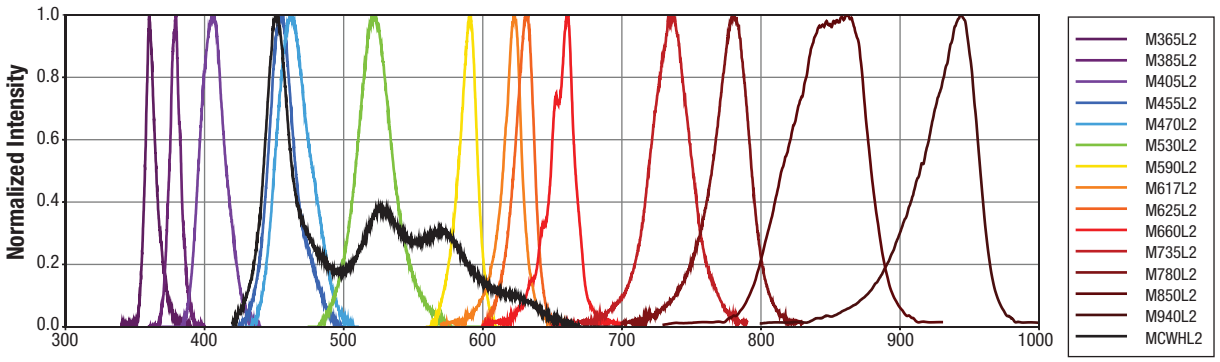
See pages 1328 - 1329

For current pricing, please see our website.

Mounted High-Power LEDs (Page 2 of 3)

This information shown below should only be used as a guideline. Due to variations in the manufacturing process and operating parameters like temperature and current, the actual spectral output of any given LED will vary.

LED Post Mounted Using an SM1RC/M Lens Tube Slip Ring



LED Specifications*

ITEM #	COLOR	NOMINAL WAVELENGTH**	MINIMUM POWER LED OUTPUT**	TYPICAL POWER LED OUTPUT**	MAX CURRENT	TYPICAL LIFETIME	RECOMMENDED DRIVERS
M365L2	UV	365 nm	190 mW	360 mW	0.7 A	>10,000 h	LEDD1B, DC2100, or DC4100
M385L2	UV	385 nm	270 mW	430 mW	0.7 A		
M405L2	UV	405 nm	410 mW	760 mW	1.0 A	100,000 h	
M455L2	Royal Blue	455 nm	900 mW	1020 mW	1.6 A	>50,000 h	
M470L2	Blue	470 nm	830 mW	950 mW	1.6 A		
M530L2	Green	530 nm	220 mW	400 mW	1.6 A		
M590L2	Amber	590 nm	150 mW	190 mW	1.6 A		
M617L2	Orange	617 nm	390 mW	570 mW	1.6 A		
M625L2	Red	625 nm	440 mW	650 mW	1.6 A		
M660L2	Deep Red	660 nm	270 mW	640 mW	1.5 A	100,000 h	
M735L2	Far Red	735 nm	260 mW	380 mW	1.5 A		
M780L2	IR	780 nm	160 mW	420 mW	1.0 A	>10,000 h	
M850L2	IR	850 nm	320 mW	450 mW	1.0 A	100,000 h	
M940L2	IR	940 nm	320 mW	460 mW	1.0 A		
MCWHL2	Cold White	6500 K	650 mW	700 mW	1.6 A	>50.000 h	

*See page 1322 for collimated mounted LEDs**Specified by the LED vendor

Collimation Adapters

Thorlabs offers collimation adapters with AR-coated aspheric condenser lenses (f = 40 mm) for collimating the output from our mounted LEDs. Two AR coating options (-A: 350 - 700 nm and -B: 700 nm - 1050 nm) and five different collimator housings are available; each is designed to mate to the illumination port on an Olympus IX/BX, Leica DMI, Zeiss Axioskop, Nikon Eclipse, or Nikon Eclipse Ti microscope.

Each LED source can be fitted to a collimator by using an SM2T2 Coupler and an SM1A2 Adapter as shown to the right. This makes it simple to interchange LED assemblies; simply unscrew the LED housing and replace it with an alternative LED.

Mounted High-Power LEDs (Page 3 of 3)

COMPATIBLE MICROSCOPES	OLYMPUS BX & IX MICROSCOPES	LEICA DMI MICROSCOPES	ZEISS AXIOSKOP MICROSCOPES	NIKON ECLIPSE MICROSCOPES	NIKON ECLIPSE TI MICROSCOPES*
AR-Coating					
A-Coated: 350 - 700 nm	COP1-A	COP2-A	COP4-A	COP3-A*	COP5-A*
B-Coated: 700 - 1050 nm	COP1-B	COP2-B	COP4-B	COP3-B*	COP5-B*

*The difference between the Nikon Eclipse adapters is an additional spring on the bayonet of the Nikon Eclipse Ti adapter.

Mounted High-Power LEDs

ITEM #	$	£	€	RMB	DESCRIPTION
M365L2	$ 455.00	£ 327.60	€ 395,85	¥ 3,626.35	UV (365 nm) Mounted High-Power LED, 700 mA
M385L2	$ 455.00	£ 327.60	€ 395,85	¥ 3,626.35	UV (385 nm) Mounted High-Power LED, 700 mA
M405L2	$ 455.00	£ 327.60	€ 395,85	¥ 3,626.35	UV (405 nm) Mounted High-Power LED, 1000 mA
M455L2	$ 260.00	£ 187.20	€ 226,20	¥ 2,072.20	Royal Blue (455 nm) Mounted High-Power LED, 1600 mA
M470L2	$ 260.00	£ 187.20	€ 226,20	¥ 2,072.20	Blue (470 nm) Mounted High-Power LED, 1600 mA
M530L2	$ 260.00	£ 187.20	€ 226,20	¥ 2,072.20	Green (530 nm) Mounted High-Power LED, 1600 mA
M590L2	$ 187.50	£ 135.00	€ 163,13	¥ 1,494.38	Amber (590 nm) Mounted High-Power LED, 1600 mA
M617L2	$ 187.50	£ 135.00	€ 163,13	¥ 1,494.38	Red Orange (617 nm) Mounted High-Power LED, 1600 mA
M625L2	$ 187.50	£ 135.00	€ 163,13	¥ 1,494.38	Red (625 nm) Mounted High-Power LED, 1600 mA
M660L2	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	Deep Red (660 nm) Mounted High-Power LED, 1500 mA
M735L2	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	IR (735 nm) Mounted High-Power LED, 1500 mA
M780L2	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	IR (780 nm) Mounted High-Power LED, 1000 mA
M850L2	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	IR (850 nm) Mounted High-Power LED, 1000 mA
M940L2	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	IR (940 nm) Mounted High-Power LED, 1000 mA
MCWHL2	$ 187.50	£ 135.00	€ 163,13	¥ 1,494.38	Cold White Mounted High-Power LED, 1600 mA

Collimation Adapters, AR Coating: 350 - 700 nm

ITEM #	$	£	€	RMB	DESCRIPTION
COP1-A	$ 175.70	£ 126.50	€ 152,86	¥ 1,400.33	Collimation Adapter for Olympus BX & IX
COP2-A	$ 175.70	£ 126.50	€ 152,86	¥ 1,400.33	Collimation Adapter for Leica DMI
COP4-A	$ 175.70	£ 126.50	€ 152,86	¥ 1,400.33	Collimation Adapter for Zeiss Axioskop
COP3-A	$ 175.70	£ 126.50	€ 152,86	¥ 1,400.33	Collimation Adapter for Nikon Eclipse
COP5-A*	$ 207.90	£ 149.69	€ 180,87	¥ 1,656.96	Collimation Adapter for Nikon Eclipse Ti

*The Nikon Eclipse Ti bayonet adapter is the same as the Nikon Eclipse adapter except that it incorporates an additional spring. Whether or not you need an adapter with a spring will depend on the compatibility requirements of the light port on your Nikon microscope.

Collimation Adapters, AR Coating: 700 - 1050 nm

ITEM #	$	£	€	RMB	DESCRIPTION
COP1-B	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	Collimation Adapter for Olympus BX & IX
COP2-B	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	Collimation Adapter for Leica DMI
COP4-B	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	Collimation Adapter for Zeiss Axioskop
COP3-B	$ 205.00	£ 147.60	€ 178,35	¥ 1,633.85	Collimation Adapter for Nikon Eclipse
COP5-B*	$ 241.60	£ 173.95	€ 210,19	¥ 1,925.55	Collimation Adapter for Nikon Eclipse Ti

*The Nikon Eclipse Ti bayonet adapter is the same as the Nikon Eclipse adapter except that it incorporates an additional spring. Whether or not you need an adapter with a spring will depend on the compatibility requirements of the light port on your Nikon microscope.

Thread Adapters

ITEM #	$	£	€	RMB	DESCRIPTION
SM1A2	$ 24.00	£ 17.28	€ 20,88	¥ 191.28	Adapter with External SM1 Threads and Internal SM2 Threads
SM2T2	$ 34.00	£ 24.48	€ 29,58	¥ 270.98	SM2 (Ø2.035"-40) Coupler, External Threads