

**M505L3-C4 - November 9, 2022**

Item # M505L3-C4 was discontinued on November 9, 2022. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

**COLLIMATED LED LIGHT SOURCES FOR MICROSCOPY**

- ▶ UV, Visible, and IR LEDs
- ▶ Mounted LED with Adjustable Collimation Optic
- ▶ Compatible with Epi-Illumination Port on Olympus, Leica, Nikon, and Zeiss Microscopes



**M625L4-C1**  
For Olympus BX/IX Microscopes

**M405LP1-C2**  
For Leica DMI Microscopes

**M590L4-C5**  
For Nikon Eclipse Microscopes

**M810L3-C4**  
For Zeiss Axioskop Microscopes

M505L4-C1 Used as a Light Source for an Olympus IX71

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**OVERVIEW**

**Features**

- Illumination Source for Microscope Epi-Illumination Ports, Projectors, and Custom Imaging Systems
- Optimized Thermal Management Provides Output Intensity Stability
- Adjustable Aspheric Collimation Optic with Low f/# (Approximately 0.8)
- Integrated Identification Chip (EEPROM) Stores LED Operating Parameters
- Higher Power LEDs Mounted to Larger Heat Sink with Ø57.0 mm Plastic Housing (See the Tables Below for Details)
- 4-Pin Female Mating Connector for Custom Power Supplies can be Purchased Separately
- Custom Adapters Available - Contact Tech Support for Details

**Quick Links**

|                              |
|------------------------------|
| LEDs for Olympus Microscopes |
| LEDs for Leica Microscopes   |
| LEDs for Zeiss Microscopes   |
| LEDs for Nikon Microscopes   |
| Mounted LED Mating Connector |

Thorlabs' collimated LED assemblies can be easily connected to standard and epi-illumination ports on most readily available commercial microscopes, including Olympus, Leica, Nikon, and Zeiss. Each collimated LED consists of a mounted LED and a lamphouse-port-compatible housing that contains an AR-coated aspheric collimation optic (see the *Specs* tab for details). If the wavelength or output power you require is not sold on this page, our mounted LEDs and Solis® High-Power LEDs are available in additional wavelengths and output powers.

Note: Please ensure your microscope is configured to directly accept an external light source. Some microscope assemblies have a permanently installed illuminator or may be otherwise incompatible with the LED light sources below.

The collimation of the beam can be adjusted by changing the position of the aspheric lens with respect to the LED. Interchanging LEDs is easy; simply unscrew one LED from the housing and replace it with a different mounted LED (sold separately). We also offer collimation packages, which can be purchased separately from these LEDs.

The approximate total beam power through the collimation adapter is given in the tables below and on the *Specs* tab. The actual power at the sample plane will be lower due to losses specific to the optical set up of the microscope. If you wish to measure the power at the sample plane for your particular microscope setup, Thorlabs also offers a microscope slide power meter sensor.

Like our mounted LEDs, the package of these collimated LEDs is in direct contact with the heat sink to provide excellent thermal management. This minimizes the degradation of optical output power caused by increased LED temperatures. Please see the *Stability* tab for information on the stable output intensity of these collimated LEDs. Additionally, our M365LP1, M385LP1, and M405LP1 LEDs feature a higher power output and are mounted to a larger Ø57.0 mm heat

sink to increase heat dissipation and thermal stability.

For microscope applications requiring compatibility with SM1 (1.035"-40) threading, our mounted LEDs (sold separately) can be collimated using a Ø1" lens and lens tubes. This collimation method also allows for a smaller beam size than the collimators on this page. Please see the *Collimation* tab on our Mounted LEDs presentation for a detailed item list and instructions.

#### Compatible Controllers

Information concerning compatible controllers is provided on the *LED Drivers* tab. If the LED is driven with a DC2200, DC4100, or DC4104 controller, the integrated EEPROM chip will identify the LED and allow the controller to automatically set the proper current limit to protect the LED from being overdriven. The DC4100 and DC4104 require the DC4100-HUB when used with these LEDs.

[Hide Specs](#)

## S P E C S

### Common LED Specifications<sup>a</sup>

#### Legend

LED Mounted to a Heat Sink in a Ø57.0 mm Red Housing

LED Mounted to a Heat Sink in a Ø30.5 mm Black Housing

The section of the housing that holds the collimation optics is the same size for all LEDs that share the same item # suffix, regardless of the size of the heat sink.

| Item # Prefix          | Nominal Wavelength <sup>b,c</sup> | Color <sup>b</sup> | Min LED Power <sup>b,d</sup> | Typ. LED Power <sup>b,d</sup> | Max Drive Current (CW) | Irradiance (Typical) <sup>d</sup>        | Electrical Power       | Typical Lifetime        | Emitter Size    |
|------------------------|-----------------------------------|--------------------|------------------------------|-------------------------------|------------------------|--|------------------------|-------------------------|-----------------|
| M365L3 <sup>e</sup>    | 365 nm                            | UV                 | 880 mW                       | 1290 mW                       | 1000 mA                | 14.4 µW/mm <sup>2</sup>                  | 3.850 W                | >10 000 h               | 2.5 mm x 2.5 mm |
| M365LP1 <sup>e,f</sup> | 365 nm                            | UV                 | 1350 mW                      | 2000 mW                       | 1700 mA                | 21.0 µW/mm <sup>2</sup>                  | 6.800 W                | >10 000 h               | 2.5 mm x 2.5 mm |
| M385L2 <sup>e</sup>    | 385 nm                            | UV                 | 270 mW                       | 430 mW                        | 700 mA                 | 11.8 µW/mm <sup>2</sup>                  | 3.010 W                | >10 000 h               | 1 mm x 1 mm     |
| M385L3 <sup>e</sup>    | 385 nm                            | UV                 | 1240 mW                      | 1780 mW                       | 1000 mA                | 19.9 µW/mm <sup>2</sup>                  | 3.700 W                | >10 000 h               | 2.5 mm x 2.5 mm |
| M385LP1 <sup>e,f</sup> | 385 nm                            | UV                 | 1650 mW                      | 1830 mW                       | 1700 mA                | 23.3 µW/mm <sup>2</sup>                  | 6.630 W                | >10 000 h               | 1.4 mm x 1.4 mm |
| M405L4 <sup>e</sup>    | 405 nm                            | UV                 | 1000 mW                      | 1300 mW                       | 1000 mA                | 14.53 µW/mm <sup>2</sup>                 | 3.400 W                | > 1 000 h               | 1.4 mm x 1.4 mm |
| M405LP1 <sup>e,f</sup> | 405 nm                            | UV                 | 1500 mW                      | 1700 mW                       | 1400 mA                | 24.6 µW/mm <sup>2</sup>                  | 4.830 W                | >10 000 h               | 1.4 mm x 1.4 mm |
| M455L3                 | 455 nm                            | Royal Blue         | 900 mW                       | 1020 mW                       | 1000 mA                | 31.2 µW/mm <sup>2</sup>                  | 3.200 W                | 100 000 h               | 1 mm x 1 mm     |
| M455L4                 | 455 nm                            | Royal Blue         | 1150 mW                      | 1445 mW                       | 1000 mA                | 32 µW/mm <sup>2</sup>                    | 1.900 W                | >100 000 h              | 1 mm x 1 mm     |
| M470L5                 | 470 nm <sup>g,h</sup>             | Blue               | 809 mW <sup>g,h</sup>        | 1161.7 mW <sup>g,h</sup>      | 1000 mA <sup>g</sup>   | 21.4 <sup>g,h,i</sup> µW/mm <sup>2</sup> | 3.820 W <sup>g,h</sup> | >100 000 h <sup>g</sup> | 1 mm x 1 mm     |
| M505L3                 | 505 nm                            | Cyan               | 400 mW                       | 440 mW                        | 1000 mA                | 11.1 µW/mm <sup>2</sup>                  | 3.300 W                | 100 000 h               | 1 mm x 1 mm     |
| M505L4                 | 505 nm                            | Cyan               | 400 mW                       | 520 mW                        | 1000 mA                | 5.94 µW/mm <sup>2</sup>                  | 3.500 W                | >100 000 h              | 1 mm x 1 mm     |
| M530L4                 | 530 nm                            | Green              | 370 mW                       | 480 mW                        | 1000 mA                | 9.46 µW/mm <sup>2</sup>                  | 3.600 W                | >100 000 h              | 1 mm x 1 mm     |
| M590L3                 | 590 nm                            | Amber              | 160 mW                       | 170 mW                        | 1000 mA                | 5.3 µW/mm <sup>2</sup>                   | 2.200 W                | 100 000 h               | 1 mm x 1 mm     |
| M590L4                 | 590 nm                            | Amber              | 230 mW                       | 300 mW                        | 1000 mA                | 6.0 µW/mm <sup>2</sup>                   | 2.500 W                | >100 000 h              | 1 mm x 1 mm     |
| M617L5                 | 617 nm                            | Orange             | 737.4 mW <sup>g,h</sup>      | 1006.2 mW <sup>g,h</sup>      | 1000 mA <sup>g</sup>   | 19.4 µW/mm <sup>2</sup> <sub>g,h,i</sub> | 2.915 W <sup>g</sup>   | >100 000 h <sup>g</sup> | 1 mm x 1 mm     |
| M625L3                 | 625 nm                            | Red                | 700 mW                       | 770 mW                        | 1000 mA                | 18.0 µW/mm <sup>2</sup>                  | 2.200 W                | 100 000 h               | 1 mm x 1 mm     |
| M625L4                 | 625 nm                            | Red                | 700 mW                       | 920 mW                        | 1000 mA                | 21.9 µW/mm <sup>2</sup>                  | 2.500 W                | 100 000 h               | 1 mm x 1 mm     |
| M660L4                 | 660 nm                            | Deep Red           | 940 mW                       | 1050 mW                       | 1200 mA                | 20.88 µW/mm <sup>2</sup>                 | 3.120 W                | >10 000 h               | 1.5 mm x 1.5 mm |
| M780L3                 | 780 nm                            | IR                 | 200 mW                       | 300 mW                        | 800 mA                 | 47.3 µW/mm <sup>2</sup>                  | 1.600 W                | >10 000 h               | 1 mm x 1 mm     |
| M810L3                 | 810 nm                            | IR                 | 325 mW                       | 375 mW                        | 500 mA                 | 61.8 µW/mm <sup>2</sup>                  | 1.800 W                | >10 000 h               | 1 mm x 1 mm     |
| M850L3                 | 850 nm                            | IR                 | 900 mW                       | 1100 mW                       | 1200 mA                | 22.9 µW/mm <sup>2</sup>                  | 3.540 W                | 100 000 h               | 1 mm x 1 mm     |
| M940L3                 | 940 nm                            | IR                 | 800 mW                       | 1000 mW                       | 1000 mA                | 19.1 µW/mm <sup>2</sup>                  | 2.750 W                | 100 000 h               | 1 mm x 1 mm     |

|        |                  |            |                          |                          |                      |   |                      |                         |       |
|--------|------------------|------------|--------------------------|--------------------------|----------------------|---|----------------------|-------------------------|-------|
| MCWHL8 | N/A <sup>j</sup> | Cold White | 1300.9 mW <sup>g,h</sup> | 1882.0 mW <sup>g,h</sup> | 1400 mA <sup>g</sup> | 22.5 $\mu$ W/mm <sup>2</sup> <sub>g,h,i</sub> | 5040 mW <sup>g</sup> | >100 000 h <sup>g</sup> | Ø3 mm |
|--------|------------------|------------|--------------------------|--------------------------|----------------------|---|----------------------|-------------------------|-------|

- a. Specifications for the LEDs without collimating adapters are given in this table. Please see the second table on this tab for specifications pertaining to the LED with the collimating adapter attached.
- b. Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual spectral output of any given LED will vary. Output plots and nominal wavelength specs are only intended to be used as a guideline.
- c. For LEDs in the visible spectrum, the nominal wavelength indicates the wavelength at which the LED appears brightest to the human eye. For UV and IR LEDs, the nominal wavelength corresponds to the peak wavelength. The nominal wavelength for visible LEDs may not correspond to the peak wavelength as measured by a spectrograph.
- d. For the bare LED. See the table below for total beam power with the collimation package.
- e. Our 365 nm to 405 nm LEDs radiate intense UV light during operation. Precautions must be taken to prevent looking directly at the UV light and UV light protective glasses must be worn to avoid eye damage. Exposure of the skin and other body parts to the UV light should be avoided.
- f. These LEDs have a higher output power (see tables below for total beam power) and are mounted to a Ø57.0 mm heat sink for increased heat dissipation.
- g. Measured at 25 °C.
- h. When driven with the maximum current.
- i. Measured at a distance of 200 mm.
- j. Correlated Color Temperature of 6500 K

### Specifications for LED with Collimating Microscope Adapter Attached

| Legend   |  |
|--|--|
| LED Mounted to a Heat Sink in a Ø57.0 mm Red Housing | LED Mounted to a Heat Sink in a Ø30.5 mm Black Housing |

The section of the housing that holds the collimation optics is the same size for all LEDs that share the same item # suffix, regardless of the size of the heat sink.

| Item # Suffix                      |                           | -C1                             | -C2                  | -C4                                      | -C5                           |
|------------------------------------|---------------------------|---------------------------------|----------------------|--|-------------------------------|
| Compatible Microscope <sup>a</sup> |                           | Olympus BX and IX               | Leica DMI            | Zeiss Axioskop and Examiner <sup>b</sup> | Nikon Eclipse (Bayonet Mount) |
| Beam Diameter <sup>c,d</sup>       |                           | 50 mm                           | 37 mm                | 44 mm                                    | 43 mm                         |
| Beam Area <sup>c</sup>             |                           | 1960 mm <sup>2</sup>            | 1080 mm <sup>2</sup> | 1520 mm <sup>2</sup>                     | 1450 mm <sup>2</sup>          |
| Item # Prefix                      | Included Collimation Lens | Total Beam Power <sup>c,d</sup> |                      |  |                               |
| M365L3                             | ACL5040U-A                | 520 mW                          | 320 mW               | 430 mW                                   | 320 mW                        |
| M365LP1                            | ACL5040U-A                | 745 mW                          | 435 mW               | 615 mW                                   | 435 mW                        |
| M385L2                             | ACL5040U-A                | 170 mW                          | 90 mW                | 110 mW                                   | 120 mW                        |
| M385L3                             | ACL5040U-A                | 680 mW                          | 450 mW               | 570 mW                                   | 410 mW                        |
| M385LP1                            | ACL5040U-A                | 795 mW                          | 520 mW               | 660 mW                                   | 630 mW                        |
| M405L4                             | ACL5040U-A                | 510 mW                          | 310 mW               | 410 mW                                   | 380 mW                        |
| M405LP1                            | ACL5040U-A                | 750 mW                          | 450 mW               | 580 mW                                   | 570 mW                        |
| M455L3                             | ACL5040U-A                | 500 mW                          | N/A                  | N/A                                      | 400 mW                        |
| M455L4                             | ACL5040U-A                | 630 mW                          | 490 mW               | 690 mW                                   | 630 mW                        |
| M470L5                             | ACL5040U-A                | 487 mW                          | 402 mW               | 521 mW                                   | 487 mW                        |
| M505L3                             | ACL5040U-A                | N/A                             | N/A                  | 180 mW                                   | N/A                           |
| M505L4                             | ACL5040U-A                | 220 mW                          | 170 mW               | 240 mW                                   | 220 mW                        |
| M530L4                             | ACL5040U-A                | 200 mW                          | 160 mW               | 220 mW                                   | 200 mW                        |
| M590L3                             | ACL5040U-A                | N/A                             | N/A                  | 70 mW                                    | N/A                           |
| M590L4                             | ACL5040U-A                | 130 mW                          | 100 mW               | 140 mW                                   | 130 mW                        |
| M617L5                             | ACL5040U-A                | 484 mW <sup>e</sup>             | 362 mW <sup>e</sup>  | 474 mW <sup>e</sup>                      | 441 mW <sup>e</sup>           |
| M625L3                             | ACL5040U-A                | N/A                             | 270 mW               | N/A                                      | 300 mW                        |
| M625L4                             | ACL5040U-A                | 630 mW                          | 490 mW               | 690 mW                                   | 630 mW                        |
| M660L4                             | ACL5040U-A                | 590 mW                          | 400 mW               | 570 mW                                   | 520 mW                        |
| M780L3                             | ACL5040U-B                | 210 mW                          | 130 mW               | 180 mW                                   | 170 mW                        |
| M810L3                             | ACL5040U-B                | 245 mW                          | 210 mW               | 230 mW                                   | 225 mW                        |
| M850L3                             | ACL5040U-B                | 480 mW                          | 330 mW               | 400 mW                                   | 370 mW                        |
| M940L3                             | ACL5040U-B                | 430 mW                          | 320 mW               | 380 mW                                   | 340 mW                        |
| MCWHL8                             | ACL5040U-A                | 658 mW <sup>f</sup>             | 419 mW <sup>f</sup>  | 596 mW <sup>f</sup>                      | 549 mW <sup>f</sup>           |

- a. Standard or Epi-Illumination Port Required.
- b. These adapters are compatible with any Zeiss microscopes that use the same dovetail as the Zeiss Axioskop and Examiner microscopes.
- c. Due to variations in the manufacturing process and operating parameters such as temperature and current, the total beam power, beam diameter, and beam area of any given LED will vary.

- d. At the output aperture of the collimation package.
- e. Measured at the Maximum Current
- f. Measured at 25 °C

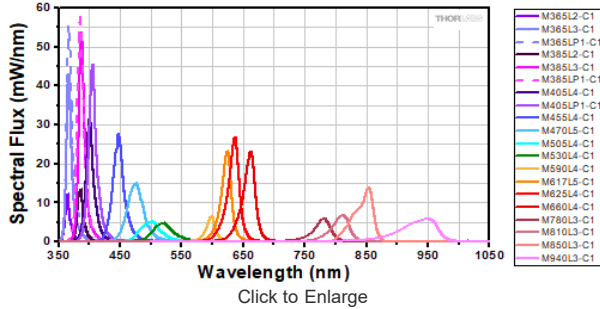
[Hide Relative Power](#)

## RELATIVE POWER

The actual spectral output and total output power of any given LED will vary due to variations in the manufacturing process and operating parameters, such as temperature and current. The typical total beam power of each collimated LED is specified to help you select an LED that suits your needs. In order to provide a point of comparison for the relative powers of LEDs with different nominal wavelengths, the spectra in the plots below have been scaled to the typical total beam power of each collimated LED. This data is representative, not absolute. An Excel file containing the normalized and scaled spectra for each collimation package can be downloaded using the link below each plot.

### Collimated LEDs for Olympus BX and IX Microscopes

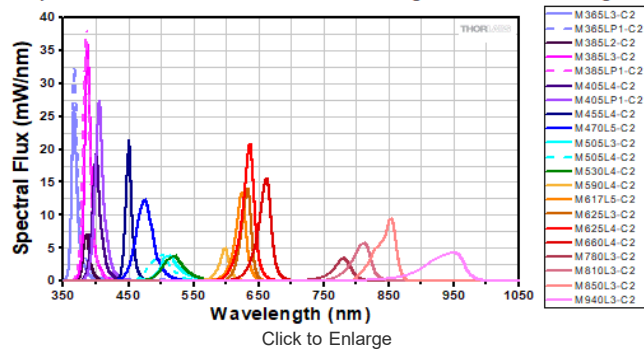
Spectra Scaled to Total Beam Power Through Collimation Package



[Click to Enlarge](#)  
An Excel file containing the data shown in the plot above may be found [here](#).

### Collimated LEDs for Leica DMI Microscopes

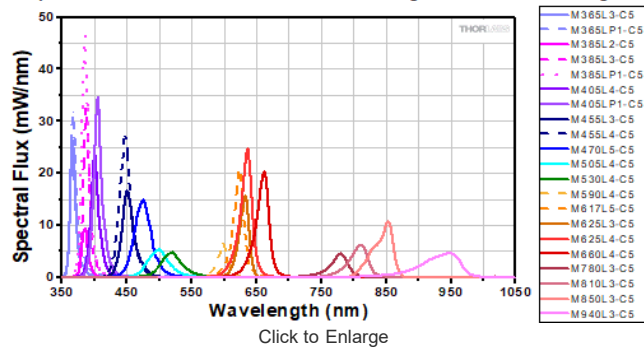
#### Spectra Scaled to Total Beam Power Through Collimation Package



[Click to Enlarge](#)  
An Excel file containing the data shown in the plot above may be found [here](#).

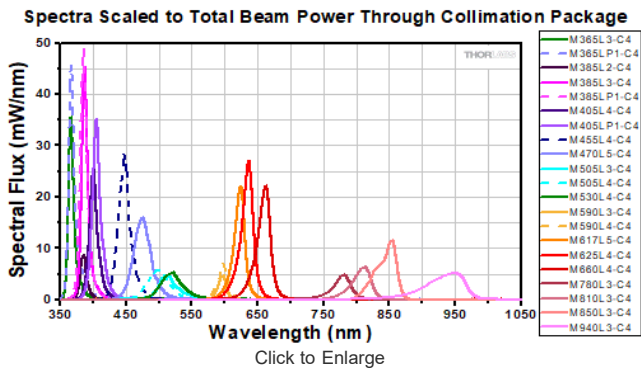
### Collimated LEDs for Nikon Eclipse Microscopes

#### Spectra Scaled to Total Beam Power Through Collimation Package



[Click to Enlarge](#)  
An Excel file containing the data shown in the plot above may be found [here](#).

### Collimated LEDs for Zeiss Axioskop and Examiner Microscopes



An Excel file containing the data shown in the plot above may be found here.

[Hide Stability](#)

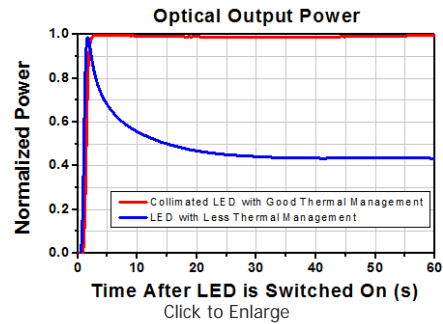
## STABILITY

### LED Lifetime and Long-Term Power Stability

One characteristic of LEDs is that they naturally exhibit power degradation with time. Often this power degradation is slow, but there are also instances where large, rapid drops in power, or even complete LED failure, occur. LED lifetimes are defined as the time it takes a specified percentage of a type of LED to fall below some power level. The parameters for the lifetime measurement can be written using the notation  $B_{XX}/L_{YY}$ , where XX is the percentage of that type of LED that will provide less than YY percent of the specified output power after the lifetime has elapsed. Thorlabs defines the lifetime of our LEDs as  $B_{50}/L_{50}$ , meaning that 50% of the LEDs with a given Item # will fall below 50% of the initial optical power at the end of the specified lifetime. For example, if a batch of 100 LEDs is rated for 150 mW of output power, 50 of these LEDs can be expected to produce an output power of  $\leq 75$  mW after the specified LED lifetime has elapsed.

### Optimized Thermal Management

The thermal dissipation performance of these collimated LEDs has been optimized for stable power output. The heat sink is directly mounted to the LED mount so as to provide optimal thermal contact. By doing so, the degradation of optical output power that can be attributed to increased LED junction temperature is minimized (see the graph to the right).



[Hide Pin Diagram](#)

## PIN DIAGRAM

### Pin Connection - Male

The diagram to the right shows the male connector of the collimated LED assembly. It is a standard M8 x 1 sensor circular connector. Pins 1 and 2 are the connection to the LED. Pin 3 and 4 are used for the internal EEPROM in these LEDs. If using an LED driver that was not purchased from Thorlabs, be careful that the appropriate connections are made to Pin 1 and Pin 2 and that you do not attempt to drive the LED through the EEPROM pins.



| Pin | Specification | Color |
|-----|---------------|-------|
| 1   | LED Anode     | Brown |
| 2   | LED Cathode   | White |
| 3   | EEPROM GND    | Black |
| 4   | EEPROM IO     | Blue  |

[Hide LED Drivers](#)

## LED DRIVERS

| Compatible Drivers              | LEDD1B | DC2200 <sup>a</sup>  | DC4100 <sup>a,b</sup> | DC4104 <sup>a,b</sup> |
|---------------------------------|--------|--|-----------------------|-----------------------|
| Click Photos to Enlarge         |        |  |                       |                       |
| LED Driver Current Output (Max) | 1.2 A  | LED1 Terminal: 10.0 A<br>LED2 Terminal: 2.0 A <sup>c</sup> | 1.0 A per Channel     | 1.0 A per Channel     |



| 295 nm                   | LED295W<br>(1.2 mW)  | -              | -                    | -                                     | -                                     | -   | -                                | -                                  | -  | -          |
|--------------------------|----------------------|----------------|----------------------|---------------------------------------|---------------------------------------|---|----------------------------------|------------------------------------|--|------------|
| 300 nm                   | LED300W<br>(1.2 mW)  | -              | -                    | M300D3<br>(26 mW Min)                 | M300L4<br>(26 mW Min)                 | -   | M300F2<br>(320 µW)               | -                                  | -  | -          |
| 308 nm                   | -                    | -              | -                    | M310D1<br>(38.5 mW Min) <sup>d</sup>  | M310L1<br>(38.5 mW Min) <sup>d</sup>  | -   | M310F1<br>(0.51 mW) <sup>d</sup> | -                                  | -  | -          |
| 310 nm                   | LED310W<br>(1.5 mW)  | -              | -                    | -                                     | -                                     | -   | -                                | -                                  | -  | -          |
| 325 nm                   | LED325W2<br>(1.7 mW) | -              | -                    | M325D3<br>(25 mW Min)                 | M325L5<br>(25 mW Min)                 | -   | M325F4<br>(350 µW)               | -                                  | -  | -          |
| 340 nm                   | LED340W<br>(1.7 mW)  | -              | -                    | M340D4<br>(45.5 mW Min) <sup>d</sup>  | M340L5<br>(45.5 mW Min) <sup>d</sup>  | -   | M340F4<br>(0.75 mW) <sup>d</sup> | -                                  | -  | -          |
|                          | LED341W<br>(0.33 mW) |                |                      |                                       |                                       |   |                                  |                                    |  |            |
| 365 nm                   | -                    | -              | -                    | M365D2<br>(1150 mW Min)               | M365L3<br>(880 mW Min)                | M365L3-Cx<br>(320 mW) <sup>e</sup>          | M365FP1<br>(15.5 mW)             | SOLIS-365C<br>(3.0 W) <sup>f</sup> | Chrolis<br>(1130 mW)                             | -          |
|                          |                      |                |                      |                                       | M365LP1<br>(1350 mW Min)              | M365LP1-Cx<br>(350 mW) <sup>e</sup>         |                                  |                                    | 4-<br>Wavelength<br>Source<br>(85 mW)            |            |
| 375 nm                   | LED375L<br>(1 mW)    | -              | -                    | M375D4<br>(1270 mW Min)               | M375L4<br>(1270 mW Min)               | -   | M375F2<br>(4.23 mW)              | -                                  | -  | -          |
|                          | LED370E<br>(2.5 mW)  |                |                      |                                       |                                       |   |                                  |                                    |  |            |
| 385 nm                   | LED385L<br>(5 mW)    | -              | -                    | M385D1<br>(270 mW Min)                | M385L2<br>(270 mW Min)                | M385L2-Cx<br>(90 mW) <sup>e</sup>           | M385F1<br>(10.7 mW)              | SOLIS-385C<br>(5.8 W) <sup>f</sup> | Chrolis<br>(1250 mW)                             | -          |
|                          |                      |                |                      |                                       | M385L3<br>(1240 mW Min)               | M385L3-Cx<br>(450 mW) <sup>e</sup>          |                                  |                                    | 4-<br>Wavelength<br>Source<br>(95 mW)            |            |
|                          |                      |                |                      | M385D2<br>(1650 mW Min)               | M385LP1<br>(1650 mW Min)              | M385LP1-Cx<br>(520 mW) <sup>e</sup>         | M385FP1<br>(23.2 mW)             |                                    |  |            |
| 395 nm                   | LED395L<br>(6 mW)    | -              | -                    | M395D3<br>(400 mW Min)                | M395L4<br>(400 mW Min)                | -   | M395F3<br>(6.8 mW)               | -                                  | -  | -          |
|                          |                      |                |                      | M395D4<br>(1420 mW Min)               | M395L5<br>(1130 mW Min)               |   | M395FP1<br>(29.8 mW)             |                                    |  |            |
|                          |                      |                |                      |                                       | M395LP1<br>(1420 mW Min)              |   |                                  |                                    |  |            |
| Wavelength               | Unmounted LEDs       | Pigtailed LEDs | LEDs in SMT Packages | PCB-Mounted LEDs                      | Heatsink-Mounted LEDs                 | Collimated LEDs for Microscopy <sup>a</sup> | Fiber-Coupled LEDs <sup>b</sup>  | High-Power LEDs for Microscopy     | Multi-Wavelength LED Source Options <sup>c</sup> | LED Arrays |
| <b>Single Color LEDs</b> |                      |                |                      |                                       |                                       |   |                                  |                                    |  |            |
| 405 nm                   | LED405L<br>(6 mW)    | -              | -                    | M405D2<br>(1500 mW Min)               | M405L4<br>(1000 mW Min)               | M405L4-Cx<br>(510 mW) <sup>g</sup>          | M405F1<br>(3.7 mW)               | SOLIS-405C<br>(3.9 W) <sup>f</sup> | Chrolis<br>(900 mW)                              | -          |
|                          | LED405E<br>(10 mW)   |                |                      |                                       | M405LP1<br>(1200 mW Min)              | M405LP1-Cx<br>(450 mW) <sup>e</sup>         | M405FP1<br>(24.3 mW)             |                                    | 4-<br>Wavelength<br>Source<br>(290 mW)           |            |
| 415 nm                   | -                    | -              | -                    | M415D2<br>(1640 mW Min)               | M415L4<br>(1310 mW Min)               | -   | M415F3<br>(21.3 mW)              | SOLIS-415C<br>(5.8 W) <sup>f</sup> | -  | -          |
|                          |                      |                |                      |                                       | M415LP1<br>(1640 mW Min)              |   |                                  |                                    |  |            |
| 420 nm                   | -                    | -              | -                    | -                                     | -                                     | -   | -                                | -                                  | Chrolis<br>(710 mW)                              | -          |
|                          |                      |                |                      |                                       |                                       |   |                                  |                                    | 4-<br>Wavelength<br>Source<br>(95 mW)            |            |
| 430 nm                   | LED430L<br>(8 mW)    | -              | -                    | M430D3<br>(529.2 mW Min) <sup>d</sup> | M430L5<br>(529.2 mW Min) <sup>d</sup> | -   | M430F1<br>(7.5 mW) <sup>d</sup>  | -                                  | -  | -          |
|                          |                      |                |                      |                                       |                                       |   |                                  | SOLIS-445C                         |  |            |

|                   |   |   |                             |                                     |                                     |  |                                       |                                       |   |                     |
|-------------------|---|---|-----------------------------|-------------------------------------|-------------------------------------|--|---------------------------------------|---------------------------------------|---|---------------------|
| 445 nm            | -   | -   | -                           | -                                   | -                                   | -  | -                                     | (5.4 W) <sup>f</sup>                  | -   | -                   |
| 450 nm            | LED450L<br>(7 mW)   | -   | LEDS450<br>(250 mW)         | M450D4<br>(2118.1 mW) <sup>d</sup>  | M450LP2<br>(2118.1 mW) <sup>d</sup> | -  | -                                     | -                                     | -   | -                   |
| 455 nm            | -   | -   | -                           | M455D3<br>(1150 mW Min)             | M455L4<br>(1150 mW Min)             | M455L3-Cx<br>(400 mW) <sup>h</sup><br>M455L4-Cx<br>(490 mW) <sup>e</sup> | M455F3<br>(24.5 mW)                   | -                                     | 4-<br>Wavelength<br>Source<br>(310 mW)                        | -                   |
| 465 nm            | LED465E<br>(20 mW)  | -   | -                           | -                                   | -                                   | -  | -                                     | -                                     | -   | -                   |
| 470 nm            | LED470L<br>(170 mW)   | EP470S04<br>(18 mW Min)<br>EP470S10<br>(100 mW Min) | -                           | M470D4<br>(809 mW Min) <sup>d</sup> | M470L5<br>(809 mW Min) <sup>d</sup> | M470L5-Cx<br>(402 mW) <sup>e</sup>                                       | -                                     | SOLIS-470C<br>(3.0 W) <sup>f</sup>    | 4-<br>Wavelength<br>Source<br>(250 mW)                        | LIU470A<br>(253 mW) |
| 475 nm            | -   | -   | -                           | -                                   | -                                   | -  | -                                     | -                                     | Chrolis<br>(630 mW)   | -                   |
| 490 nm            | LED490L<br>(3 mW)   | -   | -                           | M490D3<br>(205 mW Min)              | M490L4<br>(205 mW Min)              | -  | -                                     | -                                     | Chrolis<br>(120 mW)<br>4-<br>Wavelength<br>Source<br>(50 mW)  | -                   |
| 505 nm            | LED505L<br>(4 mW)   | -   | -                           | M505D3<br>(400 mW Min)              | M505L4<br>(400 mW Min)              | M505L3-Cx<br>(180 mW) <sup>j</sup><br>M505L4-Cx<br>(170 mW) <sup>e</sup> | M505F3<br>(11.7 mW)                   | SOLIS-505C<br>(1.0 W) <sup>f</sup>    | 4-<br>Wavelength<br>Source<br>(170 mW)                        | -                   |
| 525 nm            | LED525E<br>(2.6 mW Max)<br>LED525L<br>(4 mW)<br>LED528EHP<br>(7 mW) | -   | -                           | -                                   | -                                   | -  | -                                     | SOLIS-525C<br>(2.4 W) <sup>f</sup>    | Chrolis<br>(180 mW)   | LIU525A<br>(111 mW) |
| 530 nm            | -   | -   | -                           | M530D3<br>(370 mW Min)              | M530L4<br>(370 mW Min)              | M530L4-Cx<br>(160 mW) <sup>e</sup>                                       | M530F2<br>(9.6 mW)                    | -                                     | 4-<br>Wavelength<br>Source<br>(100 mW)                        | -                   |
| 545 nm            | LED545L<br>(2.4 mW CW,<br>8.7 mW Pulsed)                            | -   | -                           | -                                   | -                                   | -  | -                                     | -                                     | -   | -                   |
| 554 nm            | -   | -   | -                           | MINTD3<br>(650 mW Min)              | MINTL5<br>(650 mW Min)              | -  | MINTF4<br>(28 mW)                     | -                                     | -   | -                   |
| 562 nm            | LED560L<br>(0.15 mW) <sup>d</sup>                                   | -   | -                           | -                                   | -                                   | -  | -                                     | -                                     | -   | -                   |
| 565 nm            | -   | -   | -                           | M565D2<br>(880 mW Min)              | M565L3<br>(880 mW Min)              | -  | M565F3<br>(13.5 mW)                   | SOLIS-565C<br>(3.2 W) <sup>f</sup>    | Chrolis<br>(350 mW)<br>4-<br>Wavelength<br>Source<br>(106 mW) | -                   |
| 570 nm            | LED570L<br>(0.3 mW)   | -   | -                           | -                                   | -                                   | -  | -                                     | -                                     | -   | -                   |
| 590 nm            | LED590L<br>(2 mW)<br>LED591E<br>(2 mW)                              | EP590S04<br>(3.5 mW Min)<br>EP590S10<br>(18 mW Min) | -                           | M590D3<br>(230 mW Min)              | M590L4<br>(230 mW Min)              | M590L3-Cx<br>(60 mW) <sup>e</sup><br>M590L4-Cx<br>(100 mW) <sup>e</sup>  | M590F3<br>(4.6 mW)                    | SOLIS-590C<br>(350 mW) <sup>f</sup>   | Chrolis<br>(140 mW)<br>4-<br>Wavelength<br>Source<br>(65 mW)  | LIU590A<br>(109 mW) |
| 595 nm            | -   | -   | -                           | M595D3<br>(820 mW Min)              | M595L4<br>(820 mW Min)              | -  | M595F2<br>(11.5 mW)                   | SOLIS-595C<br>(700 mW) <sup>f</sup>   | -   | -                   |
| <b>Wavelength</b> | <b>Unmounted LEDs</b>   | <b>Pigtailed LEDs</b>                               | <b>LEDs in SMT Packages</b> | <b>PCB-Mounted LEDs</b>             | <b>Heatsink-Mounted LEDs</b>        | <b>Collimated LEDs for Microscopy<sup>a</sup></b>                        | <b>Fiber-Coupled LEDs<sup>b</sup></b> | <b>High-Power LEDs for Microscopy</b> | <b>Multi-Wavelength LED Source</b>                            | <b>LED Arrays</b>   |





| 840 nm                   | (22 mW)                          | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   | - |
|--------------------------|----------------------------------|----------------|----------------------|--|--|---|-------------------------------------|------------------------------------|--|---------------------|---|
| 850 nm                   | LED851L<br>(13 mW)               | -              | -                    | M850D2<br>(900 mW Min)                 | M850L3<br>(900 mW Min)                 | M850L3-Cx<br>(330 mW) <sup>e</sup>          | M850F3<br>(8.6 mW Min) <sup>d</sup> | SOLIS-850C<br>(2.7 W) <sup>f</sup> | -  | LIU850A<br>(322 mW) |   |
|                          |                                  |                |                      | M850D3<br>(1400 mW)                    | M850LP1<br>(1400 mW Min)               |   |                                     |                                    |  |                     |   |
| 870 nm                   | LED870E<br>(22 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED870L<br>(24 mW)               |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 880 nm                   | -                                | -              | -                    | M880D2<br>(300 mW Min)                 | M880L3<br>(300 mW Min)                 | -   | M880F2<br>(3.4 mW)                  | -                                  | -  | -                   |   |
| 890 nm                   | LED890L<br>(12 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
| 910 nm                   | LED910L<br>(10 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED910E<br>(12 mW)               |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 930 nm                   | LED930L<br>(15 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
| 940 nm                   | LED940E<br>(18 mW)               | -              | -                    | M940D2<br>(800 mW Min)                 | M940L3<br>(800 mW Min)                 | M940L3-Cx<br>(320 mW) <sup>e</sup>          | M940F3<br>(14.2 mW)                 | SOLIS-940C<br>(2.5 W) <sup>f</sup> | -  | -                   |   |
| 970 nm                   | LED970L<br>(5 mW)                | -              | -                    | M970D3<br>(600 mW Min)                 | M970L4<br>(600 mW Min)                 | -   | M970F3<br>(8.1 mW)                  | -                                  | -  | -                   |   |
| Wavelength               | Unmounted LEDs                   | Pigtailed LEDs | LEDs in SMT Packages | PCB-Mounted LEDs                       | Heatsink-Mounted LEDs                  | Collimated LEDs for Microscopy <sup>a</sup> | Fiber-Coupled LEDs <sup>b</sup>     | High-Power LEDs for Microscopy     | Multi-Wavelength LED Source Options <sup>c</sup> | LED Arrays          |   |
| <b>Single Color LEDs</b> |                                  |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 1050 nm                  | LED1050E<br>(2.5 mW)             | -              | -                    | M1050D1<br>(50 mW Min)                 | M1050L2<br>(50 mW Min)                 | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED1050L<br>(4 mW)               |                |                      | M1050D3<br>(160 mW Min)                | M1050L4<br>(160 mW Min)                |   | M1050F3<br>(3 mW)                   |                                    |  |                     |   |
|                          | LED1050L2<br>(8 mW) <sup>d</sup> |                |                      | -                                      | -                                      |   | -                                   |                                    |  |                     |   |
| 1070 nm                  | LED1070L<br>(4 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED1070E<br>(7.5 mW)             |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 1085 nm                  | LED1085L<br>(5 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
| 1100 nm                  | -                                | -              | -                    | M1100D1<br>(168 mW Min) <sup>d</sup>   | M1100L1<br>(168 mW Min) <sup>d</sup>   | -   | M1100F1<br>(5.4 mW) <sup>d</sup>    | -                                  | -  | -                   |   |
| 1200 nm                  | LED1200E<br>(2.5 mW)             | -              | -                    | M1200D3<br>(136 mW Min) <sup>d</sup>   | M1200L4<br>(136 mW Min) <sup>d</sup>   | -   | M1200F1<br>(2.5 mW) <sup>d</sup>    | -                                  | -  | -                   |   |
|                          | LED1200L<br>(5 mW)               |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 1300 nm                  | LED1300E<br>(2 mW)               | -              | -                    | M1300D2<br>(25 mW Min)                 | M1300L3<br>(25 mW Min)                 | -   | M1300F1<br>(2.31 mW) <sup>d</sup>   | -                                  | -  | -                   |   |
|                          | LED1300L<br>(3.5 mW)             |                |                      | M1300D3<br>(122.8 mW Min) <sup>d</sup> | M1300L4<br>(122.8 mW Min) <sup>d</sup> |   |                                     |                                    |  |                     |   |
| 1450 nm                  | LED1450E<br>(2 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED1450L<br>(5 mW)               |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 1550 nm                  | LED1550E<br>(2 mW)               | -              | -                    | M1550D2<br>(31 mW Min)                 | M1550L3<br>(31 mW Min)                 | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED1550L<br>(4 mW)               |                |                      |  |  |   |                                     |                                    |  |                     |   |
| 1600 nm                  | LED1600L<br>(2 mW)               | -              | -                    | -                                      | -                                      | -   | -                                   | -                                  | -  | -                   |   |
|                          | LED1600P                         |                |                      | M1650D2                                | M1650L4                                |   |                                     |                                    |  |                     |   |








|  |                      |   |                     |  |   |   |                     |                                  |   |                     |
|--|----------------------|---|---------------------|--|---|---|---------------------|----------------------------------|---|---------------------|
| 430 - 660 nm<br>(White)                    | LEDWE-15<br>(13 mW)  | - | -                   | -                                      | -                                       | - | -                   | -                                | - | -                   |
|  | LEDW7E<br>(15.0 mW)  | - | -                   | -                                      | -                                       | - | -                   | -                                | - | -                   |
|  | LEDW25E<br>(15.0 mW) | - | -                   | -                                      | -                                       | - | -                   | -                                | - | -                   |
| 6500 K<br>(Cold White)                     | -                    | - | -                   | MCWHD5<br>(930 mW Min)                 | MCWHL7<br>(930 mW Min)                  | - | -                   | SOLIS-1D<br>(5.8 W) <sup>f</sup> | - | -                   |
|  | -                    | - | -                   | MCWHD6<br>(942 mW Min) <sup>d</sup>    | MCWHLP2<br>(942 mW Min) <sup>d</sup>    | - | -                   | -                                | - | -                   |
|  | -                    | - | -                   | MCWHD7<br>(2064.8 mW Min) <sup>d</sup> | MCWHLP3<br>(2064.8 mW Min) <sup>d</sup> | - | -                   | -                                | - | -                   |
| 6200 K<br>(Cold White)                     | -                    | - | -                   | -                                      | -                                       | - | MCWHF2<br>(27.0 mW) | -                                | - | -                   |
| 5000 K<br>(Cold White)                     | -                    | - | LEDSW50<br>(110 mW) | -                                      | -                                       | - | -                   | -                                | - | -                   |
| 4600 - 9000 K<br>(Cold White)              | -                    | - | -                   | -                                      | -                                       | - | -                   | -                                | - | LIUCWHA<br>(250 mW) |
| 4000 K<br>(Warm White)                     | -                    | - | LEDSW40<br>(115 mW) | -                                      | -                                       | - | MWWHF2<br>(23.1 mW) | -                                | - | -                   |
| 3000 K<br>(Warm White)                     | -                    | - | LEDSW30<br>(100 mW) | MWWHD4<br>(1713 mW Min) <sup>d</sup>   | MWWHL4<br>(570 mW Min)                  | - | -                   | SOLIS-2C<br>(3.2 W) <sup>f</sup> | - | -                   |
|  |                      |   |                     |  | MWWHLP2<br>(1713 mW Min) <sup>d</sup>   |   |                     |                                  |   |                     |
| 5700 K<br>(Day Light<br>White)             | -                    | - | -                   | -                                      | -                                       | - | -                   | SOLIS-3C<br>(3.5 W)              | - | -                   |
| 470 - 850 nm<br>(Broadband)                | -                    | - | -                   | MBB1D1<br>(70 mW Min)                  | MBB1L3<br>(70 mW Min)                   | - | -                   | MBB1F1<br>(1.2 mW)               | - | -                   |
| 770 nm, 860<br>nm, & 940 nm<br>(Broadband) | -                    | - | -                   | MBB2D1<br>(740 mW Min) <sup>d</sup>    | MBB2L1<br>(650 mW Min) <sup>d</sup>     | - | -                   | -                                | - | -                   |
|  |                      |   |                     |  | MBB2LP1<br>(740 mW Min) <sup>d</sup>    |   |                     |                                  |   |                     |






- a. These Collimated LEDs are compatible with the standard and epi-illumination ports on the following microscopes: Olympus BX/IX (Item # Suffix: -C1), Leica DMI (Item # Suffix: -C2), Zeiss Axioskop (Item # Suffix: -C4), and Nikon Eclipse (Bayonet Mount, Item # Suffix: -C5).
- b. Typical power when used with MM Fiber with Ø400 µm core, 0.39 NA.
- c. Our Multi-Wavelength LED Sources are available with select combinations of the LEDs at these wavelengths.
- d. Measured at 25 °C
- e. Typical power for LEDs with the Leica DMI collimation package (Item # Suffix: -C2).
- f. Minimum power for the collimated output of these LEDs. The collimation lens is installed with each LED.
- g. Typical power for LEDs with the Olympus BX and IX collimation package (Item # Suffix: -C1).
- h. Typical power for LEDs with the Nikon Eclipse collimation package (Item # Suffix: -C5).
- i. Percentage of LED intensity that emits in the blue portion of the spectrum, from 400 nm to 525 nm.
- j. Typical power for LEDs with the Zeiss Axioskop collimation package (Item # Suffix: -C4).











[Hide Collimated LED Light Sources for Olympus BX and IX Microscopes](#)

### Collimated LED Light Sources for Olympus BX and IX Microscopes

- ▶ Approximate Beam Diameter: 50 mm
- ▶ Approximate Beam Area: 1960 mm<sup>2</sup>
- ▶ AR-Coated Aspheric Collimation Lens (EFL: 40 mm)
- ▶ See the Specs Tab for a Complete List of Specifications
- ▶ Cable Length: 2 m

| Item #                  | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-------------------------|--------------------|---|-------------------------------|
| M365L3-C1               | UV                 |  | 520 mW                        |
| M365LP1-C1 <sup>c</sup> | UV                 |  | 745 mW                        |
| M385L2-C1               | UV                 |  | 170 mW                        |
| M385L3-C1               | UV                 |  | 680 mW                        |
| M385LP1-C1 <sup>c</sup> | UV                 |  | 795 mW                        |

| Item #    | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-----------|--------------------|---|-------------------------------|
| M530L4-C1 | Green              |  | 200 mW                        |
| M590L4-C1 | Amber              |  | 130 mW                        |
| M617L5-C1 | Orange             |  | 484 mW <sup>d</sup>           |
| M625L4-C1 | Red                |  | 630 mW                        |
| M660L4-C1 | Deep Red           |  | 590 mW                        |

|                         |            |   |        |           |            |   |                     |
|-------------------------|------------|---|--------|-----------|------------|---|---------------------|
| M405L4-C1               | UV         |   | 510 mW | M780L3-C1 | IR         |   | 210 mW              |
| M405LP1-C1 <sup>c</sup> | UV         |  | 750 mW | M810L3-C1 | IR         |  | 245 mW              |
| M455L4-C1               | Royal Blue |  | 630 mW | M850L3-C1 | IR         |  | 480 mW              |
| M470L5-C1               | Blue       |  | 487 mW | M940L3-C1 | IR         |  | 430 mW              |
| M505L4-C1               | Cyan       |  | 220 mW | MCWHL8-C1 | Cold White |  | 658 mW <sup>e</sup> |

- a. Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual spectral output of any given LED will vary. Output plots are only intended to be used as a guideline.
- b. After collimation package. Due to variations in the manufacturing process and operating parameters such as temperature and current, the total beam power of any given LED will vary.
- c. These LEDs have a higher output power and are mounted to a Ø57.0 mm heat sink for increased heat dissipation.
- d. Measured at the Maximum Current
- e. Measured at 25 °C



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| Part Number | Description  | Price    | Availability |
|-------------|--|----------|--------------|
| M365L3-C1   | 365 nm, 520 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$600.20 | Today        |
| M365LP1-C1  | 365 nm, 745 mW (Typ.) Collimated LED for Olympus BX & IX, 1700 mA      | \$703.52 | Today        |
| M385L2-C1   | 385 nm, 170 mW (Typ.) Collimated LED for Olympus BX & IX, 700 mA       | \$484.31 | 7-10 Days    |
| M385L3-C1   | 385 nm, 680 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$621.92 | Lead Time    |
| M385LP1-C1  | 385 nm, 795 mW (Typ.) Collimated LED for Olympus BX & IX, 1700 mA      | \$633.57 | Lead Time    |
| M405L4-C1   | 405 nm, 510 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$533.40 | 7-10 Days    |
| M405LP1-C1  | 405 nm, 750 mW (Typ.) Collimated LED for Olympus BX & IX, 1400 mA      | \$633.57 | Today        |
| M455L4-C1   | 455 nm, 630 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$621.92 | Today        |
| M470L5-C1   | 470 nm, 487 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$546.65 | Today        |
| M505L4-C1   | 505 nm, 220 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$621.92 | Today        |
| M530L4-C1   | 530 nm, 200 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$621.92 | Today        |
| M590L4-C1   | 590 nm, 130 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$533.40 | 7-10 Days    |
| M617L5-C1   | NEW! 617 nm, 484 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA | \$469.23 | Today        |
| M625L4-C1   | 625 nm, 630 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$515.47 | Today        |
| M660L4-C1   | 660 nm, 590 mW (Typ.) Collimated LED for Olympus BX & IX, 1200 mA      | \$533.40 | Today        |
| M780L3-C1   | 780 nm, 210 mW (Typ.) Collimated LED for Olympus BX & IX, 800 mA       | \$590.47 | Today        |
| M810L3-C1   | 810 nm, 245 mW (Typ.) Collimated LED for Olympus BX & IX, 500 mA       | \$590.47 | Lead Time    |
| M850L3-C1   | 850 nm, 480 mW (Typ.) Collimated LED for Olympus BX & IX, 1200 mA      | \$590.47 | 7-10 Days    |
| M940L3-C1   | 940 nm, 430 mW (Typ.) Collimated LED for Olympus BX & IX, 1000 mA      | \$590.47 | Today        |
| MCWHL8-C1   | NEW! 6500 K, 658 mW (Typ.) Collimated LED for Olympus BX & IX, 1400 mA | \$523.15 | Today        |

[Hide Collimated LED Light Sources for Leica DMI Microscopes](#)

### Collimated LED Light Sources for Leica DMI Microscopes

- ▶ Approximate Beam Diameter: 37 mm
- ▶ Approximate Beam Area: 1080 mm<sup>2</sup>
- ▶ AR-Coated Aspheric Collimation Lens (EFL = 40 mm)
- ▶ See the *Specs* Tab for a Complete List of Specifications
- ▶ Cable Length: 2 m

| Item #                  | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> | Item #    | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-------------------------|--------------------|---|-------------------------------|-----------|--------------------|---|-------------------------------|
| M365L3-C2               | UV                 |  | 320 mW                        | M590L4-C2 | Amber              |  | 100 mW                        |
| M365LP1-C2 <sup>c</sup> | UV                 |  | 435 mW                        | M617L5-C2 | Orange             |  | 362 mW <sup>d</sup>           |
| M385L2-C2               | UV                 |  | 90 mW                         | M625L3-C2 | Red                |  | 270 mW                        |
| M385L3-C2               | UV                 |  | 450 mW                        | M625L4-C2 | Red                |  | 490 mW                        |
| M385LP1-C2 <sup>c</sup> | UV                 |  | 520 mW                        | M660L4-C2 | Deep Red           |  | 400 mW                        |
| M405L4-C2               | UV                 |  | 310 mW                        | M780L3-C2 | IR                 |  | 130 mW                        |
| M405LP1-C2 <sup>c</sup> | UV                 |  | 450 mW                        | M810L3-C2 | IR                 |  | 210 mW                        |
|                         |                    |   |                               | M850L3-C2 | IR                 |  | 330 mW                        |

|           |            |   |        |
|-----------|------------|---|--------|
| M455L4-C2 | Royal Blue |   | 490 mW |
| M470L5-C2 | Blue       |  | 402 mW |
| M505L4-C2 | Cyan       |  | 170 mW |
| M530L4-C2 | Green      |  | 160 mW |

|           |            |   |                     |
|-----------|------------|---|---------------------|
| M940L3-C2 | IR         |   | 320 mW              |
| MCWHL8-C2 | Cold White |  | 419 mW <sup>e</sup> |

- a. Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual spectral output of any given LED will vary. Output plots are only intended to be used as a guideline.
- b. After collimation package. Due to variations in the manufacturing process and operating parameters such as temperature and current, the total beam power of any given LED will vary.
- c. These LEDs have a higher output power and are mounted to a Ø57.0 mm heat sink for increased heat dissipation.
- d. Measured at the Maximum Current
- e. Measured at 25 °C










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| Part Number | Description  | Price    | Availability |
|-------------|--|----------|--------------|
| M365L3-C2   | 365 nm, 320 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$600.20 | 7-10 Days    |
| M365LP1-C2  | 365 nm, 435 mW (Typ.) Collimated LED for Leica DMI, 1700 mA      | \$730.30 | Lead Time    |
| M385L2-C2   | 385 nm, 90 mW (Typ.) Collimated LED for Leica DMI, 700 mA        | \$484.31 | Today        |
| M385L3-C2   | 375 nm, 450 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$621.92 | 7-10 Days    |
| M385LP1-C2  | 385 nm, 520 mW (Typ.) Collimated LED for Leica DMI, 1700 mA      | \$660.35 | Today        |
| M405L4-C2   | 405 nm, 310 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$533.40 | Today        |
| M405LP1-C2  | 405 nm, 450 mW (Typ.) Collimated LED for Leica DMI, 1400 mA      | \$660.35 | Today        |
| M455L4-C2   | 455 nm, 490 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$621.92 | 7-10 Days    |
| M470L5-C2   | 470 nm, 402 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$546.65 | Today        |
| M505L4-C2   | 505 nm, 170 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$621.92 | Today        |
| M530L4-C2   | 530 nm, 160 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$621.92 | Today        |
| M590L4-C2   | 590 nm, 100 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$533.40 | 7-10 Days    |
| M617L5-C2   | NEW! 617 nm, 362 mW (Typ.) Collimated LED for Leica DMI, 1000 mA | \$469.23 | Today        |
| M625L3-C2   | 625 nm, 270 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$533.40 | Lead Time    |
| M625L4-C2   | 625 nm, 490 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$515.47 | Lead Time    |
| M660L4-C2   | 660 nm, 400 mW (Typ.) Collimated LED for Leica DMI, 1200 mA      | \$533.40 | Today        |
| M780L3-C2   | 780 nm, 130 mW (Typ.) Collimated LED for Leica DMI, 800 mA       | \$590.47 | Lead Time    |
| M810L3-C2   | 810 nm, 210 mW (Typ.) Collimated LED for Leica DMI, 500 mA       | \$590.47 | Today        |
| M850L3-C2   | 850 nm, 330 mW (Typ.) Collimated LED for Leica DMI, 1200 mA      | \$590.47 | Lead Time    |
| M940L3-C2   | 940 nm, 320 mW (Typ.) Collimated LED for Leica DMI, 1000 mA      | \$590.47 | Lead Time    |
| MCWHL8-C2   | NEW! 6500 K, 419 mW (Typ.) Collimated LED for Leica DMI, 1400 mA | \$523.15 | Today        |

[Hide Collimated LED Light Sources for Zeiss Axioskop and Examiner Microscopes](#)



### Collimated LED Light Sources for Zeiss Axioskop and Examiner Microscopes

- ▶ Approximate Beam Diameter: 44 mm
- ▶ Approximate Beam Area: 1520 mm<sup>2</sup>
- ▶ Compatible with Dovetail Used in Zeiss Axioskop and Examiner Microscopes
- ▶ AR-Coated Aspheric Collimation Lens (EFL: 40 mm)
- ▶ See the Specs Tab for a Complete List of Specifications
- ▶ Cable Length: 2 m

| Item #                  | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-------------------------|--------------------|---|-------------------------------|
| M365L3-C4               | UV                 |  | 430 mW                        |
| M365LP1-C4 <sup>c</sup> | UV                 |  | 615 mW                        |
| M385L2-C4               | UV                 |  | 110 mW                        |
| M385L3-C4               | UV                 |  | 570 mW                        |
| M385LP1-C4 <sup>c</sup> | UV                 |  | 630 mW                        |
| M405L4-C4               | UV                 |  | 410 mW                        |
| M405LP1-C4 <sup>c</sup> | UV                 |  | 570 mW                        |

| Item #    | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-----------|--------------------|---|-------------------------------|
| M590L3-C4 | Amber              |  | 70 mW                         |
| M590L4-C4 | Amber              |  | 140 mW                        |
| M617L5-C4 | Orange             |  | 474 mW <sup>d</sup>           |
| M625L4-C4 | Red                |  | 690 mW                        |
| M660L4-C4 | Deep Red           |  | 570 mW                        |
| M780L3-C4 | IR                 |  | 180 mW                        |
| M810L3-C4 | IR                 |  | 230 mW                        |

|           |            |   |        |
|-----------|------------|---|--------|
| M455L4-C4 | Royal Blue |   | 690 mW |
| M470L5-C4 | Blue       |  | 521 mW |
| M505L3-C4 | Cyan       |  | 180 mW |
| M505L4-C4 | Cyan       |  | 240 mW |
| M530L4-C4 | Green      |  | 220 mW |

|           |            |   |                     |
|-----------|------------|---|---------------------|
| M850L3-C4 | IR         |   | 400 mW              |
| M940L3-C4 | IR         |  | 380 mW              |
| MCWHL8-C4 | Cold White |  | 596 mW <sup>e</sup> |

- a. Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual spectral output of any given LED will vary. Output plots are only intended to be used as a guideline.
- b. After collimation package. Due to variations in the manufacturing process and operating parameters such as temperature and current, the total beam power of any given LED will vary.
- c. These LEDs have a higher output power and are mounted to a Ø57.0 mm heat sink for increased heat dissipation.
- d. Measured at the Maximum Current
- e. Measured at 25 °C









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| Part Number | Description  | Price    | Availability |
|-------------|--|----------|--------------|
| M365L3-C4   | 365 nm, 430 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$600.20 | Lead Time    |
| M365LP1-C4  | 365 nm, 615 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1700 mA      | \$730.30 | Today        |
| M385L2-C4   | 385 nm, 110 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 700 mA       | \$484.31 | Today        |
| M385L3-C4   | 385 nm, 570 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$621.92 | 7-10 Days    |
| M385LP1-C4  | 385 nm, 660 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1700 mA      | \$660.35 | Lead Time    |
| M405L4-C4   | 405 nm, 410 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$533.40 | Today        |
| M405LP1-C4  | 405 nm, 580 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1400 mA      | \$660.35 | Lead Time    |
| M455L4-C4   | 455 nm, 690 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$621.92 | 7-10 Days    |
| M470L5-C4   | 470 nm, 521 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$546.65 | Today        |
| M505L3-C4   | 505 nm, 180 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$438.98 | Lead Time    |
| M505L4-C4   | 505 nm, 240 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$621.92 | 7-10 Days    |
| M530L4-C4   | 530 nm, 220 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$621.92 | Today        |
| M590L3-C4   | 590 nm, 70 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA       | \$375.80 | Today        |
| M590L4-C4   | 590 nm, 140 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$533.40 | Today        |
| M617L5-C4   | NEW! 617 nm, 474 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA | \$469.23 | Today        |
| M625L4-C4   | 625 nm, 690 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$515.47 | 7-10 Days    |
| M660L4-C4   | 660 nm, 570 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1200 mA      | \$573.01 | Today        |
| M780L3-C4   | 780 nm, 180 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 800 mA       | \$590.47 | Today        |
| M810L3-C4   | 810 nm, 230 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 500 mA       | \$635.89 | 7-10 Days    |
| M850L3-C4   | 850 nm, 400 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1200 mA      | \$590.47 | Lead Time    |
| M940L3-C4   | 940 nm, 380 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1000 mA      | \$590.47 | 7-10 Days    |
| MCWHL8-C4   | NEW! 6500 K, 596 mW (Typ.) Collimated LED for Zeiss Axioskop & Examiner, 1400 mA | \$523.15 | Today        |

[Hide Collimated LED Light Sources for Nikon Eclipse \(Bayonet Mount\) Microscopes](#)

### Collimated LED Light Sources for Nikon Eclipse (Bayonet Mount) Microscopes

- ▶ Approximate Beam Diameter: 43 mm
- ▶ Approximate Beam Area: 1450 mm<sup>2</sup>
- ▶ AR-Coated Aspheric Collimation Lens (EFL: 40 mm)
- ▶ See the Specs Tab for a Complete List of Specifications
- ▶ Cable Length: 2 m

| Item #                  | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-------------------------|--------------------|---|-------------------------------|
| M365L3-C5               | UV                 |  | 320 mW                        |
| M365LP1-C5 <sup>c</sup> | UV                 |  | 435 mW                        |
| M385L2-C5               | UV                 |  | 120 mW                        |
| M385L3-C5               | UV                 |  | 410 mW                        |
| M385LP1-C5 <sup>c</sup> | UV                 |  | 660 mW                        |
| M405L4-C5               | UV                 |  | 380 mW                        |

| Item #    | Color <sup>a</sup> | Housing   | Total Beam Power <sup>b</sup> |
|-----------|--------------------|---|-------------------------------|
| M530L4-C5 | Green              |  | 200 mW                        |
| M590L4-C5 | Amber              |  | 130 mW                        |
| M617L5-C5 | Orange             |  | 441 mW <sup>d</sup>           |
| M625L3-C5 | Red                |  | 300 mW                        |
| M625L4-C5 | Red                |  | 630 mW                        |
| M660L4-C5 | Deep Red           |  | 520 mW                        |

|                         |            |  |        |
|-------------------------|------------|--|--------|
| M405LP1-C5 <sup>c</sup> | UV         |  | 580 mW |
| M455L3-C5               | Royal Blue |  | 400 mW |
| M455L4-C5               | Royal Blue |  | 630 mW |
| M470L5-C5               | Blue       |  | 487 mW |
| M505L4-C5               | Cyan       |  | 220 mW |

|           |            |  |                     |
|-----------|------------|--|---------------------|
| M780L3-C5 | IR         |  | 170 mW              |
| M810L3-C5 | IR         |  | 225 mW              |
| M850L3-C5 | IR         |  | 370 mW              |
| M940L3-C5 | IR         |  | 340 mW              |
| MCWHL8-C5 | Cold White |  | 549 mW <sup>e</sup> |

- a. Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual spectral output of any given LED will vary. Output plots are only intended to be used as a guideline.
- b. After collimation package. Due to variations in the manufacturing process and operating parameters such as temperature and current, the total beam power of any given LED will vary.
- c. These LEDs have a higher output power and are mounted to a Ø57.0 mm heat sink for increased heat dissipation.
- d. Measured at the Maximum Current
- e. Measured at 25 °C



Click to Enlarge

| Part Number | Description  | Price    | Availability |
|-------------|--|----------|--------------|
| M365L3-C5   | 365 nm, 320 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$640.00 | Lead Time    |
| M365LP1-C5  | 365 nm, 435 mW (Typ.) Collimated LED for Nikon Eclipse, 1700 mA      | \$782.71 | 7-10 Days    |
| M385L2-C5   | 385 nm, 120 mW (Typ.) Collimated LED for Nikon Eclipse, 700 mA       | \$527.36 | Today        |
| M385L3-C5   | 385 nm, 410 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$661.52 | 7-10 Days    |
| M385LP1-C5  | 385 nm, 630 mW (Typ.) Collimated LED for Nikon Eclipse, 1700 mA      | \$712.76 | Lead Time    |
| M405L4-C5   | 405 nm, 380 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$576.07 | Today        |
| M405LP1-C5  | 405 nm, 570 mW (Typ.) Collimated LED for Nikon Eclipse, 1400 mA      | \$712.76 | 7-10 Days    |
| M455L3-C5   | 455 nm, 400 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$466.69 | Lead Time    |
| M455L4-C5   | 455 nm, 630 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$661.52 | Today        |
| M470L5-C5   | 470 nm, 487 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$593.86 | Today        |
| M505L4-C5   | 505 nm, 220 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$661.52 | 7-10 Days    |
| M530L4-C5   | 530 nm, 200 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$661.52 | Today        |
| M590L4-C5   | 590 nm, 130 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$573.01 | Today        |
| M617L5-C5   | NEW! 617 nm, 441 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA | \$490.40 | Today        |
| M625L3-C5   | 625 nm, 300 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$573.01 | Today        |
| M625L4-C5   | 625 nm, 630 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$565.35 | Lead Time    |
| M660L4-C5   | 660 nm, 520 mW (Typ.) Collimated LED for Nikon Eclipse, 1200 mA      | \$533.40 | Today        |
| M780L3-C5   | 780 nm, 170 mW (Typ.) Collimated LED for Nikon Eclipse, 800 mA       | \$635.89 | Today        |
| M810L3-C5   | 810 nm, 225 mW (Typ.) Collimated LED for Nikon Eclipse, 500 mA       | \$590.47 | Lead Time    |
| M850L3-C5   | 850 nm, 370 mW (Typ.) Collimated LED for Nikon Eclipse, 1200 mA      | \$635.89 | Lead Time    |
| M940L3-C5   | 940 nm, 340 mW (Typ.) Collimated LED for Nikon Eclipse, 1000 mA      | \$635.89 | Lead Time    |
| MCWHL8-C5   | NEW! 6500 K, 549 mW (Typ.) Collimated LED for Nikon Eclipse, 1400 mA | \$566.45 | Today        |

[Hide Mounted LED Mating Connector](#)

### Mounted LED Mating Connector

- ▶ Female 4-Pin Pico (M8) Receptacle
- ▶ M8 x 1 Thread for Connection to Mounted LED Power Cable
- ▶ M8 x 0.5 Panel-Mount Thread for Custom Housings
- ▶ 0.5 m Long, 24 AWG Wires
- ▶ IP 67 and NEMA 6P Rated

The CON8ML-4 connector can be used to mate mounted LEDs featured on this page to user-supplied power supplies. We also offer a male 4-Pin M8 connector cable (item # CAB-LEDD1).

| Pin | Color | Specification |
|-----|-------|---------------|
| 1   | Brown | LED Anode     |
| 2   | White | LED Cathode   |
| 3   | Black | EEPROM GND    |
| 4   | Blue  | EEPROM IO     |



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



| Part Number | Description                                    | Price   | Availability |
|-------------|--|---------|--------------|
| CON8ML-4    | 4-Pin Female Mating Connector for Mounted LEDs | \$35.82 | Today        |



