

# Prizmatix

## UHP-Mic-LED

### Ultra-High-Power LED Light Source for Fluorescence Microscope

Ver. 10

#### Introduction

The Ultra-High-Power LEDs designed for fluorescence microscopy applications. The single die LED (not LED array) with an aspheric collimator produce highly homogeneous flat field illumination under microscope objective without a need of additional diffuser. The LED head can be mounted directly on the microscope epi-fluorescence port by an appropriate adaptor. Several UHP-Mic-LED beams can be combined by a dichroic Beam Combiner to create a versatile multi-wavelength illumination system. The multi wavelength system can mix all Prizmatix collimated LEDs: Mic-LEDs, UHP-Mic-LEDs and UHP-T-LEDs. The LED driver supports CW or pulsed operation via TTL trigger.



#### Key Features

- Single chip Ultra-High Power LED chip
- Compatible with all Prizmatix modular LED Light Sources products family – see below for details
- Optically isolated TTL input (Rise/Fall time few usec) for external triggering (no shutter needed)
- Adaptors to epi-fluorescent ports of Olympus, Nikon, Zeiss and Leica. Also, compatible with standard SM1 (1.035"-40) thread
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)

#### Applications

- Fluorescence microscopy
- Whole body imaging of small animals in-vivo
- Fluorescence recovery after photo bleach (FRAP)
- Fluorescence in situ hybridization (FISH)
- Bio analysis

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## Optical Output Power Specifications:

UHP-Mic-LED power output is dependent on specific LED wavelength used in the product. Please contact us for power data for specific wavelength and fiber. Following table shows few examples for collimated Mic-LED as used in microscopy and for Mic-LED equipped with Fiber Couple Adaptor (FCA), for full table of standard available wavelengths and power levels please see: <http://www.prizmatix.com/LEDUHP/LED-UHP-Mic.aspx>

Product	Collimated Output Power
UHP-Mic-LED-405	3500 mW
UHP-Mic-LED-450	2300 mW
UHP-Mic-LED-520	1000 mW
UHP-Mic-LED-625	850 mW
UHP-Mic-LED-650	1000 mW


## UHPLCC Benchtop LED Current Controller Specifications

### Features

- Constant current or chopping modes
- TTL external trigger input
- Precise LED current setting by 10 turn dial
- Compact and robust enclosure

Digital modulation input		Optically isolated TTL
Connector for TTL input		BNC
Digital modulation frequency	Hz	DC-30000
Rise / Fall time (10% - 90%)	µs	<1.5
Input Voltage	V	12

## General Specifications

Operation temperature range	°C	10-35
Storage temperature range	°C	-10-55
Operating relative humidity (Non condensing)	%	<90
Head dimensions		See drawing below
Head weight	g	500
Controller dimensions (LxWxH)		220mm x 165mm x 51.5mm
Controller weight	g	700
Power adaptor dimensions (LxWxH)	mm	125 x 50 x 31.5
Power adaptor weight	g	300
Power Adaptor Safety		
Power Adaptor Input		100-240 VAC, 50-60Hz, 1.5A
Fan noise	dBA	38

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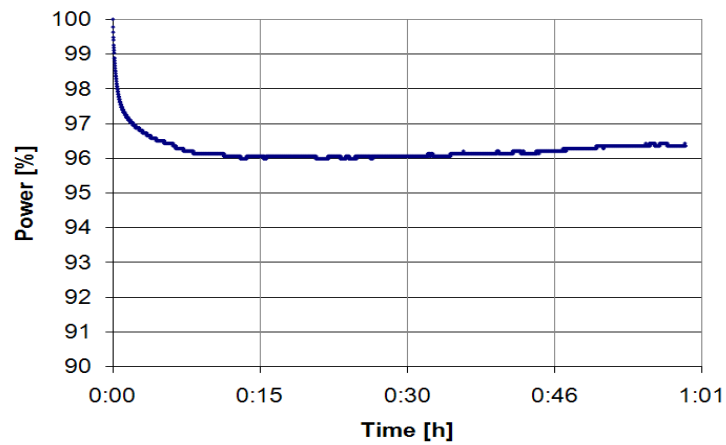
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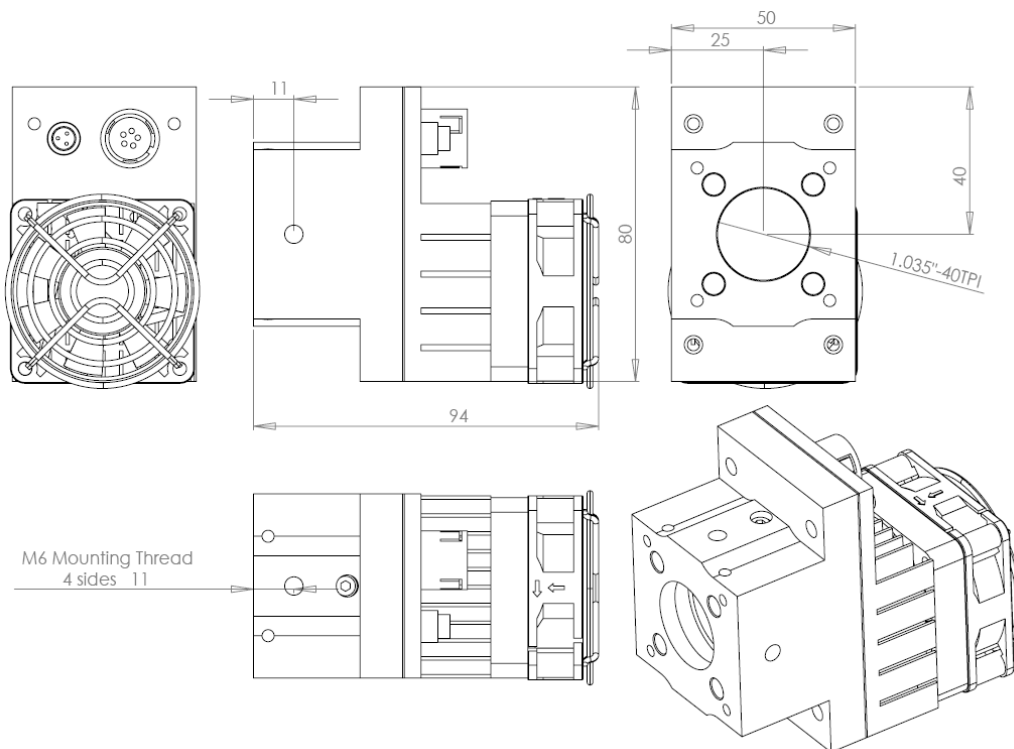
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## Performance



UHP-Mic-LED Typical stability

## Mechanical Drawings



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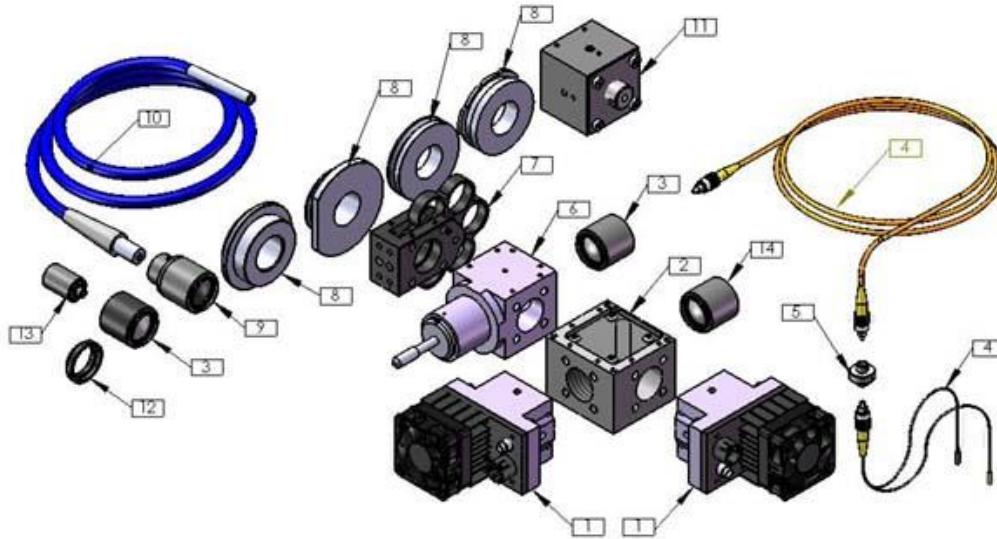
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## Optional Accessories

For full details on optional accessories please see:

<http://www.prizmatix.com/optogenetics/Optogenetics-LED-Light-Sources-and-Fiber-Optics.htm>



### Beam Combiner [2]:

Multiple LED beams can be combined into one output beam. For example UV LED can be combined with White LED to create Mercury lamp like configuration. For more details please see: <http://www.youtube.com/watch?v=iv7dlwLHaUE>

### Filter Wheel [7]:

The UHP-Mic-LED can be equipped with a 6 positions filter wheel at the beam output. This accessory is especially useful for UHP-Mic-LED-White light source. Please see <http://www.prizmatix.com/Optics/filter-wheel.htm> for more details.

### Fiber Coupler Adaptor [3]:

The UHP-Mic-LED can be easily changed from direct microscope coupling to fiber coupled LED configuration by means of Fiber Coupler Adaptor (SMA, CF or ST connector). Please see video clip <http://www.youtube.com/watch?v=iv7dlwLHaUE> for more details.

### Liquid Light Guide Adaptor [9]:

The Microscope-LED can be easily changed from direct microscope coupling to Liquid Light Guide coupled LED configuration by means of LLGA adaptor. Please see video clip <http://www.youtube.com/watch?v=iv7dlwLHaUE> for more details.

### Fiber Optics Collimator [13]:

The output from optical fiber is divergent according to fiber NA. In order to reduce the divergence angle a collimator module can be used. Prizmatix collimator was especially designed to fit thick core high NA Polymer Optical Fibers. See more details at:

<http://www.prizmatix.com/Optics/collimator.htm>

### Fiber Bundles [4]:

To combine outputs of multiple LEDs a Y-shaped fiber bundle with two or more input branches can be used. Prizmatix can help to configure and build custom fiber bundles for specific applications. See more details at: <http://www.prizmatix.com/dev/Custom-Fiber-Optic-Assemblies.htm>

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