

# Prizmatix

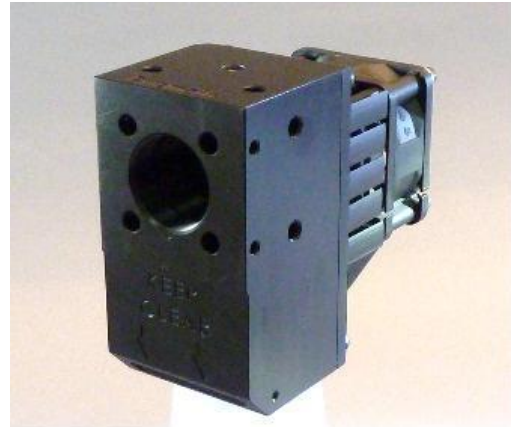
## UHP-T-LED-White

### Ultra High Power LED Light Source for Fluorescence Microscopy

Ver. 05

#### Introduction

The Ultra High Power White LED (~48 Watt) is an effective replacement of Mercury and Xenon lamps in many power demanding applications, such as fluorescence microscopy and machine vision. This new member of the modular OptiBlocks family provides **>4 Watt of *collimated*** White LED power on its output. The LED driver supports CW or pulsed operation via TTL trigger. The product can be used in various configurations such as collimated white light source, coupled to liquid light guide or coupled to optical fiber.



#### Key Features

- Compatible with Prizmatix modular Microscope-LED Light Source products family – see below for details
- Single chip Ultra High Brightness White LED
- Optically isolated TTL input for external triggering (no shutter needed)
- Analog input (0-5V) for LED power control by external device like D/A interface
- LED spectrum can be narrowed by band pass filters or a filter wheel.
- Computer control via USB and LabView software (optional)
- Excellent for fluorescence excitation
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)
- Rapid warm up time

#### Applications

- Fluorescence microscopy
- Whole body imaging of small animals in-vivo
- Bio analysis
- Machine Vision
- OEM

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## Optical Specifications

Wavelength	nm	See Spectrum for standard 4500K White*
Collimated optical power output for standard 4500K	W	>4

\* Other custom options are available upon request

## Benchtop LED Current Controller Specifications

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



Digital modulation input		Optically isolated TTL
Connector for TTL input		BNC
Digital modulation frequency	Hz	DC-10000
Rise / Fall time (10% - 90%)	µs	<10
Input Voltage	V	12
Max Input current	A	6.5
Power Adaptor Input		85-264 VAC, 47-63Hz, 1.5A

## 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	350
Controller dimensions (L x W x H)	mm	197 x 174 x 80
Controller weight	g	400
Power adaptor dimensions (L x W x H)	mm	175 x 72 x 35
Power adaptor weight	g	650
Power Adaptor Safety		
Head fan noise	dBA	38

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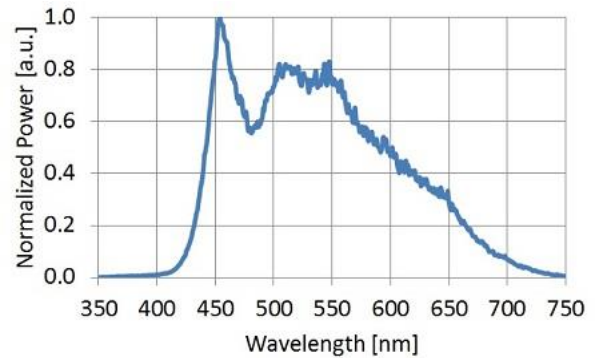
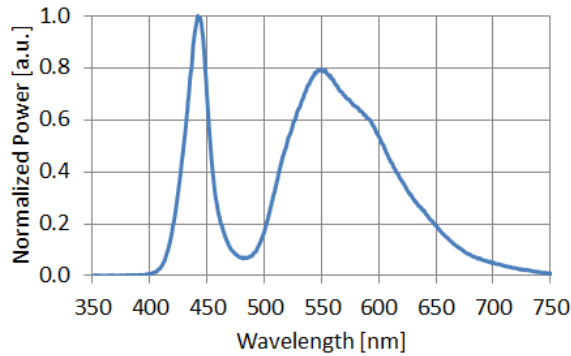
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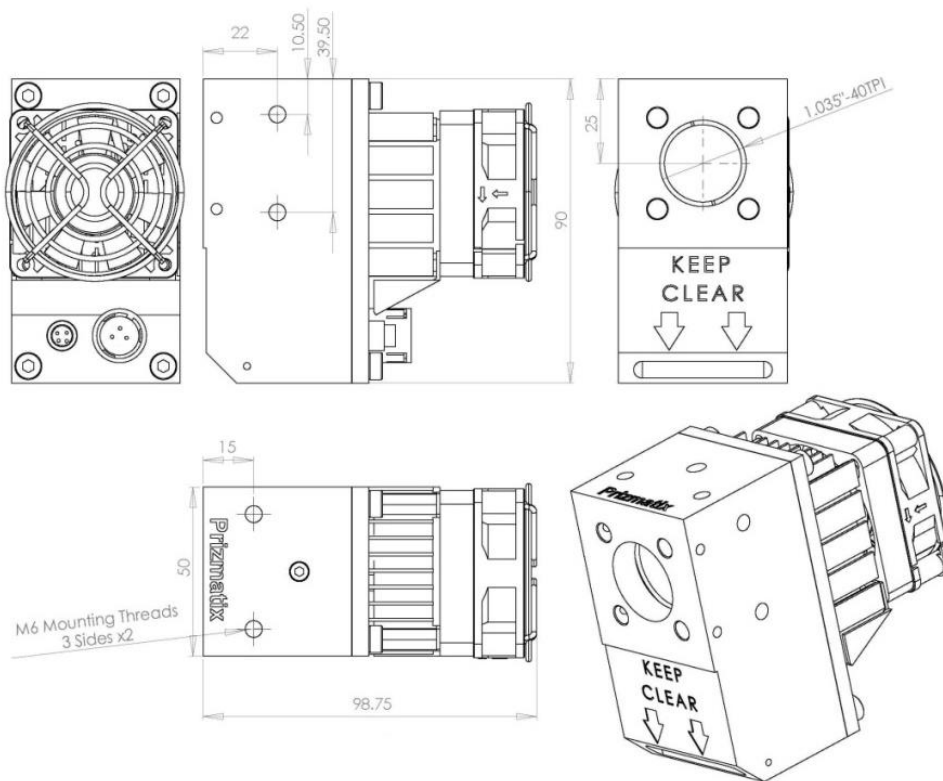
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## Performance



UHP-T-LED-White spectrum: **Left** - standard 4500K White, **Right** – custom Hi-CRI White

## Mechanical Drawings



\* Specifications subject to changes without notice

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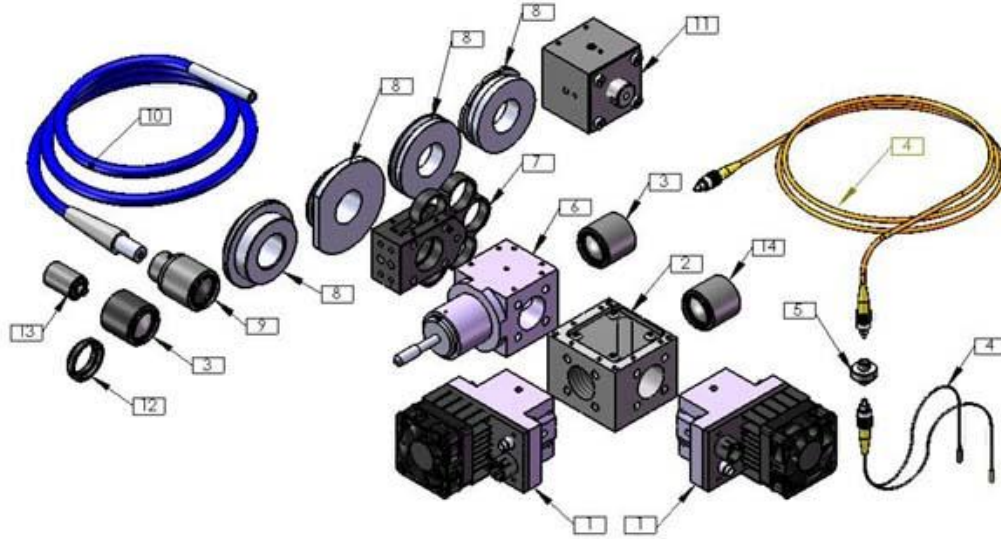
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## Optional Accessories

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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