

# Prizmatix

## UHP-T-DI

### Ultra-High Power LED Light Source for Microplate Illumination

Ver. 03

#### Introduction

The UHP-T-DI series Ultra High Power LEDs (~50 Watt) feature a powerful square homogeneous collimated beam (direct illumination without a light guide) useful in many power demanding applications such as fluorescence excitation, microscopy whole body imaging and machine vision.

The UHP-T-DI optics contains aspheric lens to optimize homogeneous illumination. The UHP-T LEDs are available at several discrete wavelengths, white and unique UHP-T-HCRI (High CRI) **broadband white LED**.

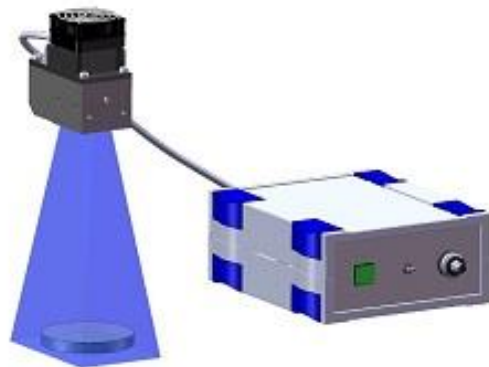
The LED current controller supports CW or pulsed operation via TTL trigger. The LED power can be controlled by 10 turn dial or via Analog input (0-5V).

The product can be used in various configurations such as collimated light source, directly connected to microscope, coupled to liquid light guide or coupled to optical fiber.



#### Key Features

- Ultra-High Brightness large homogeneous emission surface square LED chip (Not LED Array).
- Optically isolated TTL input for external triggering (no shutter needed) or strobe operation
- Optically isolated Analog input (0-5V) for LED power control by external device like D/A interface
- Computer control via USB by Windows software, LabView VI or uManager (optional).
- Long life (no lamp or laser tube replacement required)
- Compatible with Prizmatix modular Microscope-LED Light Source products family – see below for details.
- Stable precisely adjustable power



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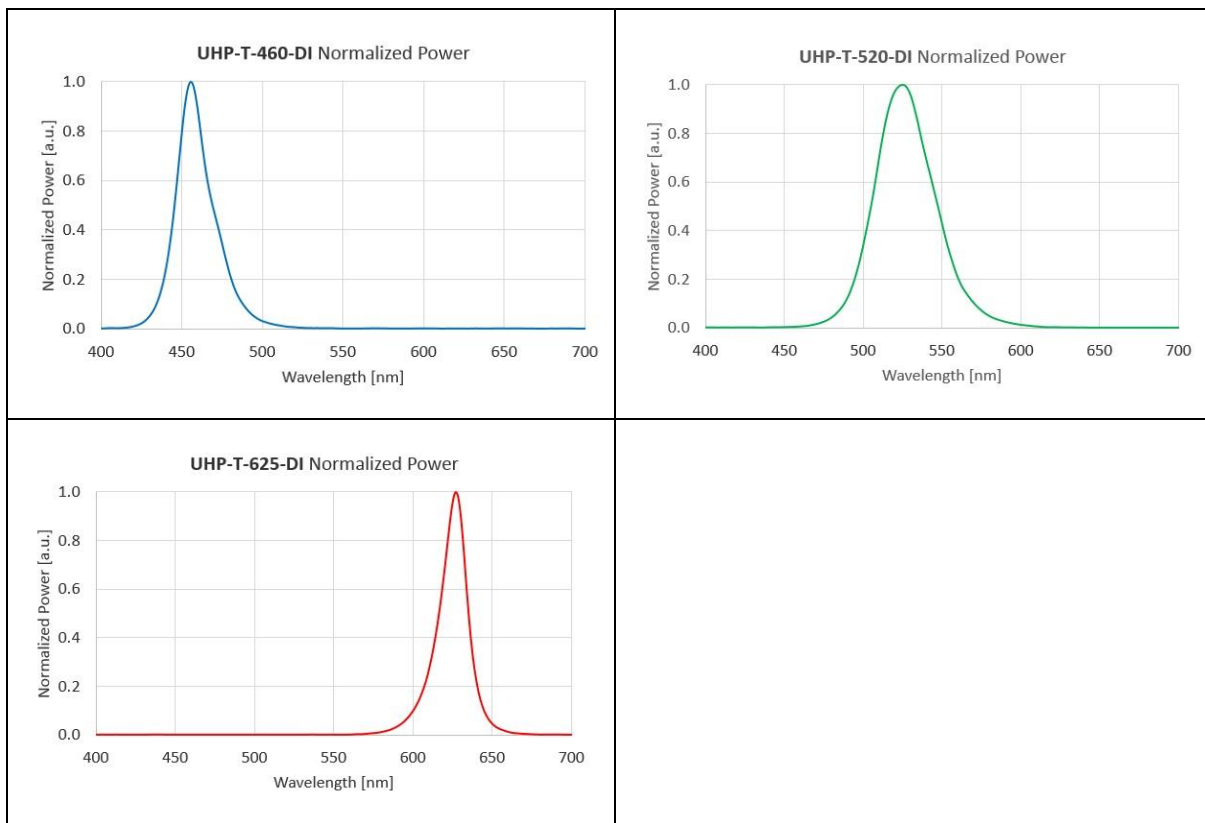
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## Applications

- Fluorescence microscopy
- *In-Vitro* Optogenetics
- Microplate illumination, Petri Dish illumination
- Whole body imaging of small animals
- Bio analysis
- Machine Vision
- OEM

## Optical Specifications – Color LEDs

Product P/N:		UHP-T-460-DI	UHP-T-520-DI	UHP-T-625-DI
<b>Peak</b>	[nm]	456	525	627
<b>Centroid</b>	[nm]	460	528	624
<b>FWHM</b>	[nm]	24	43	19
<b>Power Collimated</b>	[mW]	4300	1800	1800
<b>Power LIG3</b>	[mW]	1800	700	800
<b>Power LIG5</b>	[mW]	2700	1000	1200



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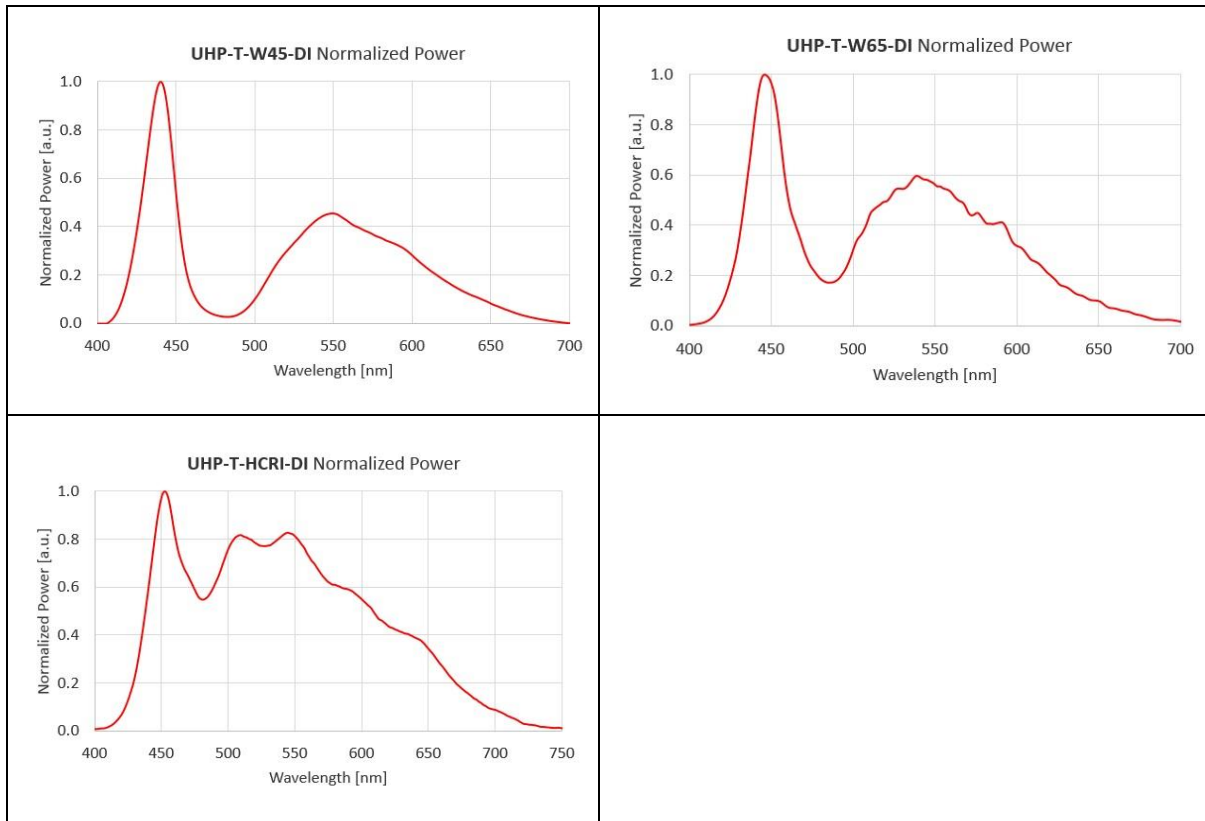
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## Optical Specifications – White LEDs

	Product P/N:	UHP-T-W45-DI	UHP-T-W65-DI	UHP-T-HCRI-DI
<b>Color Temp</b>	[K]	4500	6500	5700
<b>Power Collimated</b>	[mW]	3700	3200	2300
<b>Power LIG3</b>	[mW]	1200	1300	1000
<b>Power LIG5</b>	[mW]	2000	2000	1600



## Benchtop LED Current Controller Specifications

- Constant current or chopping modes
- Precise LED current setting by 10 turn dial
- TTL external trigger input
- Analog input for external LED power control (0-5Vdc)
- Optically isolated TTL and Analog inputs
- Compact and robust enclosure



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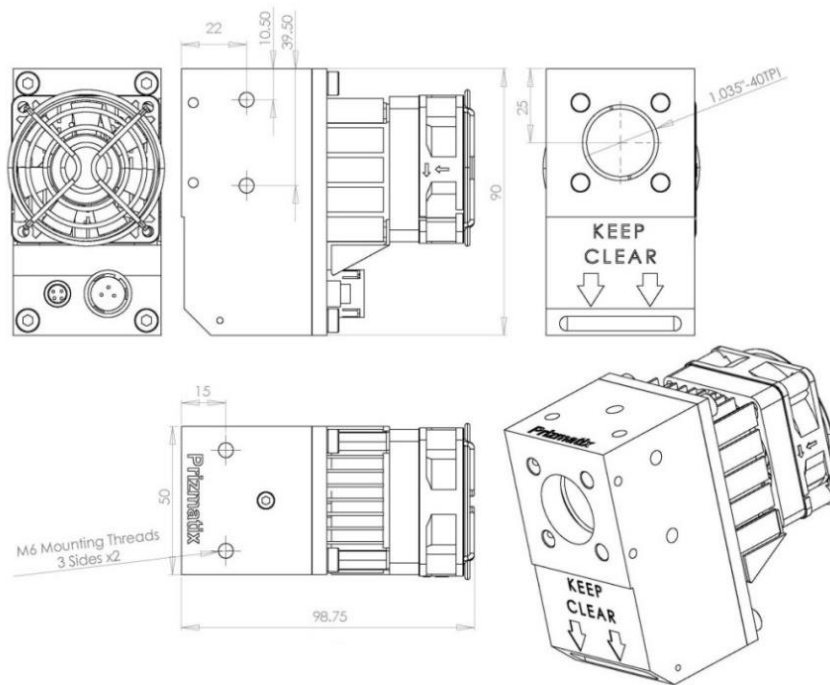
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Connectors for TTL and Analog input		Optically Isolated BNC
Digital modulation frequency	Hz	DC - 10000
Rise / Fall time	$\mu$ s	<10 / <3
Analog input voltage range	V	0 - 5
Analog modulation frequency	Hz	DC - ~100
Current controller supply voltage	V	12
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		
LED Head fan noise	dB(A)	38

## Mechanical Drawings



\* Specifications subject to changes without notice

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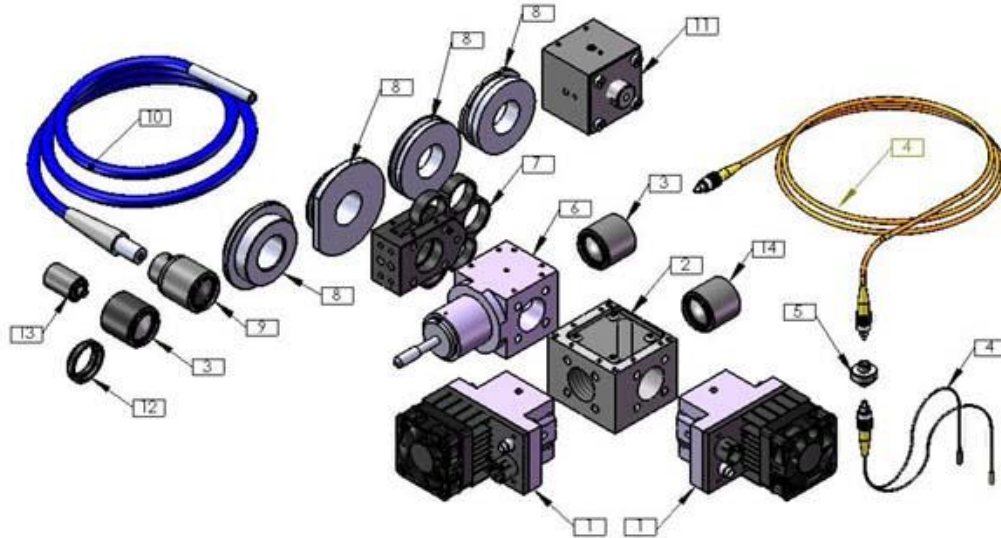
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## Optional Accessories

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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