Prizmatix

UHP-T-MP

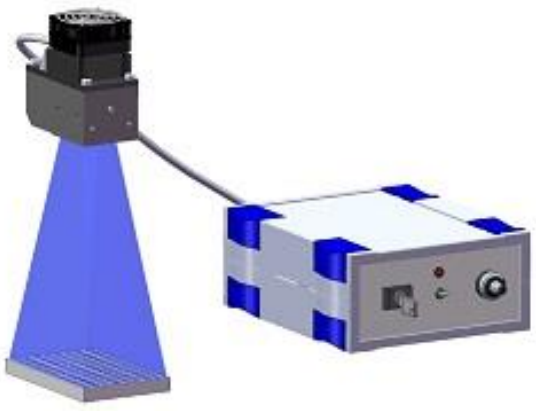
Ultra-High Power LED Light Source for Microplate Illumination

Ver. 03

Introduction

The UHP-T-MP series Ultra High Power LEDs (~50 Watt) feature a powerful rectangular (3:4) homogeneous collimated beam (direct illumination without a light guide) useful in many power demanding applications such as direct microplate illumination, fluorescence microscopy and machine vision.
The UHP-T-MP optics contains aspheric lens to optimize illumination of standard 96 well microplate from working distance of about 40 cm.
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 UHP-T-MP LEDs are available in blue, green and red wavelengths.
The product can be used in various configurations such as collimated light source, coupled to liquid light guide or coupled to optical fiber.

Key Features



- Single chip Ultra High Brightness LED 3:4 aspect ratio.
- 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).
- Excellent for Optogenetics / fluorescence excitation in microplate applications
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)
- Compatible with Prizmatix modular Microscope-LED Light Source products family – see below for details.

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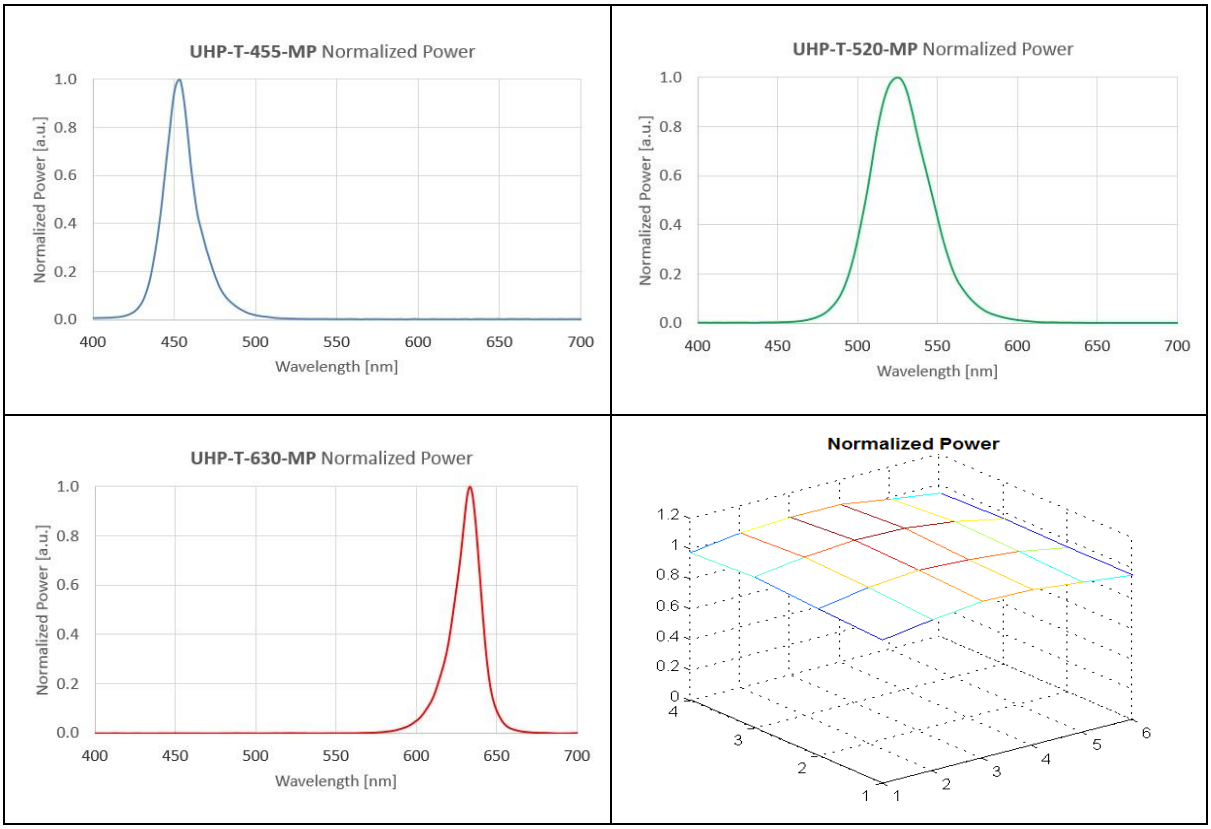
Applications

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

Optical Specifications

	Product P/N:	UHP-T-455-MP	UHP-T-520-MP	UHP-T-630-MP
Peak	[nm]	453	525	633
Centroid	[nm]	455	528	630
FWHM	[nm]	21	43	19
Power Collimated	[mW]	5000	1500	2000
Power LLG3	[mW]	1500	450	600
Power LLG5	[mW]	2800	850	1100



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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

Connectors for TTL and Analog input		Optically Isolated BNC
Digital modulation frequency	Hz	DC - 10000
Rise / Fall time	µs	<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	dBA	38

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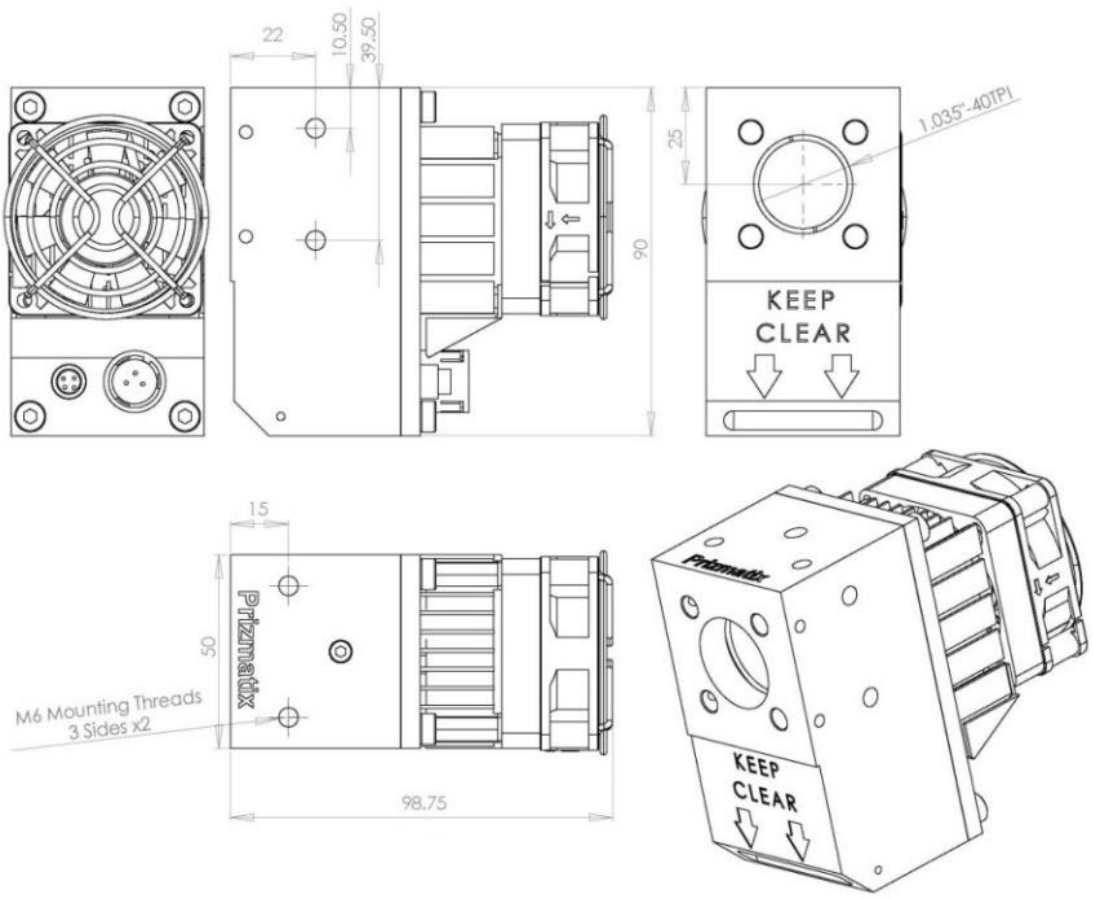
Mechanical Drawings

UHP-T-MP LED head



* Specifications subject to changes without notice

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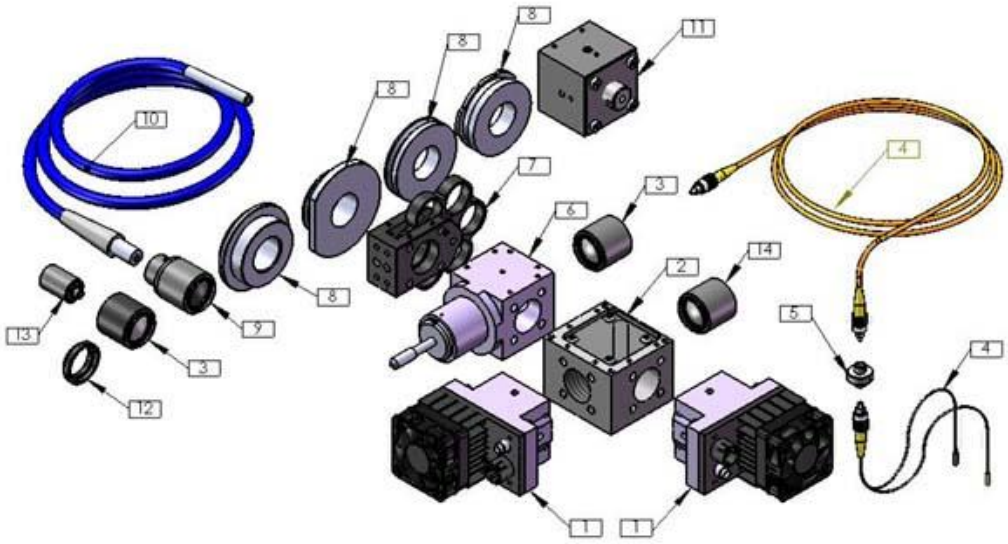
Optional Accessories

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 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 Gide 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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