Prizmatix

UHP-T-EP

Ultra-High Power LED Light Source

Ver. 03

Introduction

The Ultra High Power LED provides more than X10 increase of power in comparison with similar High power LED devices. The Ultra High Power LED (**> 50 Watt**) is an effective replacement of lasers and lamps in many power demanding applications, such as fluorescence microscopy, Optogenetics in-vitro, patterned illumination, confocal microscopy, chemical reaction activation and numerous others. Fluorescence microscopy applications will benefit from highly homogenous and flat field illumination. The shielded UHP-T-EP LED head contain the high current driver, while the LED controller box contains control functions. This arrangement eliminating much of RFI / EMI interference common in high current light sources. The controller features Optically Isolated TTL and Analog Inputs. These features make this product especially suited for electrophysiology rig applications. UHP-T-EP can be used with a full range of other optical OptiBlocks such as Fiber Coupler, Liquid Light Guide coupler, Beam Combiner, Filter Wheel, Beam Switcher and others See Optional Accessories section below.

Key Features

- Single ultra-high brightness LED chip provide highly homogeneous illumination over whole field of view.
- Shielded LED head with high current driver, low RFI/EMI.
- 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.
- Special low optical noise model available for detection of small signals (option).
- Stable precisely adjustable power

Elliot Scientific Limited
Unit 11 Sandridge Park, Porters Wood, St Albans, AL3 6PH, United Kingdom
Tel: +44 (0)1582 766300 Fax: +44 (0)1582 766340
www.elliotscientific.com sales@elliotscientific.com

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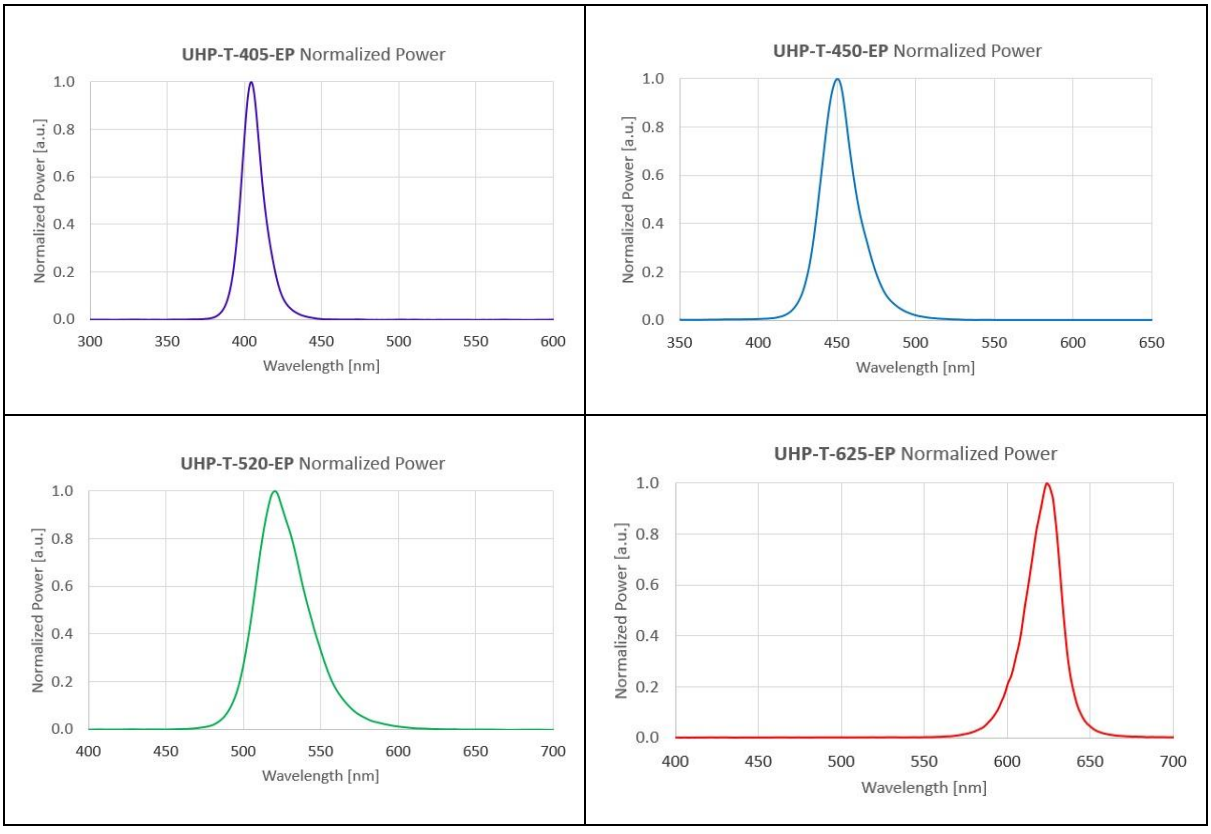
Applications

- Fluorescence microscopy in electrophysiology rig.
- *In-Vitro* Optogenetics
- Multi-wavelength systems
- Bio analysis
- OEM

Optical Specifications – Color LEDs

P/N	Peak [nm]	Centroid [nm]	FWHM [nm]	Power Collimated [mW]
UHP-T-405-EP	404	406	16	2100
UHP-T-450-EP	451	453	25	2300
UHP-T-520-EP	520	527	37	1000
UHP-T-625-EP	624	620	24	850
UHP-T-630-EP	636	632	26	1000
UHP-T-650-EP	656	652	26	1000



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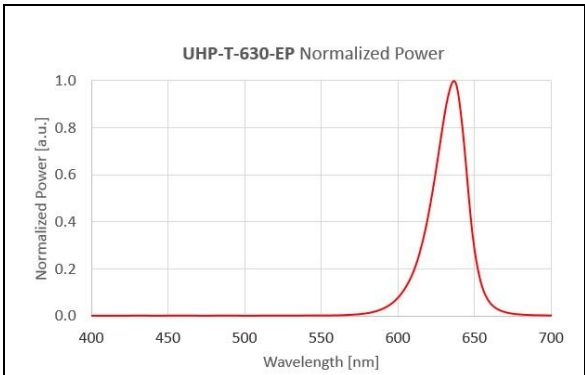

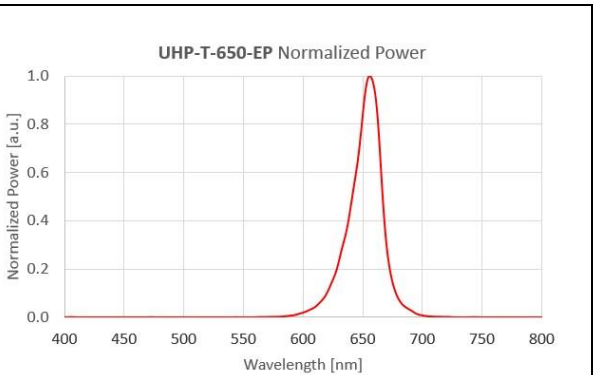

Benchtop LED Current Controller Specifications

- 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

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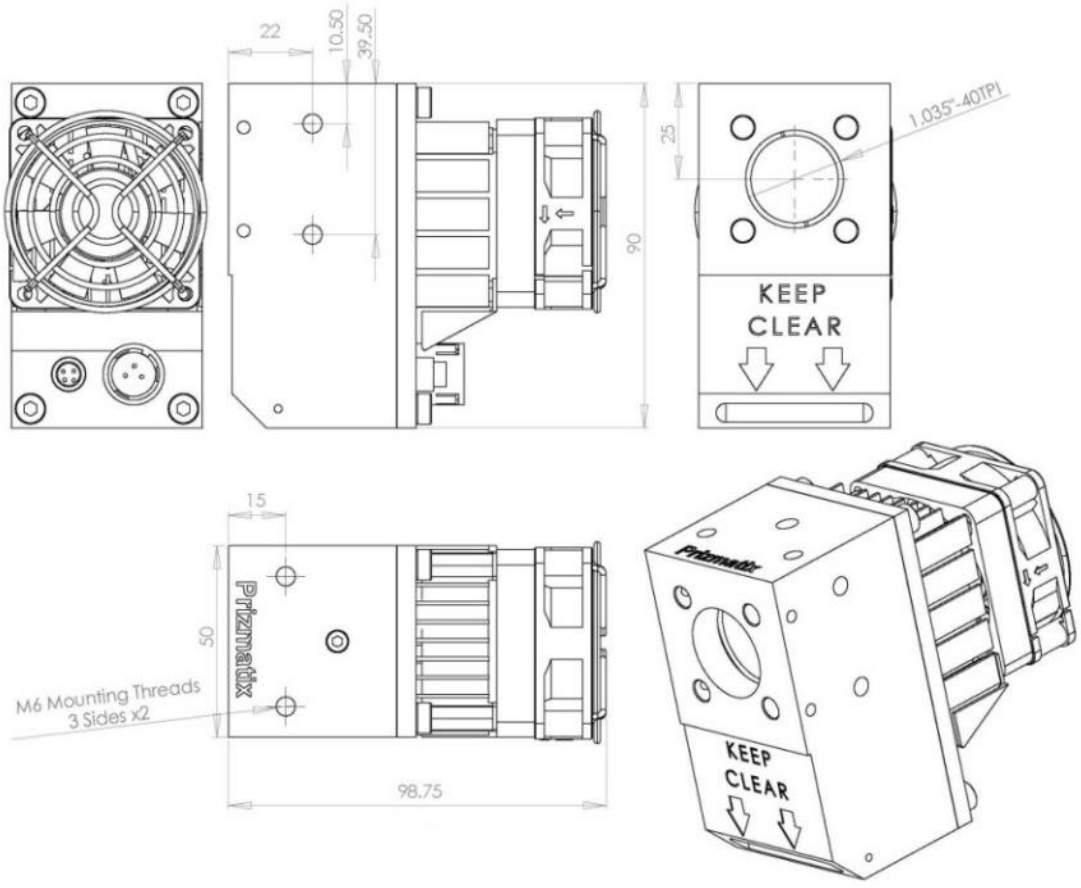
Head dimensions		See drawing below
Head weight	g	350
Controller dimensions (L x W x H)	mm	197 x 174 x 80
Controller weight	g	400
Power adaptor dimensions (L x W x H)	mm	175 x 72 x 35
Power adaptor weight	g	650
Power Adaptor Safety		
LED Head fan noise	dBA	38

Mechanical Drawings



* Specifications subject to changes without notice

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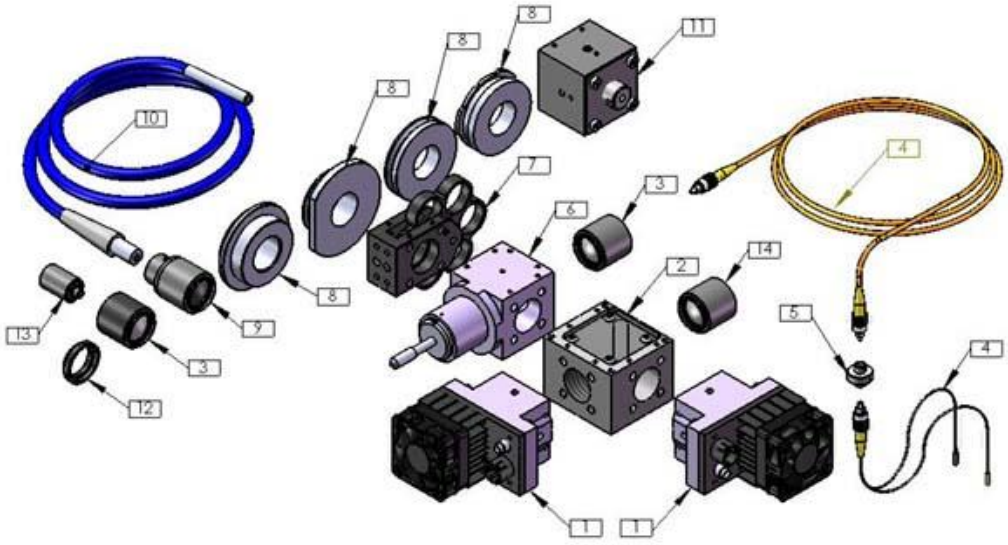
Optional Accessories

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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