

Prizmatix

UHP-Microscope-LED-595

Ultra High Power LED Light Source for Fluorescence Microscopy

Introduction

The Ultra High Power (22Watt) LED 595 nm provides excellent replacement of conventional arc lamp sources in fluorescence microscopy. Many applications such as activation of a light-driven ion pump like Halorhodopsin (NpHR) in Optogenetics may benefit of this new LED light source. The UHP-Mic-LED-595 provides **>650mW** of **collimated** LED power on its output. The LED driver supports CW or fast TTL triggered operation.



Key Features

- Compatible with Prizmatix modular Microscope-LED Light Source products family
- TTL external triggering
- Excellent for fluorescence excitation
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)
- Speckle free
- Rapid warm up time

Applications

- Optogenetics – LED activation of Halorhodopsin (NpHR)
- Fluorescence microscopy with fluorophores Alexa Fluor 594, Texas Red, DyLight 594
- Whole body imaging of small animals in-vivo
- Photo activation (PA)
- Bio analysis
- Machine Vision

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Optical Specifications

Wavelength	nm	595
Wavelength range	nm	±5
Spectrum half width	nm	16
Collimated optical power output	mW	>650

Benchtop LED Current Controller Specifications

Features

- 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-20000
Rise / Fall time (10% - 90%)	µs	6
ON/OFF extinction		>10 ⁶ : 1
Input Voltage	V	12
Max Input current	A	5.5
Power Adaptor Input		100-240 VAC, 50-60Hz, 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	500
Controller dimensions (LxWxH)		220mm x 165mm x 51.5mm
Controller weight	g	700
Power adaptor dimensions (LxWxH)		146mm x 76mm x 44mm
Power adaptor weight	g	600
Fan noise	dBA	38

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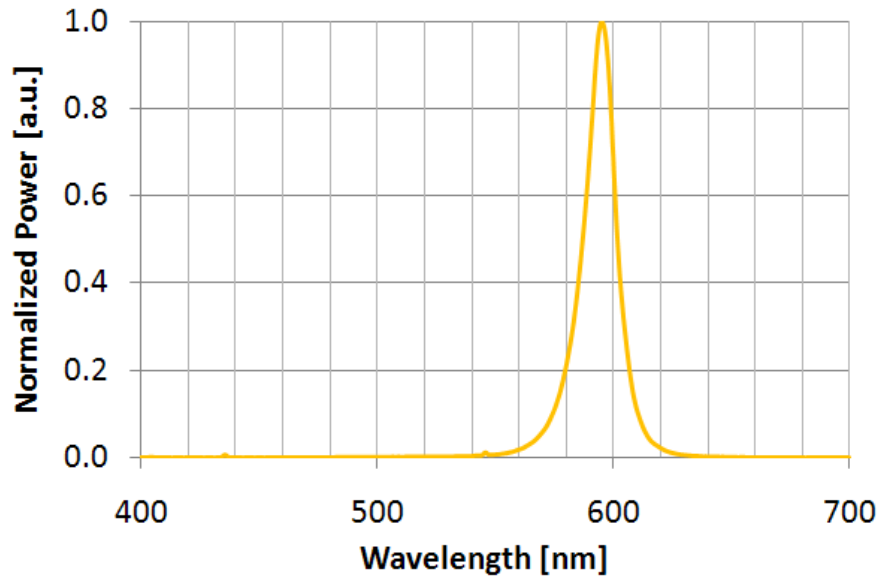
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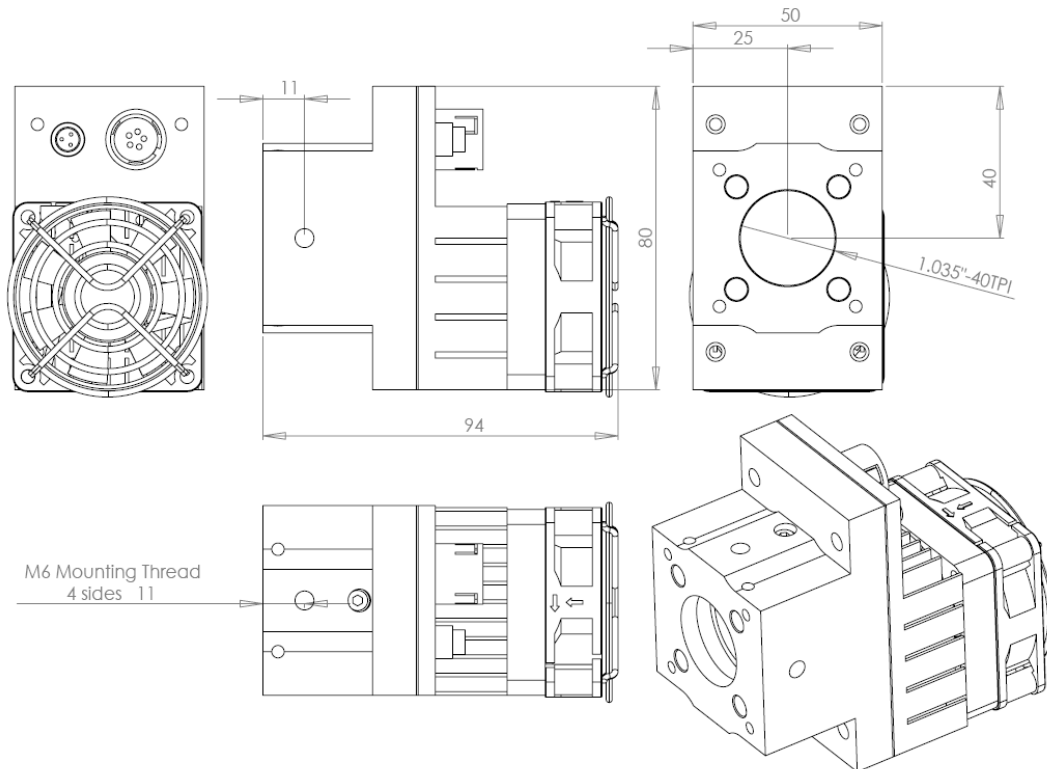
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Performance



- UHP-Microscope-LED-595 spectrum

Mechanical Drawings



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Optional Accessories

Filter Wheel:

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 video clip <http://www.youtube.com/watch?v=iv7dlwLHaUE> for more details.

Fiber Coupler Adaptor:

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). This adaptor can be easily assembled by a user on the Mic-LED output. Please see video clip <http://www.youtube.com/watch?v=iv7dlwLHaUE> for more details.

Liquid Light Guide Adaptor:

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

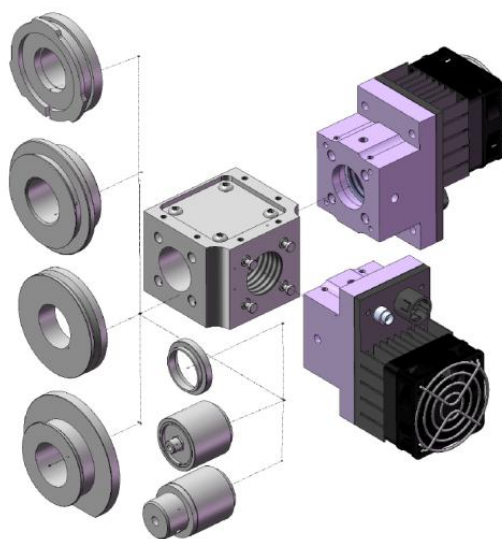
Collimator:

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://prizmatix.com/docs/collimator.cfm>

Fiber Bundles:

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://prizmatix.com/docs/Custom Fiber Optic Assemblies.cfm>



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