

# Prizmatix

## Black-LED-365 Fiber Coupled UV LED Light Source

### Introduction

The new compact fiber-coupled high power LED light source module at **365 nm** is an effective replacement of UV lasers and Hg lamps in many applications, such as spectroscopy, fluorometry and point curing. This new member of the modular OptiBlocks family provides **>50mW** of CW power at fiber output (1500 micron core POF fibers). The LED driver supports CW or external TTL modulation with user controllable frequency and duty cycle.

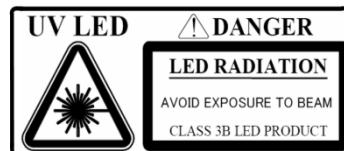


### Key Features

- High Power
- Narrow UV spectrum emission FWHM~10 nm
- Excellent for fluorescence excitation
- LED spectrum can be narrowed by optional band pass filter
- Compact and robust head: 50mm x 50mm x 45mm
- Precisely adjustable power
- TTL external modulation (analog modulation is an option)
- Long life (no lamp replacement required)
- Replacement of Mercury Lamps, He-Cd lasers, Ar++ lasers, UV diode lasers

### Applications

- Fluorescence spectroscopy and Imaging
- NADH, Quantum Dots, BFP, DAPI, Fura, Hoechst, excitation
- Photolysis of caged compounds
- Bio analysis
- Curing



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## Optical Specifications

Wavelength	nm	365
Wavelength range	nm	±5
Spectrum half width	nm	10
Optical output connector		SMA / FC / ST

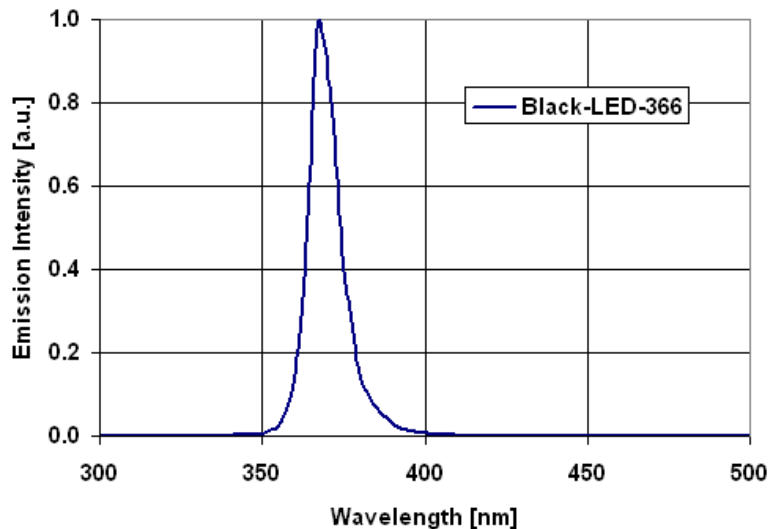
### Power output:

Black-LED power output is limited by the reciprocal fiber characteristics. Larger core and higher NA will increase maximum power output, and vice versa. The table below shows a few examples of the CW output power at different fibers:

Fiber brand	Fiber type <sup>*1</sup>	NA	Fiber Core Diameter	Output Power Typ. <sup>*2</sup>
Mitsubishi Rayon SH6001 Super Eska	POF	0.5	1500 μm	>50 mW
Mitsubishi Rayon SH4001 Super Eska	POF	0.5	1000 μm	>45 mW
Thorlabs BFH48-600	Silica High OH	0.48	600 μm	>15 mW
Thorlabs BFH48-200	Silica High OH	0.48	200 μm	>1.7 mW

\*1: POF – Polymer Optical Fiber; fibers length - 1m.

\*2: The measurement done by Ophir Nova II power meter equipped with PD300-UV head. The wavelength is set at 365nm



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## Benchtop LED Current Controller Specifications

The BLCC-02 bench top LED current controller has been designed to provide precisely controllable, low noise current for driving a variety of LEDs. The current controller can be configured to drive virtually any currently available LED including the high power LEDs in constant current (CW) or chopping mode defined by external TTL input. Analog modulation input is an option.

### Features

- Constant current or chopping modes
- Precise LED current setting by 10 turn dial
- Safety features for HP and UV LEDs
- TTL external trigger input
- Optional Analog modulation input
- Compact and robust enclosure



Max. output current (factory set to fit LED max. current)	mA	350 / 500 / 700
Output voltage		2 – 20V
Connector for TTL / Analog input		BNC
Connector for LED		9-pin D-type
Digital modulation frequency	Hz	DC-10000
Rise / Fall time (10% - 90%)	µs	20
Input Voltage	V	24
Max Input current	A	1
Power Adaptor Input		100-240 VAC, 1 A, 47-63 Hz

## 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

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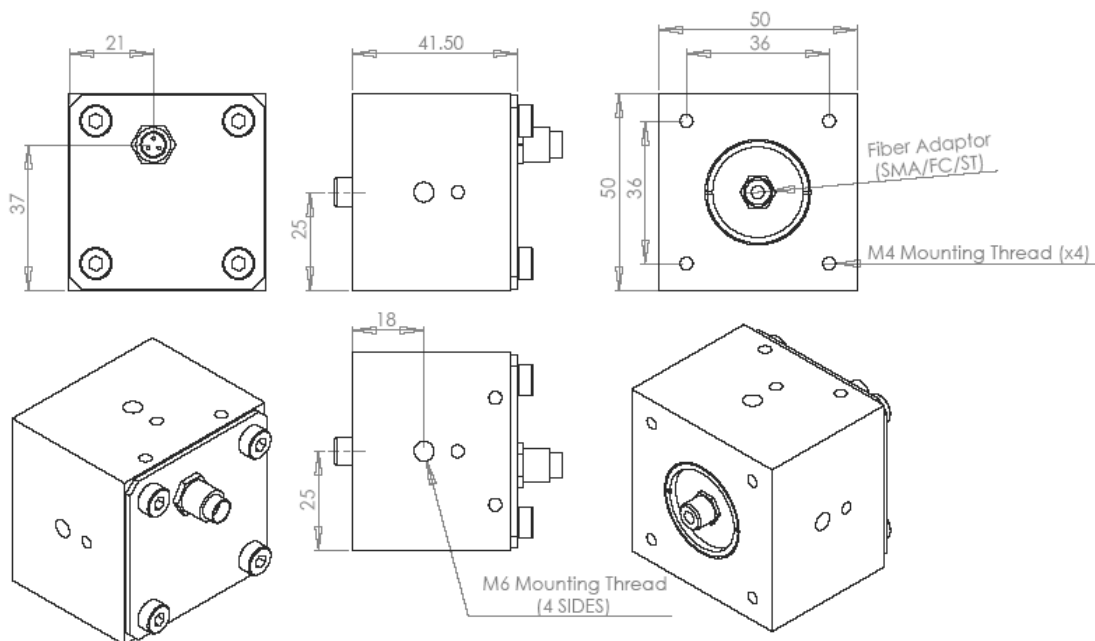
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Head weight	g	250
Controller dimensions (LxWxH)		120mm x 75mm x 40mm
Controller weight	g	300
Power adaptor dimensions (LxWxH)		95mm x 55mm x 35mm
Power adaptor weight	g	200

## Mechanical Drawings



## Optional Accessories

### 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](http://prizmatix.com/docs/Custom_Fiber_Optic_Assemblies.cfm)

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