

# Prizmatix

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## Black-LED-415 Fiber Coupled Violet LED Light Source

### Introduction

The new compact fiber-coupled high power Violet LED light source module at **415 nm** is an effective replacement of lasers and lamps in many applications, such as spectroscopy and fluorometry. This new member of the modular OptiBlocks family provides up to **30mW** of CW power at fiber output.

The LED driver supports external modulation, CW or chopping mode operation with preset frequency and duty cycle.



### Features

- High Power
- Speckle free
- LED spectrum can be narrowed by optional band pass filter
- Compact and robust head: 50mm x 50mm x 40mm
- Reciprocal SMA, FC or ST fiber connection
- Precisely adjustable power
- TTL external / internal modulation
- Long life (no lamp replacement required)

### Replacement of

- 415 nm violet laser
- Krypton laser
- Lamp

### Applications

- Fluorescence spectroscopy
- Bio analysis

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## Specifications

**Peak wavelength:** 415 nm Typ.

The peak wavelength is current and temperature dependent. The peak wavelength can be blue shifted by up to 4 nm at 100% max output power.

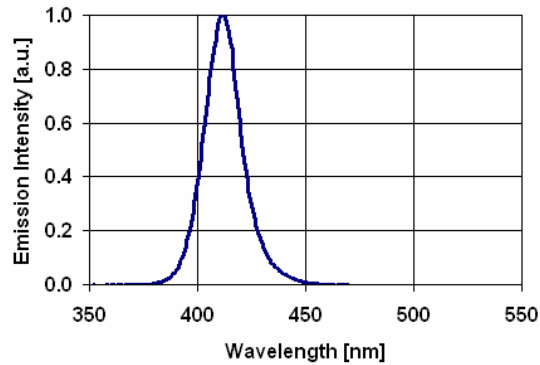
**Spectrum half width:** 20 nm Typ.

**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> |
|---|--------------------------|------|---------------------|---------------------------------|
| Toray PGR-FB1000 or Mitsubishi Rayon SH4001 | POF                      | 0.5  | 1000 $\mu$ m        | 30 mW                           |
| Thorlabs FT800UMT                           | Silica High OH           | 0.39 | 800 $\mu$ m         | 17 mW                           |
| Thorlabs BFH48-600                          | Silica High OH           | 0.48 | 600 $\mu$ m         | 12 mW                           |

\*1: POF – Polymer Optical Fiber. Fiber length ~1m.

\*2: The measurement done by Ophir Nova II power meter equipped with PD300-UV head. The wavelength is set at 415nm. The values are for non filtered Black-LED-415.

**Optical output connector:**

The Black-LED is available with SMA, FC or ST reciprocal fiber connector

**Dimensions:**

**Black-LED head:** 50mm x 50mm x 40mm

**Black-LED controller:** 75mm x 40mm x 120mm (W x H x L) without key switch and other extrusions

**Power adaptor:** 60mm x 35mm x 10mm (W x H x L)



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## Benchtop LED Current Controller

### Introduction

The Benchtop LED current controller has been designed to provide precisely controllable, low noise current for driving a variety of LEDs. The controller can be configured to drive virtually any currently available LED including the high power LEDs, in constant current or chopping mode by internal oscillator. The duty cycle and the rate of the internal oscillator can be preconfigured.



### Features

- Constant current or chopping modes
- Precise LED current setting
- Safety features for UV LEDs
- Internal modulation with predefined duty cycle
- Optional TTL external modulation
- Compact and robust enclosure

### Specifications

**Output current control range:** 0-1000 mA

**Output voltage:** 1-15 V

**Chopping frequency:** 10 Hz – 20 KHz (Factory preset)

**Duty cycle:** 1/16 – 1/1 (Factory preset)

**Connector for LED:** 9-pin D-type

**Connector for TTL input /output:** BNC

**Input power supply:** 24 VDC, 1 A

**Power adaptor input:** 100-240 VAC, 1 A, 47-63 Hz

### Dimensions:

**Controller:** 75mm x 40mm x 120mm (W x H x L) without key switch and other extrusions

**Power adaptor:** 60mm x 35mm x 10mm (W x H x L)

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