

# Prizmatix

## Triple-LED

### Fiber Coupled Triple Wavelength LED Light Source

#### Introduction

The new fiber-coupled three color UV - Blue - Green LED light source is an effective replacement of multi line lasers and lamps in many applications, such as spectroscopy and fluorometry. Such popular wavelength mix as 365nm, 405nm and 515nm is now readily available in a single MM fiber. Other wavelengths combinations can be assembled upon request. The LED driver enables CW operation with external TTL modulation inputs for chopping operation of each wavelength separately. Computer control version with USB interface is also available.



#### Features

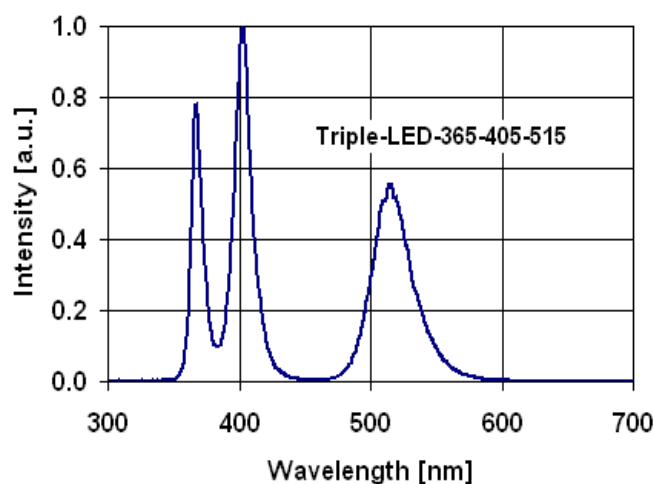
- Multi wavelengths in a single MM fiber
- Power of each LED is controlled independently
- Speckle free
- Optical output connector SMA or ST type
- TTL external / CW internal operation for each LED
- Long life (no lamp replacement required)

#### Replacement of

- Argon Ion lasers
- He-Cd lasers
- Lamps

#### Applications

- Fluorescence spectroscopy
- Bio analysis



Example spectrum of Triple-LED-365-405-515

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## Specifications

### Emission wavelengths:

Any combination of three of the following wavelengths: 365 nm, 385 nm, 390 nm, 395 nm, 400 nm, 405 nm, 410 nm, 415 nm, 420 nm, 425 nm, 430 nm, 435 nm, 440 nm, 445 nm, 460 nm, 470 nm, 480 nm, 515 nm, 595nm and 630 nm is possible. Other wavelengths in UV, Blue, Green, Yellow, Red and NIR are also available per request. Please contact us for further details.

### Power output:

Triple-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 an example of the CW output power at three sample wavelengths for 2000µm core POF fiber:

Fiber brand	Fiber type <sup>*1</sup>	Output @ 365 nm Power Typ. <sup>*2</sup>	Output @ 405 nm Power Typ. <sup>*2</sup>	Output @ 515 nm Power Typ. <sup>*2</sup>
Toray PGR-FB2000	POF	7 mW	13 mW	5 mW

\*1: POF – Polymer Optical Fiber. NA=0.5, Core diameter=2000µm, Fiber length ~ 1m.

\*2: Measurements were performed by Ophir Nova II power meter with PD300-UV head. The wavelength was set to 365nm, 405 nm and 515 nm for each wavelength separately. The values are for non filtered Triple-LED-365-405-515.

### Power Control:

For each channel independently the user can select between two operation modes (Int / Ext):

- (A) Internal (Int) mode – the LED power control is done manually by 10 turns potentiometer on the front panel. The LED power may be switched ON/OFF externally through TTL input (TTL BNC connector on the back panel).
- (B) External (Ext) mode – the LED power is controlled through Analog input (PWR BNC connector on the back panel).

Computer interface through USB link and Lab-View based software (Optional).

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*Triple-LED front panel:* Output Fiber Connector, dials of 10 turns LED power control potentiometers.



*Triple-LED back panel:* from right to left: 24VDC input socket, Device ON/OFF switch, TTL - TTL input BNC socket, PWR – Analog modulation input BNC socket.

## **Optical output connector:**

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

**TTL input frequency:** DC – 10 kHz

**Analog input modulation frequency:** DC – 10 kHz

**Connector for TTL input:** BNC

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

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

## **Dimensions:**

**Main unit:** 160 mm x 165 mm x 51.5 mm (L x W x H)

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

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