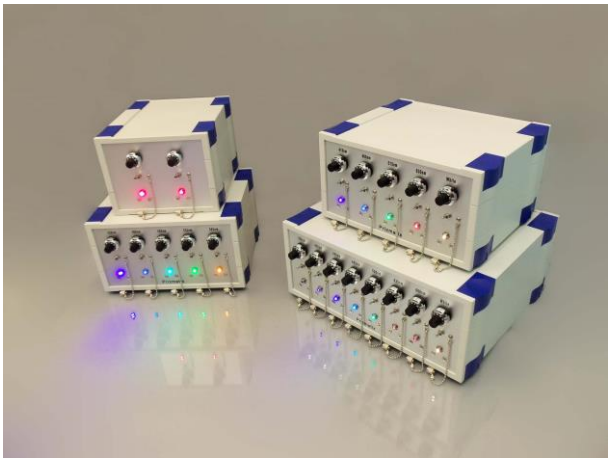
Prizmatix

High Power Multi-Wavelength Fiber-Coupled LED Light Sources
FC2-LED, FC3-LED, FC5-LED, FC8-LED

Ver. 07

Introduction



The high power multi-wavelength fiber-coupled LEDs are available in UV, Violet, Blue, Green, Yellow, Red and NIR wavelengths. These light sources are effective replacements of lasers and lamps in many applications, such as spectroscopy, point imaging, cross linking and many others. These LED modules provide high power CW or pulsed power at fiber output. The LED current controller supports CW operation mode with precise power control of each channel. The external optically isolated TTL and Analog inputs enable external triggering and power control of each LED independently. These fiber-coupled LEDs are ideal for use with various fiber optic spectrometers in continuous, strobe or external triggering measurement mode.
Please review Prizmatix website for updated list of currently available wavelengths

Features

- High Power fiber-coupled LEDs
- Reciprocal SMA fiber connection
- Precisely adjustable power by 10 turns potentiometer with dial
- Independently controlled power of each LED
- Optically isolated TTL input for fast switching for each wavelength
- Optically isolated Analog input for power control for each wavelength
- USB link for LED power computer control - optional
- Replacement of multi wavelength lasers
- Optional fiber bundles with homogenizer and collimator are available upon request
- Speckle free
- Long life (no lamp replacement required)

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Specifications:

Power output:

High Power Fiber-Coupled LED output is limited by the reciprocal fiber characteristics. Larger core and higher NA fibers will increase maximum power output, and vice versa. Please review website for power data for specific wavelength and fiber.
The table below shows an example of the CW output power at three sample wavelengths for 1500µm core POF fiber:

Fiber brand	Fiber type*1	Pout @ 365nm Power Typ.*2	Pout @ 405 nm Power Typ.*2	Pout @ 530 nm Power Typ.*2
Mitsubishi Rayon SH6001 Super Eska	POF	150 mW	170 mW	300 mW

*1: POF – Polymer Optical Fiber. NA=0.5, Core diameter=1500µm, Fiber length ~ 1m.
*2: Measurements were performed by Ophir Nova II power meter with PD300-UV head. The wavelength was set to 365 nm, 405 nm and 530 nm for each wavelength separately.

TTL input frequency: DC – 10 kHz (Higher freq. drivers available – please inquire)
Connector for TTL / Analog input: BNC
Input power supply: 12 VDC
Power adaptor input: 100-240 VAC, 1 A, 47-63 Hz
Dimensions:
FC2-LED: 174mm x 130mm x 197mm (W x H x D) without extrusions.
FC3-LED: 174mm x 130mm x 197mm (W x H x D) without extrusions.
FC5-LED: 241mm x 130mm x 197mm (W x H x D) without extrusions.
Power adaptor: 60mm x 35mm x 100mm (W x H x L)

Optional Accessories:

Fiber patch cords: Various fiber optic patch cords are available for use with the 3-LED or 5-LED products. Most popular patch cords are 1000 / 1500 / 2000 micron core diameter Polymer Optical Fibers (POF) terminated by optical SMA connectors on both sides. Prizmatix can provide Stainless Steel tube at one end of the patch cord instead of the SMA connector. This configuration is more convenient in some applications.
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.
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. The output can be connected to homogenizer to mix all wavelengths into one homogenous beam.
Special Spectroscopy Bundles: For spectroscopy application, special fiber optic bundles are very important. Special care must be addressed to eliminate possible cross link between the excitation and the collection fibers.

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