

# HIGH POWER FIBER-COUPLED LED LIGHT SOURCES

**M**ightex FCS-series fiber-coupled LED light sources employ the latest high-power LED technologies and a proprietary coupling optics to achieve maximum optical output power. Optical output is coupled into a fiber through a standard SMA fiber adaptor port (SMA fiber patch cords are sold separately). FCS series also features a locking electrical connector for secured connection. FCS series are designed as a universal light source for general lab use and OEM applications. The one-piece machined housing features multiple mounting holes. All Mightex LED drivers such as the SLC series or other LED drivers and current sources can be used to drive the light sources.

## FEATURES

- High-power UV/VIS/NIR/white fiber-coupled LEDs
- Interchangeable fiber with SMA connector
- No moving parts in optical path
- Multiple mounting features for lab and OEM applications
- Optional LED controllers
- Compact, machined metal housing with integrated heat sink
- Locking electrical connector

## APPLICATIONS

- Microscopy
- Fluorescence
- Sensors
- Semiconductor equipment
- Testing instruments
- Medical instruments
- Machine vision

## PERFORMANCE SPECIFICATIONS

### Type A FCS | *passive cooling*



Part Number	Description	Nominal Wavelength (nm)	$I_{op}$ (mA)	$V_{op}$ (V)	Typical Radiant Flux <sup>1,2</sup> (mW) With 400µm 0.22NA Fiber	Typical Radiant Flux <sup>2</sup> (mW) With 400µm 0.39NA Fiber
FCS-0000-000	Cool White	5,500K	1000	3.9	3.2	10.1
FCS-0001-000	Warm White	4,000K	1000	3.9	3.2	10.1
FCS-0002-000	Glacier White	6,500K	1000	3.6	3.2	10.1
FCS-0003-000	Warm White	3,000K	1000	2.8	2.8	8.8
FCS-0265-000	Deep UV	265	350	6.3	100µW	N/A
FCS-0280-001	Deep UV	280	500	5.8	400µW	N/A
FCS-0285-001	Deep UV	285	500	5.8	450µW	N/A
FCS-0300-000	Deep UV	300	500	6	300µW	N/A
FCS-0310-001	Deep UV	310	350	5.8	360µW	N/A
FCS-0325-001	Deep UV	325	500	5.4	220µW	N/A
FCS-0340-001	Deep UV	340	500	4.3	0.6	1.1

## Type A FCS | *continued*

Part Number	Description	Nominal Wavelength (nm)	I <sub>op</sub> (mA)	V <sub>op</sub> (V)	Typical Radiant Flux <sup>1,2</sup> (mW) With 400µm 0.22NA Fiber	Typical Radiant Flux <sup>2</sup> (mW) With 400µm 0.39NA Fiber
FCS-0365-001	UV 365nm	365	1000	3.65	5.8	18
FCS-0380-000	UV 380nm	380	1000	3.2	2.8	5.6
FCS-0385-001	UV 385nm	385	1000	3.65	5.8	18
FCS-0390-000	UV 390nm	390	1000	3.1	5.8	11.6
FCS-0395-000	UV 395nm	395	1000	3.1	6.2	12.4
FCS-0400-000	UV 400nm, 1W	400	350	3.5	0.8	2.5
FCS-0400-001	UV400nm, 4W	400	1000	4.1	3.5	10.5
FCS-0405-000	UV405nm	405	1000	3	7.5	15
FCS-0410-000	UV410nm	410	1000	3	7.3	14.6
FCS-0415-000	UV415nm	415	1000	3	7.2	14.4
FCS-0430-000	430nm	430	500	3.8	2.9	5.8
FCS-0455-000	455nm	455	1000	3.9	7	22
FCS-0470-000	470nm	470	1000	3.9	7	14
FCS-0471-000	471nm	471	350	3	2.1	4.2
FCS-0490-000	490nm	490	350	3.5	3.2	6.4
FCS-0505-000	505nm	505	1000	3.9	3.5	11
FCS-0530-000	530nm	530	1000	3.9	3.5	11
FCS-0560-000	560nm broadband	560	700	2.9	5.5	11
FCS-0590-000	590nm	590	1000	3.2	1.2	3.8
FCS-0617-000	617nm	617	1000	3	6.5	20
FCS-0625-000	625nm	625	1000	3	6.5	20
FCS-0656-000	656nm	656	1000	3.1	6.5	20
FCS-0657-000	657nm	657	350	2.4	1	3.1
FCS-0680-000	680nm	680	600	2.7	1.4	4.4
FCS-0700-000	700nm	700	500	2.1	0.6	1.2
FCS-0720-000	720nm	720	600	2.2	0.9	1.8
FCS-0740-000	740nm	740	1000	2.9	3.6	11
FCS-0780-000	NIR 780nm	780	800	2.5	2.2	6.9
FCS-0810-000	NIR 810nm	810	800	2.2	1.5	3
FCS-0850-000	NIR 850nm	850	1000	2.1	4	12.6
FCS-0870-000	NIR 870nm	870	700	1.9	1.4	4.4
FCS-0910-000	NIR 910nm	910	1000	1.9	1.5	4.7
FCS-0940-000	NIR 940nm	940	1000	2.4	4	12.6
FCS-0980-000	NIR 980nm	980	500	1.4	0.4	0.8

<sup>1</sup> Measured with a 400µm core 0.22 numerical aperture (NA) fiber. Output optical power scales approximately linearly with fiber core area and NA<sup>2</sup>. For example, with a 400µm core 0.39NA fiber, the output power will be 3.14X for VIS/IR LEDs and 1.8X for DUV LEDs (due to smaller chip size), as shown in the last column above.

<sup>2</sup> Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual output of any given LED may vary. Specifications are intended to be used as a guideline.

## Type B FCS | *fan cooling*



Part Number	Description	Nominal Wavelength (nm)	I <sub>op</sub> (mA)	V <sub>op</sub> (V)	Typical Radiant Flux <sup>1,2,3</sup> (mW) With 400µm 0.22NA Fiber	Typical Radiant Flux <sup>2,3</sup> (mW) With 400µm 0.39NA Fiber
FCS-0470-100	Blue	470	3000	4.6	11	21
FCS-0530-100	Green	530	2400	4.9	8	15
FCS-0540-100	Broadband Green	540	3000	4.6	10	20
FCS-0625-100	Red	625	2400	2.9	9	22

<sup>1</sup> Measured with a 400µm core 0.22 numerical aperture (NA) fiber. Output optical power scales approximately linearly with fiber core area and NA<sup>2</sup>. For example, with a 400µm core 0.39NA fiber, the output power will be 3.14X for VIS/IR LEDs and 1.8X for DUV LEDs (due to smaller chip size), as shown in the last column above.

<sup>2</sup> Maximum CW output achievable with a BLS-3000-2 BLS-Series control module.

<sup>3</sup> Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual output of any given LED may vary. Specifications are intended to be used as a guideline.

## Type H FCS | *super high-power, fan cooling*



Part Number	Description	Nominal Wavelength (nm)	I <sub>op</sub> (A)	V <sub>op</sub> (V)	Typical Radiant Flux <sup>1,2,3</sup> (mW) With 1000µm 0.22NA Fiber	Typical Radiant Flux <sup>2,3</sup> (mW) With 1000µm 0.39NA Fiber
FCS-0365-200	UV	365	12	4	60	180
FCS-0405-200	UV	405	13	3.8	70	210
FCS-0470-200	Blue	470	13	3.8	90	280
FCS-0525-200	Green	525	13	4.6	50	160
FCS-0560-200	560 Broadband	560	18	3.8	90	280
FCS-0625-200	Red	625	13	2.9	40	130
FCS-0730-200	NIR	730	18	5.9	90	280
FCS-6500-200	Glacier White	6500K	9	3.7	60	180

<sup>1</sup> Measured with a 1000µm core 0.22 numerical aperture (NA) fiber. Output optical power scales approximately linearly with fiber core area and NA<sup>2</sup>.

<sup>2</sup> Maximum CW output achievable with a BLS-13000-1E or BLS-18000-1 BLS-Series control module when appropriate.

<sup>3</sup> Due to variations in the manufacturing process and operating parameters such as temperature and current, the actual output of any given LED may vary. Specifications are intended to be used as a guideline.

# LED SPECTRA

## **MIGHTEX** LED WAVELENGTH PORTFOLIO

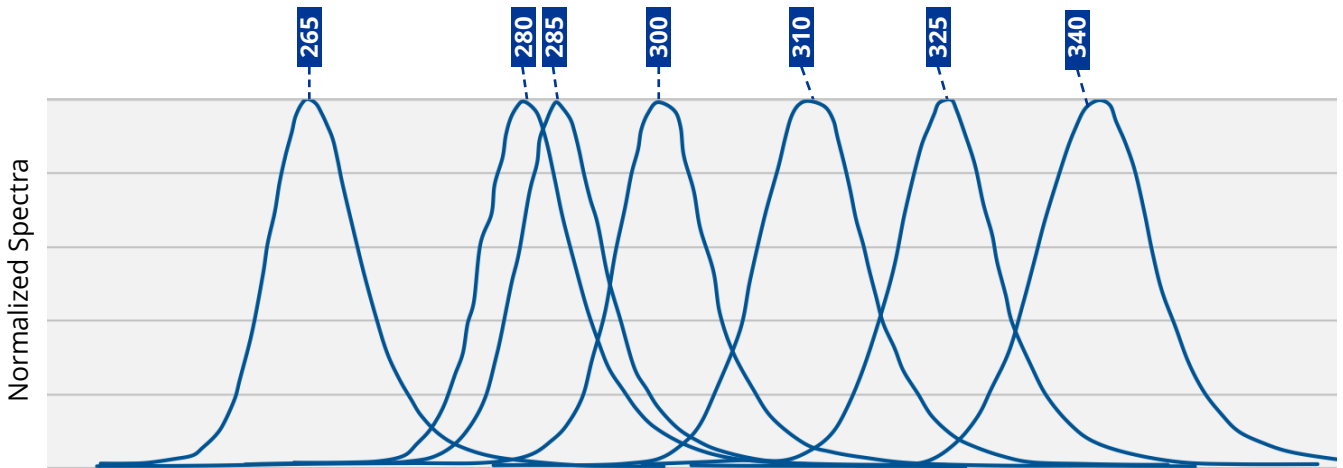
Wavelength | nm



New LED wavelengths are continually added to the portfolio. Please visit [www.mightexsystems.com](http://www.mightexsystems.com) for updated list.

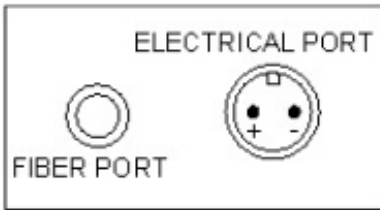
## **MIGHTEX** DUV LED WAVELENGTH PORTFOLIO

Wavelength | nm



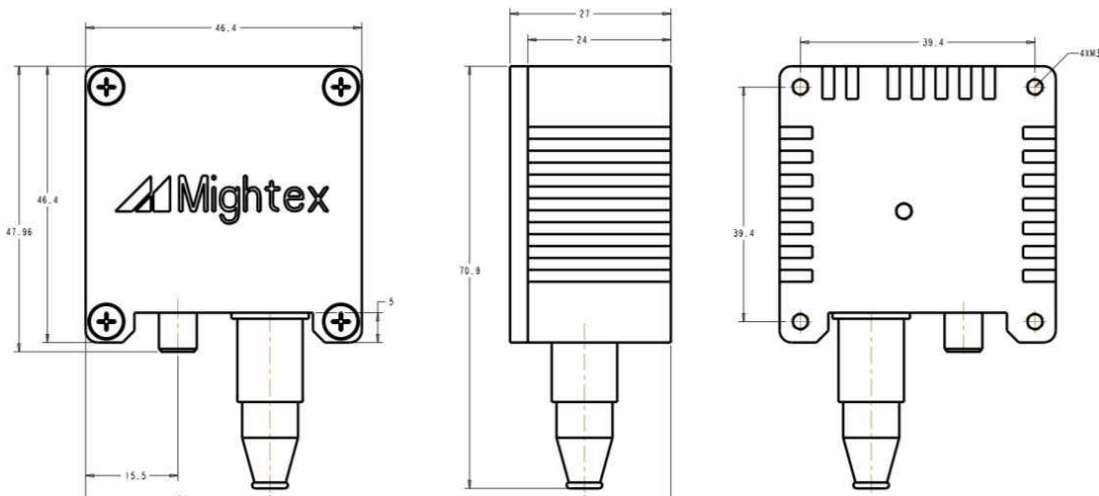
New LED wavelengths are continually added to the portfolio. Please visit [www.mightexsystems.com](http://www.mightexsystems.com) for updated list.

# ELECTRICAL PIN LAYOUT

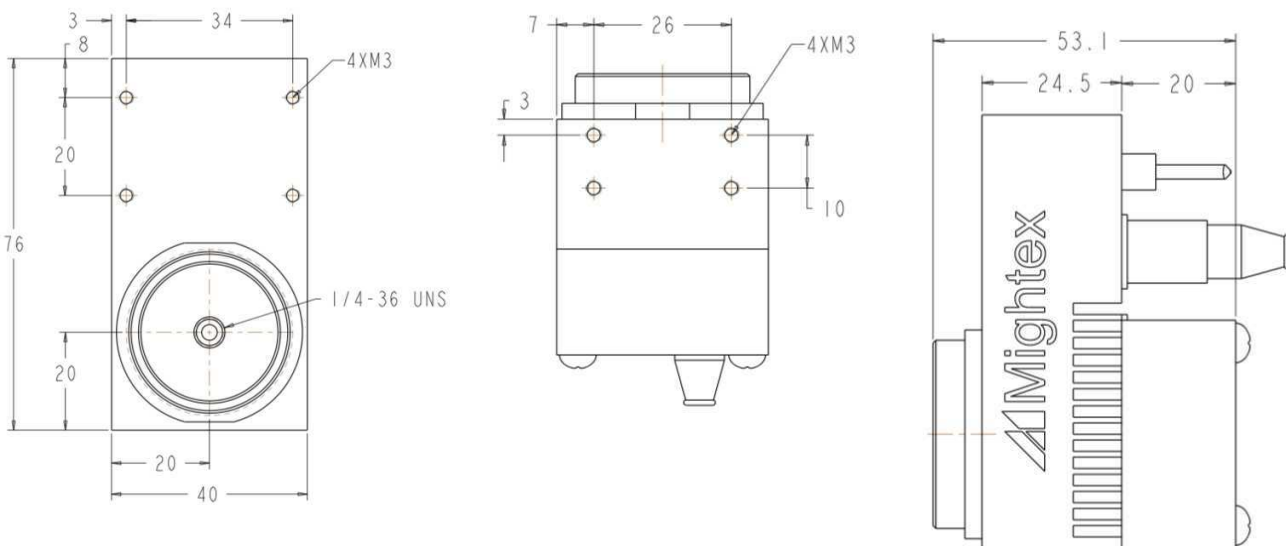


# INSTALLATION DRAWINGS

## Installation Drawing for FCS Fiber-Coupled LED, Type-A



## Installation Drawing for FCS Fiber-Coupled LED, Type-B



# Installation Drawing for FCS Fiber-Coupled LED, Type-H

