

# FL15 • FL50 • FL100 USER MANUAL

## PRODUCT OVERVIEW

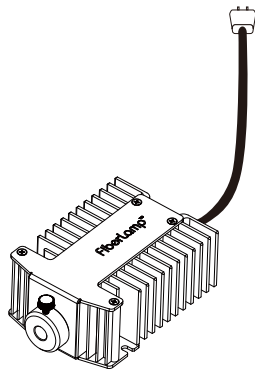
The FL15, FL50 and FL100 are LED luminaries designed for use with fiber optics for illumination purposes. This FiberLamp line can be used with both end-emitting and side-emitting fiber optics made of glass or plastic.

Each luminaire employs the densely packed array of high-powered LEDs, the DiCon Lighting Dense Matrix™ LED, to deliver intense light into fiber. The FL15, FL50 and FL100 are high brightness white luminaries that are focused on illumination quality, delivering a full spectrum of light with high CRI.

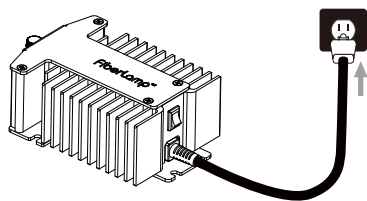
## HARDWARE AND SET-UP

### FL15

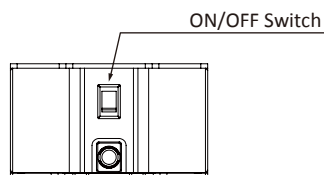
- 1 Included hardware: FL15.



- 2 Apply input cord to 90-264V AC.



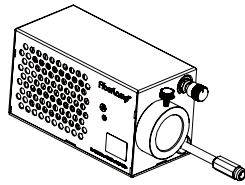
- 3 Set the power switch to the "ON" position to turn on the light.



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## FL50

- 1 Included hardware: FL50, 24V DC/65W Power supply, AC power cord.



FL50

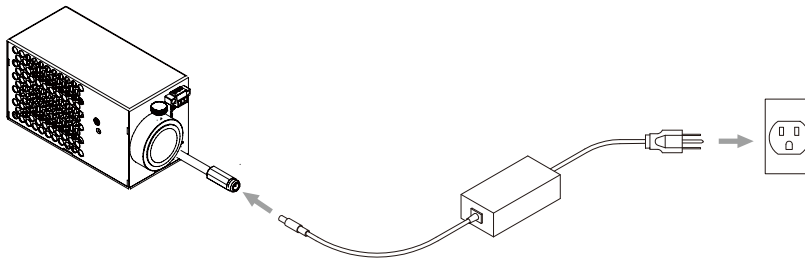


AC Power Cord

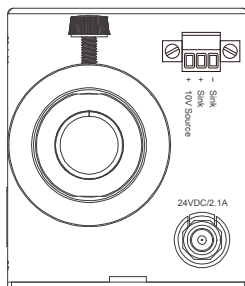


AC/DC Power Supply

- 2 Apply DC connector of the power supply to the DC connector of the FL50. Connect the power supply to 100-240V AC with the power cord.

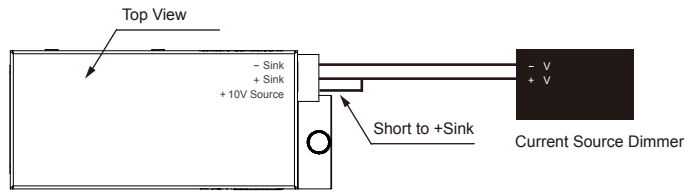


- 3 0-10V dimming model.

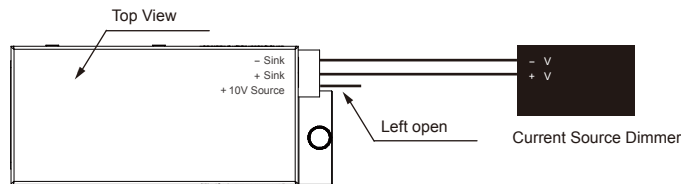


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- 4 For connection to Current Source Dimmer in compliance with IEC 60929 Annex E.2.



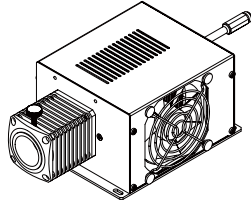
- 5 For connection to Current Source dimmer in compliance with ANSI E1.3. Use wires larger than 24AWG to connect the FL50 to a 0-10V dimmer.



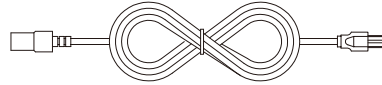
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## FL100

- 1 Included hardware: FL100, 24V DC/120W power supply, AC power cord.



FL100

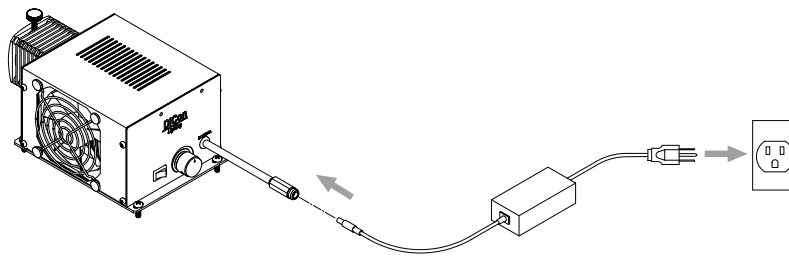


AC Power Cord



24V DC/120W Power Supply

- 2 Apply DC connector of power supply to the DC connector of the FL100. Connect the power supply to 100-240V AC with power cord.



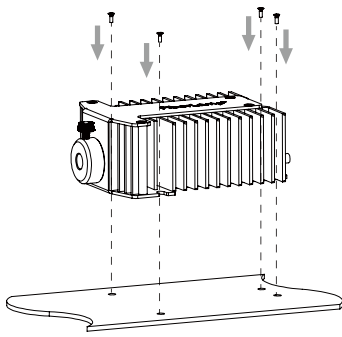
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## INSTALLATION / MOUNTING

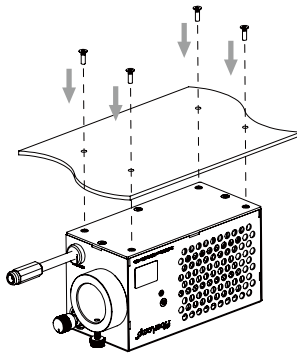
**Before installing, take the following precautions when selecting a suitable location:**

- Install in a well ventilated area (refer to Airflow requirements in Technical Specifications section).
- Make sure the area is free of dust and debris.
- Keep vents free from obstruction.
- Make sure to consider space for installing the power supply used with the FL50 and FL100.
- When using multiple fanned FiberLamps, make sure that they are installed such that no FiberLamp will intake the exhaust of another.
- Fanned FiberLamps should not be installed with the exhaust vent facing down.

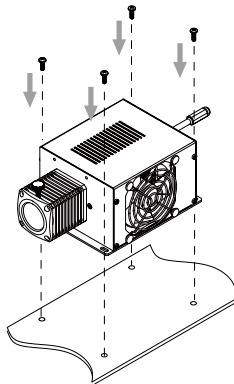
**FL15** Use size #8 screws for mounting.



**FL50** Use M4 x 0.7 screws through a surface to the bottom of the FL50.



**FL100** Use size #8 screws for mounting.

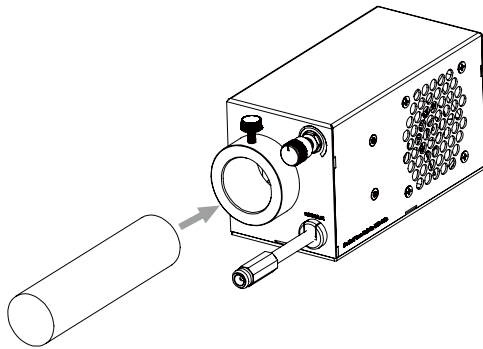


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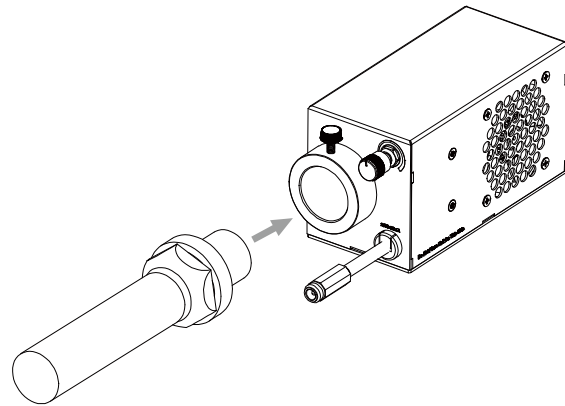
The light output ports of the FL15, FL50 and FL100 fixtures have fixed inner diameters. The outer diameter of the large core fiber or fiber bundle common end ferrule of the fibers to be used in an installation must be equal to the inner diameter of each lamp, with a tolerance of -0.25mm.

To install a large core fiber or fiber bundle common end with an outer diameter within the tolerance of the fixture inner diameter, simply insert the fiber as far back into the light output port as possible, then secure it to the fixture with the set screw supplied on the output port.

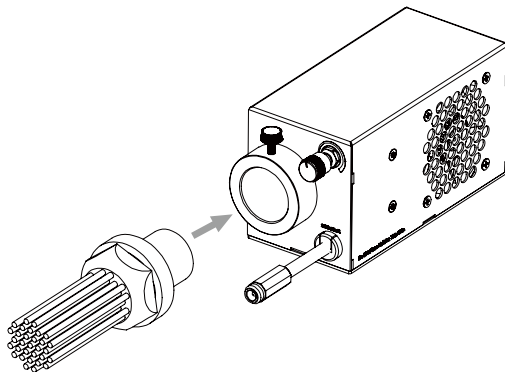
To insert a large core fiber into any FiberLamp:



Large core fiber with ferrule:



For fiber bundle common end with ferrule:



Note: If installing a fiber bundle common end, make sure that the fiber bundle is properly terminated to a ferrule as in the following instructions.

If the large core fiber or fiber bundle common end does not match the inner diameters of the fixture, within the given tolerance, then a ferrule of the appropriate size must be used. For the FL50 and FL100, there are ferrules available that can accommodate any large core fiber or fiber bundle called the ACS30-xx or ACS33-xx.

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When using a ferrule, it is important that the fibers within it are properly terminated. For glass fiber, it is always suggested to have the fiber manufacturer terminate the fiber into a common end ferrule. To properly terminate plastic fiber in a ferrule, the suggested procedure is as follows:

- a. Obtain a ferrule that has an outer diameter that matches the inner diameter of fixtures light output port. The ferrule must also have an inner diameter that is appropriately sized given the outer diameter of the large core fiber or fiber bundle. Refer to the table below for recommendations on what model ACS should be used for different size fiber and fiber bundle diameters.

Ferrule	Suggested quantity of 0.75mm diameter fiber
ACS30-06/ ACS33-06	50-180
ACS30-10/ ACS33-10	125-250
ACS30-13/ ACS33-13	250-500
ACS30-18/ACS33-18	450-750
ACS30-22/ACS33-22	650-1,200

- b. If fiber bundle has an outer casing, remove enough of it such that it does not get inserted into the ferrule with the fiber. Take care not to damage the fibers while removing the outer casing.
- c. Insert the fibers into the ferrule with all fibers protruding past the end of the ferrule.
- d. Secure the fibers to the ferrule. This can be done using epoxy if not using an ACS. If using an ACS, tighten the compression nut over the fiber bundle outer casing.
- e. Heat a hot knife so that it is hot enough to melt, but not burn the fiber.
- f. Apply the blade of the hot knife onto the the the fibers at the end of the ferrule to be inserted into the fixture, and slowly but firmly apply pressure on the fibers. Make sure that the knife is applied at an angle such that the broad side of the knife does not touch freshly cut fiber ends. Allow the heat of the knife to cut the fibers. Ease the pressure on the fibers as the cut comes to an end.

## DIMMING

The FL15 is designed for on/off purposes only and has no dimming control.

The FL50 and FL100 are built standard with a dimming knob. Turn the knob counter clockwise to dim, and clockwise to enhance the brightness of the light source.

The FL50 can be ordered with a 0-10V analog dimming interface for remote electronic dimming, in place of the physical dimming knob. There are 3 terminals for this interface: +10V source, + sink, - sink. As mentioned in the Hardware and Set-up section, the FL50 can be dimmed using any 0-10V analog dimmer that is in compliance with IEC 60929 Annex E.2 or ANSI E1.3. When installed correctly, the dimmer will apply a 0-10V potential to the + sink terminal, relative to the - sink terminal. The brightness of the light will correspond to the voltage, where 10V corresponds to 100% brightness and 0V corresponds to 0% brightness. DC voltage is sensitive to electromagnetic disturbance and long distance. Shielding is recommended for electromagnetic disturbance protection, however using a twisted pair of 24 AWG wire or larger is sufficient. The wire can extend up to 500ft, but only 200ft is recommended.

## MAINTENANCE

The FL15, FL50 and FL100 are virtually maintenance free. Technical modification of the light source is expressly forbidden and will void the warranty on the lamp. Repairs must be carried out by the manufacturer or authorized persons.

To ensure that the light source is always operating in optimal condition, the air intake and exhaust should be checked and cleaned on a regular basis (frequency of this depends upon the amount of dust in the area around the fixture).

Excess dust should be removed by wiping with cloth, vacuum cleaner or blowing with compressed air.

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## TROUBLESHOOTING

Observation	Possible Cause	Solution
Only red light shows	Light output port dust cap is still installed	Remove the dust cap and reinstall fiber into light output port.
No light	Fiberlamp is not connected to power	Connect Fiberlamp to power, following the instructions in the Hardware and Set-up section.
	Power switch is in the off position	Set the power switch to the on position
	Dimming knob is set to lowest setting	Turn the dimming knob clockwise
	Thermal trip activated	Light will turn off if the FiberLamp is too hot. Make sure there is proper ventilation to the installation site and that the temperature is within the recommended operating conditions. The light will turn back on after the FiberLamp has cooled.
	Faulty power supply	Renew power supply
Light turns on, but turns off periodically	Overheating	Make sure there is proper ventilation to the installation site and that the temperature is within the recommended operating conditions.
	Fan does not work	Return to manufacturer for repair



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## TECHNICAL SPECIFICATIONS

Electrical	FL15	FL50	FL100
Input Voltage	90-264V AC	24V DC	24V DC
Input Current	450 mA Max	2.08 A Max	5A Max
Power Rating	15 W	50 W	120 W
Power Supply	NA	24V DC, 2.08A output 100-240V AC input UL listed LPS	24V DC, 5A output 100-240V AC input UL listed LPS

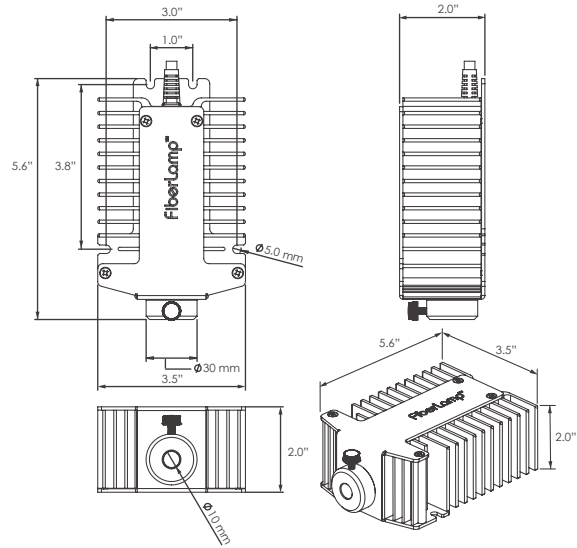
Environmental	FL15	FL50	FL100
Ingress Protection	IP20	IP20	IP20
Operating Temp	0° to 40°C	0° to 40°C	0° to 40°C
Storage Temp	-40° to 70°C	-40° to 70°C	-40° to 70°C
Airflow	Open ventilation required	13 cfm	30 cfm
Acoustic Noise	0 dBA	13.8 dBA	19 dBA

Mechanical	FL15	FL50	FL100
Material / Finish	Aluminum / Black	Aluminum / Black	Aluminum / Silver
Weight	1.8 lbs	1.25 lbs	2.45 lbs
Outer Dimensions	5.6" x 3.5" x 2"	5.9" x 2.6" x 3"	7.9" x 4.7" x 3.4"
Input Cord Length	6 ft	6 ft	6 ft

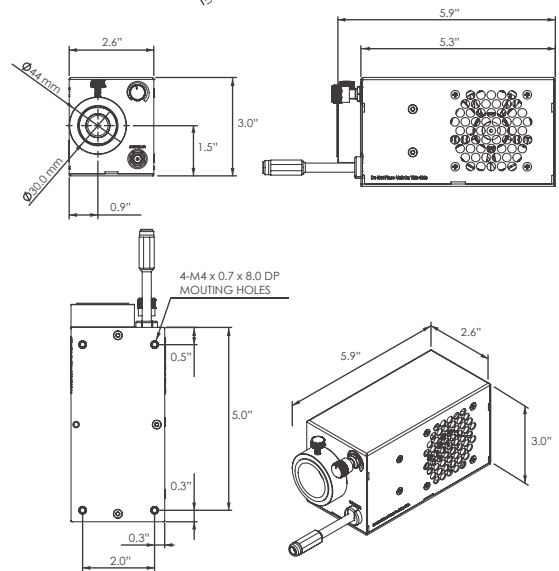
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## MECHANICAL DRAWING

FL15



FL50



FL100

