

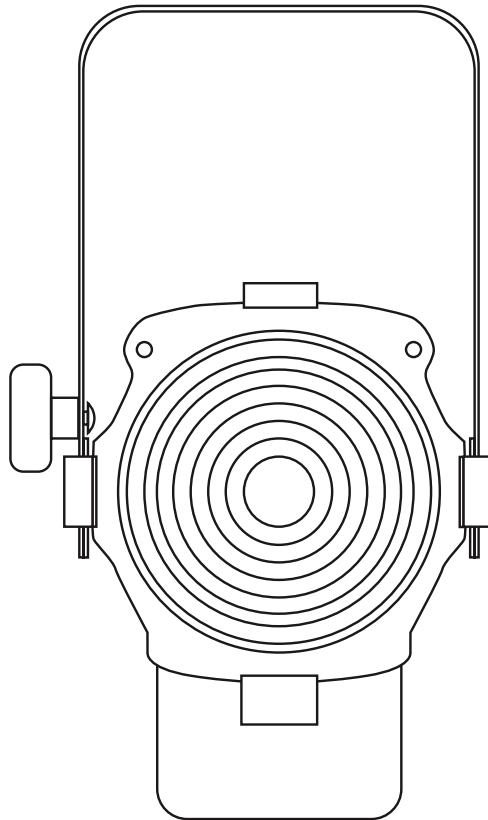
LEO™



LEO™ LED Fresnel

Cat. No. LFD10

User's Guide



WARNINGS AND CAUTIONS

- **TO AVOID FIRE SHOCK OR DEATH; TURN OFF POWER** at circuit breaker or fuse and test that power is off before installation.
- **TO AVOID SERIOUS PERSONAL INJURY**, always connect this product to a grounded circuit.
- To be installed and/or used in accordance with electrical codes and regulations.
- If you are unsure about any part of these instructions, consult an electrician.

SAFETY NOTES

WARNING: TO AVOID DEATH, SERIOUS PERSONAL INJURY OR PROPERTY DAMAGE:

- Do not open the housing or attempt any repairs. In the unlikely event the unit may require service please contact *Leviton* Technical Support. Opening the housing or attempting to repair product will void the warranty.
- Do not expose this product to rain or moisture. This product is for indoor use only! (IP20) When transferring product from extreme temperature environments, (e.g., cold truck to warm humid ballroom) condensation may form on the internal electronics of the product. To avoid causing a failure, allow product to fully acclimate to the surrounding environment before connecting it to power.
- Do not operate this product if you see damage on the housing, lenses, or cables.

CATALOG LOGIC

LFD10-30B; LFD10-50B

Fixture	Wattage	Color Temperature	Housing
LFD: LED Fresnel	10: 100W	-30: 3200K -50: 5600K	B: Black Housing

SPECIFICATIONS

CAT. NO.	LFD10
WATTAGE	100W
STANDBY LOAD	
BEAM ANGLE	11° - 53°
WEIGHT	12.1 lbs. (5.5 kg)
SIZE	W 10.1" (257mm) x H 15.2" (385mm) x D 14.6" (370mm)
ELECTRICAL	100-240 VAC, 50/60Hz

GETTING STARTED

Thank you for choosing LEO™ LED Fresnel by Leviton®. Every LEO™ LED Fresnel has been thoroughly tested and has been shipped in perfect operating condition. Your LEO™ LED Fresnel should include:

- Fixture
- powerCON® B connector
- Fuse, glass tube, 3A (for 110V)
- Fuse, glass tube, 1.5A (for 220V)
- Metal Color Frame 7.5" x 7.5" (190 x 190mm)
- Safety Guard 7.5" x 7.5" (190 x 190mm)
- Safety Cable, 31.5" (800mm) with Spring Clips
- User's Guide
- 36"-39.5" (1m) power lead with powerCON® & PBG NEMA 5-15P Connector

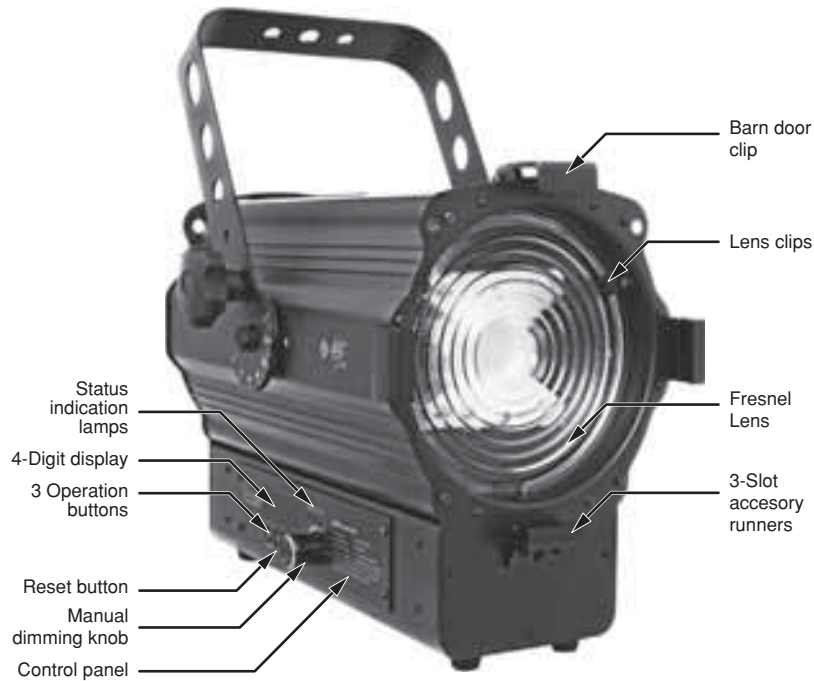
Power cords with alternate connectors, and powerCON® extension cables are available. Please contact *Leviton* and review product data sheets for details.

Important: Unpack the product and check the box to make sure all the parts are in the package and are in good condition. If any of them are damaged, please contact the shipper to make a claim. If any components are missing, please contact our Customer Service Department at 1-800-736-6682.

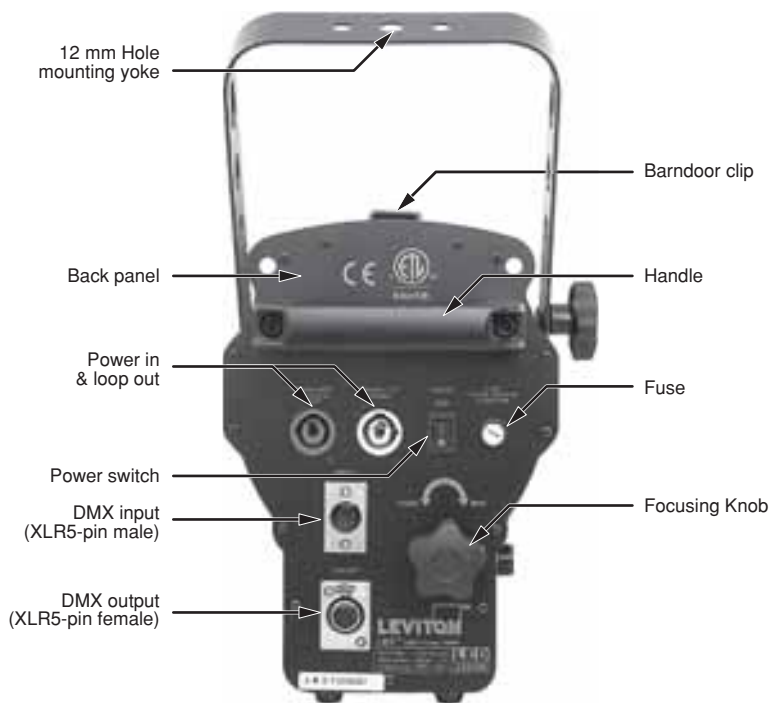
PRODUCT INTRODUCTION

LEO™ LED Fresnel is a high-performance Fresnel-style LED lighting fixture that delivers a beautiful flat even field of light in a choice of color temperatures (3200K and 5600K) with high color rendering index (CRI 90+). The fixture is fully dimmable from 0% to 100% and can be controlled manually or via DMX controller. It also supports power linking with built-in powerCON® connectors. Virtually quiet operation makes it ideal for use in any situation. The fixture is RDM-ready for precise monitoring of the LED chip's performance and status to make maintenance easy.

IDENTIFY THE PARTS



Front View



Rear View

SAFETY NOTES

- This product contains no user-serviceable parts. Do not open the housing or attempt any repairs, doing so will void the manufactures warranty. In the unlikely event the unit may require service please contact *Leviton* technical support.
- Do not operate this product if you see damage on the housing, lenses, or cables.
- This product is for indoor use only! (IP20) To prevent risk of fire or shock, do not expose this product to rain or moisture. When transferring product from extreme temperature environments, (e.g. cold truck to warm humid ballroom) condensation may form on the internal electronics of the product. To avoid causing a failure, allow product to fully acclimate to the surrounding environment before connecting it to power.

REPLACE FUSE

CAUTION:



Fuse pre-installed in BLACK fuse cover supports 220V AC Power only.

Fuse pre-installed in GREY fuse cover supports 110V AC Power only.

Always make sure you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label.

Choose the correct fuse for your power voltage before connecting power.

Step 1: Unplug the product from power.

Step 2: Use a slotted screwdriver, push slightly and rotate counterclockwise to open the fuse cap.

Step 3: Take out the fuse cap and fuse. Put a new fuse inside the fuse cap.

Step 4: Screw the fuse cap back in place and reconnect power.



CONNECT POWER

CAUTION:



WARNING: TO AVOID SERIOUS PERSONAL INJURY, always connect this product to a grounded circuit.

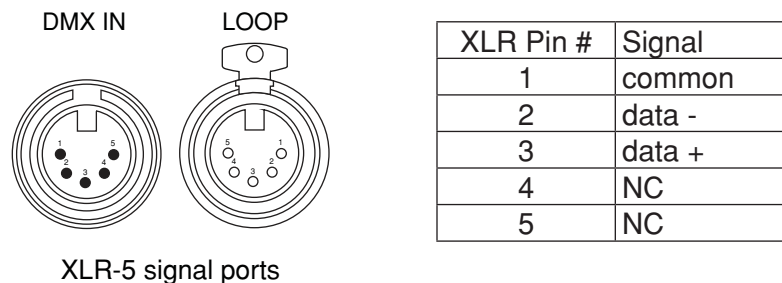
LEO™ LED Fresnel comes with a power lead terminated with a powerCON® A connector on one side, and a PBG NEMA 5-15P connector on the other side. Other connector options are available from *Leviton* or may be installed by your contractor. In addition, the fixture is designed for "Feed-Thru" operation using single power source connection at the first fixture, then, using powerCON® extensions between fixtures. The maximum load supported is 16A through the powerCON® connectors which is reduced to 15A if you use a 15A source power connector like a NEMA 5-15P.

If creating your own powerCON® connectors, use the table below to wire the included powerCON® B connector, or a local plug to the power lead.

Connection	Wire
AC Live	Brown
AC Neutral	Blue
AC Ground	Green / Yellow

CONNECT DMX

LEO™ LED Fresnel uses 5-pin XLR connectors for signal transmission and can be controlled via DMX-512 protocol. The diagram below shows the fixture's XLR-5 signal ports.



- Step 1:** Connect the (male) 5-pin connector side of the DMX cable to the output (female) 5-pin connector of the DMX console.
- Step 2:** Connect the end of the cable coming from the console which will have a (female) 5-pin connector to the fixture's input port ("DMX IN") consisting of a (male) 5-pin connector.
- Step 3:** Then, proceed to connect from the output port ("LOOP") as stated above to the input of the following fixture and so on.

MOUNT FIXTURE

CAUTION:



Always mount this product in a safe position with adequate ventilation and away from a heat source, at least 20" (50 cm) from adjacent surface, and no flammable materials close by the product while it is operating, at least 8" (20 cm) from adjacent surfaces.

Always connect the provided Safety Cable to the fixture and a suitable anchor. The safety cable should loop through the fixture yoke and be connected to a secure attachment at the other end.

LEO™ LED Fresnel may be mounted in any position (max. tilting +45° to -90° from horizontal); however, make sure there is adequate room for ventilation, configuration, and maintenance.

The fixture comes with a hanging/mounting yoke to which you can attach mounting clamps. The bracket has a 0.5" (12mm) hole, which is appropriate for this purpose. Make sure the clamps are capable of supporting the weight of this product.

FIXTURE ANGLE ADJUSTMENT

The fixture can be tilted up and down to position the light where it is needed.

Step 1: Loosen the yoke fastening knob, use the handle on the rear of the unit to keep the fixture steady.

Step 2: With the fixture turned on, use the handle to tilt it to the desired angle.

Step 3: Tighten the yoke fastening knob.

FIELD ANGLE ADJUSTMENT

You can adjust the field angle of the fixture with the focusing knob on the rear of the unit.

To reduce the field angle (SPOT), turn the focus dial clockwise.

To enlarge the field angle (FLOOD), turn the focus dial counterclockwise.

ACCESSORIES

LEO™ LED Fresnel can accommodate many different accessories.

Cat. No.	Description	Part Number
All	Safety Cable (included)	TA0SC-000
LFD10	8 Leaf Barn Door 7.5" x 7.5" (190 x 190mm)	LFD10-BDB
LFD10	Metal Color Frame 7.5" x 7.5" (190 x 190mm) (included)	LFD10-CFB
LFD10	Safety Guard 7.5" x 7.5" (190 x 190mm) (included)	LFD10-SGB

ACCESSORY SLOTS

CAUTION:



Accessories such as barn doors and color scrollers must be secured by a safety cable to the mounting structure.

Make sure all color / diffusion media are locked in position with the barn door clip before hanging the fixture.

LEO™ LED Fresnel has 3 accessory slots in the front of the fixture and is equipped with a spring-loaded barn door clip that prevents color frames and accessories from falling out.

Step 1: Release the barn door clip by pushing it sideways while gently pulling backwards

Step 2: Insert the media/accessories, secure with a safety cable where necessary.

Step 3: Lock the barn door clip by pushing sideways while gently pushing forward.

OPERATION

CAUTION:



Do not touch this product's housing during operation because it may be very hot if overheated.

The maximum ambient temperature is 95°F (35°C). Do not operate this product at a higher temperature.

Do not cover the ventilation holes when operating to avoid internal overheating.

Avoid direct eye exposure to the light source while the product is on.

In case of a serious operating problem, stop using this product immediately!

LEO™ LED Fresnel will start a self-checking process when power is applied. The unit will display the DMX address for dimming when ready to use. For standard operation, connect the fixture to a power source (100~240V AC single phase), and a DMX signal cable. The LED Display will turn on after the power switch is turned to "ON" position. You are now ready to set the desired configuration and DMX addresses.

You can assign a DMX channel to control dimming, cooling fan speed, LED display-on time, built-in effects and live/safe modes according to the DMX value on the "Menu Map". These parameters can also be assigned through a console.

CONTROL INTERFACE

The fixture comes with a 4-digit Display and 3 operation buttons on the side of the unit for control settings:



OPERATION BUTTONS

DOWN	Backward / downward change / query sequence change
UP	Forward / upward change / query sequence change
ENTER	Confirm / mode switch / enter new data or setting
RESET	Press to reset the fixture, parameters remain unchanged

STATUS INDICATION LAMPS

PWR (Power)	Light up when power is applied to the unit.
SYS (System)	Indicates the status of the fixture: No lights when working properly, Flashes when the fixture light source detects overheating.
SIG (Signal)	Light up when proper DMX signal is received, Flashes when receiving wrong signals, No lights when no signal is received.

CONTROL BASICS

CAUTION:



Check the fuse before connecting power.

Connect power to the powerCON® connector at the rear side of LEO™ LED Fresnel and switch the power switch to "ON" position. The 4-digit display will turn on and the fixture is ready to operate. The fixture is defaulted for DMX control; press the 3 operation buttons to the desired operation mode.

DIMMING DMX CHANNEL

The fixture can be controlled by a DMX channel, displayed by the 4-Digit display. The light output intensity is based on the DMX channel value.

Note: LEO LED Fresnel requires only one DMX channel for dimming, and that is the minimum number of DMX channels needed for the fixture.

SHOWING DIMMING VALUE

The dimming value is displayed on the display for local monitoring.

MONITORING LED TEMPERATURE

Temperature of the LED light source is displayed.

CONTROLLING COOLING FAN SPEED

The highest cooling fan speed can be remotely or locally controlled. The LFD10 is defaulted so that the fan will start to operate in slowest speed when LED temperature is detected at 95°F (35°C) or above to maintain the lowest fan noise.

(Note: cooling fan cannot be stopped; slowest speed is 60% of full speed)

4-DIGIT DISPLAY ON

The light-on time of the 4-Digit display can be set to 30 sec., 1 min., 2 min., 3 min. or continuously on.

RESETTING THE FIXTURE

The fixture can be reset locally by pressing the RESET button on the unit or remotely by a DMX channel.

SETTING DIMMING STEPS

Two dimming steps, standard and fine, are available for selection. It can be selected locally or remotely.

PRE-LOADED EFFECTS

The fixture has pre-loaded eight effects for demonstration. It can be selected locally or remotely.

DIMMING MODES

Two dimming modes, DMX and manual control, are available for selection. It can be selected locally or remotely.

SETTING SAFE OPERATION MODE

CAUTION:



"Live" mode allows the LED light source to operate at over-temp conditions which might shorten the lifetime and even burn out the LED chip!

It is recommended to use the factory default "Safe" mode for normal operations.

At Safe mode, LEO™ LED Fresnel will limit the light output when the LED temperature rises above 149°F (65°C) in order to protect the LED light source from overheating. The light output will be the first priority when Live Mode is selected.

NUMBERS & CHARACTERS DISPLAYED

A,B,C,D,E,F

A b C d E F

NUMBER 0-9

0 1 2 3 4 5 6 7 8 9

H,L,N,O,P,Q,R,S,T,U

H L n o P q r S t U

Note: The corresponding display number "5" and character "S" appear the same, please note the difference.

CONTROL ATTRIBUTES AND DEFAULT DISPLAYS AND SETTINGS

The LEO™ LED Fresnel fixtures have several different control attributes. With the exception of the dimming attribute which must be assigned a DMX value for remote control, all other attributes may be manually set only at the fixtures, or, remote controlled from your DMX console. Therefore, from a DMX perspective, your fixture may be a 1, 2, 3, 4, 5, 6, 7 or 8 channel fixture depending on which attributes are assigned to a channel. Some customers will assign a unique DMX address for each dimming attribute, then, a common channel for all other attributes so fixtures are always controlled together. The system is flexible so the specific configuration is up to you.

The fixture is factory-set to display the default DMX address "A001" until a new address is assigned. Then, the last assigned DMX address will become the default display.

Please refer to the chart below to see all the default settings and displays:

CONTROL ATTRIBUTES

Menu Items	Default Display	Value Range	Default Value	Options DMX Value	Level	Remarks
Dimming address	A001	1-512	1	0-255		Mandatory to assign DMX channel to this attribute
Dimming mode	dL01	1/2	1		1 2	Dimming according to DMX value Dimming according to manual knob
Dimming mode control address	d000	1-512	0	0-255		
Operation mode	SLO1	0/1	1	0-127 128-255	0 1	Live: Light output will be the first priority Safe: LED over-temp protection, light output will be limited when temp. over 149°F (65°C)
Operation mode control address	S000	1-512	0	0-255		

DEFAULT SETTINGS

Menu Items	Default Display	Value Range	Default Value	Options DMX Value	Level	Remarks
Built-in effects	9000	0~8	0	0-20 21-40 41-70 71-100 101-130 131-160 161-190 191-220 221-255	0 1 2 3 4 5 6 7 8	Normal dimming Flash effect 1 – super fast Flash effect 2 – fast Flash effect 3 – medium Flash effect 4 – slow Fade-in & fade-out effect 1 Fade-in & fade-out effect 2 Fade-in & fade-out effect 3 Fade-in & fade-out effect 4
Built-in effects control address	9000	1-512	0	0-255		
Dimming steps	EL01	1/2	1	0-31 32-255	1 2	Standard: 256 steps Fine: 512 steps
Dimming steps control address	EL00	1-512	0			
Remote DMX reset	FL00	0/1	0	0-127 128-255	0 1	At normal control Trigger reset
Remote DMX reset control address	FL00	1-512	0			
LED display-on time	LL01	1~5	1	0-50 51-100 101-150 151-200 201-255	1 2 3 4 5	Continuously on LED display off after 30 seconds LED display off after 1 minute LED display off after 2 minutes LED display off after 3 minutes
LED display-on time control address	LL00	1-512	0	0-255		
Fan speed	FL01	1~5	1	0-50 51-100 101-150 151-200 201-255	1 2 3 4 5	Auto 90% of full speed 80% of full speed 70% of full speed 60% of full speed
Fan speed control address	FL00	1-512	0	0-255		
LED temperature °C	E350	0/1	0			EEL Error: Below the lowest limit < 32°F / 0.1°C
°F	E095					EEM Error: Above the highest limit > 212°F / 99.9°C
Dimming Value	RH00 Rd00	0~255	0	0-255		Display in hex
Parameter setting status	DEFA					USER Press "ENTER" button for 5 seconds to resume default settings.

MAINTENANCE

To eliminate unnecessary wear and improve its lifespan, during periods of non-use completely disconnect the product from power via breaker or by unplugging it.

EXPECTED LED LIFESPAN

LEDs gradually decline in brightness over time, mostly because of heat. Packaged in clusters, LEDs exhibit higher operating temperatures than in ideal, single-LED conditions. For this reason, using clustered LEDs at their fullest intensity significantly reduces the LED's lifespan. Under normal conditions, this lifespan can be 50,000 hours at 77 °F (25 °C). If extending this lifespan is vital, lower the operating temperature by improving the ventilation around the product and reducing the ambient temperature to an optimal operating range. In addition, limiting the overall projection intensity may also help to extend the LED's lifespan.

LENS

The lens in your fixture is made of a high quality glass and reflective coating which should require little maintenance. However, due to fog residue, smoke and dust, lens cleaning must be carried out periodically to optimize light output. To maintain optimum performance and minimize wear, clean this product at least twice a month. However, usage and environmental conditions contribute to increased cleaning frequency.

CAUTION:



Do not use ammonia-based or other harsh commercial cleaners. They may damage the glass surface and the Anti-Reflective coatings.

Replace lenses if they contain visible damage (cracks or deep scratches).

Step 1: Unplug the product from power and wait until the product is at room temperature.

Step 2: Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol may be used on the cloth.

Step 3: Make sure to dry all parts completely before plugging the product back in.

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FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at Leviton Manufacturing of Canada Ltd to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9 or by telephone at 1 800 405-5320.

WARRANTY INFORMATION

LEVITON LIGHTING & ENERGY SOLUTIONS DIVISION of Leviton manufacturing Co. Inc. warrants its Entertainment Products to be free of material and workmanship defects for a period of two years after system acceptance or 26 months after shipment, whichever comes first. This Warranty is limited to repair or replacement of defective equipment returned Freight Pre-Paid to Leviton Lighting & Energy Solutions Division at 20497 Teton Ave., Tualatin, Oregon 97062, USA. User shall call 1-800-959-6004 and request a return authorization number to mark on the outside of the returning carton, to assure that the returned material will be properly received at Leviton. All equipment shipped back to Leviton must be carefully and properly packed to avoid shipping damage. Replacements or repaired equipment will be returned to sender freight prepaid, F.O.B. factory. Leviton is not responsible for removing or replacing equipment on the job site, and will not honor charges for such work. Leviton will not be responsible for any loss of use time or subsequent damages should any of the equipment fail during the warranty period, but agrees only to repair or replace defective equipment returned to its plant in Tualatin, Oregon. This warranty is void on any product that has been improperly installed, overloaded, short circuited, abused, or altered in any manner. Neither the seller nor Leviton shall be liable for any injury, loss or damage, direct or consequential arising out of the use of or inability to use the equipment. This Warranty does not cover lamps, ballasts, and other equipment which is supplied or warranted directly to the user by their manufacturer. Leviton makes no warranty as to the Fitness for Purpose or other implied Warranties.

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LEO™



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