

## Installation Instructions

Conversion from ballast to direct AC power

**Congratulations!** You are about to install energy efficient, mercury-free, and environmentally sustainable lighting from Light Emitting Designs. We sincerely appreciate your selection of Light Emitting Designs solid-state lighting products, and want to make sure that your installation is safe, easy, and fast. **The kit includes:** This instruction sheet, the LED T8 lamp(s), and the fixture modification label.

**IMPORTANT!** The Light Emitting Designs LED T8 Tubes contain an important safety feature: UL standard "live on only one end" design that provides greater safety when installing. Always be sure to insert the "live" end **AFTER** you have inserted the other end into the unwired mounting bracket.



- Failure to follow the recommended installation instructions could result in serious injury or death.
- Disconnect power for the fixture at the breaker panel before opening the fluorescent fixture. Verify that power is off before working on the fixture by using a proper voltmeter or tester. When splicing wires with wire nuts, always follow the manufacturer's instructions and wire capacity.
- This device is not intended for use with emergency exit fixtures or emergency exit lights.
- Not for use in luminaires controlled by a dimmer.
- **WARNING** - Indoor use only.
- **WARNING** - Risk of fire or electric shock. Reflector kit installation requires knowledge of fluorescent lighting luminaires electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.
- Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.
- **WARNING** - To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

**Step 1.** Verify that the voltage rating of the product matches the voltage of the fixture circuit. **Improper voltage matching can result in performance degradation and/or physical damage.**



Electrical Wiring Diagram

**Step 2.** Turn off power at the breaker box and confirm the lights in the fixture are off (be sure to double check fixtures with battery back up, or fixtures that are on an emergency circuit to ensure power is off). Disconnect the appropriate circuit breaker and follow lockout/tagout procedures prior to opening the fixture for any reason.

**Step 3.** Remove lens or diffusion cover on light fixture.

**Step 4.** Remove the old fluorescent tubes and recycle. Refer to the [EPA.gov](http://EPA.gov) website for fluorescent tube recycling instructions.

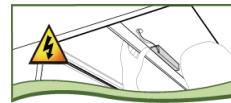


Figure 1

**Step 5.** Identify the ballast location and remove any covers to expose ballast and wires. If a luminaire disconnect is available, disconnect it now. (See Figure 1)



Figure 2

**Step 6.** Identify the hot and neutral wires running from the breaker box to the ballast and confirm the power is off using a voltmeter or tester. (Refer to the electrical tester's instructions for proper use). (See Figure 2)

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(continued)

**Step 7.** Check how many wires are attached to each fluorescent lampholder. If only one wire is attached to each lampholder, the holders are incompatible with the LED T8 Tubes. Replace the lampholders with non-shunted (not internally shorted) fluorescent lampholders, available from electrical suppliers or home improvement centers before continuing installation. Lampholders with an external shunt may be used without replacement. (See Figure 3)

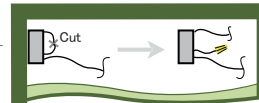


Figure 3

**Step 8.** Cut all the wires attached to the ballast. Be sure to cut as close to ballast as possible. (See Figure 4)

**Step 9.** Remove and recycle the ballast. Refer to the [EPA.gov](http://EPA.gov) website for ballast recycling instructions.

**Step 10.** Only one lampholder for each lamp will be wired for power. Select the lampholder(s) nearest to where the hot and neutral wires enter the fixture.

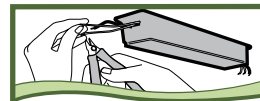


Figure 4

**Step 11.** If the selected lampholders are externally shunted, cut and cap the short loop to provide two connections to the selected lampholders. (See Figure 3)

**Step 12.** Test continuity of the selected lampholders with a multimeter to verify lampholder terminals are not internally shunted (shorted) to each other. If shunted, the lampholders are incompatible with the wiring configuration required by the LED T8 Tubes and will need to be replaced with non-shunted lampholders.

**Step 13.** Choose one end of the fixture, and begin by stripping insulation on the wires from the fluorescent lampholders on this end. It is important to strip the insulation to the appropriate length according to the wire nut instructions.



Figure 5

**Step 14.** Splice the neutral wire to exactly one terminal wire from each selected lampholder. Then, splice the hot wire to the remaining terminal wire from each selected lampholder. (See Figure 5)

**Step 15.** The wires attached to the lampholders at the opposite end can be removed or ignored as they will not be used for this wiring configuration. (See the Electrical Wiring Diagram)

**Step 16.** Reinstall the ballast cover to hide all wires.

**Step 17.** Affix the fixture modification label to the ballast cover or any other location visible when diffusion cover is removed.



Figure 6

**Step 18.** Install the new LED T8 tubes. (See Figure 6)

**Step 19.** Reinstall lens or diffusion cover on the light fixture.

**Step 20.** Turn power on at the breaker box.

**Step 21.** Turn on the lights!

**NOTE:** Always turn off the power at the circuit breaker when dealing with electricity.

**NOTE:** For Warranty information contact [sales@led-lc.com](mailto:sales@led-lc.com)

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