

Important Safety Instructions

WARNIG: Before installing make certain the power is off.

The electrical rating of this product is 120-277V, before installing confirm the fixture has 120-277V.

LED lights are bright, avoid looking directly to the LED as extended exposure may cause harm to the eyes.

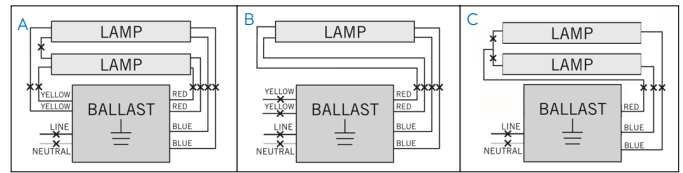


Instructions for Single ended Wiring Installation

Removing Existing Fluorescent System

1. Disconnect power from fixture;
2. Remove fluorescent lamps;
3. Remove lens and wiring compartment if applicable;
4. Cut all wires connected to the ballast as shown below and remove ballast;
5. Identify type of lampholders in fixture. Single-ended wiring installations of tubes require non-shunted G13 lampholders ;
6. If applicable, replace lampholders with non-shunted lampholders.

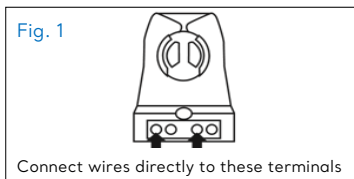
Typical Ballast Configuration



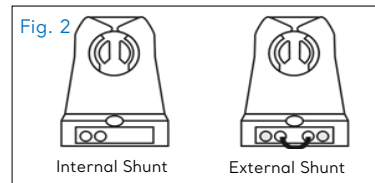
WARNIG: Use only non-shunted lampholders for Single-ended wiring installations. Do not perform Single-ended wiring installation in a fixture with shunted lampholders (found in all fixtures using instant start ballasts).

If the existing lampholders are shunted, and Single-ended wiring is desired, remove and replace them with non-shunted lampholders (or remove the external shunt if applicable). Make new connections directly to lampholder terminals as shown in Figure 1.

Typical Non-Shunted Lampholder



Typical Shunted Lampholders



NOTE: For the Single-ended wiring installations, power is only applied to endcap labeled Side A.. DO NOT apply power to Side B.

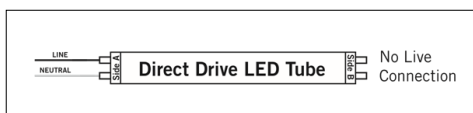
- I. Confirm that power is still disconnected from fixture;
- II. Make sure fixture is properly grounded;
- III. Follow step I for single lamp application; follow steps II and III for multiple lamp application, based on the number of lamps in the fixture.

Single Lamp

1. On the Side A lampholder, connect line (L) and neutral (N) AC wires to the corresponding pins marked (L) and (N) on the endcap. If only one lamp is being installed, proceed to step 4.

Multiple Lamps

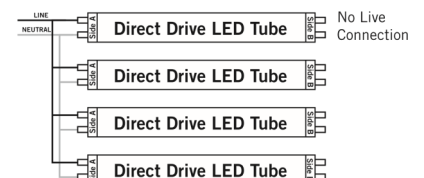
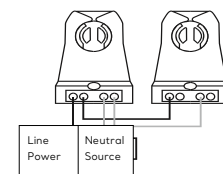
2. Follow the steps above for single lamp connection to connect the first lamp.
3. Connect the terminals on the powered lampholder on the first lamp to the matching terminals on the powered lampholder on the second lamp with line and neutral wires as shown below. Continue daisy-chain connection for each additional lamp.



4. Complete all electrical connections with appropriate connectors/wire nuts as needed, per all local and national electrical codes.

NOTE: There should not be any exposed wires from sockets left unconnected.

5. Replace wiring compartment cover;
6. Install all the tubes, making sure Side A is installed in the lampholders wired to the line and neutral; install LED tubes so that the LED's are pointed in the proper directions for illumination, and install any lens or diffuser as applicable.
7. Apply power to fixture and check for illumination.



Instructions for Single ended Wiring Installation

Removing Existing Fluorescent System

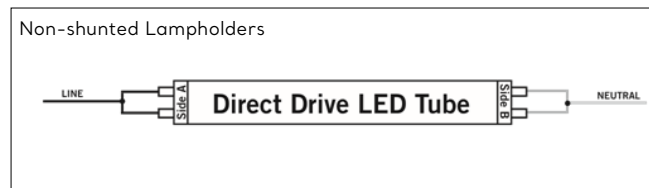
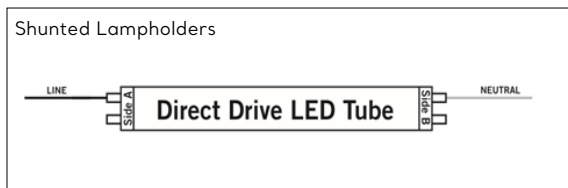
1. Disconnect power from fixture;
2. Remove fluorescent lamps;
3. Remove lens and wiring compartment if applicable;
4. Cut all wires connected to the ballast as shown below and remove ballast as shown in Diagrams A, B and C on Page 1;
5. Identify type of lampholders in fixture. Double-ended wiring installations of tubes require non-shunted G13 or non-shunted G13 lampholders (with instructions to externally shunt). See Figures 1 and 2 on Page 1.

Installing the Lamps

- I. Confirm that power is still disconnected from fixture;
- II. Make sure fixture is properly grounded;
- III. Follow step 1 for single lamp application or steps 2 and 3 for multiple lamp application, based on the number of lamps in the fixture.

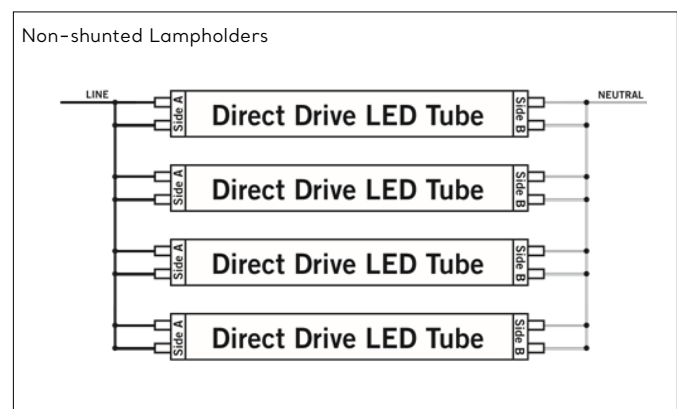
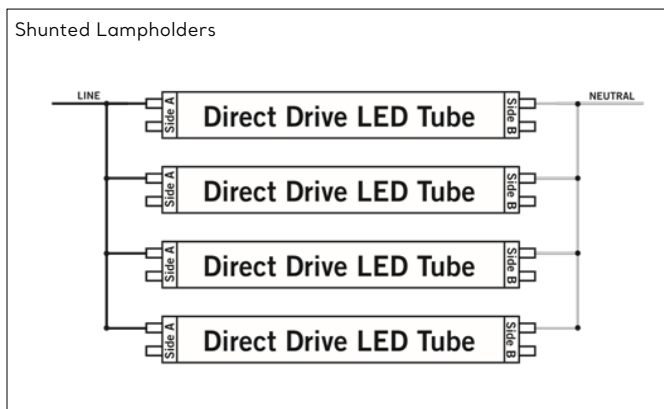
Single Lamp

1. From AC wires, connect line (L) to Side A lampholder and neutral (N) to Side B lampholder. If only one lamp is being installed, proceed to step 4.



Multiple Lamps

2. Follow the steps above for single lamp connection to connect the first lamp;
3. Connect the terminals from the first lamp to the matching terminals on the lampholder of the second lamp with line and neutral wires as shown below. Continue daisy-chain connection for each additional lamp.



4. Complete all electrical connections with appropriate connectors/wire nuts as needed, per all local and national electrical codes.

NOTE: There should not be any exposed wires from sockets left unconnected.

5. Replace wiring compartment cover;
6. Install all the tubes, making sure Side A is installed in the lampholders wired to the line and neutral; install LED tubes so that the LED's are pointed in the proper directions for illumination, and install any lens or diffuser as applicable.
7. Apply power to fixture and check for illumination.

Safety and Electrical Parameters

These LED tubes are intended to retrofit a UL Listed, surface mount, type IC or non-IC, recessed mount fluorescent luminaire that uses a maximum of 6 straight tubular lamps with or without diffuser. The minimum dimensions of the luminaire are tabulated below:

This device complies with Part 15 of the FCC Rules. Operation is subject to the two following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. These Led tubes are intended for lighting systems only;
2. These LED tubes are for indoor use only. Maximum ambient temperature must not exceed 45°C (113°F);
3. Avoid use of sunlight, abnormal heat or moist / condensing environments.
 - Working temperature: -20°C—45°C (-4°F—111°F)
 - Working humidity: 30% - 85%
 - Storage temperature: -40°C—65°C (-40°F—149°F)
 - Storage humidity: 10% - 90%
4. These LED tubes are not intended to be repaired by the user, manufacturer, or service personnel in any case of failure;
5. These LED tubes are constructed such that they do not rely upon de luminaire enclosure for protection against accidental contact with live parts;
6. These LED tubes are intended to be used in damp or dry locations only;
7. These LED tubes are not for use with dimmers;
8. These LED tubes are not intended for use with emergency exit fixtures of any type;
9. These tubes are intended to be installed in the same orientation as the fluorescent tubes they are replacing.

WARNING: Risk of fire or electronic shock. Installation of this Retrofit Kit requires knowledge of electrical systems. If you are not qualified, do not attempt installation and contact a qualified electrician.

Install this kit only in luminaires that have the construction features and dimensions shown in the photographs and drawings.

Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.

To prevent damage to wiring, do not expose wires to the edges of sheet metal or other sharp objects.

WARNING: For single-ended wiring installations: To avoid potential fire or shock hazard, do not use this retrofit kit in luminaires employing shunted bi-pin lamp holders. Mote: Shunted lampholders are found only in fluorescent luminaires with Instant-Start ballasts. Instant-Start ballasts can be identified by the words "Instant Start" or "I.S." marked on the ballast. This designation may be in the form of statement pertaining to the ballast itself, or may be combined with the marking of the lamps with which is intended to be used, for example F40T12/IS. For more information contact Keystone Technologies.

Installers should not disconnect existing wires from lamp holder terminals to make new connections to lamp holder lead wires by employing applicable connectors.

WARNING: RISK OF FIRE OR ELECTRIC SHOCK, DO NOT ALTER, RELOCATE, OR REMOVE WIRING, LAMP HOLDERS, POWER SUPPLY, OR ANY OTHER ELECTRICAL COMPONENT.

THE RETROFIT ASSEMBLY IS ACCEPTED AS A COMPONENT OF THE LUMINAIRE WHERE THE SUITABILITY OF THE COMBINANTION SHALL BE DETERMINED BY UL OR AUTHORITIES HAVING JURISDICTION.