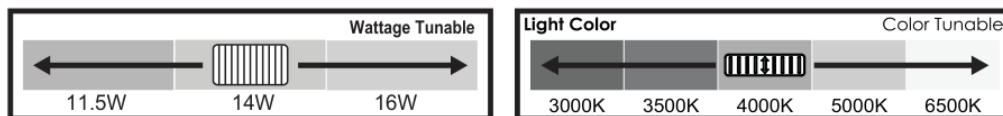


Direct-wire (ballast bypass) T8 LED tube with **selectable wattage and colour temperature** on the tube, for **single-ended or double-ended** wiring. Read the whole guide before you start.

TUBE SWITCHES



Wattage Tunable: 11.5, 14 or 16 W · Light Color / Color Tunable: 3000K, 3500K, 4000K, 5000K or 6500K. **Select the desired wattage and CCT before applying power; never move the wattage and CCT switches when power is on.**

⚠ WARNINGS

- **Risk of fire or electric shock.** LED retrofit installation requires knowledge of luminaire electrical systems. If not qualified, do not attempt installation: contact a **qualified electrician**.
- **Risk of fire or electric shock.** Install this product only in luminaires that have the construction features and dimensions shown in the photographs and/or drawings and where the input rating of the product does not exceed the input rating of the luminaire.
- Do not make or alter any open holes in an enclosure of wiring or electrical components during installation.
- To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.
- To avoid potential fire or shock hazard, **for single-ended wiring, do not use this product in luminaires employing shunted bi-pin lampholders** (for double-ended wiring, shunted lampholders are allowed: see below). Shunted lampholders are found only in fluorescent luminaires with instant-start ballasts, which can be identified by the words "INSTANT START" or "I.S." marked on the ballast, alone or combined with the marking of the intended lamps (e.g. F40T12/IS). For more information, contact LEDCO.
- Do not disconnect existing wires from lampholder terminals to make new connections at the lampholder terminals: instead, cut the existing lampholder leads away from the lampholder and make new connections to the lampholder lead wires with applicable connectors.
- This product is accepted as a component of a luminaire where the suitability of the combination shall be determined by the authorities having jurisdiction. It must be installed by a qualified electrician in accordance with the applicable electrical codes. This guide does not supersede local or national regulations for electrical installations.

SAFETY AND ELECTRICAL PARAMETERS

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

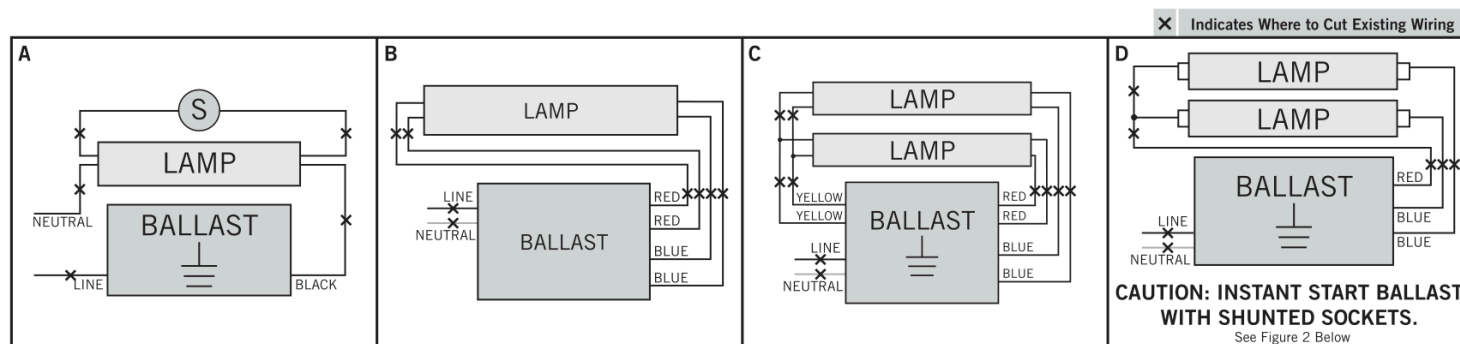
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- These LED tubes are intended for lighting systems only.
- **Indoor use only.** Maximum ambient temperature must not exceed 45 °C (113 °F).
- Avoid use in sunlight, abnormal heat, or moist / condensing environments. Working temperature: -20 °C to 45 °C (-4 °F to 113 °F) · working humidity: 30% to 85% · storage temperature: -40 °C to 65 °C (-40 °F to 149 °F) · storage humidity: 10% to 90%.
- These LED tubes are not intended to be repaired by the user, manufacturer or service personnel in any case of failure.
- These LED tubes are constructed such that they do not rely upon the luminaire enclosure for protection against accidental contact with live parts.
- For **dry or damp** locations only.
- **Not for use with dimmers.**
- Not intended for use with emergency exit fixtures of any type.
- Install the tubes in the same orientation as the fluorescent tubes they replace.

SINGLE-ENDED WIRING — REMOVING THE FLUORESCENT SYSTEM

1. Disconnect power from the fixture.
2. Remove the fluorescent lamp(s).
3. Remove the lens and wiring compartment cover, if applicable.
4. Cut all wires connected to the ballast as shown below and remove the ballast.

TYPICAL BALLAST CONFIGURATIONS

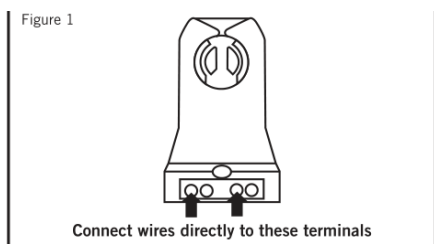


× indicates where to cut existing wiring · LAMP · BALLAST · LINE · NEUTRAL · RED / BLUE / YELLOW / BLACK wires · S = starter. D: **caution, instant start ballast with shunted sockets** (see figure 2).

5. Identify what type of lampholders are in the fixture. The direct-wire tube requires **non-shunted G13 medium bi-pin lampholders**.

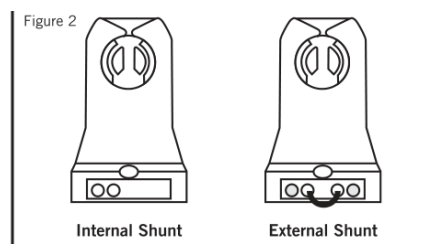
Caution: use only non-shunted lampholders. Do not install the product in a fixture with shunted lampholders (found in all fixtures using instant start ballasts). If the existing lampholders are shunted, remove them and replace them with non-shunted lampholders (or remove the external shunt, if applicable). Make new connections directly to the lampholder terminals as shown in figure 1.

FIGURE 1 — NON-SHUNTED LAMPHOLDER



Connect wires directly to these terminals.

FIGURE 2 — SHUNTED LAMPHOLDERS



Internal shunt · external shunt.

SINGLE-ENDED WIRING — INSTALLING THE TUBES

Note: for single-ended wiring, power is only applied to the endcap labelled "Side A". DO NOT apply power to Side B.

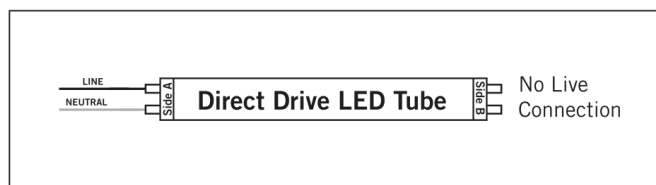
I. Confirm that power is still disconnected from the fixture. Select the desired wattage and CCT; never move the wattage and CCT switches when power is on.

II. Make sure the fixture is properly grounded.

III. Follow step 1 for a single tube, or steps 2 and 3 for multiple tubes, based on the number of tubes in the fixture.

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

SINGLE TUBE, SINGLE-ENDED WIRING

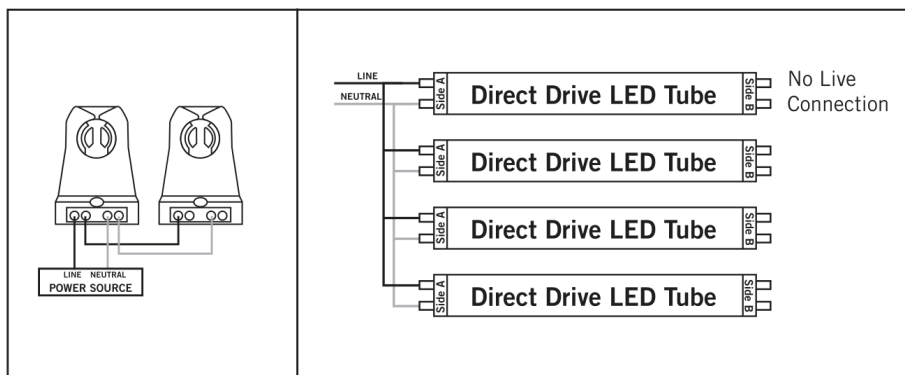


Line · neutral · direct drive LED tube · Side A / Side B · no live connection.

Multiple tubes — 2. Follow the step above to connect the first tube.

3. Connect the terminals on the powered lampholder of the first tube to the matching terminals on the powered lampholder of the second tube with line and neutral wires, as shown below. Continue the daisy-chain connection for each additional tube.

MULTIPLE TUBES, SINGLE-ENDED WIRING



Power source (line, neutral) - Side A / Side B - no live connection.

4. Complete all electrical connections with appropriate connectors or 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 the wiring compartment cover.

6. Install all of the tubes, making sure Side A is installed in the lampholders wired to the line and neutral. Point the LEDs in the proper direction for illumination and install any lens or diffuser as applicable.

7. Apply power to the fixture and check for illumination.

DOUBLE-ENDED WIRING — REMOVING THE FLUORESCENT SYSTEM

1. Disconnect power from the fixture.

2. Remove the fluorescent lamp(s).

3. Remove the lens and wiring compartment cover, if applicable.

4. Cut all wires connected to the ballast as shown in diagrams A, B and C above.

5. Identify what type of lampholders are in the fixture. For double-ended wiring, the tubes can be used with shunted G13 or non-shunted G13 lampholders (with instructions to externally shunt). See figures 1 and 2.

DOUBLE-ENDED WIRING — INSTALLING THE TUBES

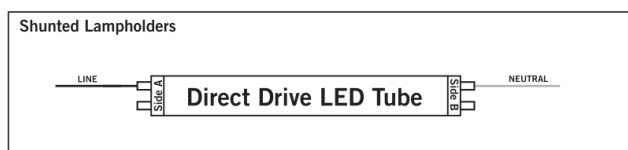
I. Confirm that power is still disconnected from the fixture. Select the desired wattage and CCT; never move the wattage and CCT switches when power is on.

II. Make sure the fixture is properly grounded.

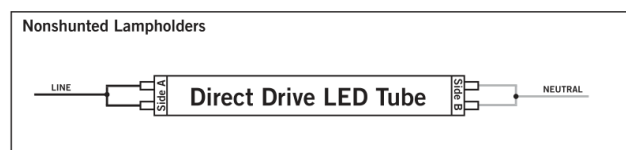
III. Follow step 1 for a single tube, or steps 2 and 3 for multiple tubes, based on the number of tubes in the fixture.

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

SINGLE TUBE — SHUNTED LAMPHOLDERS



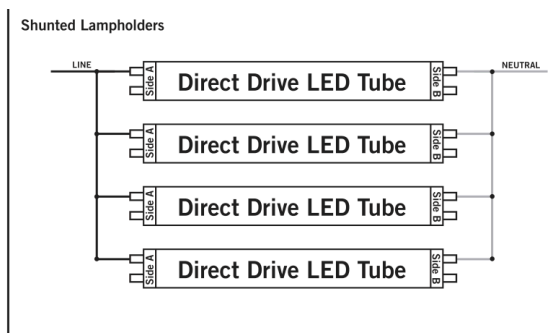
SINGLE TUBE — NON-SHUNTED LAMPHOLDERS



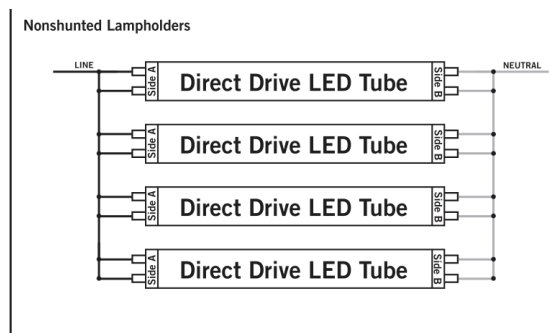
Multiple tubes — 2. Follow the step above to connect the first tube.

3. Connect the terminals from the first tube to the matching terminals on the lampholder of the second tube with line and neutral wires, as shown below. Continue the daisy-chain connection for each additional tube.

MULTIPLE TUBES — SHUNTED LAMPHOLDERS



MULTIPLE TUBES — NON-SHUNTED LAMPHOLDERS



Line · neutral · Side A / Side B.

4. Complete all electrical connections with appropriate connectors or 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 the wiring compartment cover.

6. Install all of the tubes. Point the LEDs in the proper direction for illumination and install any lens or diffuser as applicable.

7. Apply power to the fixture and check for illumination.