

Installation Guide: Ex-Fit External-Driver T8 LED Tube Lamp Kit



Ex-Fit External-Driver T8 LED Tube Lamp Kit

Model No.	Max. No. of Retrofit Conversion Kits	Min. Dimensions of Lamp Compartment (in.)
202420-21X	1	24.4L x 11.8W x 3.1H
202421-21X	1	24.4L x 11.8W x 3.1H
202422-21X	1	24.4L x 23.6W x 3.1H
202423-21X	1	24.4L x 23.6W x 3.1H
203420-21X	1	36.2L x 11.8W x 3.1H
203421-21X	1	36.2L x 11.8W x 3.1H
203422-21X	1	36.2L x 23.6W x 3.1H
203423-21X	1	36.2L x 23.6W x 3.1H
204420-21X	1	48.0L x 11.8W x 3.1H
204421-21X	1	48.0L x 11.8W x 3.1H
204422-21X	1	48.0L x 23.6W x 3.1H
204423-21X	1	48.0L x 23.6W x 3.1H
205420-21X	1	48.0L x 11.8W x 3.1H
205421-21X	1	48.0L x 11.8W x 3.1H
205422-21X	1	48.0L x 23.6W x 3.1H
205423-21X	1	48.0L x 23.6W x 3.1H

Contents:

Carefully open the box and check contents. Contact Revolution Lighting if any items are missing.		
Qty. #	EX-FIT EXTERNAL-DRIVER T8 LED TUBE LAMP(S) [SKU #: (as ordered)]	Ex-Fit External-Driver T8 LED Tube Lamp(s)
Qty. 1	“RETROFITTED LIGHT LUMINAIRE” LABEL [SKU #: 300224]	This decal must be placed in the LED-modified luminaire so that it is visible if replacing an LED tube (only one label per retrofitted luminaire required).
Qty. 1	“MODIFIED POWER SOCKET” LABEL [SKU #: 300004]	If retrofitting as SEP, this decal must be placed at the base of the powered LED tube socket on the LED-modified luminaire so that it is visible when replacing an LED tube. The arrow should point in the direction of the powered socket (only one label per retrofitted luminaire required at powered end).
Qty. 1	EX-FIT EXTERNAL-DRIVER T8 LED TUBE LAMP KIT INSTALLATION GUIDE [SKU #: 300565 v01]	Provides information necessary to retrofit a luminaire with an SEP/DEP External-Driver LED Tube Lamp Kit.

Installation Notes & Precautions:

- Read all precautions, warnings, and instructions contained in this document.
- These instructions can be used to install the Ex-Fit External-Driver T8 LED Tube Lamp Kit into a properly wired luminaire/troffer.
- Before installing lamps, verify that luminaire tombstone spacing matches the lamp length.
- Installation should be performed by a qualified electrician or installer.
CAUTION: Do not install more than the maximum number of kits within the minimum volume listed in the table above.
- Operating voltages: 120-277VAC
CAUTION: Wire-up the fixture according to these installation instructions. (See Step 5A or 5B below.)
- LED tube can be powered from each end (DEP) or from one end (SEP).
- This light source is not intended as an emergency exit fixture or light.
- A “Retrofitted Luminaire” label is included with your LED tube. This decal must be placed in a prominent location inside the luminaire so that it is visible if replacing an LED tube. If the luminaire is already modified for LED

- tube use and has a label, the new label may be discarded.
- The LED tube fits into any T-Series, Medium Bi-Pin (T8/T10/T12) socket. If wiring DEP, lampholder sockets do not need to be replaced unless they are damaged or missing. If wiring SEP, lampholder sockets should be replaced with non-shunted G13 lampholders.
- The LED tube may be used in open or enclosed surface or recessed (Type-IC) luminaires.

STEP 1 – Turn Off Power



- Disconnect power to installation site.
WARNING: Ensure that all power is off using a voltmeter or other method.

STEP 2 – Prepare Fixture for Retrofit



- Remove troffer lens, if present.
- Remove existing fluorescent or LED tube lamps by rotating one quarter turn and sliding each lamp out. Dispose of fluorescent lamps per job/company site rules and regulations.
- Remove ballast cover. (Cover may be secured with screws or tabs.)

STEP 3 – Bypass Ballast



- Cut all ballast wires as close to ballast as possible, then choose one of the following two options:
 - Unscrew screw(s) and remove ballast from luminaire, then reinsert original screw(s) into ballast mounting hole(s).

OR

- Abandon and leave ballast in its original mounting location.
- Remove lamp-holder (socket/tombstone) covers from both ends of luminaire. (Covers may be secured with screws or tabs.)

STEP 4 – Install LED External Driver

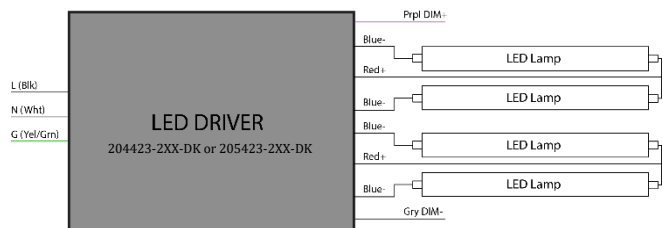
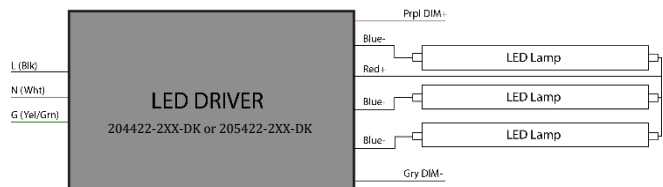
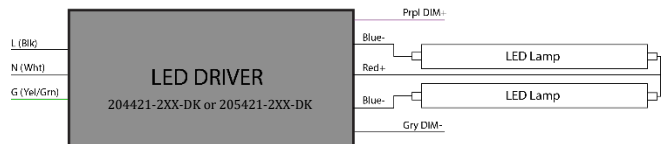
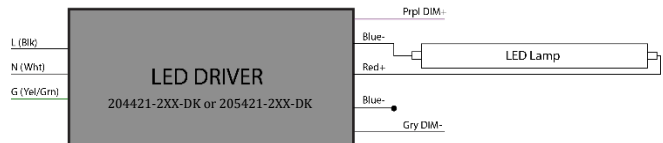


The metal enclosure of driver must be grounded.

- Insert the external driver into the troffer and fasten using the pre-existing ballast screw(s).
- **NOTE:** The location for the external driver within the troffer should take into account the wiring schematic to be used (DEP vs. SEP) and the existing wire length if any sockets/tombstones will be reused. For DEP installations, it is advisable to fasten the new external driver centrally within the fixture to

maximize flexibility in wire routing. For SEP installations, it is possible to minimize wire length by placing the external driver closer to the sockets/tombstones to be used.

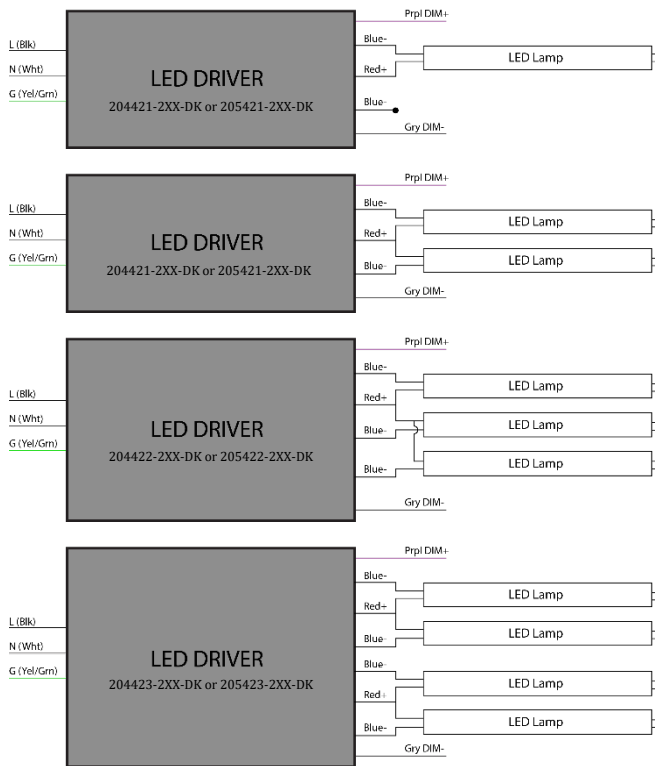
STEP 5A – DEP Wiring Configuration



0-10V Dimming: DIM+ and DIM- (Note: Dimming connections must use Class-1 wiring.)

- Ensure that all opposing lamp sockets in the fixture are wired according to diagrams above, which depict a double-end-power (DEP) wiring configuration with a blue (-) wire connected to each socket on one end and the red (+) wire connected to the set of sockets on the opposite end.
- **NOTE:** The 1-Lamp kit uses the same driver as the 2-Lamp kit. If installing a single lamp only, cap the unused blue (-) wire with a wire nut.
- **NOTE:** For 4-Lamp kits, there are two red wires, each of which connects to two lamps for DEP operation.
- **SAFETY NOTE:** These LED tube lamps, when wired in a DEP arrangement, will work with either shunted or non-shunted tombstone sockets.
- After checking the socket wiring, cut and strip approximately 1/2" of insulation from the free ends of the wires coming from the tombstone sockets.
- Splice the blue (-) and red (+) driver output power leads to all corresponding wires from the sockets using the appropriate wire nuts.
- Secure all fasteners, clips, and wires (use electrical tape if necessary), and reinstall socket covers at both ends of troffer.
- Apply supplied label SKU #300224. If necessary, clean the area where label will be placed before affixing the self-adhesive label. Ensure that the label will not be covered by any cover pieces, trim pieces, or other items.

STEP 5B – SEP Wiring Configuration



0-10V Dimming: DIM+ and DIM- (Note: Dimming connections must use Class-1 wiring.)

- Ensure that the lamp sockets in the fixture are wired according to the above diagrams, which depict a single-end-power (SEP) wiring configuration with a blue (-) wire connected to each socket and the red (+) wire connected to the adjacent contact of each non-shunted socket.
- **NOTE:** The 1-Lamp kit utilizes the same driver as the 2-Lamp kit. If installing a single lamp only, cap the unused blue (-) wire with a wire nut.
- **NOTE:** For 4-Lamp kits, there are two red wires, each of which connects to two lamps.
- **SAFETY NOTE:** These LED tube lamps, when wired in a SEP arrangement, will work ONLY with non-shunted tombstone sockets.
- After checking the socket wiring, cut and strip approximately 1/2" of insulation from the free ends of the wires coming from the tombstone sockets.
- Splice the blue (-) and red (+) incoming power leads to all corresponding wires from the sockets using the appropriate wire nuts.
- Secure all fasteners, clips, and wires (use electrical tape if necessary) and reinstall socket covers at both ends of troffer.
- Apply supplied label SKU #300224. If necessary, clean the area where label will be placed before affixing the self-adhesive label. Ensure that the label will not be covered by any cover pieces, trim pieces, or other items.
- Apply supplied label SKU #300004 with arrow pointing to a powered troffer socket, indicating modified power sockets. If necessary, clean area where the label will be placed before affixing the self-adhesive label. Ensure that the label will not be covered by any cover pieces, trim, or other items.

STEP 6 – Insert LED Tube Lamps, etc.









- Insert each LED Tube Lamp in the normal way by sliding the G13 connecting pins into opposing tombstone sockets and gently rotating a quarter turn until LED tube locks in place. LED lamp is now fully installed.
- Repeat above step for all LED tube lamps.
- Replace ballast cover.
- Replace troffer lens, if present.

STEP 7 – Turn On Power






- Switch power back on.

Warnings:

-  **WARNING** – Risk of fire or electric shock. Do not alter, relocate, or remove wiring, lampholders, ballasts or any other electrical component. If necessary, contact a qualified electrician for assistance.
-  **WARNING** – To prevent wiring damage or abrasion, do not expose wiring to exposed edges of sheet metal or other sharp objects.
-  **WARNING** – Always disconnect power for your safety when performing the luminaire modification steps below! In some cases, it may be necessary to test the power feed with the power connected. Only connect the power when doing the testing, then disconnect the power from the luminaire when performing the steps below.
-  **WARNING** – Always follow local and regional NEMA Electrical codes. NEMA codes provide information on proper procedures, safety guidelines, proper tools, connection methods, and specifications on materials.
-  **WARNING** – Revolution Lighting Technologies, Inc. cannot and will not be liable for any modifications or results of modifications to electrical devices or luminaires. These instructions are provided as a reference. By using the included instructions, you are solely responsible for following all applicable electrical safety procedures, codes, methods, and materials. If you are unsure about any electrical modification or installation, please consult a licensed electrician or electrical contractor in your area.
-  **WARNING** – To avoid potential fire or shock hazard, do not use this retrofit kit in luminaires employing shunted bi-pin lampholders when tube lamp is wired for SEP operation. Note: Shunted lamp holders 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 a statement pertaining to the ballast itself, or it may be combined with the marking for the lamps with which the ballast is intended to be used, for example F40T12/IS. For more information contact the LED luminaire retrofit kit manufacturer.

Cautions:

-  **CAUTION** – Risk of Shock. Use in Dry or Damp Locations Only.
-  **CAUTION** – Do NOT install an LED tube into a fluorescent luminaire containing a ballast and/or starter. The ballast and/or starter must be removed prior to installation.
-  **CAUTION** – Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.