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

Installers should examine all parts that are not intended to be replaced by the retrofit kit for damage and replace any damaged parts prior to installation of the retrofit kit.

THIS DEVICE IS NOT INTENDED FOR USE WITH EMERGENCY EXITS.

Only use the control provided with or specified by these instructions to control this lamp. This lamp will not operate properly when connected to a standard (incandescent) dimmer or dimming control.

TYPE B LAMP – Intended for operation in luminaires with traditional fluorescent-type lampholders wired directly to the branch circuit. This includes both factory-wired luminaires as well as those converted for this purpose under a retrofit program.

KEYSTONE LIGHT MADE EASY

DIRECTDRIVE DX2

SINGLE- OR DOUBLE-ENDED LINE VOLTAGE LED TUBES

WATTAGE	INPUT VOLTAGE	CRI	PF
15W	120-277V	>80	>0.90
FREQUENCY	INPUT CURRENT	CCT	WARRANTY
50/60HZ	145mA at 120V 60mA at 277V	3000K/3500K/ 4000K/5000K/ 6500K	5 Years

COLOR SELECT

Rohs2 Compliant

Installation & Operating Instructions below

CAUTION: Before installing, make certain the AC power to the fixture is off.
CAUTION: The electrical rating of this product is 120-277V. Installer must confirm that there is 120-277V at the fixture before installation.
CAUTION: LEDs are extremely bright. Do not look directly at the LED light source for extended time as over-exposure may cause harm to the eyes.

EASY CODE: **CI-806**

CAT. NO.:
KT-LED15T8-48GC-8CSJ-DX2

Instructions for Single-Ended Wiring Installation

Removing Existing Fluorescent System
1. Remove fluorescent tubes.
2. Remove luminaire cover/door.
3. Remove lens and wiring compartment, if applicable.
4. Locate and identify ballast wiring (see examples A, B, and C).
5. Identify what type lamp holders are in fixture. (Single-Ended wiring installations of Keystone Direct Drive DX2 tubes require non-shunted (CC) or non-shunted (CC) lamp holders.
6. If applicable, replace lamp holders with non-shunted lamp holders.

Typical Ballast Configurations



CAUTION: Use only non-shunted lamp holders for Single-Ended wiring installations.
Shunted Lamp Holder: Power wiring installation of product in a fixture with shunted lamp holders (found in all fixtures using instant start ballasts) if the existing lamp holders are shunted, the lamp holders must be replaced with non-shunted lamp holders or removed the internal shunt if applicable. Make sure connections directly to lamp holder terminals as shown in Figure 1.

Typical Non-Shunted Lamphol



Typical Shunted Lampholders



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 in the luminaire.
5. Replace wiring compartment cover.
6. Install all of the Keystone Direct Drive DX2 tubes. Install LED tubes by aligning pins with lamp holders, rotate tube 90° until it locks in place. Re-install any lens or diffuser as applicable.
7. Apply power to fixture and test for normal operation.

Instructions for Double-Ended Wiring Installation

Removing Existing Fluorescent System
1. Remove fluorescent tubes.
2. Remove luminaire cover/door.
3. Remove lens and wiring compartment, if applicable.
4. Cut all wires connected to the ballast as shown in Diagrams A, B, and C above.
5. Identify what type lamp holders are in fixture. (Double-Ended wiring installations of Keystone Direct Drive DX2 tubes can be used with shunted (CC) or non-shunted (LL) lamp holders and is preferred to universally shunt. See Figure 1 and 2 above.

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

Single Lamp
1. On one side of lamp holder, connect line (L) to Side A lamp holder and neutral (N) to Side B lamp holder. If only one lamp is lamp installed.

Shunted Lampholders



Non-Shunted Lampholders



Multiple Lamps
1. Follow first steps above for single lamp connection to connect the first lamp.
2. Connect the terminals of the powered lamp holder from the first lamp to the matching terminals on the powered lamp holder of the second lamp with line (L) and neutral (N) connected to the right. Continue daisy chain connection for each additional lamp.

Shunted Lampholders



Non-Shunted Lampholders



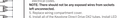
Installing the Lamps
NOTE: For Single-Ended wiring installations, power is only applied to endcap labeled Side A. DO NOT apply power to Side B.
1. Confirm that power is still disconnected from fixture.
2. Make sure fixture is properly grounded.
3. Follow step 1 for single-lamp application or steps 2 & 3 for multiple lamp application, based on the number of lamps in the fixture.

Single Lamp
1. On one side of lamp holder, 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.

Shunted Lampholders



Non-Shunted Lampholders



Multiple Lamps
1. Follow first steps above for single lamp connection to connect the first lamp.
2. Connect the terminals of the powered lamp holder from the first lamp to the matching terminals on the powered lamp holder of the second lamp with line (L) and neutral (N) connected to the right. Continue daisy chain connection for each additional lamp.

Shunted Lampholders



Non-Shunted Lampholders



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 in the luminaire.
5. Replace wiring compartment cover.
6. Install all of the Keystone Direct Drive DX2 tubes. Install LED tubes by aligning pins with lamp holders, rotate tube 90° until it locks in place. Re-install any lens or diffuser as applicable.
7. Apply power to fixture and test for normal operation.





Safety and Electrical Parameters

These LED tubes are to be used only with the ballast which they are intended to operate. Incorrect ballast may overheat that uses a maximum of 5 straight tubular lamps (T8 or T12). Refer to the nominal dimensions of the luminaire are tabulated below.

LED TUBE MODEL NO.	Lamp Compartment Dimensions mm	Max. Lamps in Luminaire	Spare Between Lampholders mm
KT-LED15T8-48GC-8CSJ-DX2	1212 x 50 x 71.5	4	0.5

Luminaire with Non-Shunted (Type LL) Lampholders. For Reference Only. For Fundamental safety when LED Lamp

LED TUBE MODEL NO.	INPUT VOLTAGE	INPUT FREQUENCY	INPUT CURRENT	INPUT WATTAGE	TUBE LENGTH
KT-LED15T8-48GC-8CSJ-DX2	120-277V	50/60 Hz	0.145-0.060A	15W	4ft

WARNING: Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of luminaires electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

AVERTISSEMENT: Risque d'incendie ou d'électrocution. L'installation d'un kit d'installation retrofit a led nécessite une bonne connaissance des systèmes électriques des luminaires. si vous n'êtes pas qualifié, ne tentez pas l'installation et contacter un électricien qualifié.

WARNING: Risk of fire or electric shock. Install this kit only in luminaires that have the construction features and dimensions shown in the photographs and/or drawings and where the input rating of the retrofit kit does not exceed the input rating of the luminaire.

AVERTISSEMENT: Risque d'incendie ou d'électrocution. Installer cet ensemble uniquement pour les luminaires présentant les caractéristiques de fabrication et les dimensions indiquées sur les photographies et / ou les dessins et pour lesquels la puissance d'entrée de l'ensemble d'après installation ne dépasse pas la puissance nominale du luminaire.

WARNING: To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.
AVERTISSEMENT: Pour éviter d'endommager ou câblage ou éviter son abrasion, ne le placez pas sur les bords de surfaces en tôle ou près de tout autre objet coupant.

Installers should not disconnect existing wires from lampholder terminals to make new connections at lampholder terminals. Instead installers should cut existing lampholder leads away from the lampholder and make new electrical connections to lampholder lead wires by employing applicable connectors. All electrical connections shall be provided with an enclosure.

THE RETROFIT KIT IS ACCEPTED AS A COMPONENT OF A LUMINAIRE WHERE THE SUITABILITY OF THE COMBINATION SHALL BE DETERMINED BY AUTHORITIES HAVING JURISDICTION. PRODUCT MUST BE INSTALLED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH THE APPLICABLE AND APPROPRIATE ELECTRICAL CODES. THE INSTALLATION GUIDE DOES NOT SUPERSEDE LOCAL OR NATIONAL REGULATIONS FOR ELECTRICAL INSTALLATIONS.