

SAFETY WARNINGS
IMPORTANT SAFETY INFORMATION
 **DANGER**

Risk of shock. Disconnect power before installation.

DANGER- RISQUE DE CHOC- COUPER L'ALIMENTATION AVANT L'INSTALLATION

 **WARNING**

Risk of fire or electric shock. LED Retrofit Assembly installation requires knowledge of luminaires electrical systems. If not qualified, do not attempt installation. Product must be installed in accordance with NEC or your local electrical code. If you are not familiar with these codes and requirements, contact a qualified electrician.

ATTENTION- Risque d'incendie ou de choc électrique. L'installation du kit upgrade LED exige la connaissance des systèmes électriques pour luminaires. Si non qualifié, ne tentez pas d'installation. Ce produit doit être installé conformément à NEC ou votre code électrique local. Si vous n'êtes pas familier avec ces codes et ces exigences, veuillez contacter un électricien qualifié.

 **WARNING**

Risk of fire or electric shock. To prevent wiring damage or abrasion, do not expose wires to the edge of sheet metal or any other sharp objects.

ATTENTION- Pour éviter les dégâts de câblage par l'abrasion, ne pas mettre en contact les fils électriques avec des bords de tôle ou d'autres objets pointus.

 **WARNING**

Risk of fire or electric shock. Check the existing wiring for damage before installing upgrade assembly. Do not install if existing wires are damaged.

ATTENTION- Risque d'incendie ou de choc électrique. Vérifier si le câblage existant n'est pas endommagé avant l'installation du kit upgrade LED. Ne pas installer si des fils sont endommagés.

 **WARNING**

Risk of fire or electric shock. Luminaire wiring and electrical parts may be damaged when drilling for installation of the LED upgrade assembly. Check for enclosed wiring and components.

ATTENTION- Risque d'incendie ou de choc électrique. Câblage électriques peuvent être endommagés lors du perçage pour l'installation du kit upgrade LED. Vérifier les fils et composants.

UNPACKING THE KIT

For installation in 4ft or 8ft strip-style luminaires, suitable for dry or damp locations, with min. 4 inch width and 1-¹¹/₁₆ inch depth.

Supplied Components:

- (1) Preassembled Universal Douglas LED 4' Primary Assembly Panel with:
 - (1) Universal Douglas LED Lensed Module
 - (1) Universal Douglas Driver
 - Associated connectors and wires
- (1) Preassembled Universal Douglas LED 4' Secondary Assembly Panel with:
 - (1) Universal Douglas LED Lensed Module
 - (2) End Mounting Brackets
 - (1) Universal Douglas Mounting Bracket

NOTE: Consult your local authority regarding disposal or recycling procedures of removed ballast and lamps.

**SUITABLE FOR DRY OR DAMP LOCATIONS.
NOT FOR USE WITH PHASE CUT DIMMERS.**

CONVIENT AUX EMPLACEMENTS HUMIDES.

NE PAS UTILISER AVEC GRADATEUR À COUPURE DE PHASE.

 **WARNING**

Risk of fire or electric shock. Install this assembly only in luminaires that have the construction features and dimensions shown in the photographs and/or drawings.

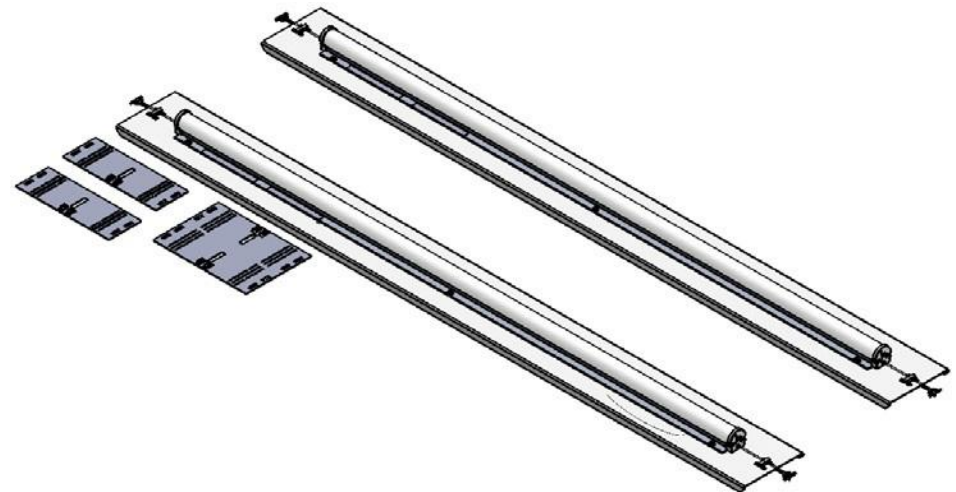
ATTENTION- Risque d'incendie ou de choc électrique. Installez ce kit seulement dans les luminaires qui ont les caractéristiques de construction et les dimensions dans les photographies ou les dessins de la page suivante.

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

IL EST INTERDIT DE FAIRE OU DE MODIFIER UNE OUVERTURE DANS UN BOÎTIER DE CÂBLAGE OU DE COMPOSANTS ÉLECTRIQUES AU COURS DE L'INSTALLATION DU NÉCESSAIRE.

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

LE NÉCESSAIRE DE MODERNISATION EST ACCEPTÉ À TITRE DE COMPOSANT D'UN LUMINAIRE LORSQUE LA PERTINENCE DE LA COMBINAISON DOIT ÊTRE DÉTERMINÉE PAR LA CSA OU PAR LES AUTORITÉS COMPÉTENTES.



INSTALLATION

USING EXISTING SOCKET BAR PLATES

Fig. 1



Step 1: Verify the fluorescent fixture is a 4ft or 8ft strip fixture of appropriate dimensions as shown in **Figure 1**. For fixtures that are connected together in series on the same branch circuit, identify the section to be retrofitted.

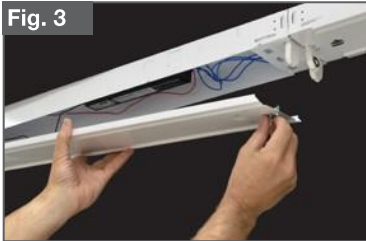
Step 2: Disconnect power to the fixture.

Fig. 2



Step 3: Remove existing linear fluorescent lamps as shown in **Figure 2**. Dispose of lamps per local regulations.

Fig. 3



Step 4: Locate the ¼-turn fasteners as shown in **Figure 3** and remove the cover panels on both strip light sections and discard.

Fig. 4



Step 5: Remove the socket mounting plate by gently prying outward on the housing using a large flathead screwdriver. **Figures 4** and **5**.

Note: For some strip light models the lampholder sockets can be removed without removing the socket mounting plate. See steps **8a** - **8c**.

Fig. 5

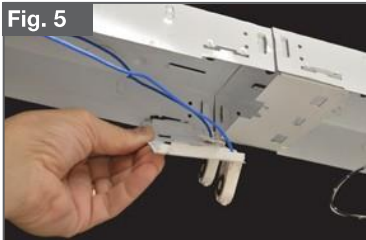
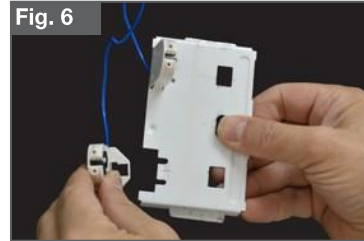


Fig. 6



Step 6: Remove the sockets from the mounting plate as shown in **Figure 6**.

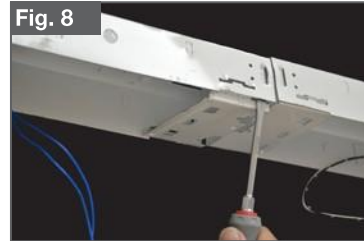
Fig. 7



Step 7: Replace mounting plate making sure that the holes are in the same orientation as when removed. Insert the tab on the mounting plate into the slot in the housing as shown in **Figure 7**. Gently pry the housing outward with a large flat head screw driver as shown in **Figure 8** and insert the tab of the mounting plate into the slot in the housing.

Note the correct orientation of the holes in the mounting plates in **Figure 8**.

Fig. 8



Step 8: Repeat steps 5, 6, and 7 for the remaining 3 socket mount plates.

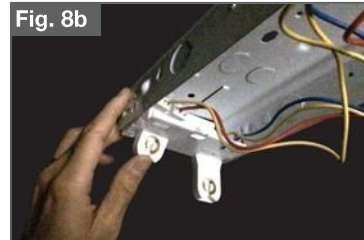
Fig. 8a



Alternate Lampholder Socket Removal Steps:

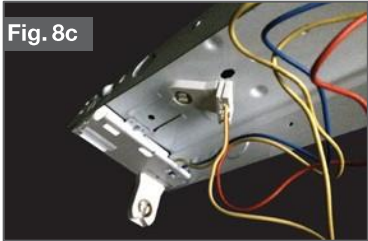
Step 8a: Place your finger behind the lampholder socket as shown in **Figure 8a** and push the lampholder socket towards the center of the light fixture until the lampholder pops out of the socket mounting plate.

Fig. 8b



Step 8b: Push the lampholder socket up and over the lampholder socket mounting plate. See **Figures 8b** and **8c**.

INSTALLATION



Step 8c: Repeat steps **8a** and **8b** for all lampholders.



Step 9: Cut the branch circuit wires at the connection to the fluorescent ballast leads in both strip light housings (if ballasts exist in both housings) as shown in **Figure 9**.



Step 10: Remove the ballast(s) by removing the mounting screw and dispose of properly per local regulations. See **Figure 10**.



Step 11: Remove the Linear Retrofit Assembly from the packaging. There are one of two panel assemblies: one with a driver and module and one (LRA28 only) with a module only.

For 4' retrofits, skip to **Step 16**.

For 8' retrofits locate the panel with the module only. Mount and position this assembly to the fixture section furthest from the branch circuit splice connections with the blue and red leads facing the center of the fixture - See **Figure 11**.

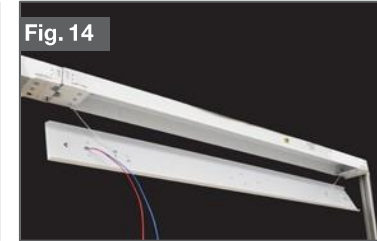
For LRA14 kits go straight to **Step 12**.



Step 12: Insert the ends of the lanyards at each end of the panel assembly into the indicated holes as shown in **Figures 12** and **13**.

Allow the assembly to hang by the lanyards as shown in **Figure 14**.

For LRA14 kits skip to **Step 19**.



Step 13: Route blue and red leads through the center of the fixture as shown in **Figure 15**.

Step 14: Lift the panel such that the lanyards at each end feed through the holes in which they were inserted, as shown in **Figure 16**.



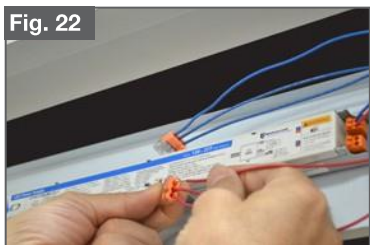
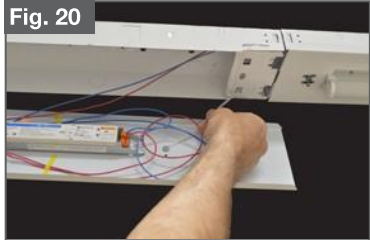
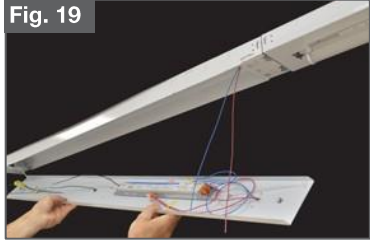
Step 15: To use the 1/4 - turn fasteners, first remove the knockout.

Secure the panel assembly in place onto the strip light housing, and fasten to the lampholder mounting plates with the 1/4-turn fasteners located at each end of the assembly as shown in **Figures 17** and **18**.

*For alternate mounting using the drill-point screws provided, see **Step 21A**.*



INSTALLATION



Step 16: Locate the remaining panel assembly with the driver.

Position the panel assembly for ease of connection to the branch circuit wiring in the fixture as shown in **Figure 19**.

Step 17: Insert the ends of the lanyards at each end of the panel assembly into the indicated holes as shown in **Figure 20** as done with the previous panel assembly.

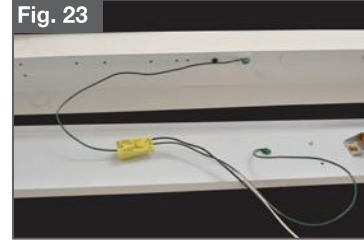
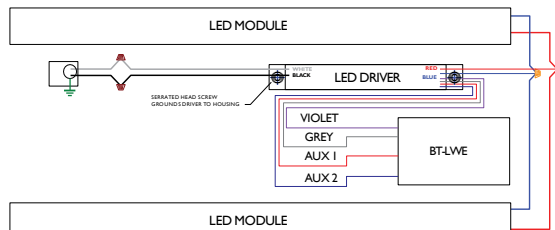
Allow the assembly to hang by the lanyards.

Step 18: Locate the red and blue lead wires with the orange 3-position push-in connectors attached and locate the red and blue lead wires from the other tandem LRA panel assembly previously installed.

Push the blue wire into the connector with the other blue wires and the red wire into the connector with the other red wires as shown in **Figures 21** and **22**.

Note: *Blue Tooth Wireless Dimming Interface (BT-LWE)*

- A Blue tooth wireless dimming interface is connected to the end of one of the light bars.
- This is powered by the driver and connects to the driver's 0-10V dimming leads
- Blue Tooth commands are received from a wireless dimming control.



Step 19: Locate the Luminaire Disconnect with the ground wire connected. Secure the ground wire to the equipment grounding conductor in the luminaire or to the luminaire housing in accordance with the National Electrical Code (NFPA 70). See **Figure 23**. A ground screw is provided with the kit if needed.

Step 20: From the branch circuit wires strip about 0.40 inches of insulation. Insert the white branch circuit wire into the white hole of the Luminaire Disconnect and the black wire into the black hole. See **Figure 24**.

Step 21: Lift the panel such that the lanyards at each end feed through the holes in which they were inserted as performed with the previous panel assembly as shown in **Figure 25**.

Secure the panel in place using the ¼-turn fasteners at each end of the panel.

INSTALLATION

USING ADJUSTABLE MOUNTING BRACKETS

Fig. 1



Step 1: Verify the fluorescent fixture is 8 ft strip fixture of appropriate dimensions as shown in **Figure 1**.

Step 2: Disconnect power to the fixture.

Step 3: Remove fluorescent components including:

- a. Lamps
- b. Ballast cover
- c. Lamp holders & brackets
- d. Ballast

Examine all parts that are not intended to be replaced by the retrofit assembly for damage and replace any damaged parts prior to installation of retrofit assembly.

Step 4: Attach center bracket. Locate large bracket at center of 8 foot fixture **Fig2**.

Note: Be sure all existing wiring is above bracket.

Center bracket and use fixture as guide to bend to correct width **Fig 2A**.

Once bracket is bent to size secure with #8 drill point screw (*supplied separately*) on either side of fixture.

Fig. 2

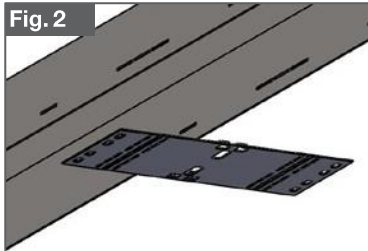


Fig. 2A

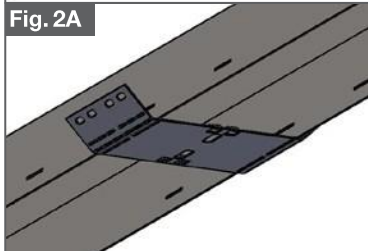


Fig. 2B

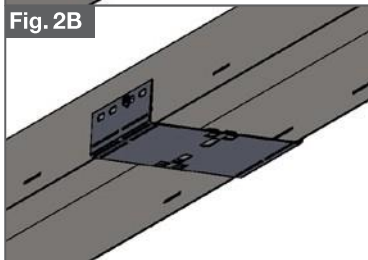


Fig. 3

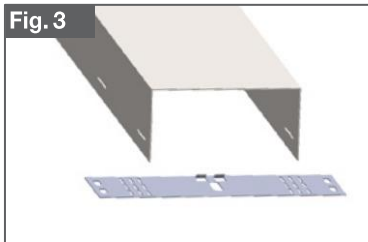


Fig. 3A

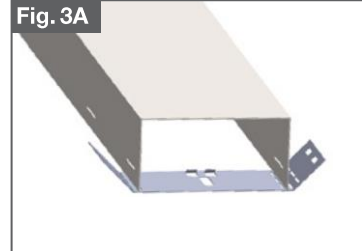
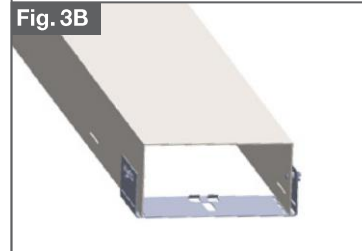


Fig. 3B



Step 5: Attach end brackets.

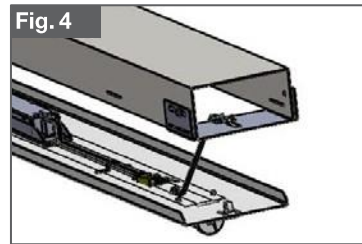
Locate bracket align with end of fixture. Ensure tether hook features point inboard **Fig 3**.

Center bracket width and use fixture as guide to bend to correct width **Fig 3A**.

Once bracket is bent to size secure with #8 drill point screw (*supplied separately*) on either side of fixture **Fig3B**.

Repeat at outer end of fixture.

Fig. 4



Step 6: Suspend panels from tethers by inserting "T" end of captive tether into hook features in brackets at both ends of panel **Fig 4**.

Step 7: Repeat steps 4-6 for secondary panel.

Fig. 5A



Step 8: While panels are suspended make the following connections:

Connect primary module ground lead to existing fixture ground screw **Fig 5a**.

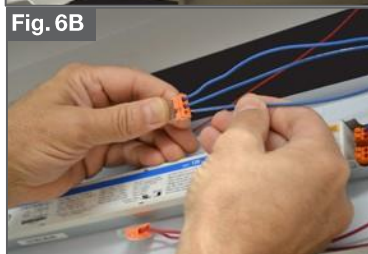
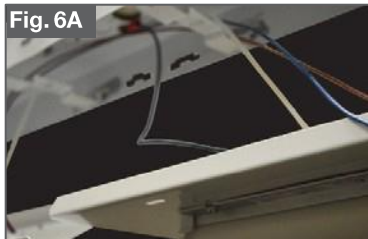
Ground lead position may be moved to alternate location **Fig 5b**.

Fig. 5B



INSTALLATION

USING ADJUSTABLE MOUNTING BRACKETS



Step 9: Before making connection route all wire over brackets to ensure panel seats properly (**Fig 6a**).

Connect red and blue leads from secondary panel to orange push in connectors from driver) **Fig 6b** and **6c**.

Step 10: Connect incoming power with luminaire disconnect plug on driver input (black and white) (**Fig 6**).

Step 11: Lift panel into place and secure with captive 1/4 turn panel fasteners.

Repeat for second panel

DRIVER PROGRAMMING

Driver output currents can be programmed at different levels to change the system's light output and input power. The driver currents must be programmed within the ranges shown in the table below:

Kit Part Number	Driver Part Number	Programming Range
LRAyC14-HL8xx-U-70LC	D15CC55UNVPW-C	900mA
LRAyC14-ML8xx-U-42LC	D10CC30UNVPW-C	1050mA
LRAyC28-HL8xx-U-12KC	D21CC80UNVPW-C	1500mA
LRAyC28-HL8xx-U-85LC	D21CC80UNVPW-C	750mA
LRAyC28-ML8xx-U-65LC	D15CC55UNVPW-C	1500mA

x= 35, 40, 50

y= 4 or 5

Contact your local ULT sales representative for driver programming tools and support.

BT-LWE EMERGENCY OPERATION

The BT-LWE can be configured to act as an Emergency mode controller turning on its connected fixture at full brightness when failure of normal power is detected. See the Douglas Lighting Controls BTCC App Field Manual for details.

The BT-LWE Emergency operation can be tested using the iOS mobile device (e.g. iPod Touch) that was used to commission the BT-LWE with the Douglas Lighting Controls BTCC App (BTCC).

To test Emergency operation, perform the following steps:

1. Ensure the emergency circuit is connected to the fixture controlled by the BT-LWE and is energized.
2. Use a Douglas Lighting Controls Bluetooth switch to turn OFF the BT-LWE, or use the BTCC "Room Setup" tab on the commissioning mobile device to access control of the device and turn it OFF.
3. Use the BTCC "System Setup" tab on the commissioning mobile device to navigate to the commissioned devices list and select the settings cogwheel for the BT-LWE to test.
4. In the settings page for the BT-LWE, select the "Test Emergency Mode" button on the bottom of the setting page. The BT-LWE will turn on to 100% brightness for approximately 30 seconds. Following the 30 second test, the fixture will remain ON and return to its previous dimming state. The device will resume normal operation, e.g. responding to occupancy and switch control.
5. Use the "Cancel" button in the upper left corner to exit the BT-LWE Settings page WITHOUT writing the configuration parameters.