



## *Ultra Performance LED Tube Installation Instructions*

Revised: 20150706

These instructions do not purport to cover all details or variations in components nor to provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further information be desired or should a particular problem arise which is not covered sufficiently for the purchaser's purpose, the matter should be referred to Linmore LED Labs. Linmore does not claim liability for any installation not performed according to this guide or not by a qualified electrician.

### **IMPORTANT SAFEGUARDS**

When using electrical equipment, basic safety precautions should always be followed including the following:

#### **READ AND FOLLOW ALL SAFETY INSTRUCTIONS**

1. DANGER – RISK OF SHOCK – DISCONNECT POWER BEFORE INSTALLATION
2. WARNING – Risk of fire or electric shock. LED Upgrade Kit 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.
3. WARNING – Risk of fire or electric shock. Luminaire wiring and electrical parts may be damaged when drilling for installation of the LED upgrade kit. Check for enclosed wiring and components.
4. WARNING – Risk of fire or electric shock. Check the existing wiring for damage before installing upgrade kit. Do not install if existing wires are damaged.
5. WARNING – To prevent wiring damage or abrasion, do not expose wires to the edge of sheet metal or any other sharp objects.
6. WARNING – Risk of fire or electric shock. Install this kit only in the luminaires that have the construction features and dimensions shown in the photographs and/or drawings.
7. The retrofit assembly is accepted as a component of a luminaire where the suitability of the combination shall be determined by UL or authorities having jurisdiction.
8. Only the holes indicated in the photographs or drawings may be made or altered as a result of the kit installation. Do not leave any other holes open in a wiring enclosure or electrical component.

**SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE NOTES:**

1. Upgrade Kit is for installation in a nominal 1x4 or 2x4 Listed dry or damp location fluorescent troffer, wrap or strip luminaire, with or without a diffuser. The luminaire shall have the following minimum dimensions:
  - 2-15/16" deep pan
  - 3" wide minimum wiring compartment
2. Consult your local authority regarding disposal or recycling of removed ballast and lamps.

**LIST OF SUPPLIED COMPONENTS:**

Ultra Performance LED Tube(s) per Chosen Kit  
LED Drivers(s) as Ordered  
Self-Tapping Screws: 2 per Driver

**LIST OF ITEMS INSTALLER MAY HAVE TO SUPPLY:**

Additional wire to extend wire length or make jumpers  
Wire nuts  
Extra self-tapping screws

**NOTE:** The instructions below reflect the steps necessary for retrofit of a typical fluorescent troffer luminaire. These steps are functionally identical for retrofit of a typical wrap or strip luminaire.

Step 1: Locate latches on the lens frame and and release them allowing the lens frame to open. Carefully let the lens frame hang.

Step 2: Remove the existing linear fluorescent tubes and properly dispose of them.



Step 3: Remove the wiring compartment cover. Set aside.



Step 4: Cut the leads from the ballast to the socket housing on both sides of the ballast. When cutting the leads, leave the smallest amount of wire attached to the ballast to leave as much length as possible for electrical connections. Remove ballast from housing and dispose of properly.



Step 5: A qualified electrician should assess the lamp holders for continued use. Replace the lamp holders if necessary. Leave wiring in place and make sure wire length is long enough to attach to the new LED driver.

Step 6: Prepare input power by stripping input power leads 5/8".

Step 7: Bring new driver into housing using mounting holes from old ballast when possible and secure it using supplied self-tapping screws. Ensure that the existing luminaire housing is properly grounded to ensure proper driver grounding. If housing has multiple locations for power supply, new driver can be secured in any of these locations.



Step 8: Make the input electrical connection per diagram on the face of the LED Driver. The White Input Wire is the Neutral. The Black or Red Input Wire is Line Voltage Input from 100 – 277 Volts. Ensure that the driver is properly grounded to the luminaire.



Step 9: The LED Driver comes standard with 0-10 Volt Dimming. The Blue, Yellow, and White wires on the output side of the driver are for dimming functions. If the dimming functions will NOT be used, tie the blue and yellow wires together with a wire nut and cap the white dimming wire.



If the dimming functions will be used, this is the function of the dimming wires:

Yellow: 0-10V + Dimming Input

White: 0-10V – Dimming Input

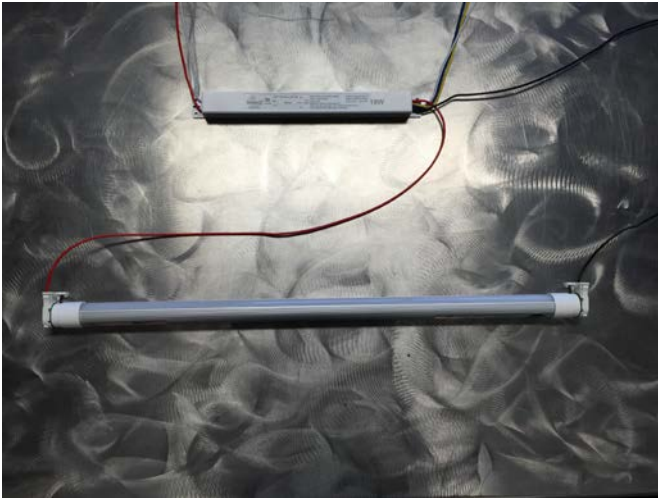
Blue: Input Power Supply for Dimmer at 9 Volts (when required by dimming system). If not required, cap this wire.

Step 10: The Linmore UP Tubes have designated ends to bring the driver output Positive/+ side and the opposite end of the UP Tube is for the driver output Negative/- . Connect the driver output Positive/+ lead(s) to one side of the luminaire's lamp holders. On the opposite side, connect the driver output Negative/- lead(s) according to the following pictures based on the number of UP Tubes driven by a single driver. There are four configurations: 1 Tube, 2 Tubes, 3 Tubes, or 4 Tubes.

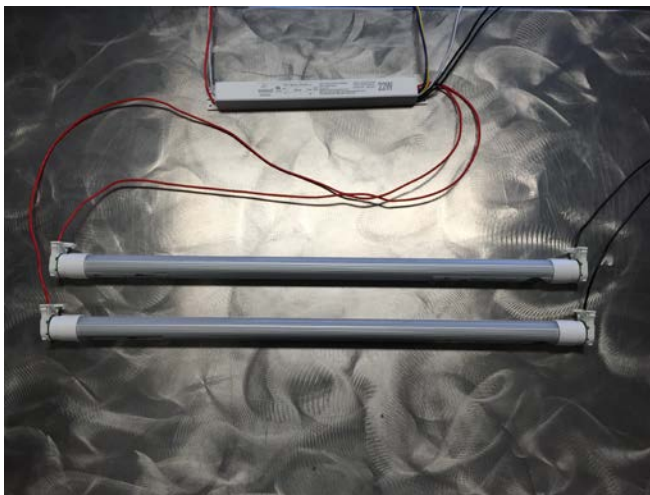




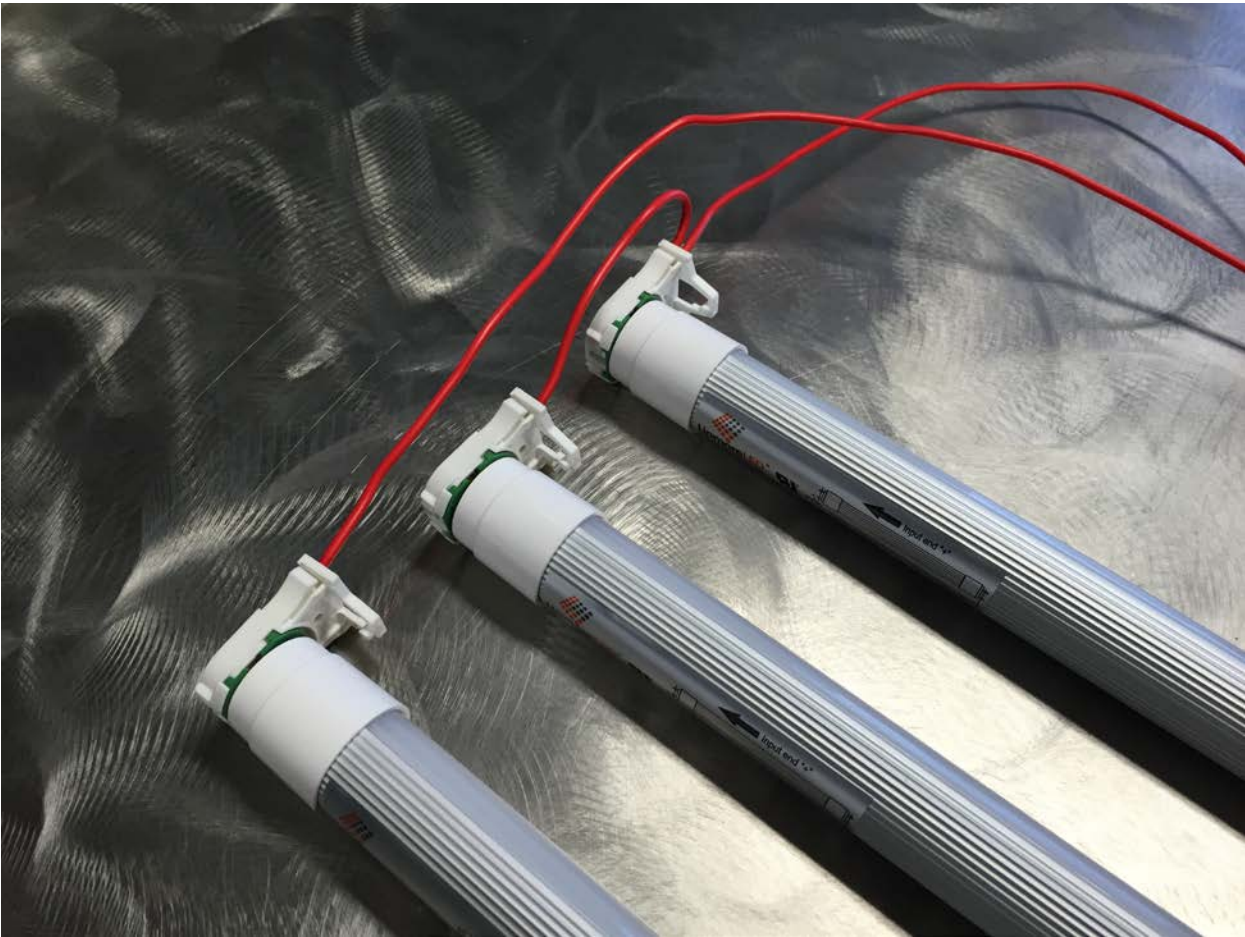
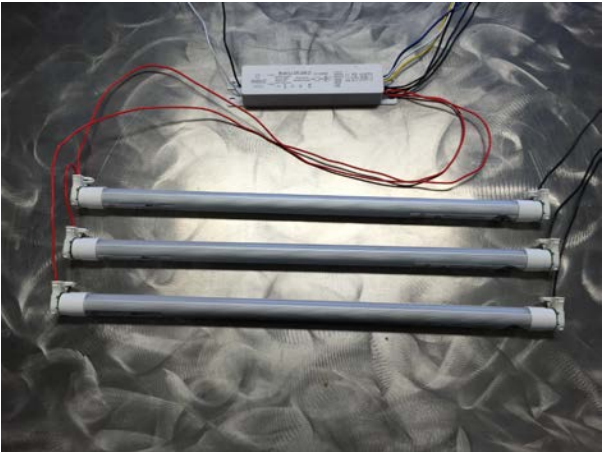
**1 Tube:** 2 Driver Output Leads: 1 Red/Positive/+ and 1 Black/Negative/-



**2 Tubes:** 4 Driver Output Leads: 2 Red/Positive/+ and 2 Black/Negative/-



**3 Tubes:** 5 Driver Output Leads: 2 Red/Positive/+ and 3 Black/Negative/-



**4 Tubes:** 6 Driver Output Leads: 2 Red/Positive/+ and 4 Black/Negative/-





Step 11: Bring wiring compartment cover previously removed in Step 3 into the housing. Carefully tuck all leads and wire connectors into the wire compartment. Reattach wire compartment by snapping into place over the driver insuring no wires are pinched. Route the driver outgoing leads through the wiring compartment allowing leads to be exposed through the end of the wiring compartment.

Step 12: Ensure that the pins on the twist lock lamp holders are in the vertical position. Bring the lamp(s) into the luminaire and insert both lamp sockets into the luminaire at the same time. Ensure that the lamp is installed with the lens pointing away from the base of the luminaire.

Step 13: Secure lamp by turning the twist lock into lock position on both ends of the lamp. Twist lock pins will be horizontal when twist lock is in locked position.

Step 14: Close the lens door and secure the latches.

Step 15: Restore the power supply to the fixture and ensure proper operation.