

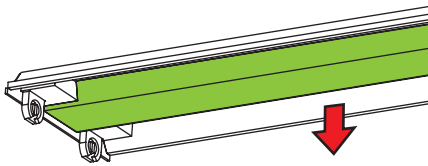
### Installation Instructions:

I. Shunted tombstones are required for installation.

**Note: If tombstone is a non-shunt type, convert it to a shunted tombstone.**

II. Ballast must be removed and replaced with LED driver.

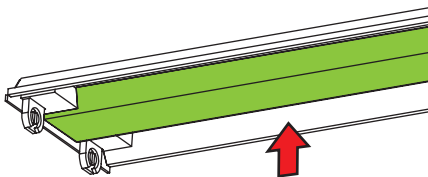
1. Turn off the power to the light fixture at the breaker panel before installation.
2. Open the diffuser of the light fixture.
3. Remove the fluorescent tubes. Please dispose of these items properly as they contain mercury.
4. Remove wiring channel cover.



5. Remove the existing ballast and install the external LED driver in place of the ballast.
6. Connect to input end of the LED driver: connect AC power to the red wire (AC L [Hot or Live]) and the neutral to the black wire (AC N [Neutral]).
7. Connect the output end of the external LED driver so that one end of the fixture connects to the (Neutral) black wire (LED-) and other end connects to the (Live or Hot) red wire (LED+).
8. Connect dimmer wiring to the to the external LED driver output dimming wires. For some driver models the Live (+0-10)/Dim+ is brown and the Neutral (GNG/Dim-) is blue. For other driver models the Live (Dim+) is brown and Neutral (Dim-) is yellow

**Note: Dimming wiring method may vary based on external LED driver used.**

9. Replace the cover over the wiring channel.



10. Insert the LED tube(s) into the fixture, making sure the correct corresponding ends are installed in the neutral and live (Hot) ends.

**Note: The tube(s) will be marked with a negative (-) sign on one end and plus (+) sign on the other end.**

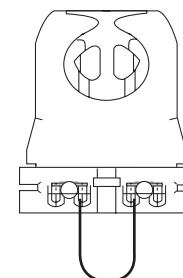
## SAFETY GUIDELINES

**READ CAREFULLY BEFORE INSTALLING.  
RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

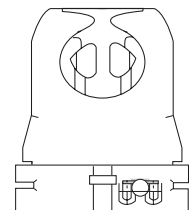
- **CAUTION - Risk of fire or electric shock.** Do not install this lamp in a pre-heat luminaire.
- **WARNING - Risk of electric shock.** Turn off electrical power at fuse or circuit breaker box.
- This product must be installed in accordance with applicable manufacturer installation instructions.
- Installation must be performed only by a licensed electrician in accordance with the National Electrical Code (NEC) and local electrical codes. Proper grounding is required for safety.
- **WARNING - Test lamp before mass installation.**
- **WARNING - This device is not intended for use with emergency exits.**
- This lamp can be used indoors or outdoors. (damp locations rated).
- **CAUTION - If the lamp or luminaire exhibits undesirable operation (buzzing, flickering, etc.), immediately turn off power, remove the lamp from luminaire and contact the manufacturer.**

*TGS cannot and will not be liable for any modifications or results of modifications to electrical devices or fixtures. 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.*

Shunted Tombstone

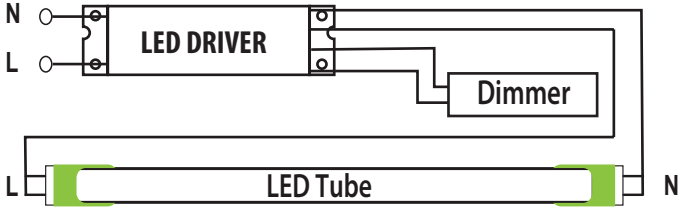


Shunted Tombstone

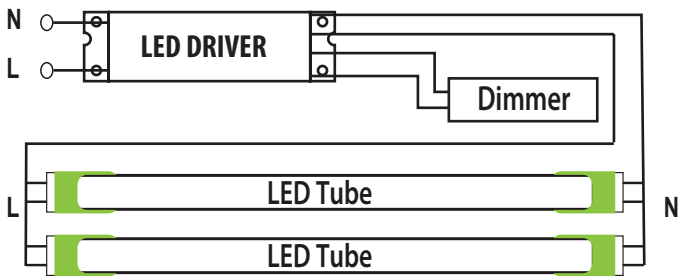


## Dimmable

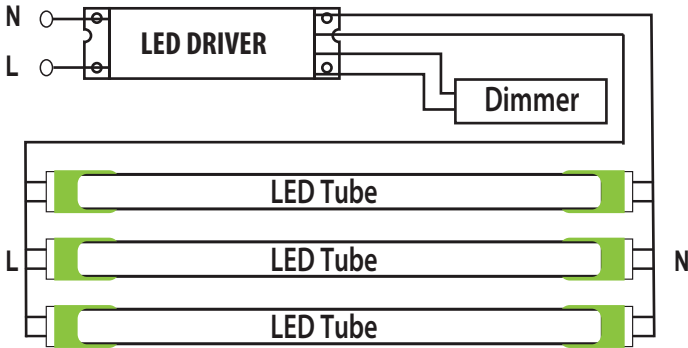
### Single Tube Installation Diagram:



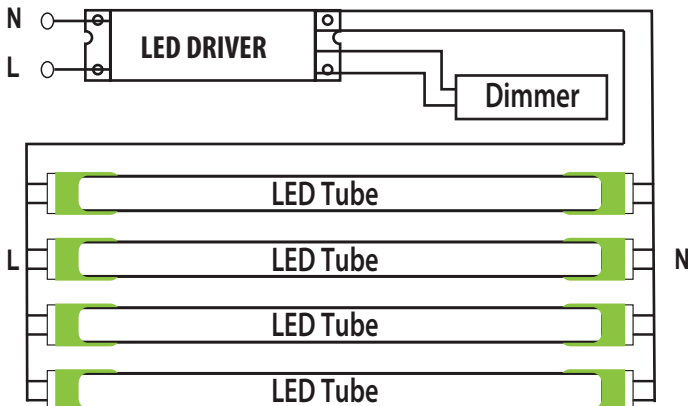
### Two Tubes Installation Diagram:



### Three Tubes Installation Diagram:

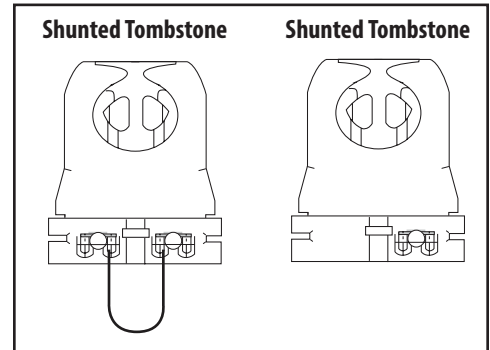


### Four Tubes Installation Diagram:



Input		Output	
Wire Color	Assignment	Wire Color	Assignment
Red	AC L	Red	LED 1 +
Black	AC N	Black	LED 1 -
		Blue	GNG/Dim -
		Brown	+(0-10)/Dim +

Input		Output	
Wire Color	Assignment	Wire Color	Assignment
Red	AC L	Red	LED 1 +
Black	AC N	Black	LED 1 -
		Brown	Dim +
		Yellow	Dim -



Note: Tombstone wiring should have one side Hot (L) and other side Neutral (N). Tombstones may vary based on what is currently installed in the fixture.