



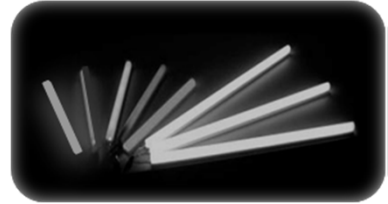
The Leader in Electro-Optics Technology

LED GREEN Technology

a subsidiary company of LITEON<sup>®</sup>

# LED Illumination System Border Tube BTL Series

## *Installation Guide*



This procedure is designed as an installation aid. Skilled trades people that are familiar with general construction and electrical installation techniques should perform the installation. Licensed electricians should provide electrical installation connections. Installations and connections should be done in accordance with all national and local codes and permits. In no way is this document intended to construe warranty or fitness of use of the products described, nor is it intended to provide safety instruction for those installing the product.



### **WARNING**

**Before proceeding with installation or service maintenance of this product:**

- Disconnect power to reduce electrical shock risk.
- Review the entire Installation Guide.
- Inspect this properly packaged product for any damage that may have occurred during transit.
- Verify product application complies with manufacturer design recommendations.
- Verify the availability of necessary tools and incidental material.
- Verify applicable code requirements. Field assembly and installation are subject to acceptance by local inspection authority.
- Appropriate safety equipment to be determined by end user, per applicable safety standards and precautions.



Fig. 1

**Step 1** - Determine the location of the BTL product relative to the top or bottom of the building or canopy. Mark the location for mounting brackets.

**Please note:** The recommended spacing for the mounting brackets is 3" from each end and 24" on center for length of the section.



Fig. 2

**Step 2** - Using a #8 (M3) screw (not included), securely install mounting brackets.

**Please note:** If mounting surface is brick, stucco or concrete, a masonry anchor or insert should be used.



Fig. 3

**Step 3** - Place BTL at a slant over the top of the surface-mounted bracket. The turned lip of the bracket should be inserted in the back mounting groove of the BTL. Snap the BTL down and over the mounting bracket so the bottom lip fastens to the lower groove of the BTL. BTL should now be fastened securely to the mounting bracket.

**Step 4** - The BTL Printed Circuit Board (PCB) (Fig. 5) may be cut every 3 inches. Determine the length of BTL required and mark accordingly, making an allowance for the new end cap, which will add 6/8" to the overall length of the BTL after installation.

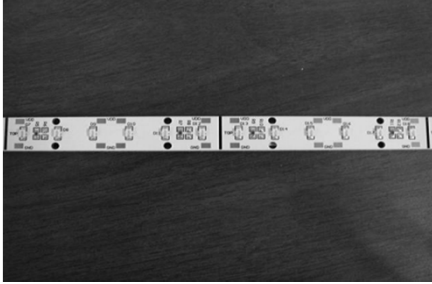


Fig. 5

Using a miter saw, make a clean, straight cut at the desired BTL length. A clean cut is required to allow for proper bonding of the end cap to the BTL. Remove the PCB board from the cut end, and snip the PCB board at the closest cut mark at least 1" from the end cut. Push the PCB back into tube and proceed to Step 5.

**Please note:** After cutting, there may be as much as 3" of empty tube at the end of the BTL. The LED light distribution will be enough to illuminate this empty tube. It is important that enough space remain in the BTL to accommodate the bonding of the end cap during installation, as shown in Step 5, and to minimize pressure on the sealed end cap from expansion and contraction of the PCB.

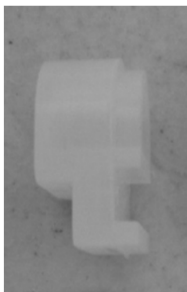


Fig. 6



Fig. 7

**Step 5** - To properly protect the cut end from the environment, bond a new end cap (Fig. 6) in place using activator 770 and glue 406 (Fig. 7). Insert the end cap into the tube, leaving 1mm gap (Fig. 8) between the end cap and the tube. Using activator 770, apply evenly across the surface between the end cap and the tube. Next, apply glue 406 evenly across the surface between the end cap and the tube. The glue should be applied on front, side and bottom of the tube. Allow 15-20 seconds for gluing process, then press end cap securely into the tube.

**Please note:** Glue 406 takes 40-60 minutes to cure.

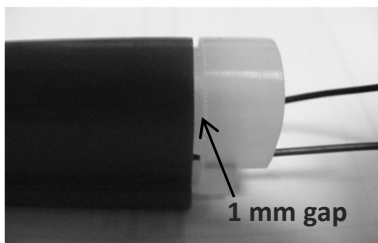


Fig. 8

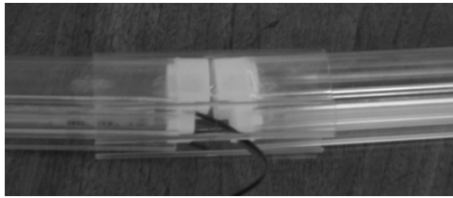


Fig. 9

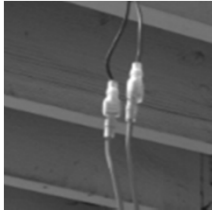


Fig. 10

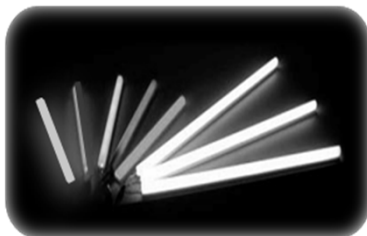
**Step 6 - Connecting BTL together:** After mounting BTL end cap to end cap, and securing the appropriate BTL splice joint (Fig. 9), use weatherproof connectors (Fig. 10) to splice the conductors, maintaining a proper connection to prevent corrosion. Terminate conductors red-to-red and black-to-black.



Fig. 11

**Step 7 –** The power supplies can be mounted anywhere on the outside or inside of the building, at a maximum distance of 100' from the BTL, if 10 or 12 AWG wire is used as the conductor between the power supply and the BTL. The power supply must be mounted in an area that allows for accessibility after installation, and must not be in an area that is adjacent to combustible materials or that will be allowed to exceed temperatures of 194°F (90°C). When laying out the location of the power supplies, the location of available power junction boxes and how to run the primary to them, should be considered. When mounting outdoors, a secondary enclosure such as a transformer box with a UL Wet Location or NEMA 3R rating is recommended.

**Please note:** Wattage drawn by BTL varies by color. Per foot: Green, Blue, White = 1.6W; Red, Orange, Yellow 2.2W.



Installation complete.