

White Lightning Fixtures, LTD



High Power LightBar INSTALLATION INSTRUCTIONS

VERSION 1



Patent Pending
UL 8750 Light Engine





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A. Revision History

V.1: 10/29/12 Document Created

B. Warranty Information

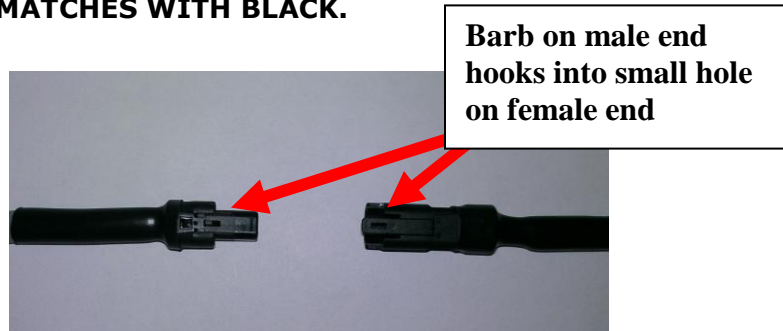
(Please read instructions in this manual PRIOR to installation of the LightBar product. Failure to follow the instructions listed in this manual may result in a **VOID** of warranty)

Warranty Terms: The warranty covers normal use and service. It DOES NOT cover damage caused by vandalism, electrical surges, lightning strikes, and any other acts of God. Any consequential or contingent liability is also excluded from this warranty. Warranty claims must be registered with White Lightning within thirty (30) days of damage or malfunction. Blair reserves the right to visit the site of the installation or to require documentation of the claim before assuming any responsibility under the provisions of the warranty.

Note: LightBar warranty period begins at the ship date




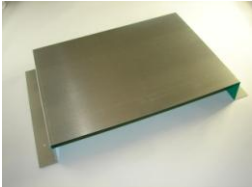




C. Cautions and Warnings

1. Always disconnect electrical supply before servicing any equipment. Make sure to use proper Lock-out Tag-out (LOTO) procedures.
2. Connectors are polarized and should mate easily. If an attempt is made to improperly mate the connectors, the contacts inside will be permanently damaged and it will not work. **IT IS OF VITAL IMPORTANCE TO ENSURE THE PROPER POLARITY BEFORE ATTEMPTING TO MATE THE CONNECTORS. CHECK THAT RED MATCHES WITH RED AND BLACK MATCHES WITH BLACK.**



3. It is the installer's responsibility to ensure the LightBar system is weather proof upon completion of the installation. This includes installing any weatherproof junction boxes on the primary wiring.
4. When cleaning the LightBar or optional lens, NEVER use cleaning or adhesive products containing chlorine (or any derivative of chlorine). Chlorine will damage the LightBar lens over time and cause discoloring and make the lens brittle. A mixture of water and mild detergent works very well to clean the product.
5. When installing LightBar, **NEVER** make the electrical connections while the power supply is energized (hot-plugging). **This will cause irreversible damage to the LEDs which will shorten their lifespan significantly.**

D. Parts List

 <p>Power Supply (48 VDC) HLB</p>	 <p>Y Splitter (10') 39-01-13</p>	 <p>10' Extension 39-01-14</p>	<p>Lens</p> <p>White: 39-00-11 Clear: 39-01-11</p>
 <p>Sunshade BSC00003</p>	 <p>Mounting clip Stainless Steel: 17-22-82</p>	 <p>Hardware Split Rivet: 17-07-02</p>	
 <p>End Caps White: 39-00-10 Clear: 39-01-10</p>	 <p>Adhesive Kit 39-01-16 Contains: End Cap Glue, Sealing Silicone</p>	<p>Accessory Pack 39-01-17 Contains: (2) Gender Adapter (2) Y-Splitter (8) End Caps (1) Adhesive Kit</p>	

E. System Wiring Guide

Note: All secondary wiring components have been UL approved for use in exterior wet-location applications (48 VDC, IP65 Wet Rated).

1. The brown, blue, and green wires from the power supply must be connected to an appropriate 90-277 VAC circuits. This can be along the same service as the fascia, or other accent lighting, and should be triggered by the same energy management system. This system can either be a timer or a photocell.
2. All primary wiring to the power supplies must follow local regulatory codes.
3. Secondary (48 VDC) wiring accessories are included in the kit in order to make installation easier for unique situations. **REMEMBER THAT ONE POWER SUPPLY WILL ONLY HANDLE A SET LENGTH OF LIGHTBAR. REFER TO THE NOTE BELOW (Page 5).**

Remember to NEVER hot-plug LightBar

F. Installing Power Supplies

Power Supply Specifications: 48 VDC, IP65 Wet Rated
 INPUTS AVAILABLE - 105-277 VAC, OUTPUT - 48V DC

ONLY USE THE SUPPLIED POWER SUPPLY. NO SUBSTITUTIONS SHOULD BE MADE

1. Check that the primary supply voltage matches the input range listed on the power supply. (105-277 VAC)
2. Check that the supply circuit has the available current (in Amps) on the circuit. **Note: DO NOT LOAD THE PRIMARY 20A CIRCUITS BEYOND 18A.**
3. Install each power supply. One supply will only power a set length of LightBar, and this length will vary depending on the type of the LightBar itself. **Wiring more than the maximum length of LightBar will result in a dim product or failure.**
4. Connect AC source to the primary side of the power supply.
5. Follow all local electrical codes during the installation.

There are currently four different power supplies which allow a maximum amount of LightBar to be connected to them based on the power of the LEDs used. They are:

Part Number	Wattage	Max Feet Driven 1W	Max Feet Driven 1/2 W	Max Feet Driven 1/3 W
HLB00073	40W	4.5	9	13.5
HLB00074	60W	7	14	21
HLB00075	80W	9	18	27
HLB00080	100W	12	24	28

Table 1: Note: Shaded regions show that length of run exceeds maximum rating of wire. The power supply will need to be placed in the middle of the installation and power will need to be divided with a Y-splitter.

The maximum amount of High Power LightBar that can be run in one direction is 14 feet. This length draws 2.3A, and is the maximum rating for a single run of product. For runs longer than 14 feet, (such as a 1/3W product with a 100W supply) a Y-splitter will need to be used to send a lighter load in both directions. The installer does not need to balance the load between both halves, but only need to ensure that nothing longer than 14 feet is loaded per wire.

In Exterior applications, a sunshade must be installed over every power supply in a manner so that sunlight does not come in contact with the power supply. This is done to ensure long life of the power supply, especially if the product is to be powered during the day. The sunshade can be secured to the mounting surface with screws or rivets.



Figure 1: Sunshade installed over Power Supply

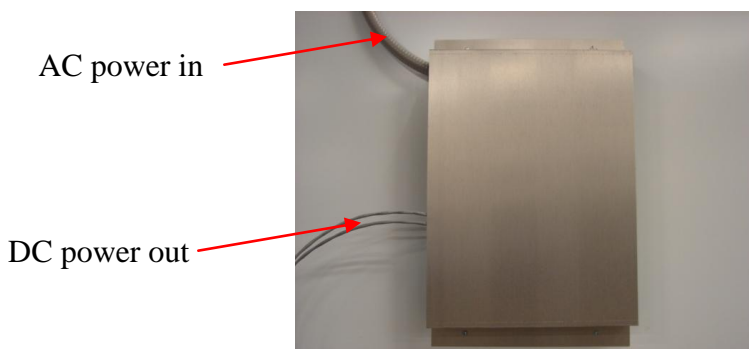


Figure 2: Top view, sunshade installed over power supply

G. Wiring Schematics

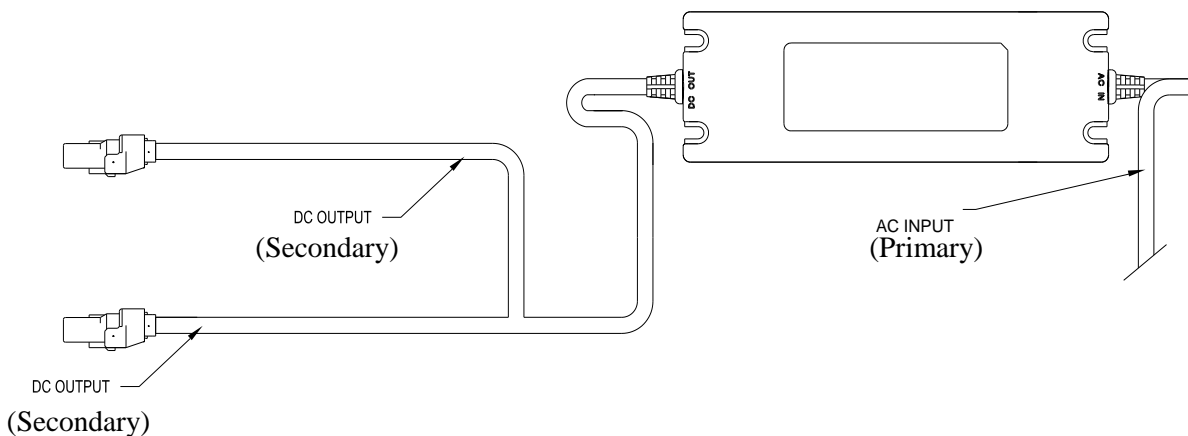


Figure 3: Wiring schematic showing the connections for the primary and secondary side of the power supply

Remember to NEVER hot-plug LightBar

H. LightBar Mounting Overview

Prior to installing any mounting clips, mark a horizontal straight line across the entire surface. Installers may use a chalk-line, laser line, or something similar.

The LightBar product is held in place with a series of metal clips. These clips must be installed at the proper locations along a section of LightBar; depending on the size of said section.

The following chart shows a general overview of where to locate the mounting clips:

LightBar Length	# of Stainless Clips	Stainless Steel Clip Location
0-4 ft	1	Center
4.1-6 ft	2	12" from either end
6.1-8 ft	2	20" from either end
8.1-10 ft	2	30" from either end

Table 2: Stainless Steel Clip Locations.

In some situations, the mounting surface will be uneven. To ease installation, shims should be used to bring all surfaces within a similar plane. The installer should place either a stainless steel or plastic washer behind the mounting clip(s) needed to be shimmed. **Do not use regular steel washers that could corrode.**

When installing LightBar, it is important to maintain a gap between any section of product and the next. Due to thermal expansion, these gaps are important such that the LightBar sections do not collide with each other and cause buckling when hot, or have too large of a gap when cold. The following chart dictates what gap should be used when installing at certain temperatures:

Install Temp	<0 °F	0 – 39 °F	40 – 100 °F	> 100 °F
Gap Size	1/2"	3/8"	1/4"	1/8"

Table 3: Gap size based on temperature at time of installation

I. Installing Sections of LightBar

1. Mark lines at the appropriate locations described above (See Table 2) for the placement of the mounting clips
2. Following the layout drawing, locate each joint between sections of LightBar. Make a distinct marking at these joints.
3. Using the supplied rivet, install stainless steel mounting clips at each location referenced in Table 2.

Note: Use of the appropriate fastener is critical. For ACM, aluminum, plastic, or similar thin materials, any fastener other than the supplied split rivet could result in the product falling from the fascia.

For concrete, masonry, wood, or similar materials, the installer is responsible for determining the appropriateness of any fastener.

4. Snap the LightBar into the mounting clips. This is best accomplished by resting the bottom edge of the LED bar into one of the barbs of the clips. Gently rotate the LightBar up to engage the other barb. The installer should squeeze the lens while engaging the clips to prevent "over-snap" (See Figures 5 and 6). The LightBar should easily mate into the mounting clip.

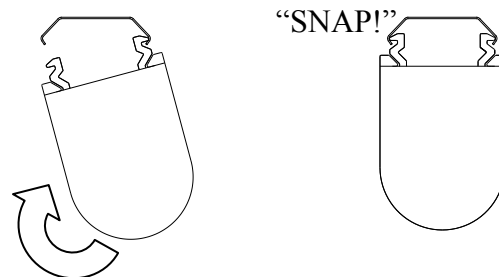


Figure 4: Snapping the light-bar into the mounting clip



Figure 5: Properly engaged lens and clip. Note: Lens does not extend past the top groove in the aluminum channel



Figure 6: Improperly engaged lens and clip. Note: Lens extends below the top groove, and into the bottom groove of the aluminum channel

Note: Allow a minimum of a 1/4" Gap between each section for thermal expansion. Failure to leave a gap between sections can cause separation of the product from the mounting surface.

5. Make electrical connections at each joint. Connectors are polarized and only fit together one way, so make sure that the locking tab engages fully. **DO NOT FORCE CONNECTORS!** Perform a pull test to verify capture.

DO NOT PLUG CONNECTORS TOGETHER IF THERE IS POWER AT THE POWER SUPPLIES. THIS WILL SHORTEN THE LIFE OF THE LEDS.

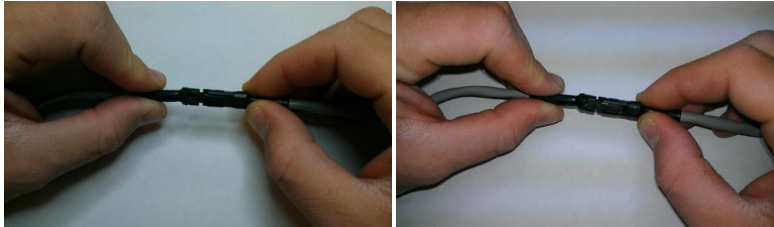


Figure 7: Mate connectors and pull gently to ensure proper capture

J. Finalizing the Installation

In some circumstances, a male plug end will not be connected to another female plug due to either maximizing the linear feet for a single power supply, or utilizing only one plug on a power supply or Y-splitter. For external applications only, you will need to make a “Field Termination”. To do this, simply apply the supplied silicone (from the adhesive pack) to the contacts of the male plug.



Figure 8: Male plug sealed with silicone. Note the amount used; only use enough to cover the contacts.

Power up the entire system and check that all LightBar sections are properly illuminated. If a section needs to be removed, use a #2 flat screwdriver to gently pry up on the top barb of the mounting clip. Disconnect the connector and remove bar from the clips.

After installing sections of LightBar, it may be necessary to perform a final wipe-down of all of the lenses to remove any grease or dirt from installation.

Note: NEVER USE CLEANING CHEMICALS CONTAINING CHLORINE (OR CHLORINE DERIVATIVES)! USE WATER AND MILD DETERGENT ONLY.

K. Troubleshooting

1. **Clearly define symptoms!!** This is the most critical step in troubleshooting. You must clearly understand the problem before you can attempt to solve it.
 - a. Is the problem unique to one LightBar?
 - b. Do all affected segments of LightBar display the same symptom?
 - c. Are the symptoms intermittent (They are not there all the time)?
 - i. If the symptoms are intermittent, what are the conditions when the problem is observed? Temperature, weather, and time of day can all be factors.
2. If one or more segments of LightBar are not lighting correctly:
 - a. If the problem is located on a single segment only, the most likely cause is the segment itself. Try swapping it with another LightBar.
 - b. If there is more than one segment of LightBar with the same problem, and they are in series with each other, there is likely a problem with the connection going to the first problematic segment in the series.
3. If none of the LightBar is lighting:
 - a. Verify there is adequate power to the LightBar.
 - b. Check that the timer or photocell is not causing the problem.
 - c. Check input and output voltage of the power supply.

The Input voltage should read 90-277 VAC.

The Output voltage should read 48V DC.