LinearStar® Sign Lighting & Wall Washer

Installation Instructions

IMPORTANT SAFETY WARNINGS

THE INSTALLATION MUST ONLY BE PERFORMED BY A LICENSED ELECTRICIAN. TO PREVENT DEATH, INJURY OR DAMAGE TO PROPERTY, THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NFPA70) IN THE US OR CANADIAN ELECTRICAL CODE (CSA22.1) IN CANADA.

L'INSTALLATION NE DOIT ÊTRE EFFECTUÉE QUE PAR UN ÉLECTRICIEN AGRÉÉ. POUR PRÉVENIR LES DÉCÈS, LES BLESSURES OU LES DOMMAGES MATÉRIELS, CE PRODUIT DOIT ÊTRE INSTALLÉ CONFORMÉMENT AU CODE NATIONAL DE L'ÉLECTRICITÉ (NFPA70) AUX USA OU CODE CANADIEN DE L'ÉLECTRICITÉ (CSA22.1) AU CANADA.

DISCONNECT POWER BEFORE INSTALLING THE PRODUCT OR SERVICING IT.

DÉBRANCHEZ L'ALIMENTATION AVANT D'INSTALLER OU DE LE RÉPARER LE PRODUIT.

SUITABLE FOR WET LOCATIONS. SUITABLE FOR OPERATION IN AMBIENT NOT EXCEEDING 50°C (122°F).

CONVIENT AUX ENDROITS HUMIDES. PEUT ÊTRE UTILISÉ À UNE TEMPÉRATURE AMBIANTE N'EXCÉDANT PAS 50°C (122°F).

CAUTION – RISK OF FIRE. MIN 45°C (113°F) SUPPLY CONDUCTORS.

ATTENTION – RISQUE D'INCENDIE. LES FILS D'ALIMENTATION 45°C (113°F) MIN.

- To reduce the risk of death, personal injury or property damage from fire, electric shock, falling parts, cuts/abrasions, and other hazards please read all warnings and instructions included with the box and labels.
- Follow all manufacturer's warnings and restrictions for: power supply type, burning position, mounting locations/methods, replacement and recycling.
- Wear gloves and safety glasses at all times when removing luminaire from carton, installing, servicing or performing maintenance.
- Verify that supply voltage is correct by comparing it with label information.
- Wiring connections should be capped with UL-approved wire connectors.
- DO NOT INSTALL DAMAGED PRODUCT! This luminaire has been properly packed so that no parts should have been damaged during transit. Inspect to confirm. Any part damaged during or after assembly should be replaced.
- It will occasionally be necessary to clean the optical assembly. Frequency of cleaning will depend on ambient dirt level and minimum light output which is acceptable to user. Refractor/lens should be washed in a solution of warm water and any mild, non-abrasive household detergent, rinsed with clean water and wiped dry.

If two power sources are required, then wire power to the luminaire through the left and right end caps. **DO NOT make the power connection at the midpoint of the luminaire.**

Note: These instructions do not purport to cover all details or variations in equipment nor to provide every possible contingency to meet in connection with installation, operation, or maintenance.

Component Part Number	Component Description
SKT1-2-XX-XX-XX-1-XX-XX-L	LinearStar Luminaire, 1 ft, Left End Unit
SKT1-2-XX-XX-XX-1-XX-XX-R	LinearStar Luminaire, 1 ft, Right End Unit
SKT1-2-XX-XX-XX-4-XX-XX-L	LinearStar Luminaire, 4 ft, Left End Unit
SKT1-2-XX-XX-XX-4-XX-XX-R	LinearStar Luminaire, 4 ft, Right End Unit
SKT1-2-XX-XX-XX-4-XX-XX-C	LinearStar Luminaire, 4 ft, Center Unit
SKT1-2-XX-XX-XX-4-XX-XX-S	LinearStar Luminaire, 4 ft, Stand Alone Unit
SMT1-1-BK-V	Mount Arm, Variable Angle
PSB-1-24-96	US LED Class 2 Power Supply | 24V 96W | IP66 Rated
PSC1-2-B-XX	20' Cable Whip With Water Tight Gland
980054C	UL-Listed Power Supply Box | Suitable For Wet Locations

Specifications and dimensions subject to change without notice.

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MOUNT SPACING AND HEAD ANGLE

LinearStar can be installed for downlighting and uplighting applications. When installed for uplighting, ensure the fixture is mounted to prevent water from collecting on the lens or entering the electrical connections. Maintain the same mounting dimensions and aiming recommendations shown for standard installations.

Figure 1A shows the mounting diagram for LinearStar in a downlighting application. Figure 1B shows an uplighting application. Note the location of the luminaire relative to the sign surface. The Head Angle is critical to achieve uniform lighting on the sign surface and depends on the sign height as shown in Table 1.

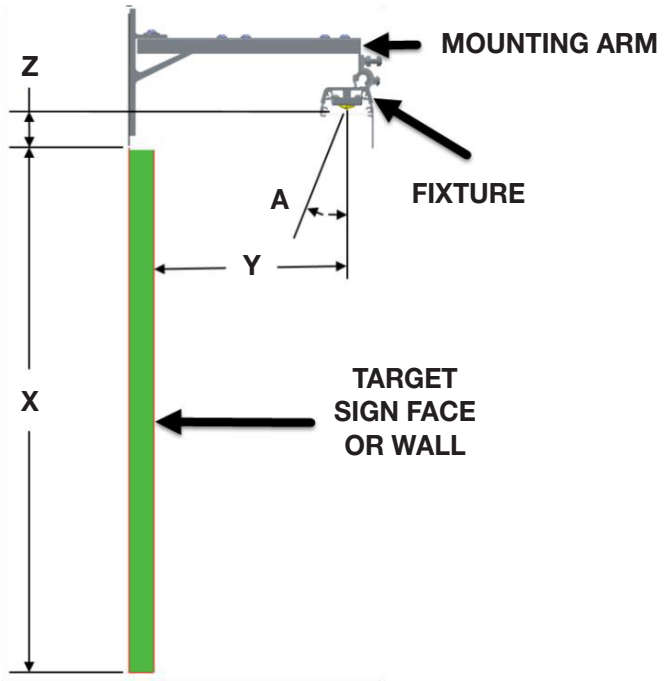

FIGURE 1A: DOWNLIGHT MOUNTING DIAGRAM

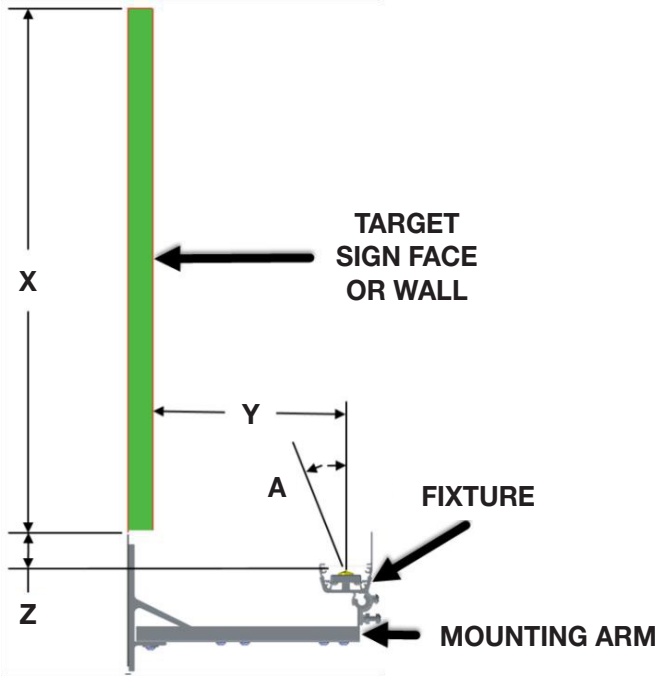

FIGURE 1B: UPLIGHT MOUNTING DIAGRAM

TABLE 1: TABLE OF DISTANCES

Sign/Wall Height (X)	Distance to Target Surface (Y)*	Mount Offset (Z)	Head Angle (A)
2 ft. to less than 4 ft.	15 in.	7 in.	27°
4 ft. to less than 6 ft.	15 in.	7 in.	22°
6 ft. to 8 ft.	15 in.	7 in.	18°
8 ft. to 10 ft.	15 in.	7 in.	18-27° **

*** Keep the LED luminaire approximately 15 in. from the sign face by mounting it at the appropriate location on the mount arm.**

**** It's critical that the angle be set for best projection of light onto the sign. If the angle is not properly set then the light might not be projected at the extremities of the sign's height.**

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The luminaire assembly consists of a **Left Unit**, **Right Unit** and several **Center Units** depending on the desired total luminaire length. The luminaire length can range from 4 to 50 ft in increments of 2-ft. You can view the basic configuration of the luminaire assembly for various length configurations on page 4 (Figure 2).

INTERCONNECTING FIXTURES

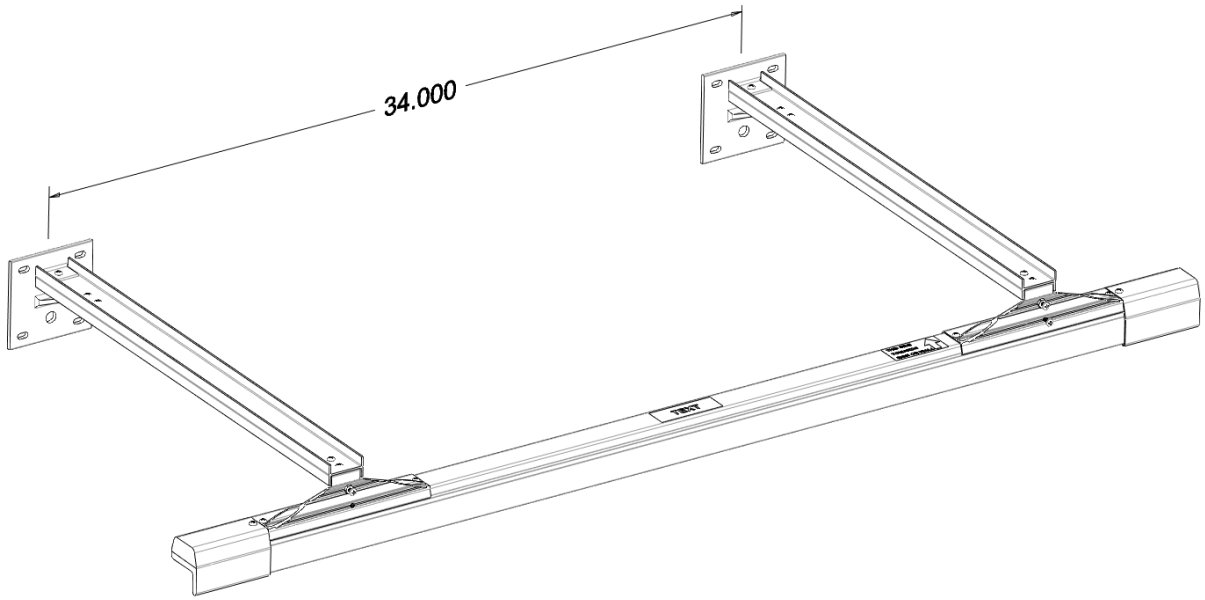
1. Fixtures are interlinked with a Mount Bracket as shown in Figure 3. The Mount Bracket is pre-installed onto the fixture. To connect to the adjacent fixture simply attach the open end of the Mount Bracket to the adjacent fixture and secure it with the two #8-32X1/4” thread cutting screws provided.
2. Connect the wires located under the Mount Bracket. Connect red to red and blue to blue. (see Figure 5).
3. Secure the Wire Guard with the 2 provided #4-24X3/8” flat head screws (Figure 3).
4. It's recommended to assemble and mount fixture assemblies longer than 12 feet in sections.
5. See Figure 4 to mount end units.

MOUNT ARM INSTALLATION

1. Each Mount Bracket has an associated Mount Arm.
2. Refer to Figure 2 for the spacing between adjacent Mount Arms. Note that the spacing between Mount Arms is not always the same (34", 41", 48").
3. Secure Mount Arms with 4 bolts per arm (not provided). The mounts must be securely mounted to the structure with proper backing. This will vary depending on the installation site requirements.

CONNECTING THE FIXTURE ASSEMBLY TO THE MOUNT ARMS

1. The LED Fixture must be located roughly 15" from the sign face. Adjust the Mount Bracket along the Mount Arm if needed to accomplish this. The swivel on the Mount Bracket is pre-installed at a 21” distance from the wall, which is good for a 6” deep sign. See Figure 1.
2. Slide the Fixture Assembly onto its associated Mount Arm as shown in Figure 6.
3. Use included #8-32 x 1/4” Thread Cutting screws to contain swivel within the Mount Bracket (Figure 7).



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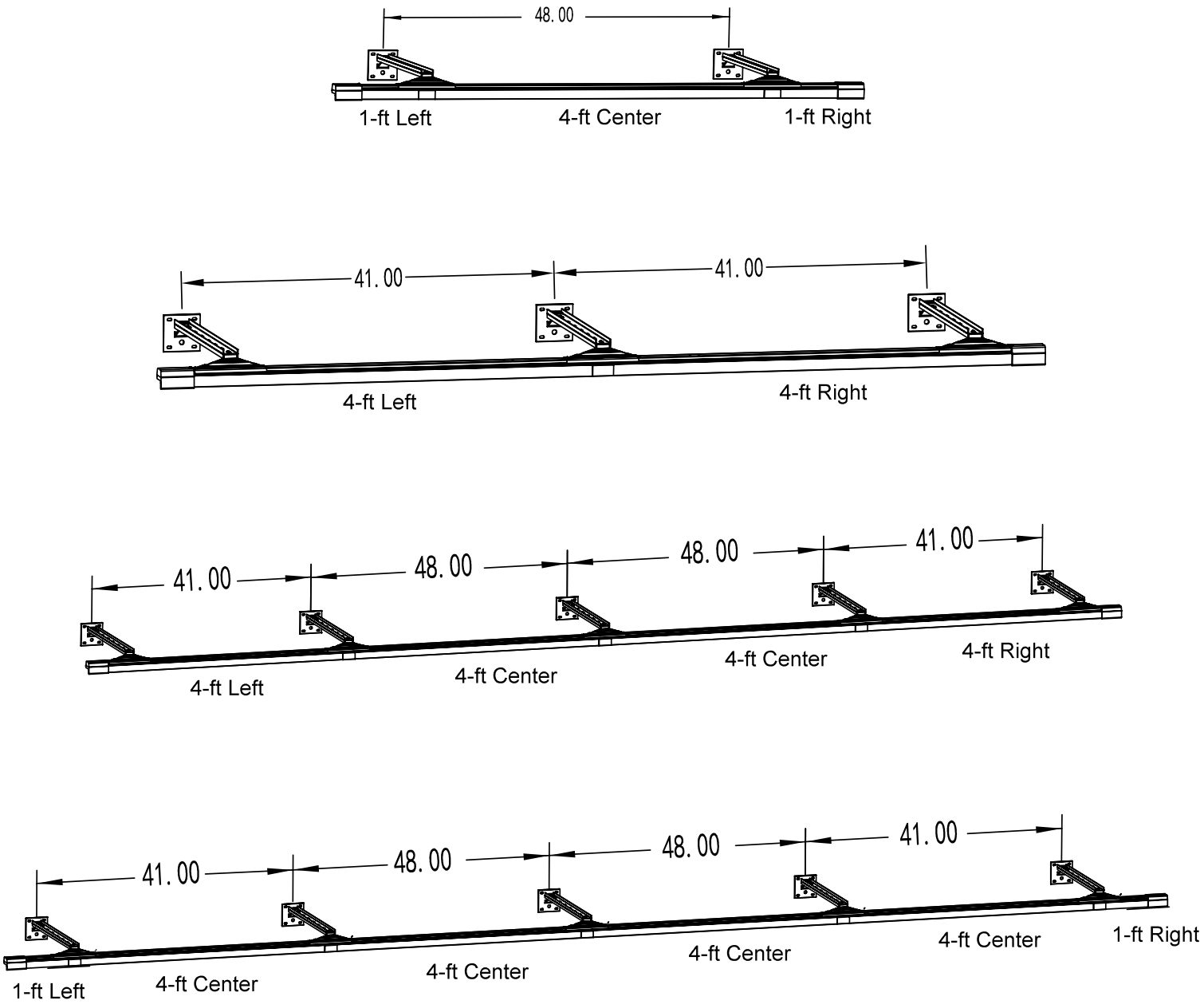

FIGURE 2: LEFT, CENTER, AND RIGHT MOUNT ASSEMBLIES FOR VARIOUS LUMINAIRE LENGTHS

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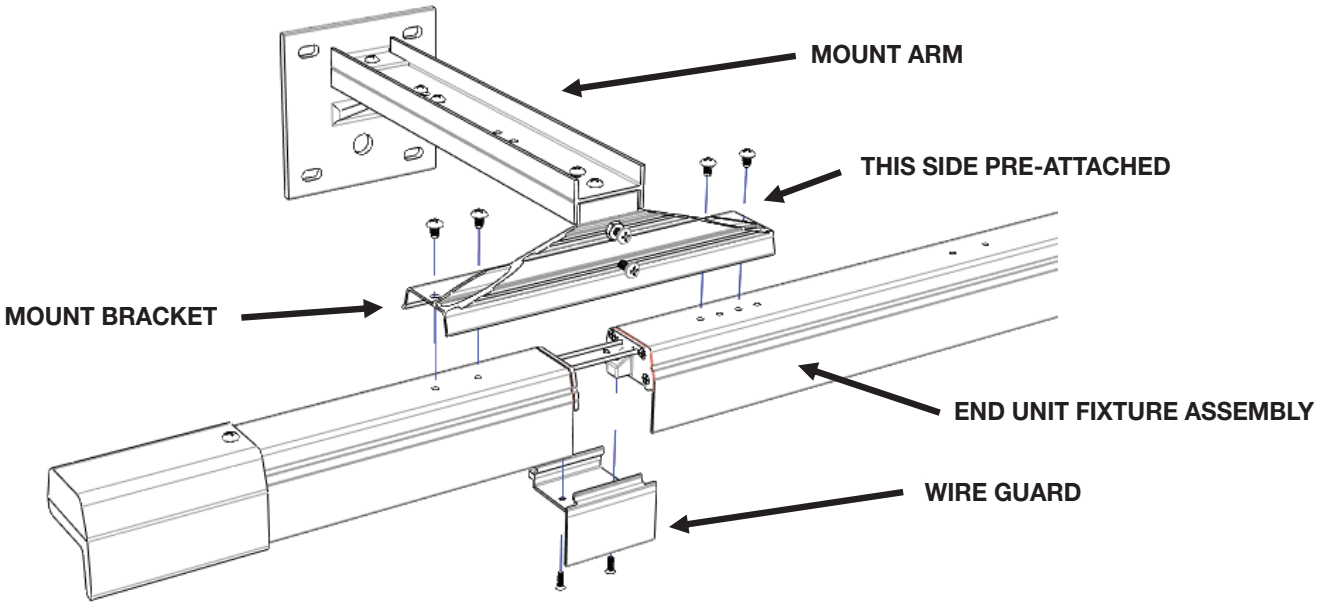

FIGURE 3: CONNECTING TO A 1 FT END-TO-CENTER UNITS OR CENTER-TO-CENTER UNITS. NOTE THAT THE MOUNT BRACKET STRADDLES 2 FIXTURES

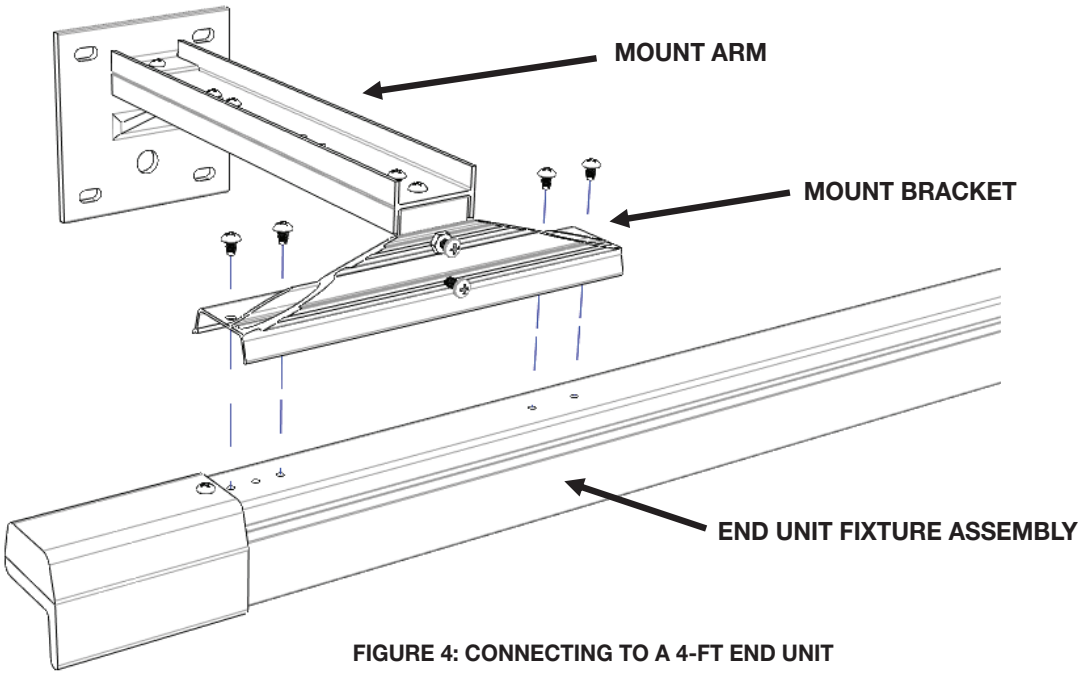

FIGURE 4: CONNECTING TO A 4-FT END UNIT

Screw	Description
Screw A	Screw, Third-Cutting Type F, M4*6
Screw B	Screw, Machine, Phillips, Pan Head, SS, 8-32 x ½
Screw C	4-40 x 3/8 Thread forming Type B, Phillips, FH
Screw D	Screw, Third-Cutting Type F, M4*6 (Figure 7)

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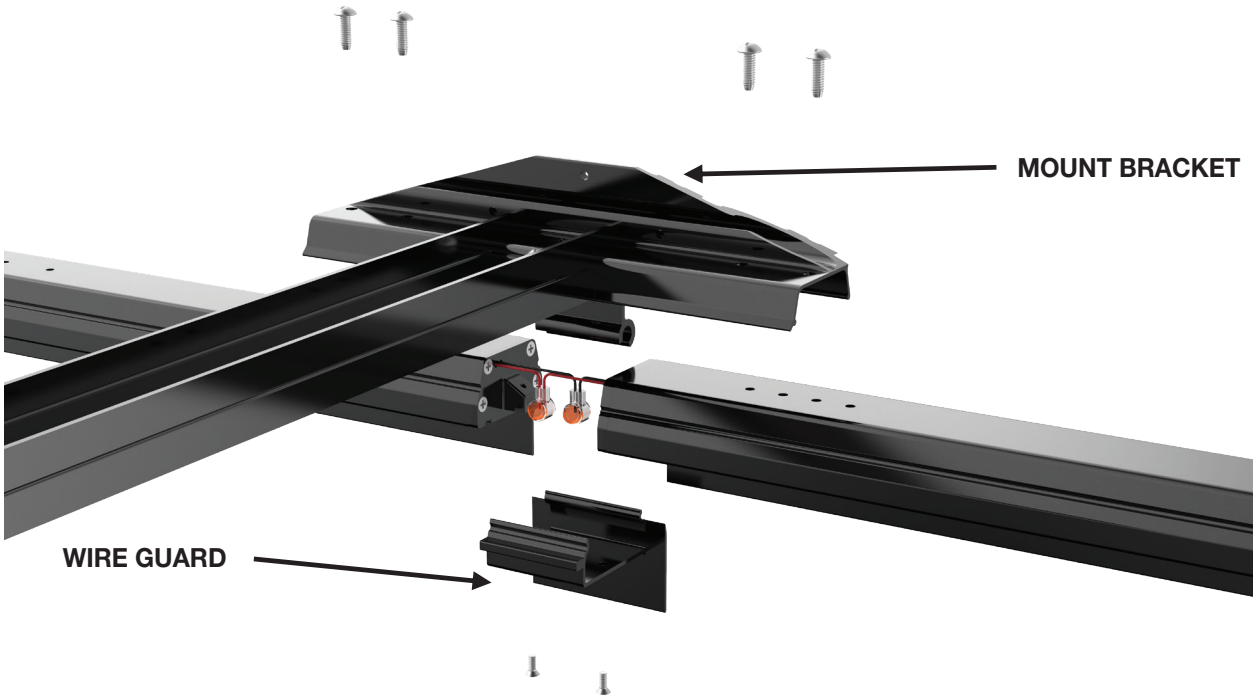

FIGURE 5: ELECTRICALLY CONNECTING ADJACENT FIXTURES

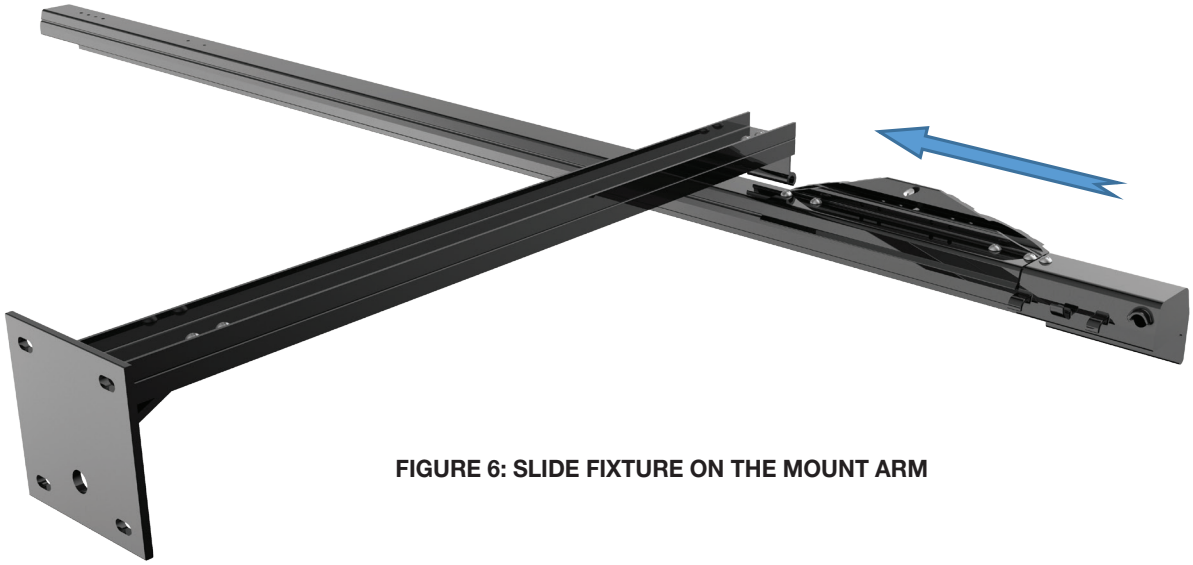

FIGURE 6: SLIDE FIXTURE ON THE MOUNT ARM

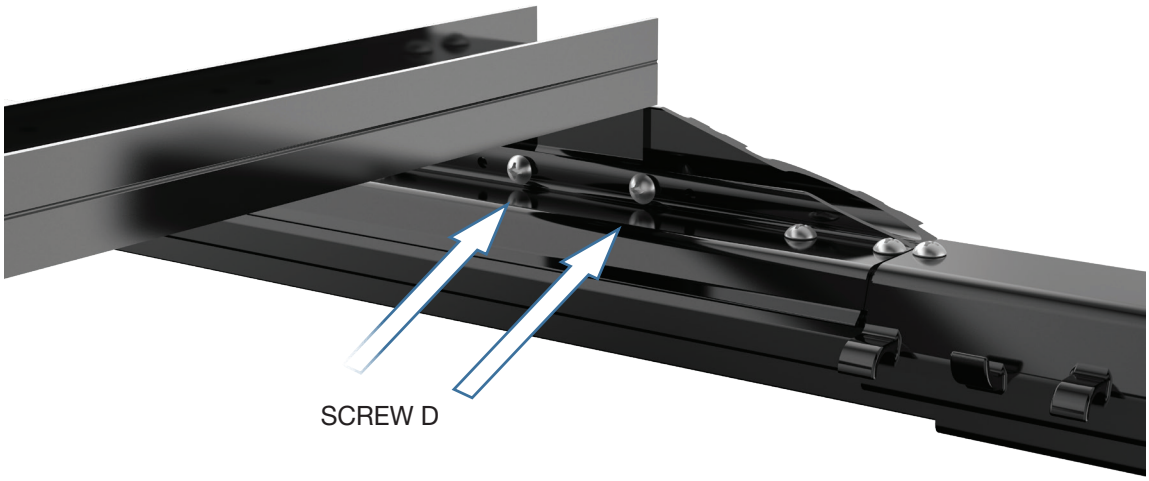

FIGURE 7: SECURE FIXTURE FROM SLIDING MOVEMENT BY TIGHTENING THE CONTAINMENT SCREWS

RUNNING POWER TO THE LUMINAIRE

1. Power is supplied to the fixture by running power cabling to the end cap(s). The number of 24VDC Class 2 power supplies and cables are determined by the fixture's power rating and total assembled length. See the section about 24VDC Class 2 power supply loading for details.
2. Remove the end cap that will host the power connection (see Figure 9).
3. Run the power cable through the hole in the end cap. Connect the red or white wire of the power cable to the red wire of the fixture. Connect the black or blue wire of the power cable to the blue wire of the fixture.
4. Replace the end cap and secure it with its screw. Route the power cable along the fixture utilizing the cable management features molded into the end cap (see Figure 10). Route the cable along the Mount Arm by securing it to the arm using P-clips or cable ties (not provided).
5. Wire the power cable to the secondary side of the 24VDC Class 2 power supply. Connect the red wire of the power supply to the red or white wire of the power cable. Connect the blue wire of the power supply to the blue or black wire of the cable.

SET THE HEAD ANGLE

1. After connecting the fixture assembly to the mount arms, some adjustment is required when using the variable angle mount arm. See Figure 8.
2. This adjustment can be done either for each section or after all sections are in place.
3. The goal is to aim the light so that the entire sign is lit. Pay particular attention to aiming the top of the light at the top of the area to be illuminated.

4. Use the adjusting screw to help set the light angle. When angle is found use the lock nut on the adjusting screw to hold it in place while tightening the set screw. Refer to Figure 8.

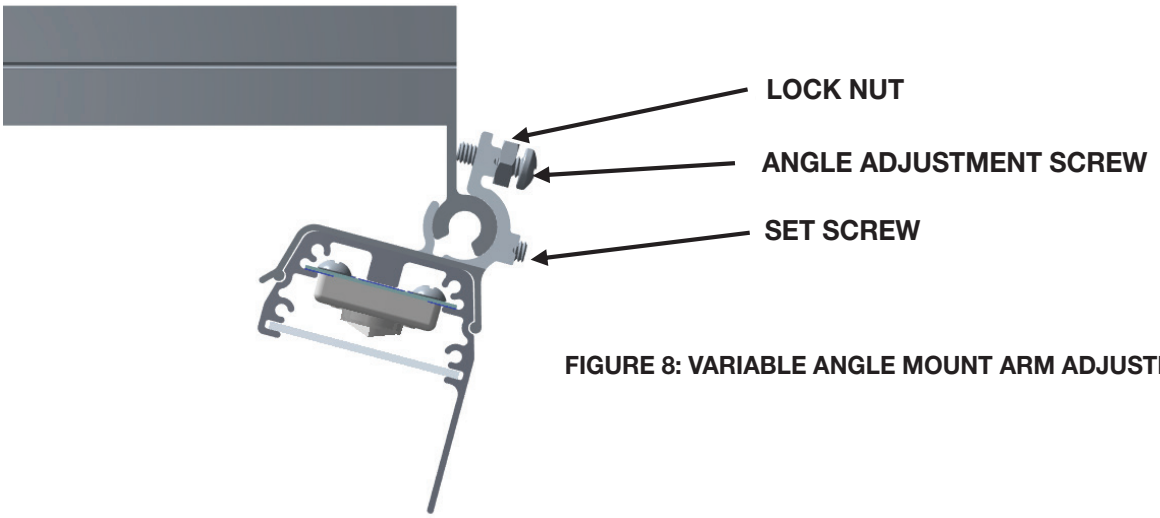

FIGURE 8: VARIABLE ANGLE MOUNT ARM ADJUSTMENT

24VDC CLASS 2 POWER SUPPLY LOADING

LinearStar is powered by the PSB-1-24-96 24VDC Class 2 Power Supply. Up to 2 power sources can be wired to a fixture assembly. The maximum power source loading is as follows:

Power Source Quantity	Fixture Type	Maximum Load
1 (Left or Right End Powered)	LinearStar LED Luminaire, 3.7W/ft	25 ft.
2 (Both Ends Powered)	LinearStar LED Luminaire, 3.7W/ft	25 + 25 ft.*

***Do not make the power connection at the midpoint of the luminaire when 2 power sources are used.*

Special Notes:

- The PSB-1-24-96 power supply is suitable for outdoor installation and does not require an enclosure. An optional enclosure may be used when the customer prefers to house the power supply and field wiring connections in a weather-resistant enclosure.
- For best performance, mount the power supply as close to the luminaire as practical. When using 18 AWG cable, a maximum recommended distance of approximately 20 feet between the power supply and luminaire should be maintained. Longer distances may require larger conductors to minimize voltage drop.

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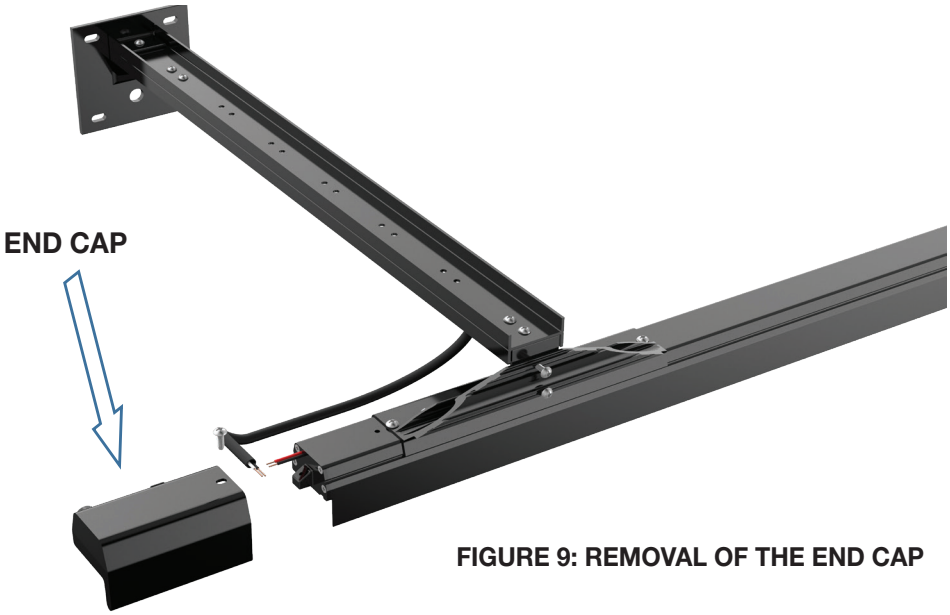


FIGURE 9: REMOVAL OF THE END CAP

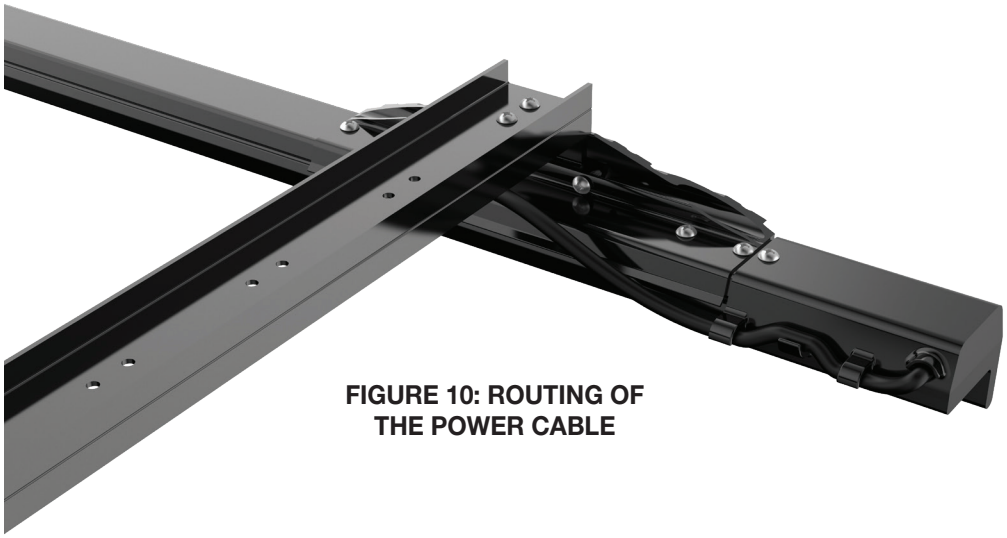
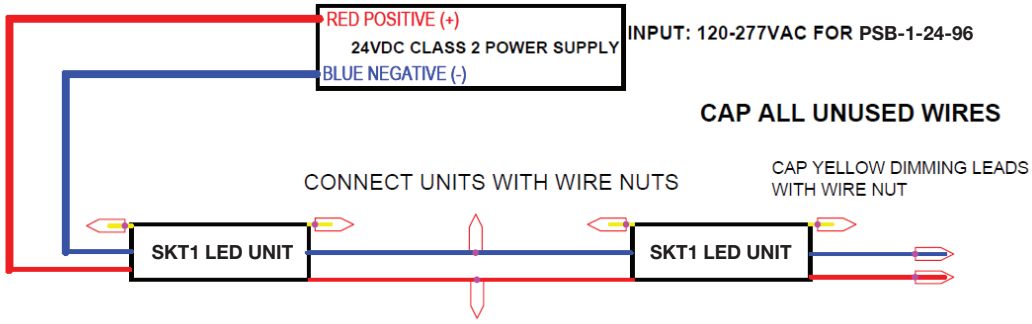


FIGURE 10: ROUTING OF THE POWER CABLE

LINEARSTAR - WIRING DIAGRAM NON-DIMMABLE



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