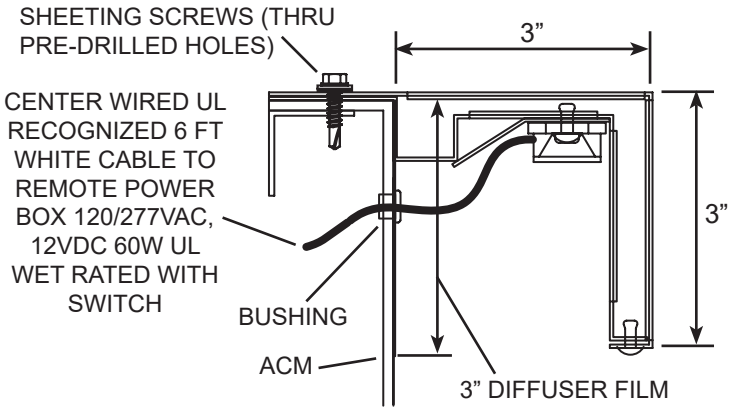


76 Crest LED Light Bar Signature Image Installation Guide

This product is designed to be installed with the 76 Crest Signature Image. Please verify that your site meets this classification and the new canopy fascia has been installed prior to beginning LED light bar installation. Contact LSI Customer Service at **1-800-231-0129** for installation support.

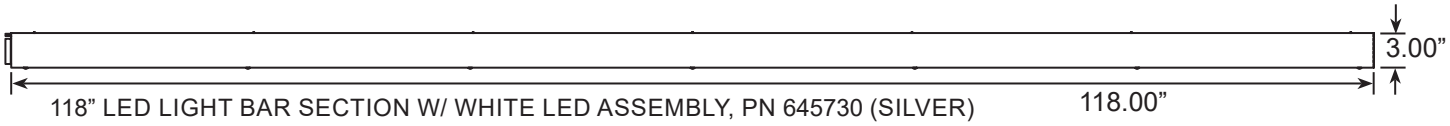
Read through all of the instructions prior to beginning installation, and verify (using the packing list) that all parts have been received and are in good condition.

The location of the disconnect switch after installation shall comply with Article 600 (A)(1) of the National Electrical Code.

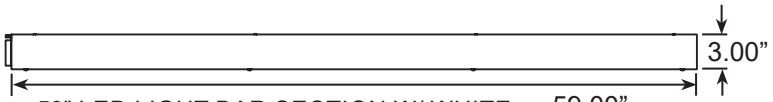
This product is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign.

Parts

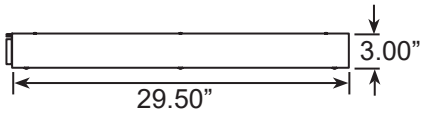
Installer to verify using packing list that all parts are received in good condition.



118” LED LIGHT BAR SECTION W/ WHITE LED ASSEMBLY, PN 645730 (SILVER)

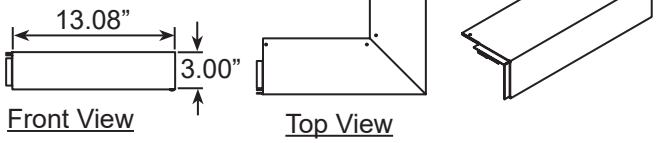


59” LED LIGHT BAR SECTION W/ WHITE LED ASSEMBLY PN 656351 (SILVER)



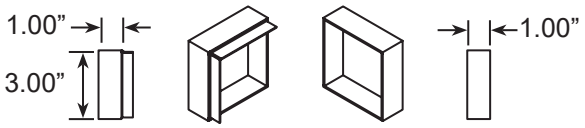
29.5” LED LIGHT BAR SECTION W/ WHITE LED ASSEMBLY, PN 674281 (SILVER)

13”X13” LED LIGHT BAR CORNER W/ WHITE LED ASSEMBLY, PN 654964 (SILVER)



Front View

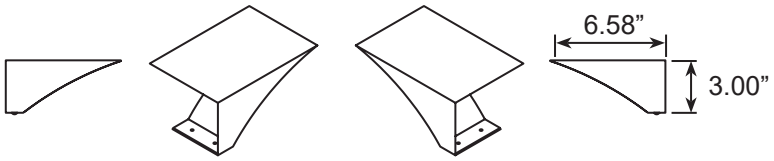
Top View

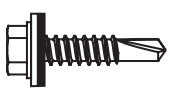


END CAPS – LEFT & RIGHT SET PN 644788 (SILVER)

5’ JUMPER CABLE PN 502548

RADIUS CAPS – LEFT & RIGHT SET PN 644790 (SILVER)





PN 771520, #12X1 SHEETING SCREW

60W POWER SUPPLY PN 640933

2X60W POWER SUPPLY PN 702039

3” 8915 MATTE FILM W/ PREMASK PN 651176

Archer™ US Patent No. 10,627,077 B2 April 21, 2020; 11,073,255 July 27, 2021.

***NOTE* BEFORE CUTTING OR INSTALLING ANY ELEMENTS, FIELD VERIFY DIMENSIONS!**

Verification is VITAL in ensuring all elements are installed properly

PLEASE REFER TO ANY NECESSARY SITE SPECIFIC LAYOUTS AND/OR RENDERINGS FOR GUIDANCE WITH CUT SECTIONS AND ELECTRICAL WIRING.

The location of the disconnect switch after installation shall comply with Article 600 (A)(1) of the National Electrical Code.

This product is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the product.

Please read the following before beginning installation

LSI Components

LSI Graphic Solutions Plus provides components for the Phillips 76 Crest canopy system. The components provided by LSI have been evaluated and tested to meet requirements. The LED systems are UL recognized and listed under UL 48 as outline lighting. These installation guidelines must be followed to keep these certain specifications, and adjusted as required to meet local codes and site conditions.

Information to know about your site

Before beginning any installation, be sure to determine with your local Phillips 76 representative that you are using the current Image Standards. Your order will be coordinated with a BIC project manager to determine the product you need to complete your site. Coordination between installer/project manager/representative is essential to the success of this program.

Structural knowledge of your site

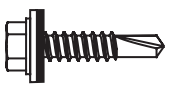
Information about your canopy is needed to be able to provide the correct components and plan a safe and structurally sound installation. The length of all sides of the canopy is important, as well as logo placement, to determine the number of sections needed and the layout of lighting elements and power sources. It is the installer's responsibility to ensure that the existing structure is sound and capable of supporting the weight of the LED light bar, as well as any additional wind load, snow load, or other potential conditions. The added weight of the logos must also be considered, and any additional bracing or structure required to support these must be added.

Component specs

The LED system requires 5.91W/ft. of power. One 60W power supply or half of a 2X60W power supply is required to run one 118" section of LED light bar. Electrical service must be provided for these in 120VAC 60hz, roughly every 10ft. or 20ft. on a canopy run, depending on the layout. Other voltage and frequency power supplies are available as an option. The 60W power source draws 1.1A, so a typical canopy of up to 150 illuminated ft. of LED lighting can be run from a single 20A circuit, not including logo signs or deck lighting.

This sign is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign.

Use PN 771520 - SCR TEK HWH #12X1 SHEETING, STL ZINC W/ WSHR to fasten the Light Bar to the top of the ACM panel on canopy. **DRIVE THE SHEETING SCREWS THRU THE PRE-PUNCHED HOLES IN THE LIGHT BAR** and thru the ACM panel into the top mounting angle. The sheeting screws will provide more strength to hold the ACM panels to the canopy in high wind than K-lathe screws.



PN 771520, #12X1 SHEETING SCREW

Before beginning installation

Identify the sides of the canopy that will receive LED light bar BEFORE BEGINNING INSTALLATION. Refer to renderings/ layouts provided by BIC for specifications.

Be sure that matte diffuser film has been applied to all sides receiving LED light bar. All matte film is to be applied on site by the installer. DO NOT PROCEED WITH LED LIGHT BAR UNTIL MATTE FILM HAS BEEN APPLIED.

There are offsets on the left hand side of each section/corner. These offsets will fit into the next section, securing them together without gaps.

The LED light bar sections must be installed tight and flush against the fascia, with as little of a gap as possible between the reflector and the ACM. Failure to do so will cause improper illumination of the canopy.

If a canopy has four sides of illumination, four corners will need to be installed.

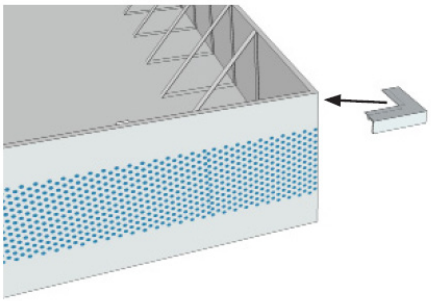
If a canopy only has three sides of illumination, end caps will be installed to terminate the LED light bar run at the edge of the canopy.

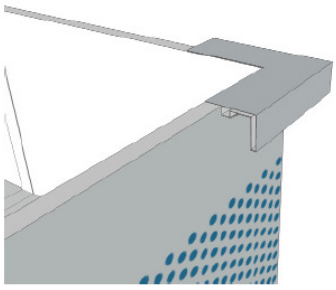
There will NEVER be less than three sides of LED light bar on a gas canopy. If a rendering/layout calls out less than three, verify!

I**f matte film has not been applied yet, apply the 8915 matte film to the top of all sides of canopy getting LED light bar.** Follow all 3M vinyl application guidelines to ensure the matte film is installed properly.

Installing Light Bar Corner

1. Install the corner sections FIRST. Drill a 5/8” diameter hole 1-1/2” from the top of the ACM panel for each of the power cables (make sure that the hole lines up with the respective cable so that the bushing will not have issues when placed in the ACM – DO NOT drill so that the cable will be stretched too tightly and cause potential current/future issues).





Ensure that the corner is flush and tight against the ACM before securing in place with the provided hardware. **The hood and reflector edges should be EVEN, and the screw should run through the pilot hole in the HOOD.** Run the cable through the drilled hole and secure the bushing in place in the ACM fascia.

Installing Light Bar

(FOR PLACEMENT OF LOGO, REFER TO 76 CREST ACM FASCIA INSTALLATION GUIDE.)

2a. A LOGO requires interruption of the light bar, and a section of LED light bar will need to be cut to fit between the radius cap and the corner/end cap. A 29.5” or 59” section will be sent to cut down. The length of the section depends on the placement of the logo. See following diagrams for cutting/spacing.

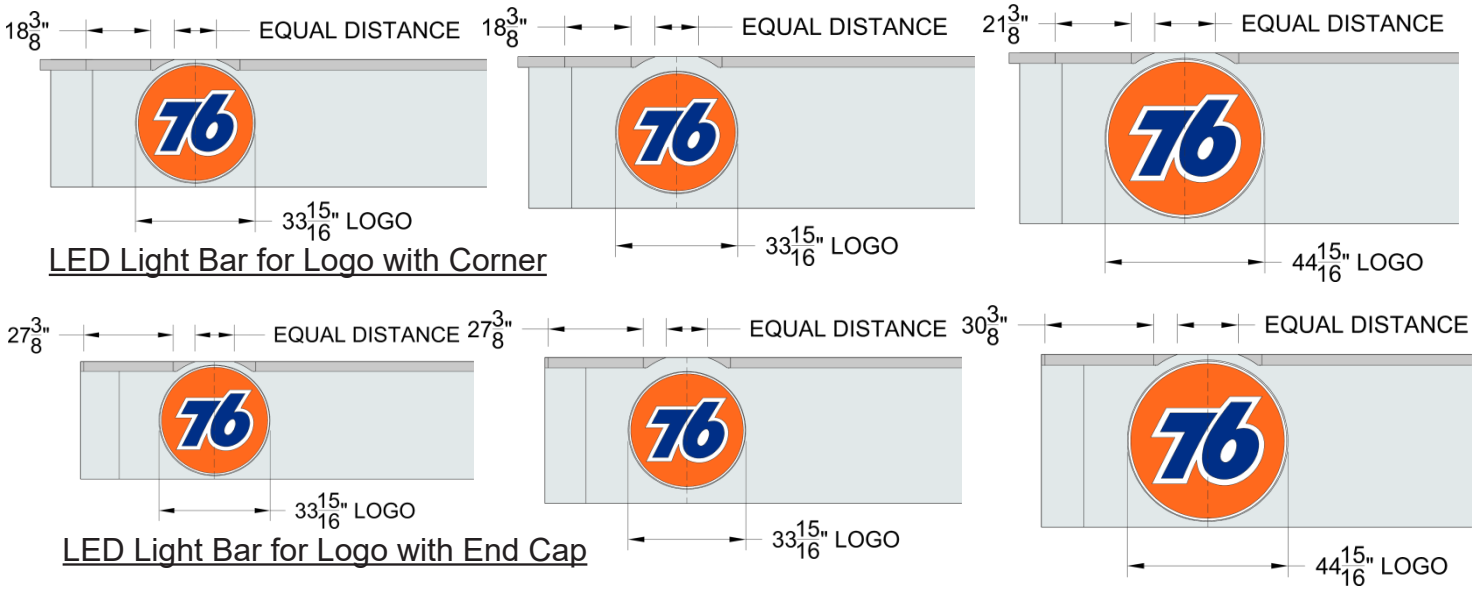


FIGURE A - Cutting 29.5”/59” section and spacing of radius caps

DO NOT CUT THROUGH THE LED MODULES! It may be necessary to remove or relocate an LED if the cut falls in that area.

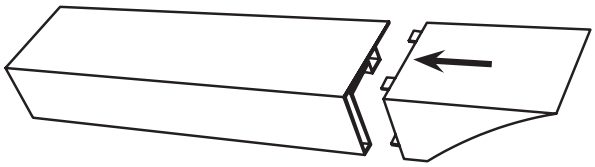
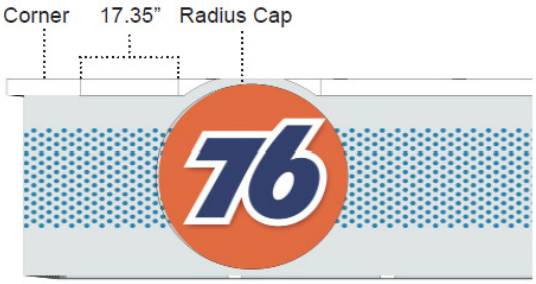


FIGURE B - Attach the radius caps to the LED light bar with provided screws BEFORE attaching to the canopy as shown (left).

Install the LED light bar sections with radius caps around the logo using the guidelines in Figure A for spacing. Be sure the ends of the logo are off-set from edge of light bar sections as shown. Follow the same process as above, drilling a 5/8” diameter hole 1-1/2” from the top of the ACM panel for each section.

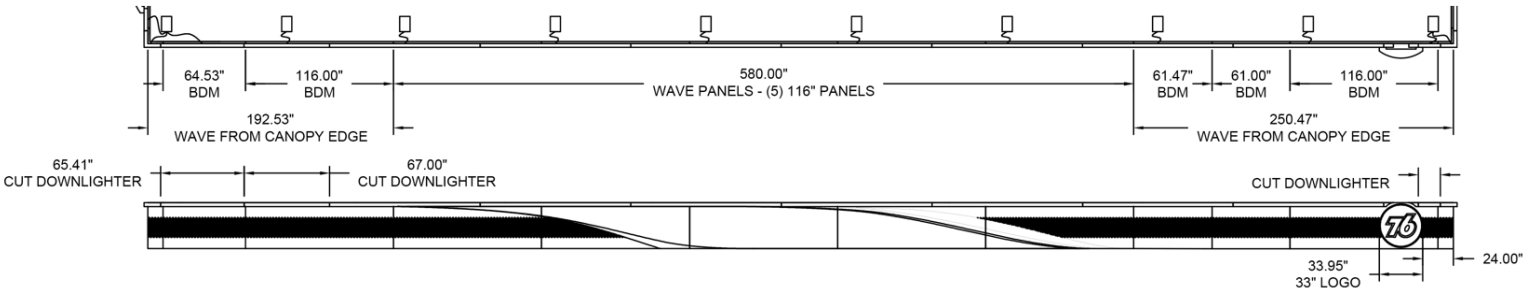


Begin installing 118” sections. Follow the same process as above, drilling a 5/8” diameter hole 1-1/2” from the top of the ACM panel for each section. The hood and reflector edges should be EVEN, and the screw should run through the pilot hole in the HOOD. When approaching the end of a canopy side, pay close attention to make sure that the remaining cut LED light bar section will not be less than 24”. If it appears that the last section would be less than 24”, two cut sections will be necessary (or a 29.5”/59” section if provided and a cut 118” section).

Installing LED Light Bar

2b. For a side WITHOUT a logo – begin installing 118” sections. If on a side where the LED light bar will terminate with an end cap, try to have any cut sections at the end cap end.

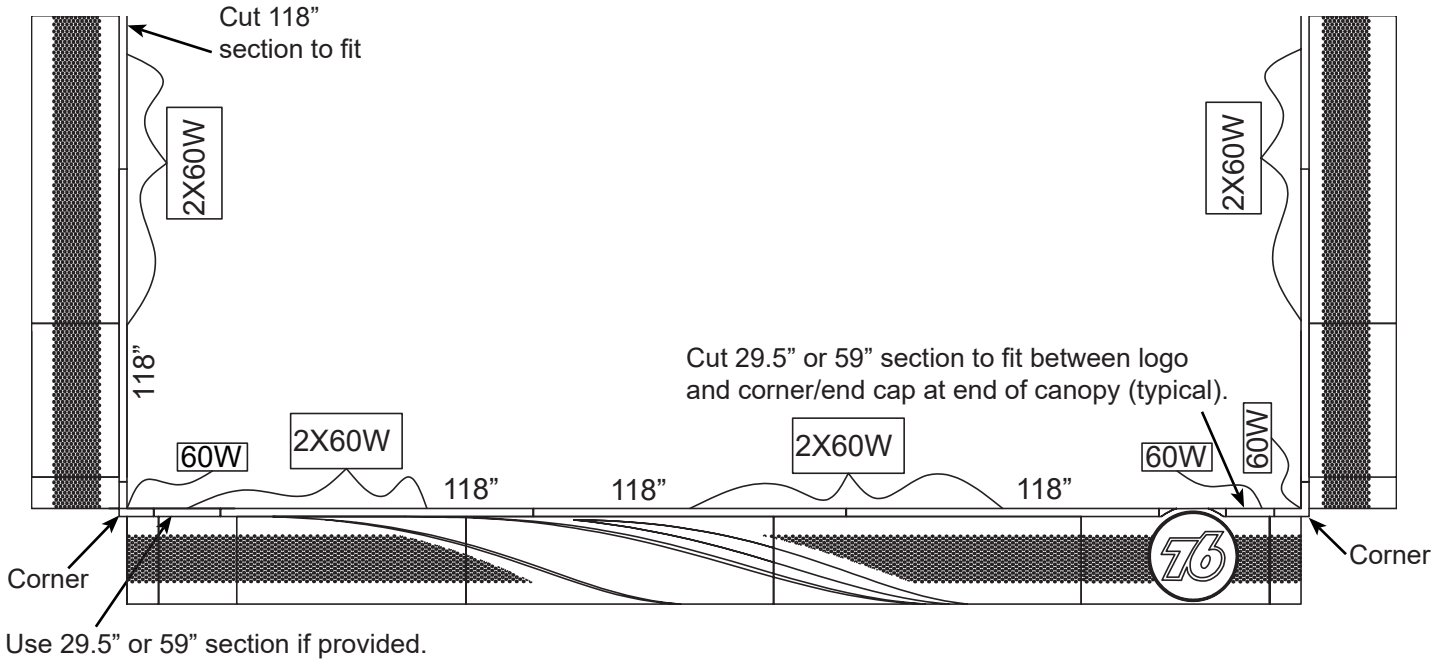
Follow the same process as above, drilling a 5/8” diameter hole 1-1/2” from the top of the ACM panel for each section. The hood and reflector edges should be EVEN, and the screw should run through the pilot hole in the HOOD. When approaching the end of a canopy side, pay close attention to make sure that the remaining cut LED light bar section will not be less than 24”. If it appears that the last section would be less than 24”, two cut sections will be necessary (or a 29.5”/59” section if provided and a cut 118” section).



3. Measure and cut the necessary length piece(s) to fill the remaining space. DO NOT CUT THROUGH THE LED MODULES! It may be necessary to remove or relocate an LED if the cut falls in that area.

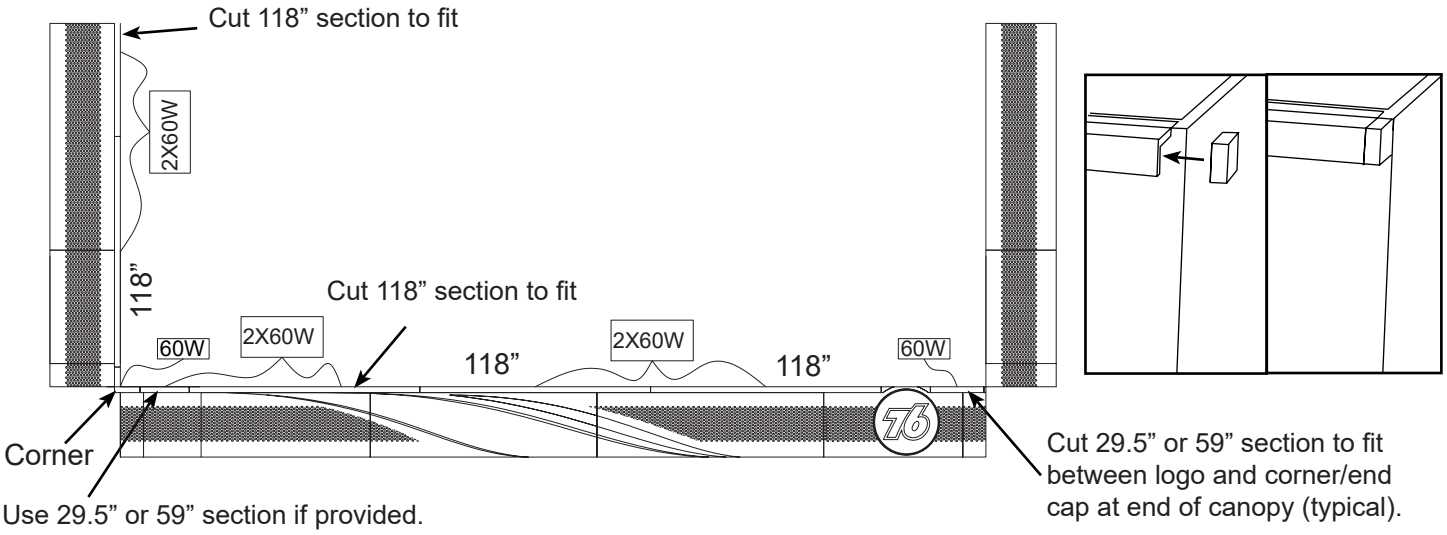
In some cases, a 29.5” or 59” LED light bar section may be sent to fill the remaining space, which has its own dedicated wire coming from the end of the assembly. It is also possible that a side will need a 29.5” or 59” section AND an additional cut section. Use the 29.5” or 59” section at the end and cut the adjacent 118” section to fit.

Be mindful of where the offset is needed on each section – always cut so that the offset is on the usable piece. Close off any wires that need to be cut with a dab of silicone to prevent water from entering the wiring.



Installing LED Light Bar

4. If an LED light bar run ends against an unlit side, end caps (left and right) will need to be installed. The end caps must be installed flush with the edge of the canopy. When cutting an LED light bar section, keep in mind that it must end 1” before the edge of the canopy for the end cap to fit.



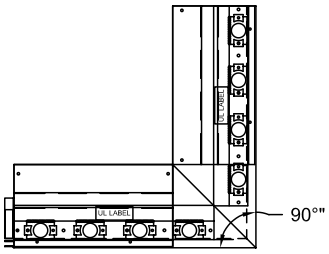
5. Apply paintable caulk/silicone to any gaps in the corner sections. Be sure to check and make sure there are no light leaks between any of the LED light bar sections, and that all sections have been installed flush and tight against the canopy surface.

Obtuse/Acute angles

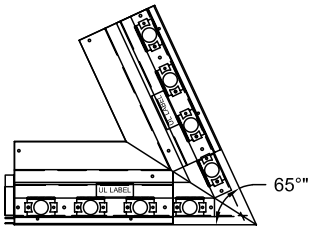
For sites with non-90° angles, field modifications will be needed to make the LED light bar system work.

Acute angles - The inner portion of the corner section will need to be cut down to accommodate a tighter angle, to be no less than a 65°. Be sure not to cut the LEDs!

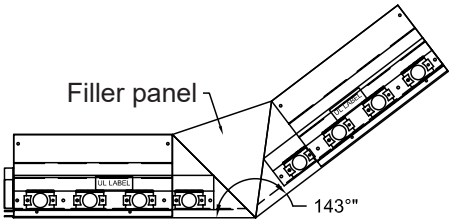
Obtuse angles – The corner section can be opened up wider to accommodate a wider angle, and a filler panel will need to be fabricated in the field to fit over the created gap between the sides.



STANDARD CORNER



ACUTE CORNER



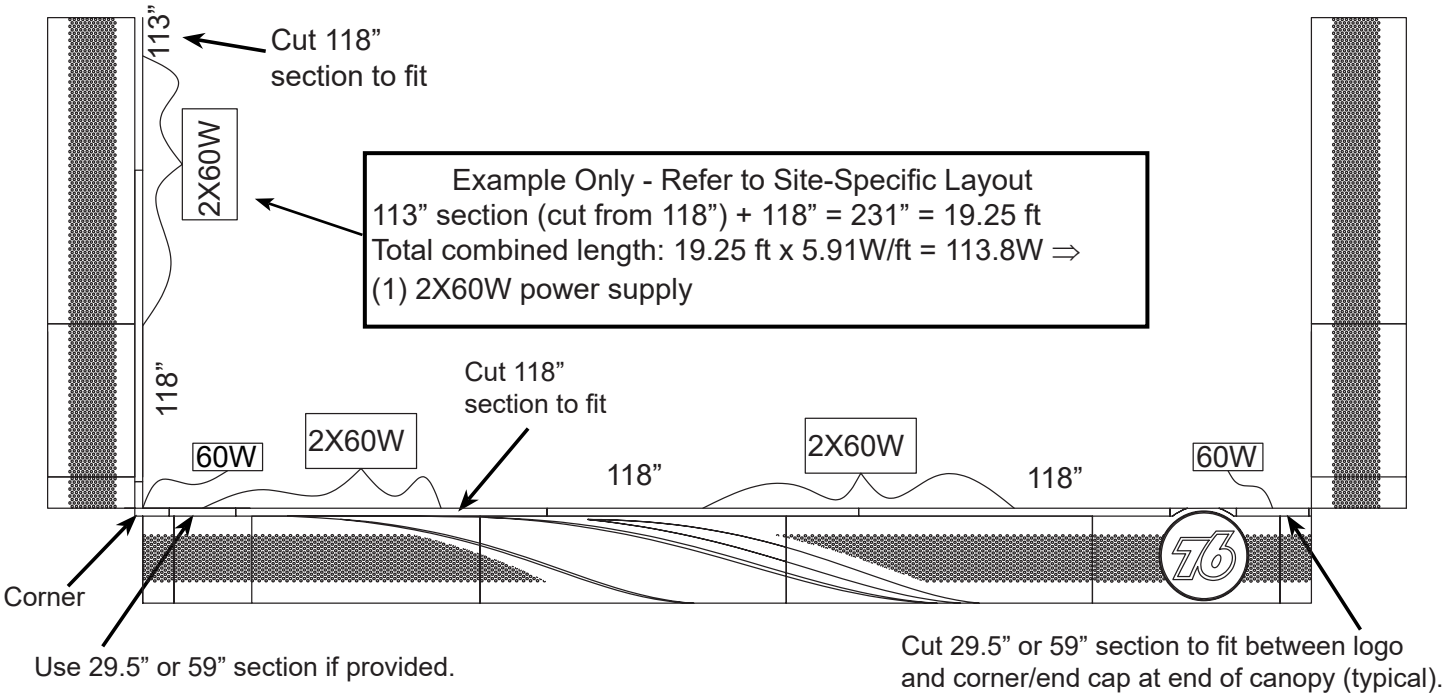
OBTUSE CORNER

NOTE: ELECTRICIAN NEEDS THIS PAGE FOR WIRING.

LED Specifications:
1.32W/module, 5.91W/ft, 83Lm/W
118” LED light bar – 44 LEDs per section = 58.08W
59” LED light bar – 22 LEDs per section = 29.04W
29.5” LED light bar – 11 LEDs per section = 14.52W
13”x13” corner – 4 LEDs per section (x2) = 10.56W

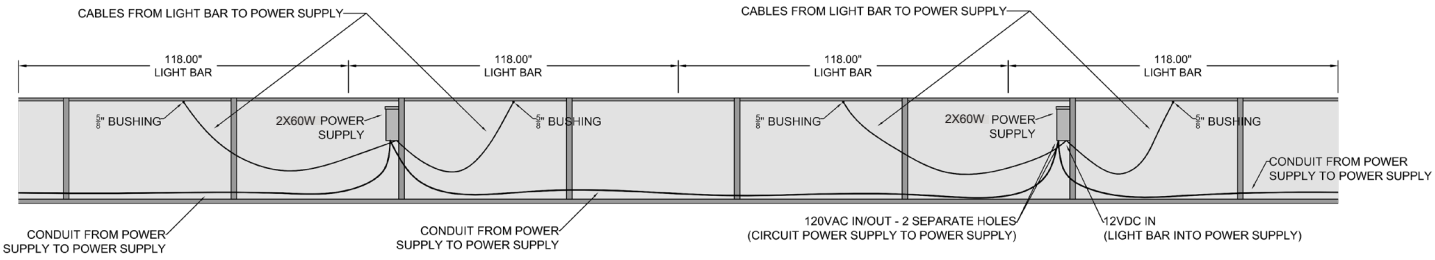
Power Supply Specifications:
60W power supply – 100-277VAC / 12VDC, 1.1A-0.45A
2X60W power supply – 100-277VAC / 12VDC, 2.2A-0.90A

Each 118” LED light bar section requires one 60W power supply (or half of a 2X60W box).
Cut sections/corners can be combined onto one 60W power supply however, a 60W power supply is provided with each corner section. If combining sections/corner, then get as close as possible to maximizing the power supply potential for optimum efficiency; running 105” of LED light bar on a 60W power supply will be better than running 20” of LED light bar on a 60W power supply. **DO NOT EXCEED THE MAXIMUM WATTS!**



Refer to site specific layouts/renderings for guidance with cut sections and electrical wiring.

Failure to follow these guidelines can blow out the power supply and cause damage to the LEDs.



For a 2X60W power supply, the box must be installed as centered as possible between the two light bar sections.

NOTE: ELECTRICIAN NEEDS THIS PAGE FOR WIRING.

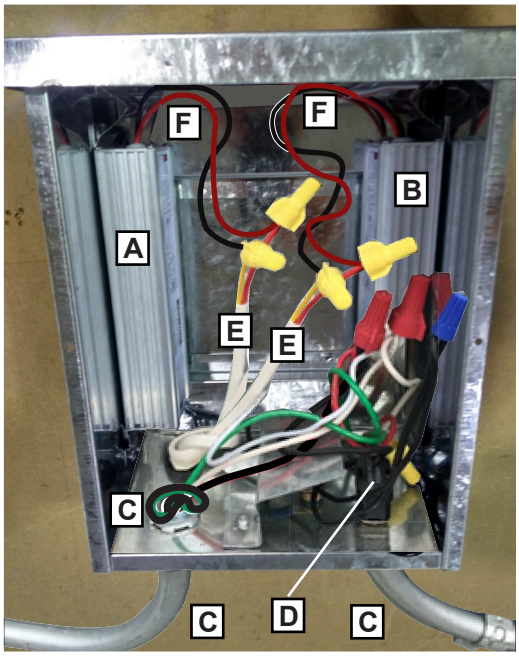
Circuit Specifications:
The power supply is multi-volt – nominally 120VAC.
120VAC, 20A circuit = 16A (80%) = (14) 60W pwr supplies or (7) 2X60W pwr supplies (15.4A) at 1.1A each
240VAC, 30A circuit = 24A (80%) = (43) 60W pwr supplies or (21) 2X60W pwr supplies (23.4A) at 5.5A ea
NOTE The above number of power supplies are applicable ONLY to a circuit with nothing else on it – please recalculate for any additional elements connected to the circuit (i.e. logos).

Acceptable conduit – rigid (EMT) and flexible weatherproof (Sealtite); do not use romex.
In some areas, a cable rated for exterior exposure can be used – check local codes for further information.

(7) 2X60W power supplies at 20 ft apart = 140 ft. If greater than 140 ft run, wire heavier than 14 gauge is needed. If 10 ft cable from light bar is not enough, spliced cable must accommodate voltage drop and be weatherproof with weatherproof wire nuts.

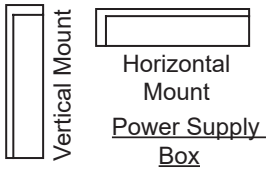
Wiring and Power Supply Box Installation

-Licensed electrician must connect all wiring. Use wire nuts to connect all twisted ends of wires. Follow the National Electrical Code and all state and local codes.
-There MUST be a drip loop in all wires going to the power supply box and wires going to LEDs.
-Bushing(s) MUST be installed at every point a wire runs through metal (e.g., flashing). This is required by UL. If the wire runs through multiple layers, a pass through non-metallic pipe (i.e., PVC) can be used.
-All wire connections must be made INSIDE the power supply box.
-Tie strain relief knot inside box in VAC wires and in VDC cables going out to LED modules to prevent them from pulling out of box.
-External (source) VAC wires: black is line, white is neutral, green is ground.
-Secure the cover to the power supply box once all wiring is completed – DO NOT LEAVE THE COVER OFF!
-Test and make sure all switches are on for each box once connected to circuits. Any switch left in the off position will prevent the LED modules from lighting.
-Light bars and signs should not be placed on the same circuits as building lighting – light bar is classified as UL48 Outline Lighting for Signage, and per UL classifications, outline lighting and signs should be on a separate circuit from lighting.
-Signs can be connected into the same circuit as light bars if they do not exceed the allowed amperage.
-Be sure that the roof deck is clean of all wiring – secure any excess wire in a neat roll/bundle so it does not hang/lay on the roof deck. Wires coming from DNLT/ power supply boxes must be fastened to wall or solid structure using fasteners/ cable ties and not be hanging loose.



A - 60W power supply
B - 60W power supply (optional)
C - VAC power
D - Switch (leave on)
E - LED power cord
F - 12 VDC power out

Make connections inside box using wire nuts. TO PREVENT CORROSION/SHORTING, WIRES MUST BE FREE OF WATER BEFORE MAKING CONNECTIONS. DRY WITH HOT AIR BEFORE CONNECTING IF NECESSARY.



06/05/2017 – Date created
06/27/2017 – Added notes for hood/reflector alignment & caulk/silicone.
10/17/2017 – Guide changed to reflect LED light bar Obtuse/Acute angles.
12/21/2018 - Added verbiage for UL compliance.
3/07/2019 - Added Electrical Addendum.
2/27/2020 - Converted MS Word format to In-Design. Updated example layouts to show 2X60W power supplies, and not show as many sections/corners wired to a single power supply. Added 29.5" LED light bar to Part List (p. 3). On p. 7, Section 2 (**Begin installing LED light bar sections**...), changed "If it appears that the last section would be less than 24", two cut sections will be necessary", to "If it appears that the last section would be less than 24, two cut sections will be necessary (or a 29.5"/59" section if provided and a cut 118" section)". On p. 7, Section 3 (**Measure & cut the**...), removed "Be mindful that some "drop" from a cut section may be used for a different side." Updated example layout (plan view) diagrams.
3/9/2020 - Changed K-lathe screw from #10 to #8 on p. 5.
9/8/2021 - Added updated instructions (yellow box) to use PN 771520, #12X1 sheeting screws to fasten Light Bar (for more strength in high wind).
6/25/2024 - Compressed length of document. Removed mention of K-lathe screws, because with use only sheeting screws.