

**NEW 24V  
SYSTEM  
- PLEASE  
READ  
PRIOR TO  
INSTALLING.**





## Conoco Apex 24V DC LED Archer™ Light Bar Signature Image Installation Guide

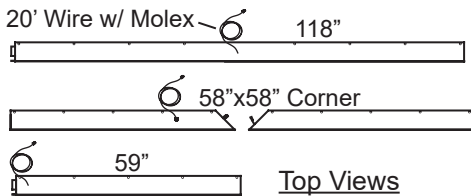
Please review site plans before proceeding. Contact LSI Customer Service at 1-800-231-0129 for installation support.

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 product.

### Parts

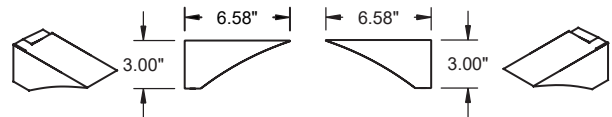


Left Endcap



Right Endcap

L/R set PN 774172



END CAP SET LH & RH CURVES SVR  
LOGO GEN 6 DNLT PN 839182

#### 118" DNLT

- 1 pack: PN 839177
- 3 pack: PN 839179
- 5 pack: PN 839178

#### 59" DNLT

- 1 pack: PN 839180

#### 58" x 58" Corner DNLT

- 1 pack: PN 839181

#### Every 118"/59" DNLT and 58" x 58" Corner includes:

- (1) 20' cable with Molex connectors and (1) Strain relief

#### Roll of 3M 8915 clear ultra-

#### matte overlaminate diffuser film

- 3" x 118" PN 645719
- 3" x 60" PN 672200

PN 771520, #12X1  
SHEETING SCREW  
(PROVIDED WITH  
ACM PANELS)



#### Power supply

- 2x96W (two power supplies in one box, with four Molex): PN 804989
- 96W (one power supply in box, with two Molex): PN 810979

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



## Please read the following before beginning installation

### LSI Components

LSI Graphic Solutions Plus provides components for the Conoco Apex 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 Conoco 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

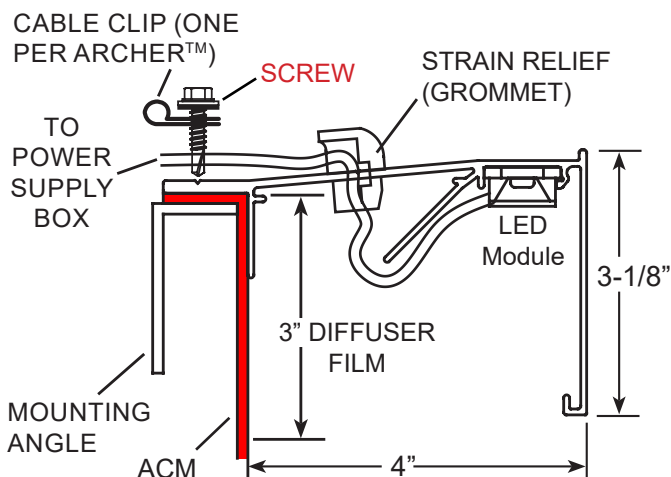
Information about your canopy is needed to be able to provide the correct components and plan a safe and structurally sound installation. The length of all sides of the canopy is important, as well as logo placement, to determine the number of sections needed and the layout of lighting elements and power 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 4.47W/ft. of power. One 96W power supply or half of a 2X96W power supply is required to run two 118" sections of LED light bar. Electrical service must be provided for these in 120VAC 96hz, roughly every 20ft. or 40ft. on a canopy run, depending on the layout. Other voltage and frequency power supplies are available as an option. The 96W power source draws 1.1A, so a typical canopy of up to 280 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 product.

## Installation

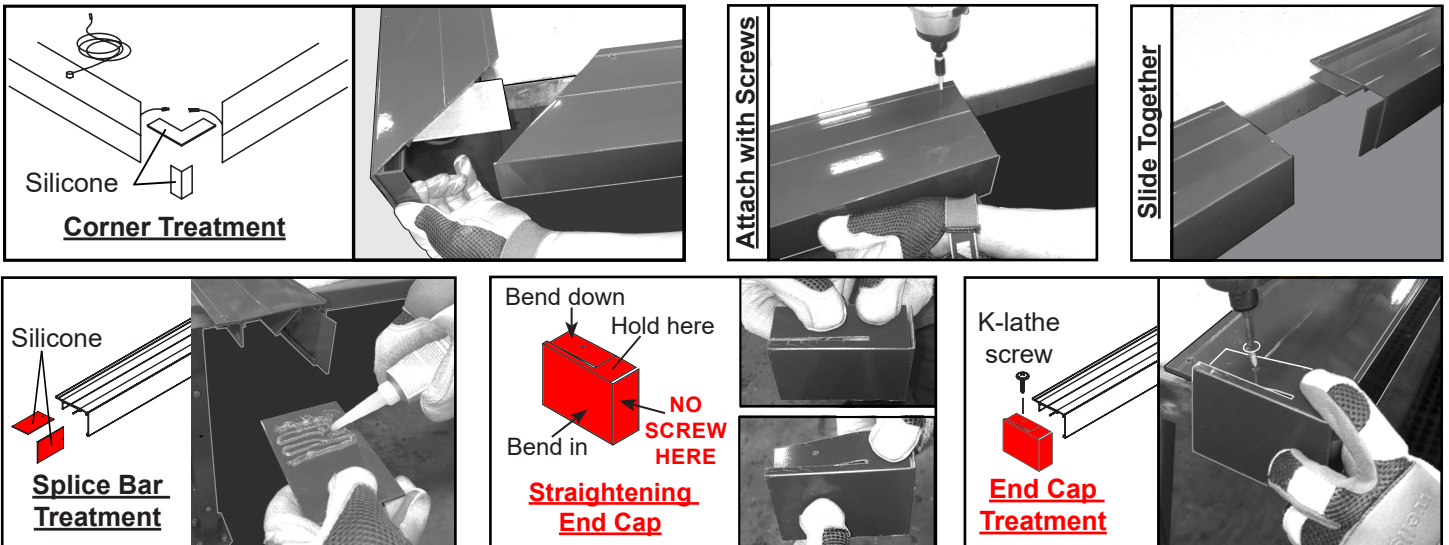


1. Unbox parts and verify using packing list that all parts have been received and are in good condition.
2. Apply Ultra-matte diffuser film to top 3" of canopy fascia before attaching downlight (DNLT), unless film is already applied to ACM fascia. Slice film at gap between fascia panels and press edges of film into seam.
3. Mount DNLT flush, square and level on canopy using hex sheeting screw in each pre-drilled hole. Butt DNLT sections tightly together with no gap between them.
4. Run all LED power cords over top of canopy.
5. Mount power supply boxes behind ACM on canopy, and make electrical connections inside boxes.

**VERIFY CANOPY DIMENSIONS BEFORE STARTING, BECAUSE SITE SURVEY COULD BE INACCURATE.**



## Installation



- Make sure there are no light leaks between any DNLT sections and all sections are flush/tight against canopy surface.
- DNLT corners can be field cut (FC), but not at the miter. Splice bars must be placed at left end of one corner section.

Remove top and front splice from light bar for left end cap.



## Removing/Inserting Between Sections



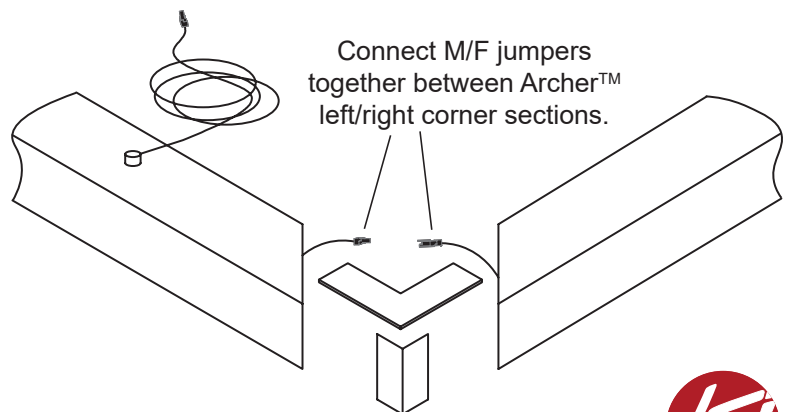
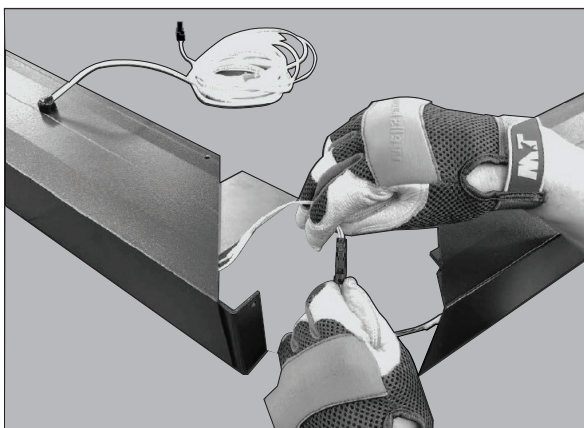
Archer™ units can be removed as shown above to allow neighboring units to be removed or inserted if needed (splices prevent pulling straight out).

## Snapping Molex Together



Snap M/F Molex together. Make sure Molex are completely together, and joint is tight to seal out moisture.

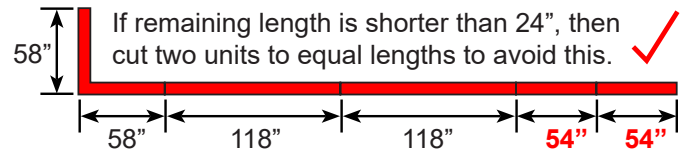
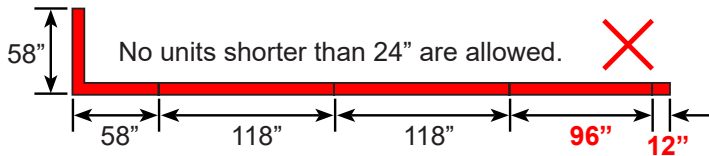
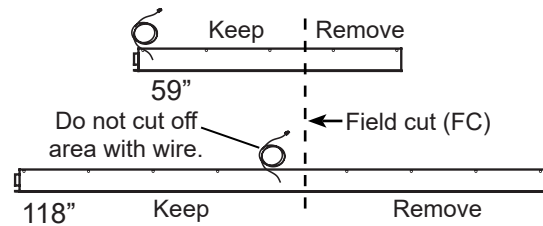
## Snapping Corner Jumper Wire Molex Together



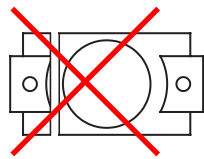


## How to Field Cut Archer™

**DO NOT CUT THROUGH LED MODULES.** It may be necessary to remove or move an LED if a cut falls in that area. If an LED module is cut, then cut wires to damaged module, and seal all wires with silicone to prevent electrical short, moisture, corrosion. **DO NOT CUT OFF SPLICE END OF ARCHER™ OR AREA WITH WIRE.**



### Removing LED Modules for Field Cutting DNLT (if required)



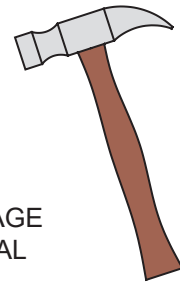
**DO NOT CUT THROUGH LED MODULE!**



If necessary for field cutting (FC) DNLT, remove last one or two LED modules and cut it off or move slightly. Glue module back on with silicone (do not get silicone on LED lens).

Screwdriver or chisel

**DO NOT DAMAGE BASE MATERIAL**



## 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 splices on the left hand side of each section/corner. These splices 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 flange 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!

**If 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.

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. The sheeting screws will be driven thru the pre-punched holes into the Light Bar and ACM panel to the top mounting angle. The sheeting screws will provide more strength to hold the ACM panels to the canopy in high wind than the K-lathe screws.

PN 771520, #12X1 SHEETING SCREW



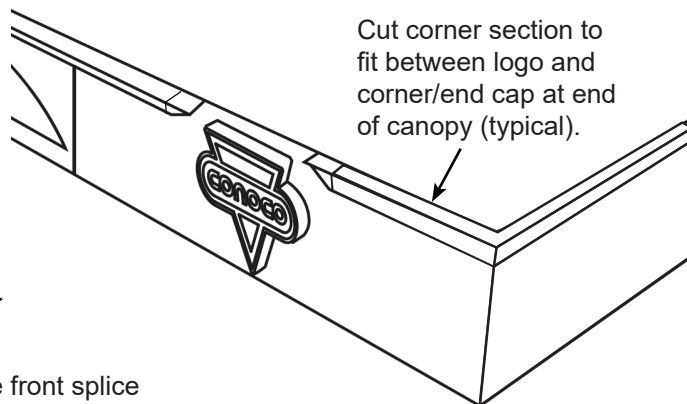
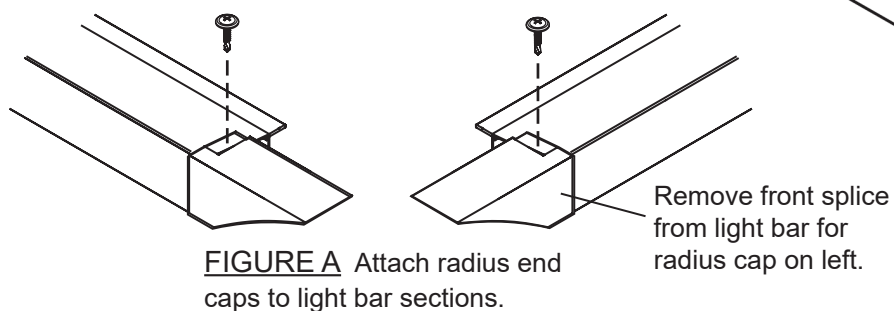
## Installing LED Light Bar

**1. Install the corner sections FIRST.** Ensure that the corner is flush and tight against the ACM before securing in place with screws.

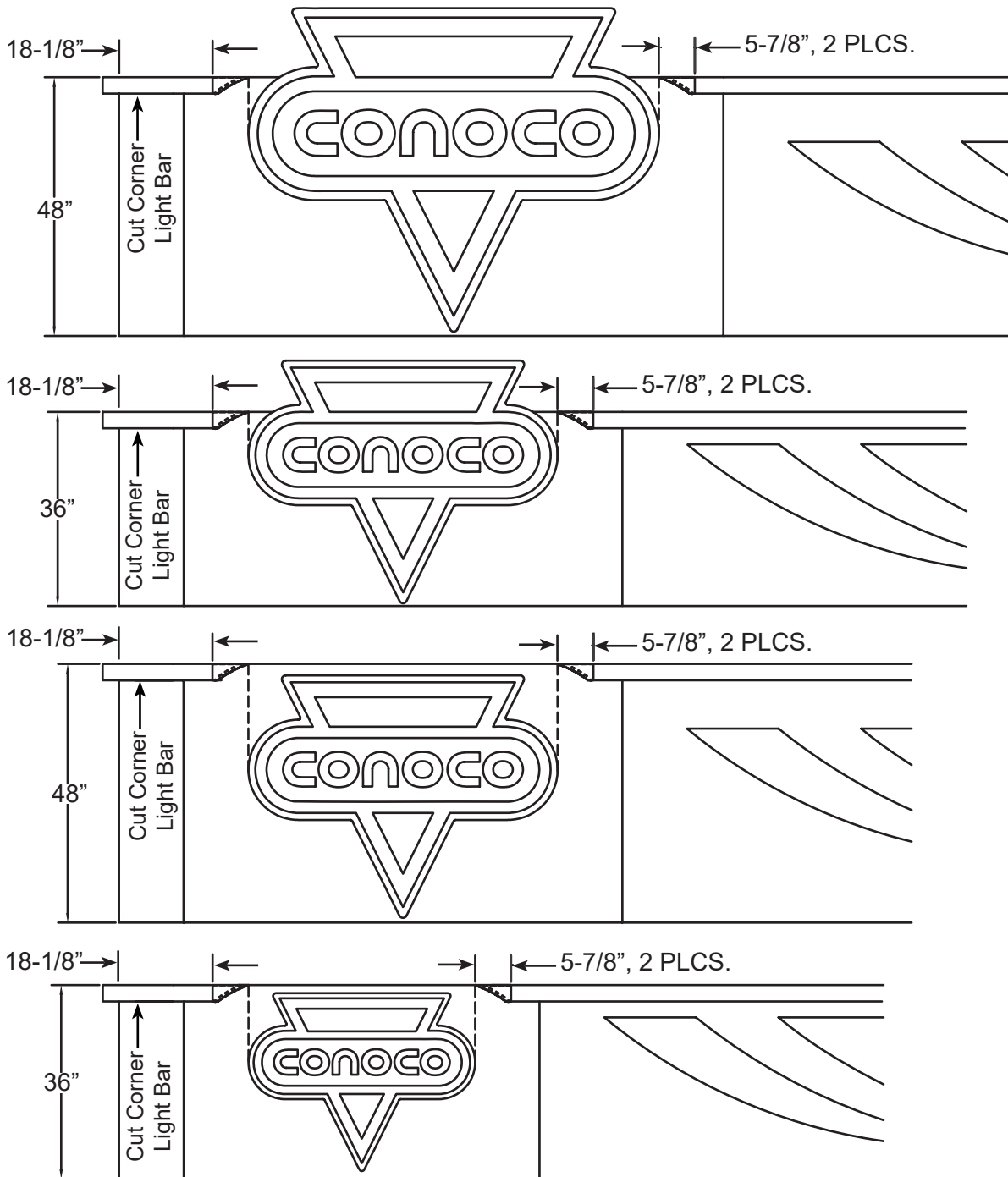
**The light bar over all logos must be interrupted**, and the 58x58 corner must be cut to end the radius end cap directly above the edge of the Conoco Apex logo. The length of the section is shown in Figure B (for placement of logo, see site-specific layout and Conoco brand book). See Figure B for placement of radius caps.

Install the LED light bar sections with radius caps around the logo using the guidelines in Figure B for spacing. Be sure the ends of the logo are offset from edge of light bar sections as shown.

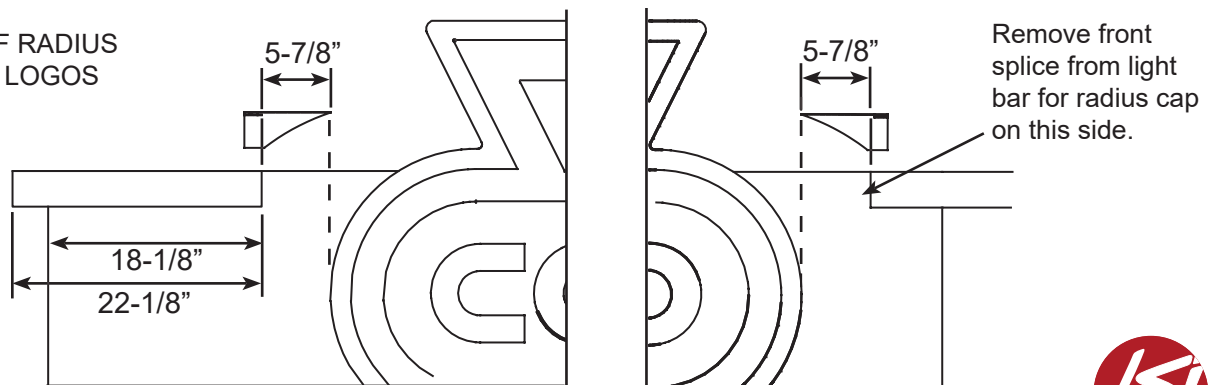
Attach the radius caps to the LED light bar with provided K-lathe screws as shown in Figure A.



## Installing LED Light Bar



**FIGURE B**  
PLACEMENT OF RADIUS  
CAPS AROUND LOGOS



## Installing LED Light Bar

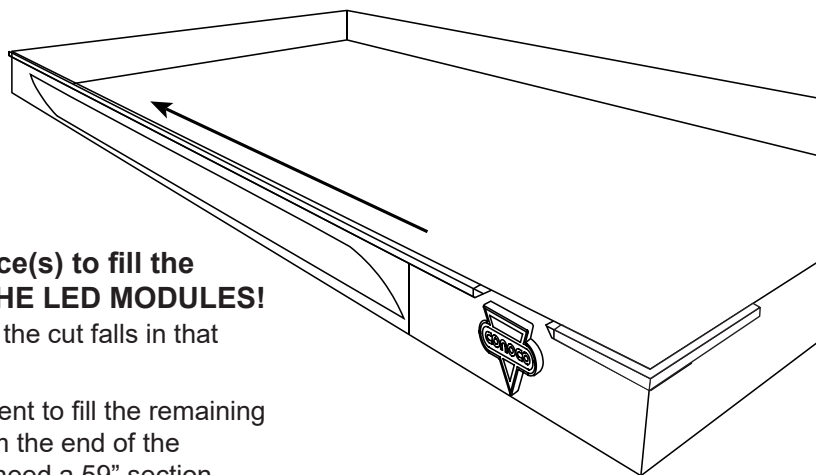
**2. Begin installing 118" sections.** When approaching the end of a canopy side, pay close attention to make sure that the remaining cut LED light bar section will not be less than 24". If it appears that the last section would be less than 24", two cut sections will be necessary (or a 59" section if 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!**

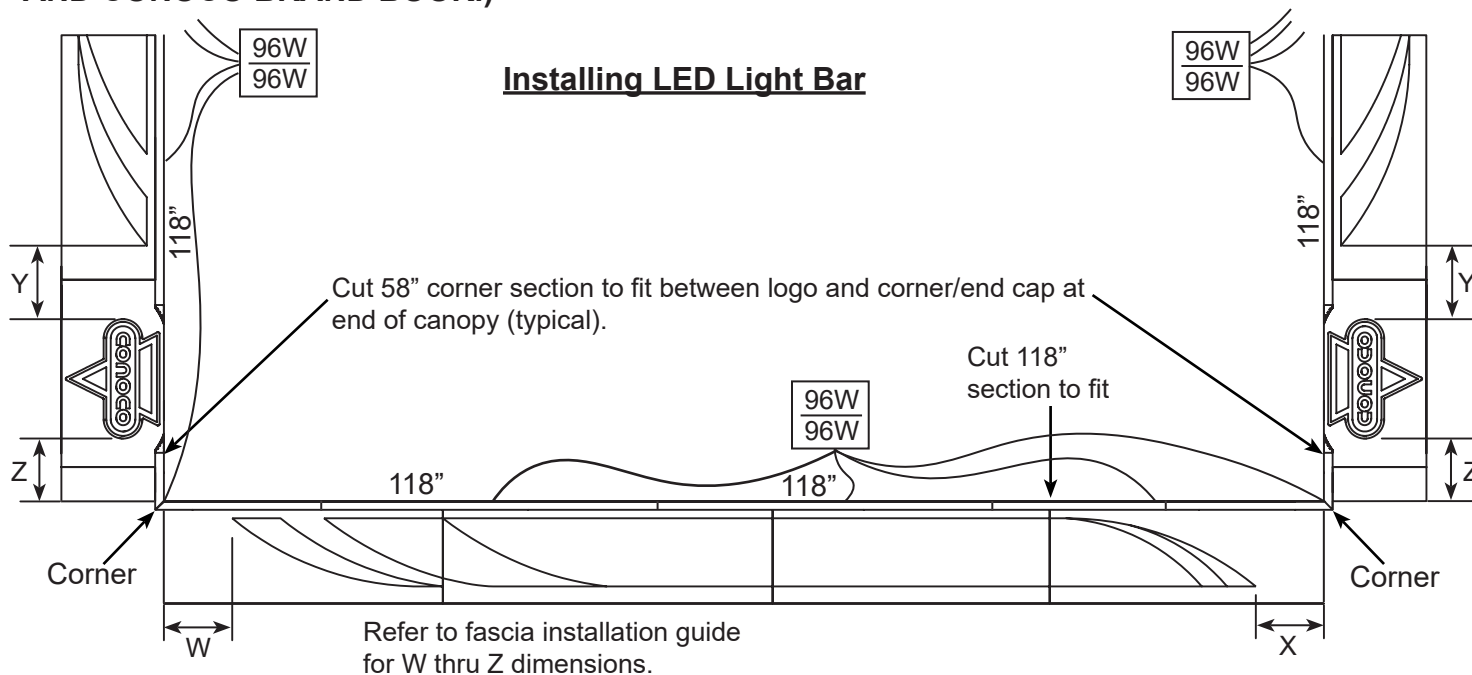
It may be necessary to remove or relocate an LED if the cut falls in that area.

In some cases, a 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 canopy side will need a 59" section AND an additional cut section. Use the 59" section at the end and cut the adjacent 118" section to fit.

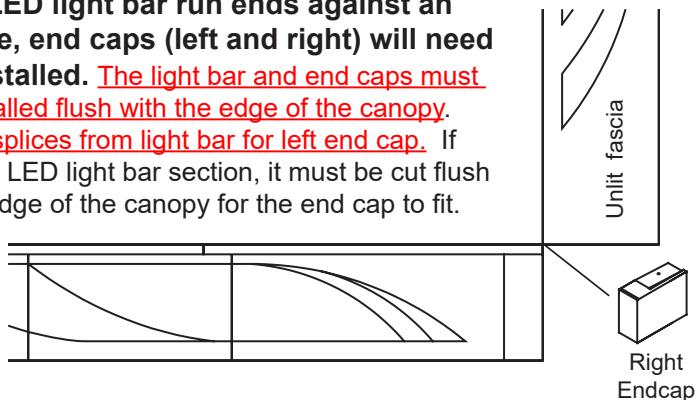
Be mindful of where the splice is needed on each section – always try to cut so that the splice is on the usable piece. Apply silicone to any cut wires for electrical insulation and to keep out water.



**(FOR LOGO PLACEMENT, REFER TO CONOCO APEX ACM FASCIA INSTALLATION GUIDE AND CONOCO BRAND BOOK.)**



**4. If an LED light bar run ends against an unlit side, end caps (left and right) will need to be installed. The light bar and end caps must to be installed flush with the edge of the canopy. Remove splices from light bar for left end cap.** If cutting an LED light bar section, it must be cut flush with 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.



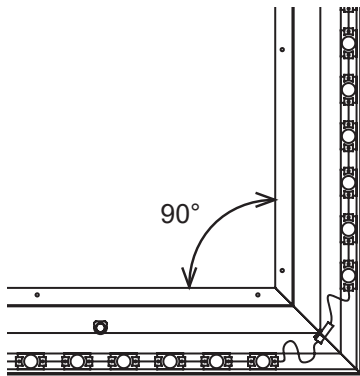


## Obtuse/Acute angles

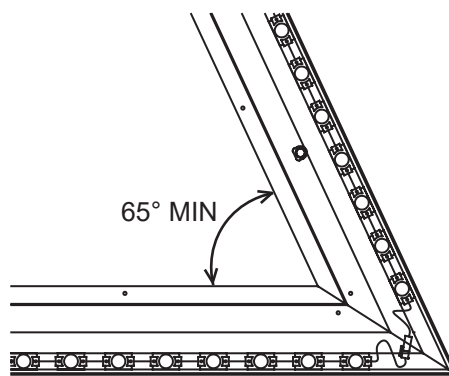
For sites with non-90° angles, field modifications will be needed to make the LED light bar system work.

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!

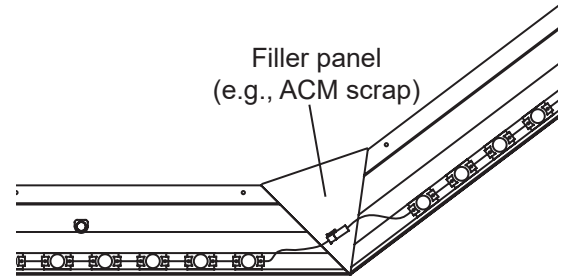
Obtuse angles – the corner section can be opened up wider to accommodate a wider angle, and a filler panel will need to be fabricated in the field to fit over the created gap between the sides. A cover is also available for obtuse corners.



**STANDARD CORNER**

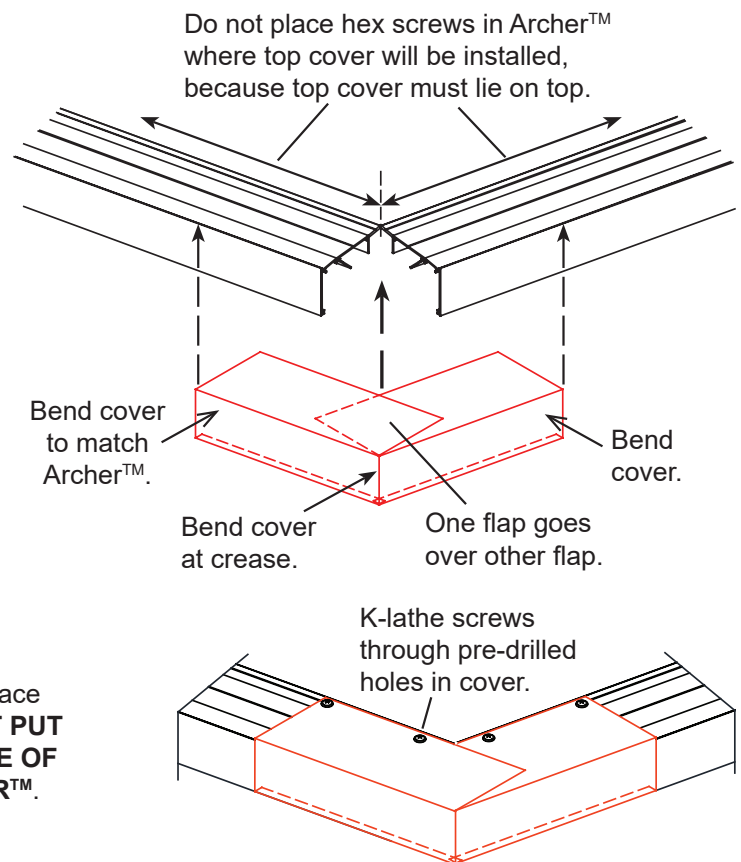
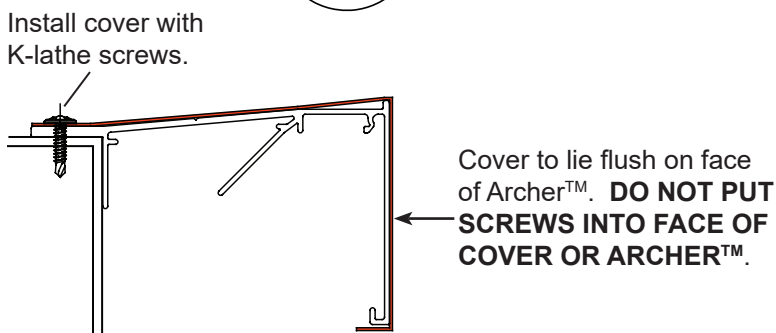
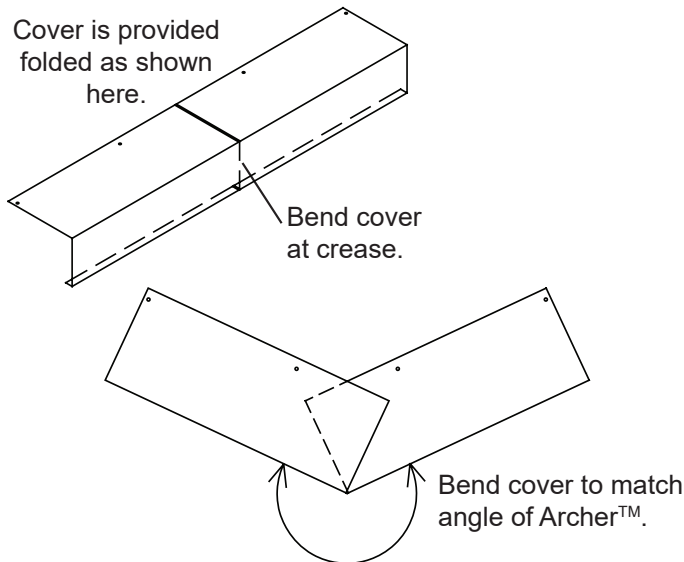


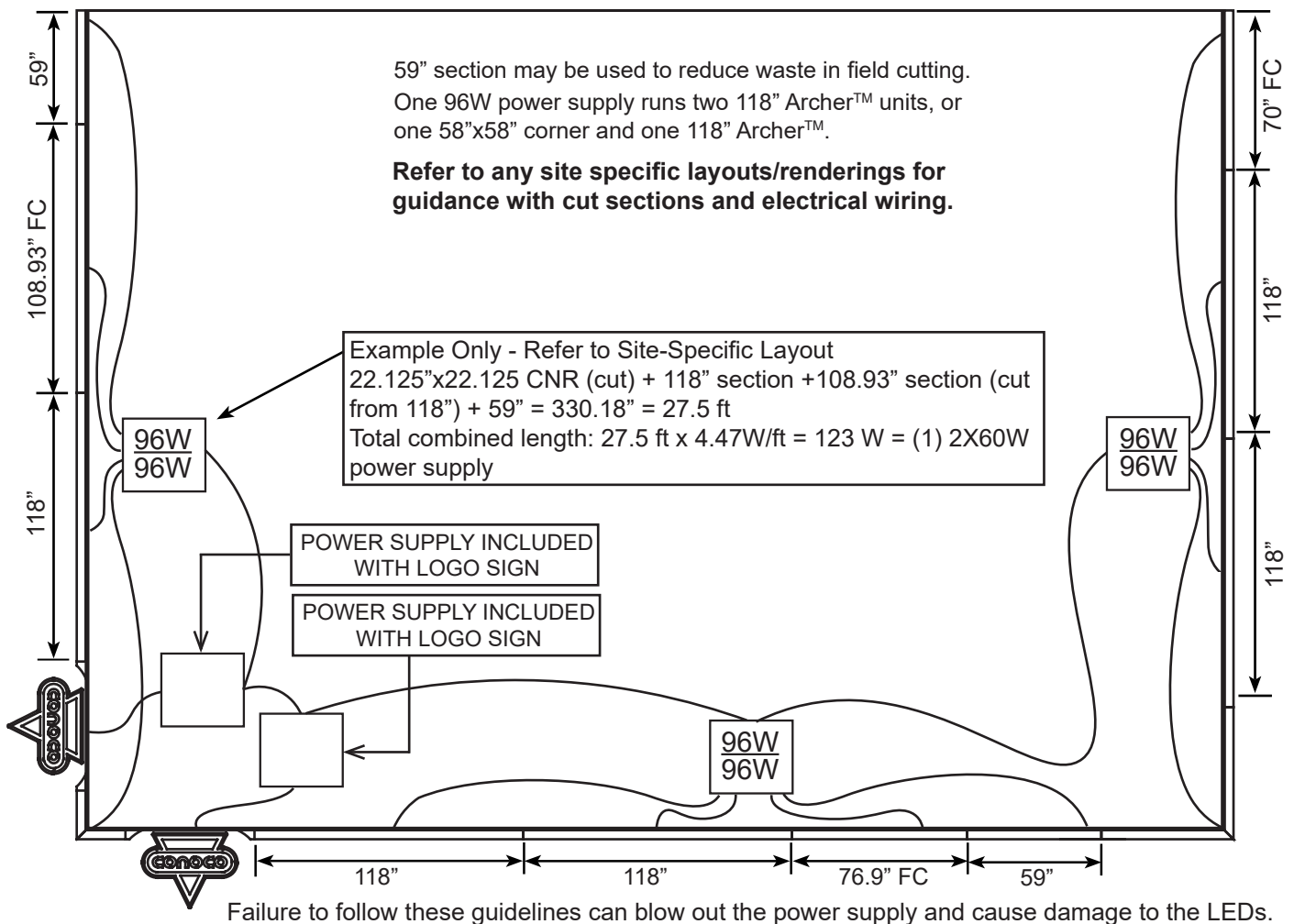
**ACUTE CORNER**



**OBTUSE CORNER**

## Archer™ Obtuse Corner Cover





### Electrical Information

LED Specifications:  
4.47W/ft.

Power Supply Specifications:  
 96W power supply – 100-277VAC / 24VDC, 1.1A-0.45A  
 2X96W power supply – 100-277VAC / 24VDC, 2.2A-0.90A

One 96W power supply powers (2) 118" downlight sections.

When using a 2X96W power supply with (4) 118" downlight sections connected, the power supply box needs to be installed as centered as possible between the four sections.

**DO NOT EXCEED THE MAXIMUM WATTS PER POWER SUPPLY!**

Circuit Specifications:

The power supply is multi-volt – nominally 120VAC.

120VAC, 20A circuit = 16A (80%) = (14) 96W power supplies or (7) 2X96W power supplies (15.4A)

240VAC, 30A circuit = 24A (80%) = (53) 96W power supplies or (26) 2X96W power supplies (23.4A)

**\*\*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. signs).

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.

Archer™ downlight and building sign should not be placed on the same circuits as building lighting – downlight is classified as UL48 Outline Lighting for Signage and per UL classifications; signs should be on a separate circuit from lighting.

Signs can be connected into the same circuit as the downlight if this does not exceed allowed amps.

Follow the National Electrical Code and all state and local codes.



**NOTE: ELECTRICIAN NEEDS THIS PAGE FOR WIRING.**

## 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.

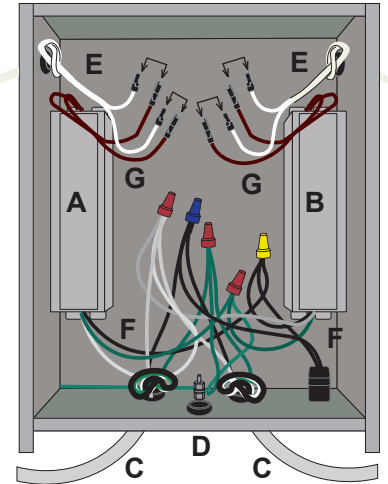
-Secure the cover to the power supply box once all wiring is completed – **DO NOT LEAVE THE COVER OFF!**

-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.

-LED rails and signs should not be placed on the same circuits as building/canopy lighting – LED rail is classified as UL48 Outline Lighting for Signage, and per UL classifications, outline lighting and signs should be on a separate circuit from lighting.

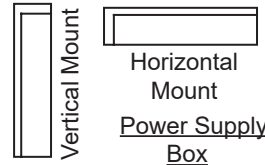
-Signs can be connected into the same circuit as LED rails if they do not exceed the allowed amperage.

-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 solid structure using fasteners/cable ties and not be hanging loose.

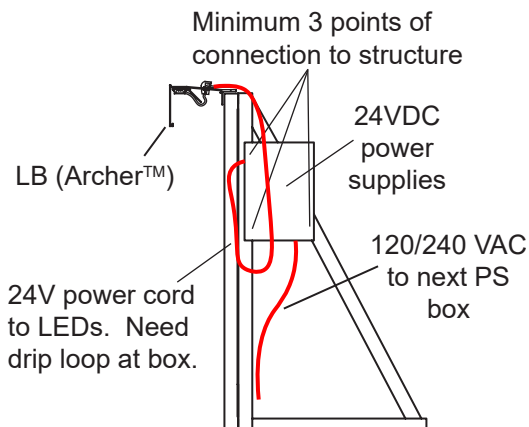
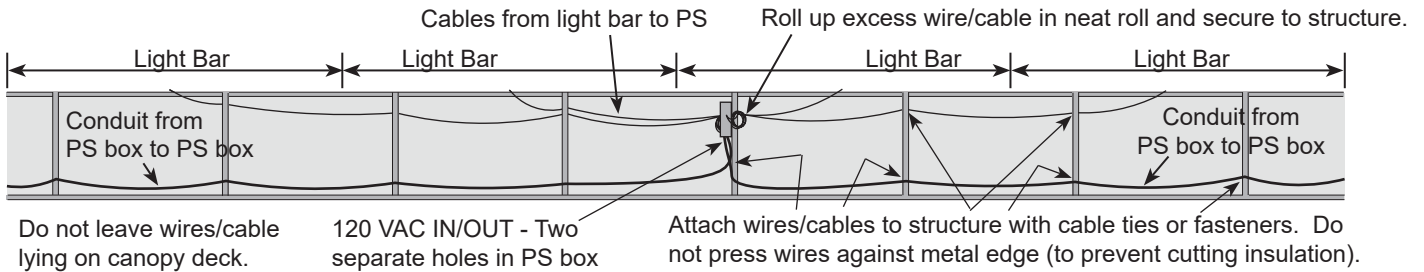


- A - 96W power supply
- B - 96W power supply (optional)
- C - VAC power (external and between power supply boxes)
- D - Switch (leave on)
- E - LED power cord
- F - VAC power
- G - VDC power out

Use Molex provided to connect LED cables to power supplies. On wires without Molex, make connections inside box using wire nuts. **TO PREVENT CORROSION/SHORTING, WIRES AND MOLEX MUST BE FREE OF WATER BEFORE MAKING CONNECTIONS. DRY WITH HOT AIR BEFORE CONNECTING IF NECESSARY.**



**\* DO NOT WIRE ARCHERS DIRECTLY TO VAC POWER. CONNECT THEM TO POWER SUPPLIES AS SHOWN.**



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.

12/16/2024 - Date created.

1/17/2025 - Added yellow cover sheet to alert installer that this is a new 24V system.

