IllumiWrap

ILLUMIWRAP

Installation Guide

These instructions can be used for installation of the IllumiWrap extruded downlight (LED light bar) 24 VDC system on buildings.

This downlight system is designed to be installed on a building as outline lighting for signage as defined in UL48. Please verify that your site meets the classification prior to beginning installation. Please review site plans before proceeding. Contact Principal Sloan Customer Service at 325-227-4577 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 Electric Code.

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

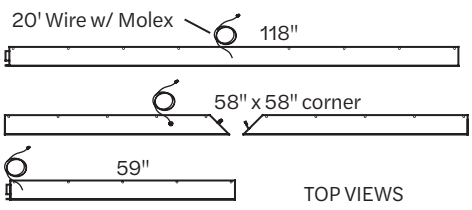
NOTE: BEFORE CUTTING OR INSTALLING ANY ELEMENTS, FIELD VERIFY DIMENSIONS!
NEVER TEST LEDS WITH ANY SECONDARY POWER, OTHER THAN THE PROVIDED POWER SUPPLIES, I.E. DRILL BATTERIES.

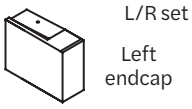
- Verification is VITAL in ensuring all elements are installed properly.
- This product is intended to be installed in accordance with the requirements of Article 600 of the National
- Electric Code and/or other applicable local codes. This includes proper grounding and bonding of the product.
- The location of the disconnect switch shall comply with Article 600 (A)(1) of the National Electric Code.

PLEASE REFER TO ANY NECESSARY SITE SPECIFIC LAYOUTS AND/OR RENDERINGS FOR GUIDANCE ARCHER PLACEMENT AND/OR ELECTRICAL WIRING.

Principal Sloan Customer Service:
325-227-4577

Parts





Power supply:

2 x 96 W (two power supplies in one box with four Molex)

96 W (one power supply in box with two Molex)

Parts not included:

FLEX CONDUIT 1/2 BLK NYLON (328-ft roll)

CND FIT PUSH IN 90D 1/2 BLK (one per)

CND FIT PUSH IN 1/2 BLK NYL (one per)

NUT LOCKING 1/2 BLK NYL CND (2 per)

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

PRINCIPAL SLOAN
A Principal Industries Company

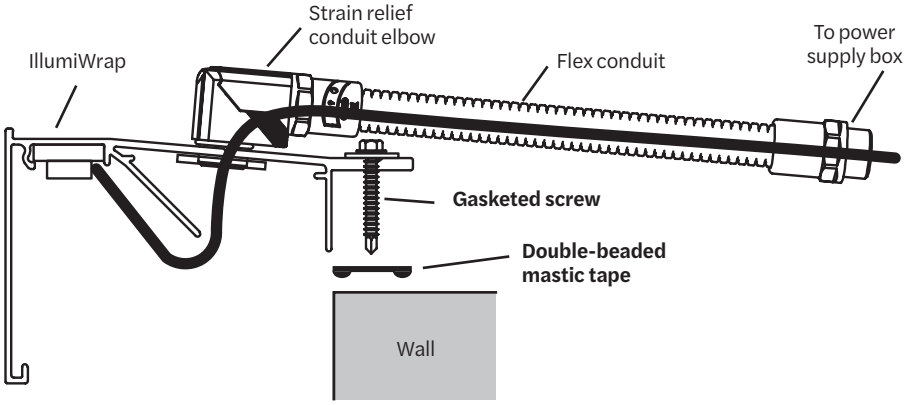
Installation Guide

Installation

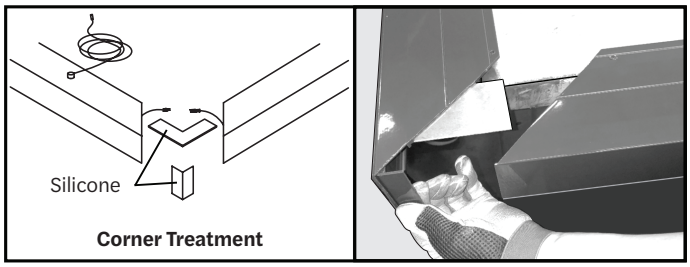
Installation on a Building:

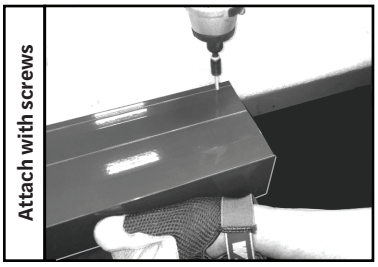
1. Unbox parts and verify using packing list that all parts have been received and are in good condition.
2. Place mastic tape seal (if ordered) on top edge of wall.
3. Mount IllumiWrap flush, square, and level on wall using gasketed screw in each pre-drilled hole. Seal back edge of IllumiWrap with silicone (if seal not ordered).
4. Run all LED power cords over top of wall.
5. Mount power supply boxes set back from wall (see site specific layout), and make electrical connections inside boxes. See more detailed installation instructions in this guide.

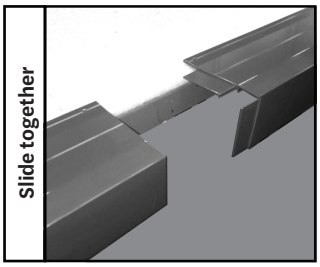
VERIFY BUILDING DIMENSIONS BEFORE STARTING INSTALLATION AS SITE SURVEY COULD BE INACCURATE.

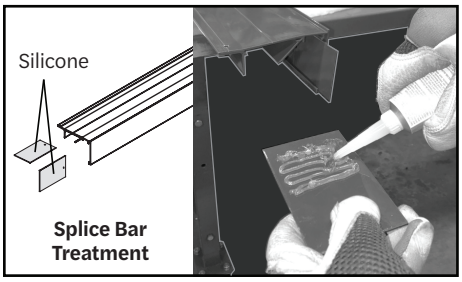


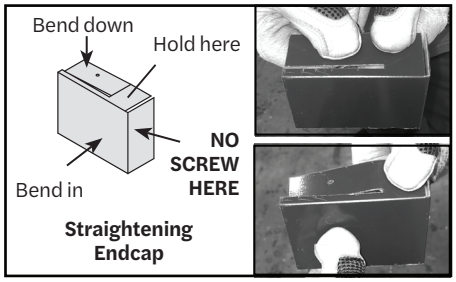
Make sure there are no light leaks between any IllumiWrap sections and all sections are flush/tight against canopy surface. IllumiWrap corners can be field cut (FC), but not at the miter. Splice bars must be placed at left end of one corner section.

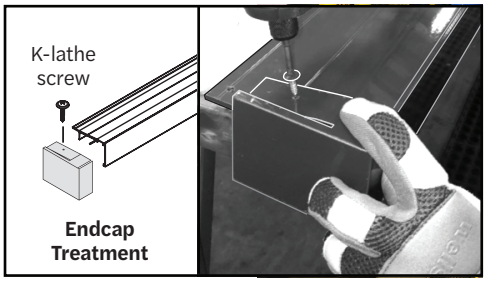




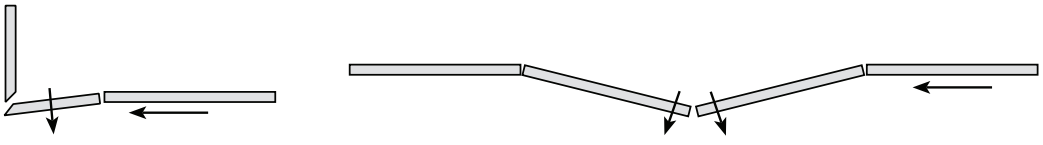








Removing/Inserting Between Sections

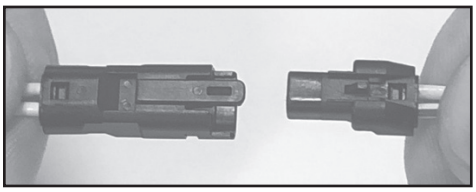
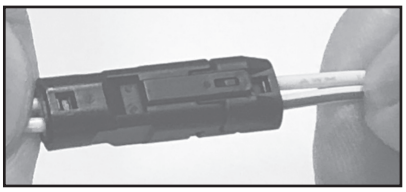
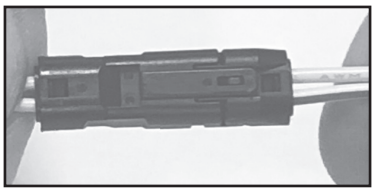


IllumiWrap units can be removed as shown above to allow neighboring units to be removed or inserted if needed (splices prevent pulling straight out).

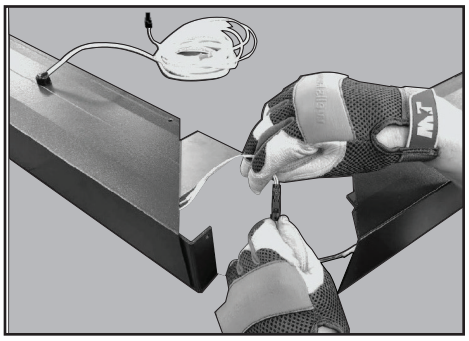
Installation (cont.)

Snapping Molex Together

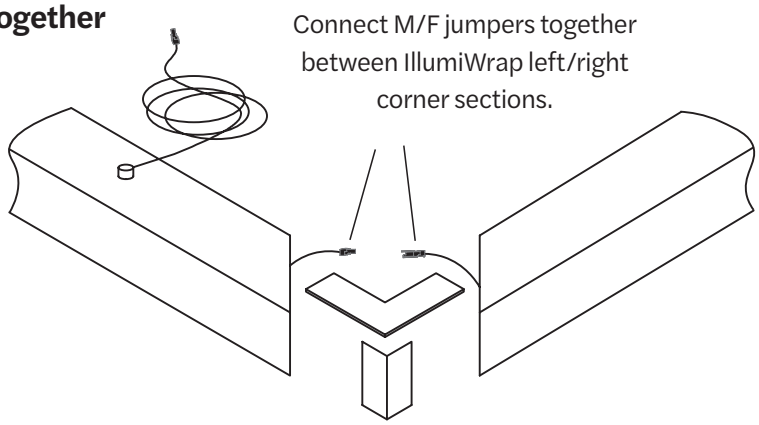
Snap M/F Molex together: Make sure Molex are completely together and joint is tight to seal out moisture.

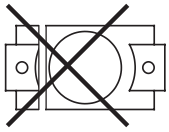
Snapping Corner Jumper Wire Molex Together



Connect M/F jumpers together between IllumiWrap left/right corner sections.

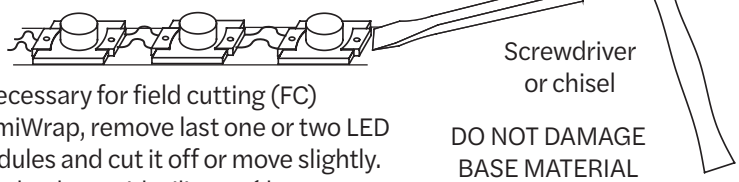


Removing LED Modules for Field Cutting IllumiWrap (if required)



DO NOT CUT THROUGH LED MODULE

LED strip with hard glue

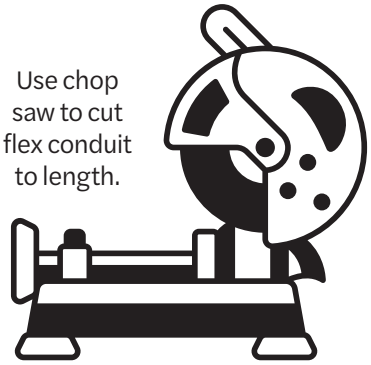


Screwdriver or chisel

DO NOT DAMAGE BASE MATERIAL

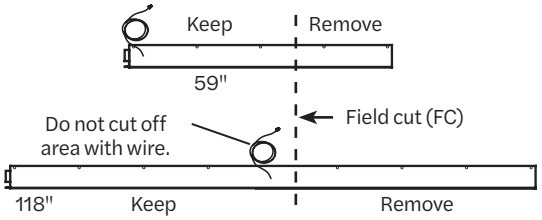
If necessary for field cutting (FC) IllumiWrap, remove last one or two LED modules and cut it off or move slightly. Glue back on with silicone (do not get silicone on LED lens).

Use chop saw to cut flex conduit to length.

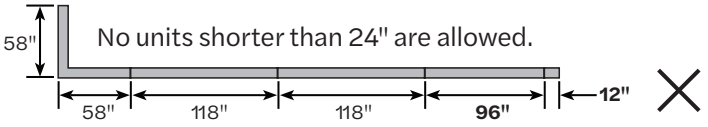


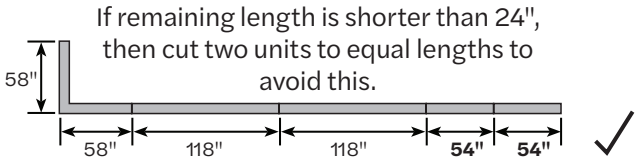
Installation (cont.)

How to Field Cut IllumiWrap



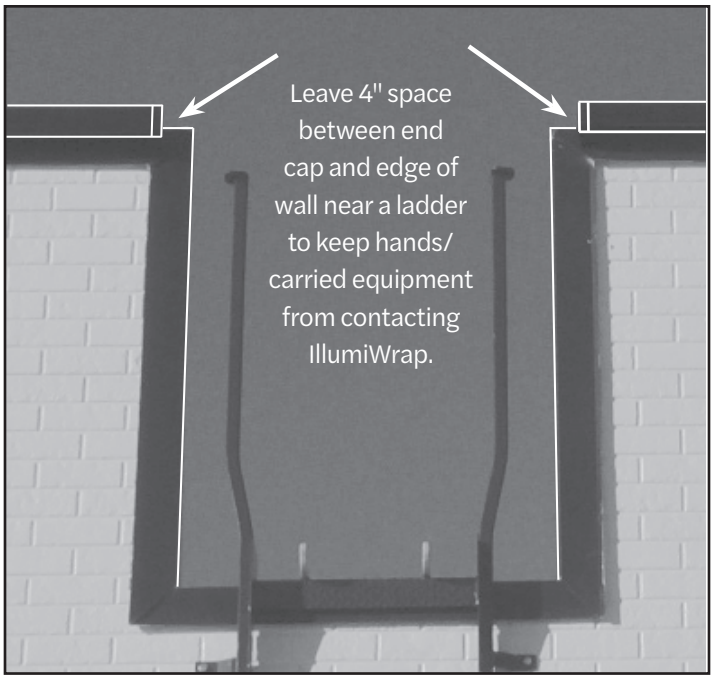
DO NOT CUT THROUGH LED MODULES. It may be necessary to remove or move an LED if a cut falls in that area. If an LED module is cut, then cut wires to damaged module, and seal all wires with silicone to prevent electrical short, moisture, corrosion. DO NOT CUT OFF SPLICE END OF ILLUMIWRAP OR AREA WITH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



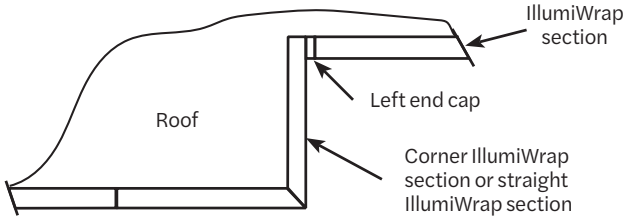


Important Notes:

1. Each IllumiWrap section must be installed tightly, flush, and level against the wall/parapet with as little of a gap as possible. Failure to do so may cause improper illumination. Butt IllumiWrap sections tightly together with no gap between them.
2. End caps are required on a building when a straight IllumiWrap section intersects a corner IllumiWrap section or straight IllumiWrap section 90 degrees (see image below).
3. Do not cut through LEDs. It may be necessary to remove or relocate an LED if a cut falls in that area. If an LED is cut, then cut the wire after the adjacent uncut LED. Pit silicone on cut wires to seal them (for electrical insulation and to keep moisture out).
4. Be sure to put splice strips in miter at center of IllumiWrap corner. Provided silicone adhesive may take some time to cure, but will hold. Do not put any screws in front face of IllumiWrap. Put paint able caulk in miter joint of IllumiWrap corner and (if needed) at joint between IllumiWrap sections to block light and help keep water out.
5. Place field cut (FC) IllumiWrap section at end of run or between IllumiWrap corners. IllumiWrap corners can be cut. Use 58" straight section end of run or to reduce waste in FC.
6. One 96 W power supply powers two 118" IllumiWrap sections or one 118" IllumiWrap section and one 58" x 58" IllumiWrap corner. Cut sections/corners can be combined onto one power supply – be sure not to exceed 96 W when combining. Get as close as possible to maximizing the power supply potential for optimum efficiency. DO NOT EXCEED THE MAXIMUM WATTS!
7. Check to 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.



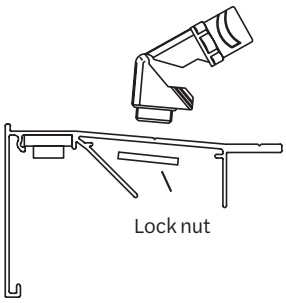
Installation near ladder.

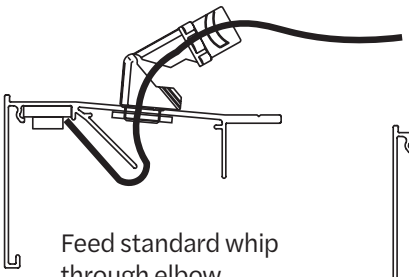


Hardware has been provided or suggested in this guide to mount in typical cases, but installer must use best judgement for site conditions and material to ensure all elements are structurally secure and adequately mounted to substrate. Some substrates (e.g., ceramic) may require different hardware than suggested in this guide.

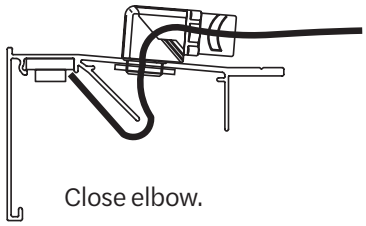
Installation Guide

Install elbow onto IllumiWrap and secure with lock nut.



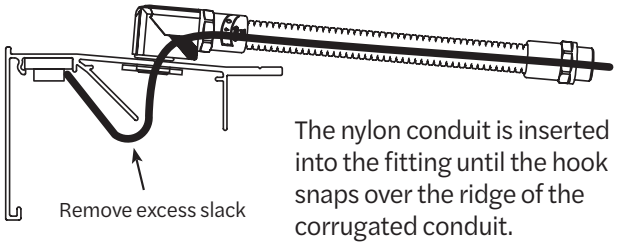


Feed standard whip through elbow.

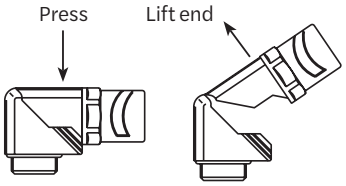


Close elbow.

Feed standard whip through standard conduit and insert conduit into elbow.



The nylon conduit is inserted into the fitting until the hook snaps over the ridge of the corrugated conduit.



Press top of elbow to lift one end (if necessary).

Press here to release conduit.

Installing Conduit to IllumiWrap and PS Box

Installation Instructions for Flex Conduit:

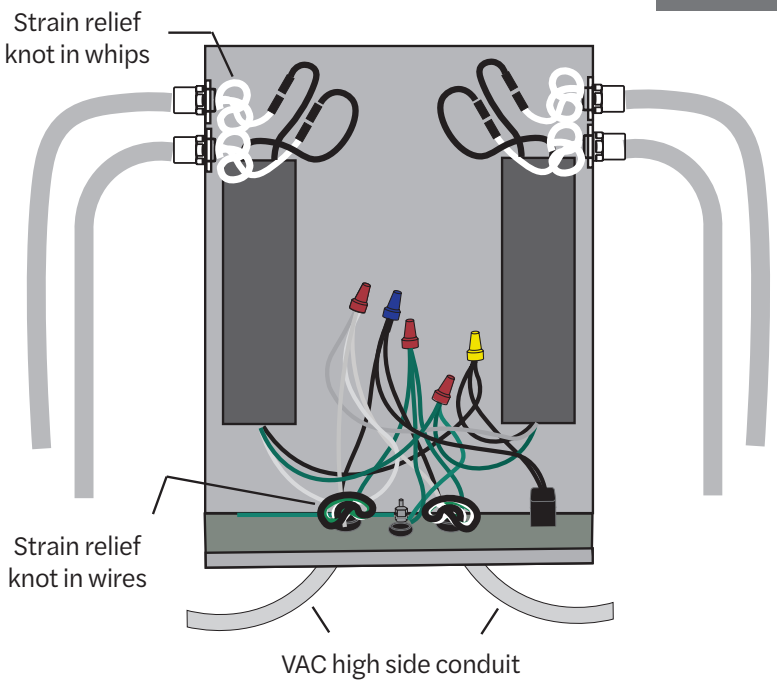
1. Remove strain relief elbow from top of standard IllumiWrap.
2. Use step drill bit to enlarge existing hole in IllumiWrap to 0.6 to 0.68" diameter.
3. Insert elbow strain relief in hole, secure elbow with lock nut, pull wire through, remove slack from wire, and close elbow.
4. Cut provided flex conduit to needed length (typically 20 ft).
5. Pull whip through flex conduit.
6. Press fit flex conduit onto elbow.
7. Drill four (4) holes in 96 W / 96 W power supply box to receive four (4) connections, or two (2) holes for 96 W box.
8. Secure conduit connector on box. Thread lock nut onto conduit connector inside box to prevent it from pulling out of hole.
9. Tie knot in wire to prevent it from pulling out, and roll up excess wire inside box.
10. Make wire connections in box.

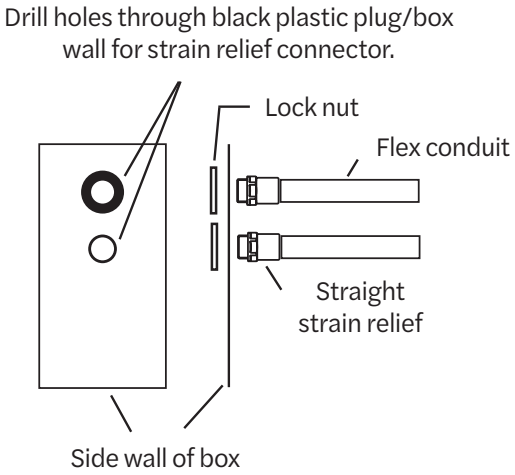
Adding Extension Wire onto Standard Whip:

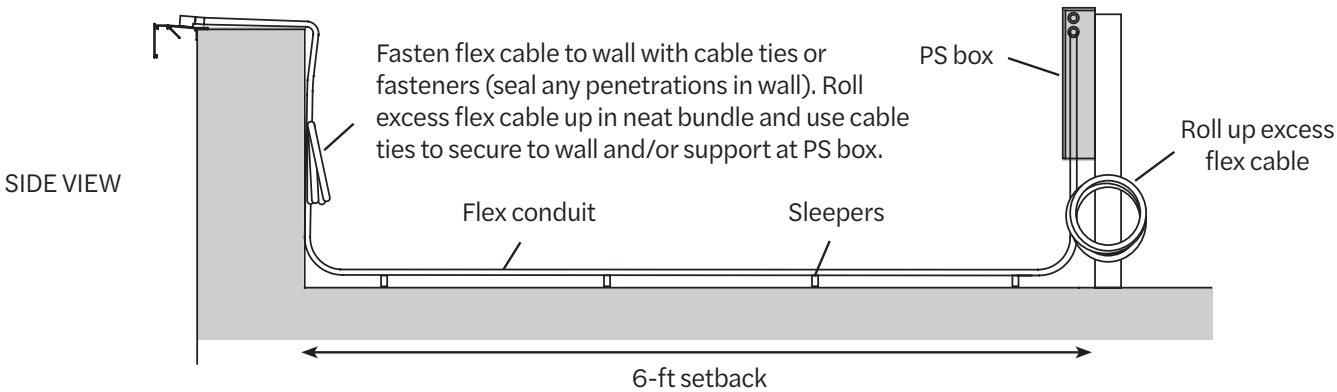
1. Remove strain relief elbow from top of standard IllumiWrap.
2. Use step drill bit to enlarge existing hole in IllumiWrap to 0.6 to 0.68" diameter.
3. Insert elbow strain relief in hole, secure elbow with lock nut, pull wire through, remove slack from wire, and close elbow.
4. Snap Molex at end of standard 20-ft whip onto Molex at beginning of extension conduit.
5. Measure required length needed to reach PS box.
6. Cut provided flex conduit to needed length.
7. Pull whip through flex conduit.
8. Press fit flex conduit onto elbow.
9. Drill four (4) holes in 96 W / 96 W power supply box to receive four (4) connections, or two (2) holes for 96 W box.
8. Secure conduit connector on box. Thread lock nut onto conduit connector inside box to prevent it from pulling out of hole.
9. Tie knot in wire inside box to prevent it from pulling out, and roll up excess wire inside box.
10. Make wire connections in box.

Installation (cont.)

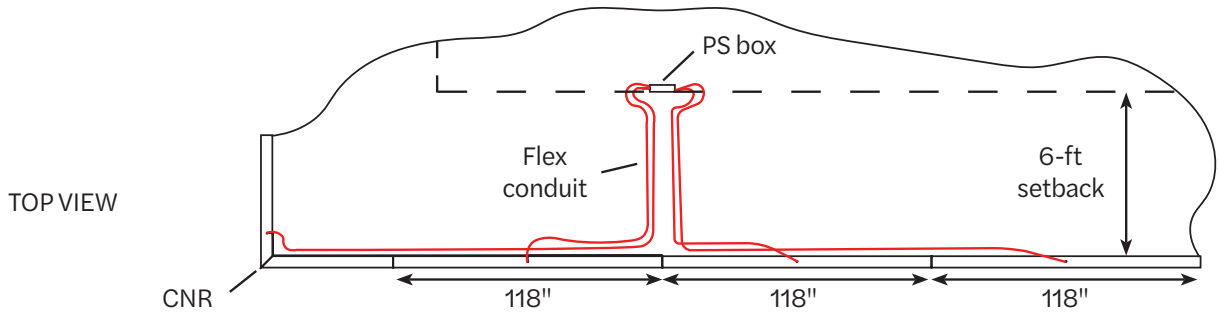
NOTE: ELECTRICIAN NEEDS THIS PAGE FOR WIRING.







Installer/electrician to put their own conduit through wall to PS boxes inside building for soffit/wall mount IllumiWrap without the flex conduit shown in parts list.

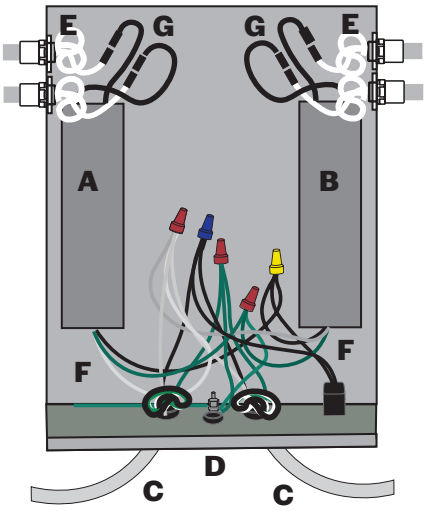


Installation (cont.)

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 the wire the LED modules and the power supply box.
- 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 in VAC wires and cables to LEDs inside box to prevent them from pulling out of box.
- Connect VAC line wire (BLACK) to switch inside box and VAC neutral wire (WHITE) to AC input on each power supply.
- 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 switch is on in 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 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 IllumiWrap/power supply boxes must be fastened to wall or solid structure using fasteners/cable ties and not be hanging loose.

NOTE: ELECTRICIAN NEEDS THIS PAGE FOR WIRING.



A 96 W power supply

B 96 W power supply (optional)

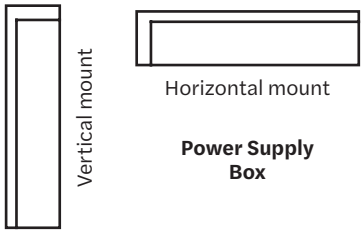
C VAC power (external and between power supply boxes)

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.

Installation Guide

Electrical Information

LED Specifications:

4.47 W/ft

Power Supply Specifications:

96 W power supply – 100-277 VAC / 24 VDC, 1.1 A - 0.45 A

2 X 96 W power supply – 100-277 VAC / 24 VDC, 2.2 A - 0.90 A

One (1) 96 W power supply powers two (2) 118" downlight sections.

When using a 2 X 96 W power supply with four (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:

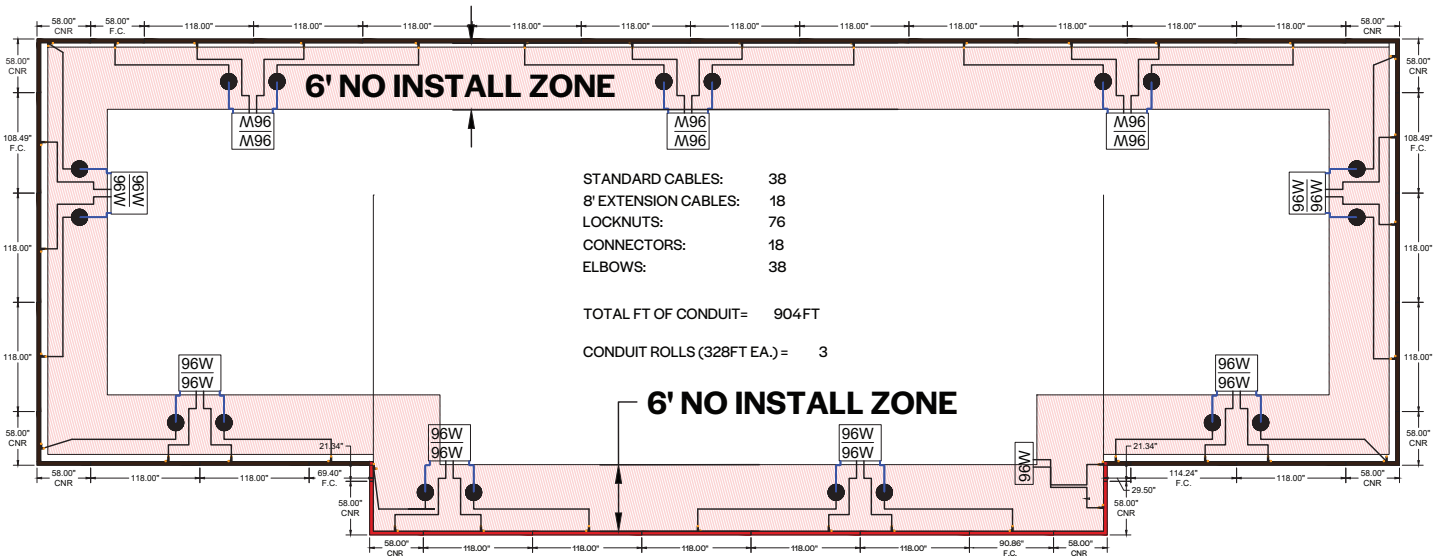
The power supply is multi-volt – nominally 120 VAC.

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

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

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).

Example Electrical Layout – Refer to Site Specific Layout



Legend

6' NO INSTALL ZONE
CONNECTOR
ELBOW
LOCKNUT
EXTENSION CABLE

Electrical Information

96W / 96W — 96W/96W POWER SUPPLY 2.2A @ 120 VAC/24 VDC

96W — 96W POWER SUPPLY 1.1A @ 120 VAC/24 VDC

96W POWER SUPPLY (1) X 1.1A
96W/96W POWER SUPPLY (9) X 2.2A
TOTAL # OF AMPS IS 20.9A
20A CIRCUIT X 80% = 16A
2 CIRCUITS REQUIRED

Patent #: 10,627,077.

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