



# AQUA NEON

## Installation Manual

Version 1.1 - September 2025



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# SAFETY WARNING

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1. Follow the electrical safety regulations of your country, and ensure that the products are installed and maintained by a qualified electrician.
2. Before making any installation, maintenance, or connections, be sure that the mains power is disconnected.
3. Please operate the fixtures according to the instructions, and ensure that the working voltage meets the product requirements.
4. The construction of underwater projects must comply with NEC 680 regulations, and designated accessories are required for installation.
5. Contact with water is prohibited for the wiring and installation of devices.
6. The products are only suitable for use in seawater or freshwater; they must not be used in hot water, such as therapeutic pools, hot tubs, spas, etc., nor in any corrosive liquids.
7. The cable junction box must be located on the shore and at least 4in (10 cm) above the ground.
8. Do not energize the fixture while it is still in coil packaging for more than 30 minutes.
9. Do not cut, modify, or dismantle the fixture.
10. For supply connections, use only an isolating low-voltage power supply with an ungrounded output that is evaluated for swimming pool use.
11. Unless the luminaire is installed in an area of the swimming pool that is not used for swimming, and the lens is adequately guarded to prevent any person from contacting it, the luminaire must be installed in or on a wall of the pool, with the top of the lens opening no less than 457 mm (18 inches) below the normal water level of the pool.

Note: Environmental conditions may vary between pools. To avoid any issues, consider factors like temperature, installation time before water filling, and water disinfection method. It's also advised to do a sample test of the recommended mounting channels and Wave fixture before placing orders.

## POOL WATER DISINFECTION TIPS

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- Do not let undiluted pool chemicals come into direct contact with pool surfaces or equipment, as this can cause damage.
- Pre-dissolve: Always dissolve disinfectants in a separate bucket or container of water before adding them to the pool. Make sure they are fully dissolved.
- Apply Safely: When adding the diluted mixture, pour it at least 3 feet (1 meter) away from any installed LED neon flex lighting.



# POOL LIGHTING CHECKLIST

To provide you with the best solution, please send us the CAD file or photos of your swimming pool, along with the following information:

## FOR RETROFITTING POOL LIGHTS

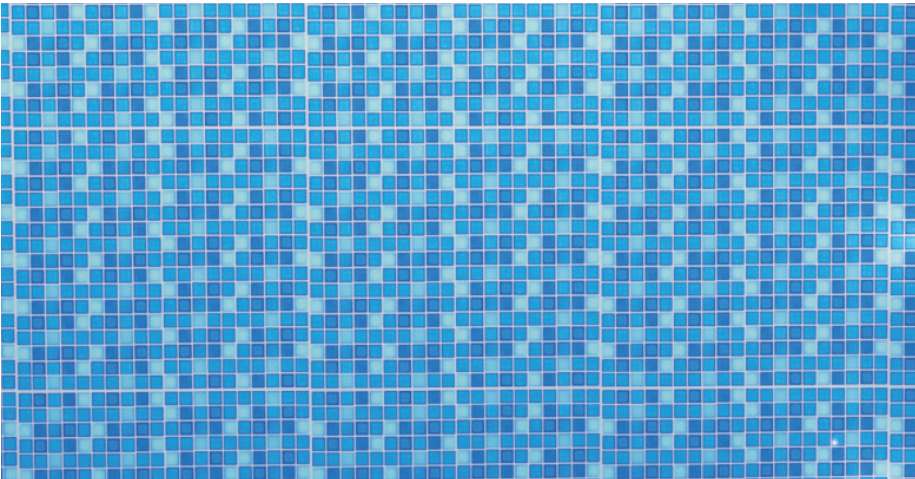
- Distance between the electrical room and the junction box, including the product's power feed position
- Number and location of existing wiring and connection boxes (if applicable)
- Swimming pool disinfection method (e.g., ozone, chlorine)
- Any special chemicals used in the water
- Any additional information about the pool that may be helpful

## FOR INSTALLING LIGHTS IN A NEW POOL

- Location of the electrical room
- Wiring requirements, including the number of connection boxes.
- Swimming pool disinfection method
- Any special chemicals used in the water
- Any other requirements for the installation



Connection Box: Use waterproof junction boxes filled with silicone glue or epoxy resin.



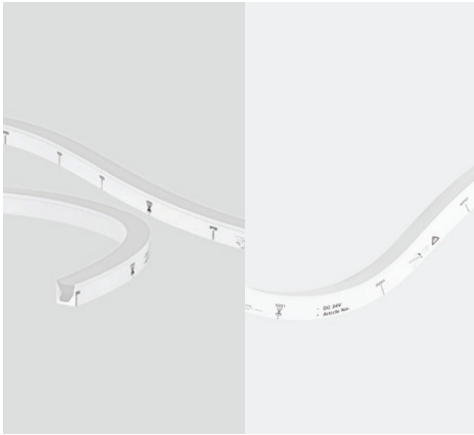
Electrical Room



Connection Box



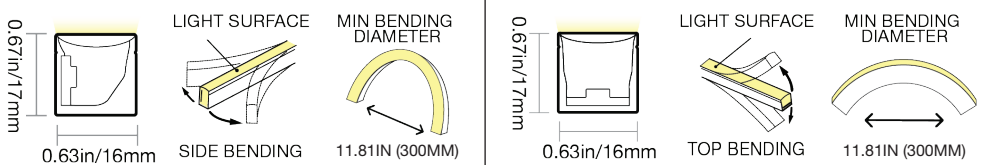
Connection Box



AQUA NEON WAVE: PVC & SILICONE - 24V  
Submersible Pool Rated Linear Flex Profile



PROFILE CAPABILITIES



CERTIFICATIONS & FEATURES



TEMPERATURES

Please refer to the GLLS Spec sheet for Ambient installation, maximum mounting surface temperature, and fixture storage temperature for PVC and Silicone light fixtures.

Aqua Neon Wave 24V is engineered to be the most reliable underwater Linear Flex profile (0.63in x 0.67in), designed to withstand the harshest aquatic environments. With unmatched durability, it provides a minimum top bend or side bend diameter of 11.81 inches (300mm), making it flexible for architectural, commercial, and industrial submersible applications. This dimmable, UL676, IP68 & IK08 rated product is available in tunable white PWM, SPI-Pixel, static white, red, green, blue, and amber and pairs seamlessly with a range of connectors, mounting profiles, and control systems for a fully customizable installation. Offering a 5-year warranty, and built to tackle water, corrosion, electricity, thermal management, and safety challenges, it ensures long-lasting performance.

| MATERIAL                                                                                            | COLOUR                            | OPTIONAL CONNECTOR   | CABLE      |              | MOUNTING PROFILE                             | WATER TYPE  |                  |                         |                                     |                 |                   |
|-----------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|------------|--------------|----------------------------------------------|-------------|------------------|-------------------------|-------------------------------------|-----------------|-------------------|
|                                                                                                     |                                   |                      | CABLE TYPE | CABLE LENGTH |                                              |             |                  | POOL WATER              |                                     |                 |                   |
|                                                                                                     |                                   |                      |            |              |                                              | FRESH WATER | SEA WATER (≤ 4%) | (FREE CHLORINE ≤ 2 PPM) | (FREE CHLORINE > 2 PPM BUT ≤ 5PPM ) | (O ZONE 0.3PPM) | HOT SPRING ≤ 45°C |
| PVC                                                                                                 | Static, Tunable White, SPI/ Pixel | PVC Submersible      | SJTW*2~3   | 5m, 10m      | Plastic Profile-Reinforced, Silcone Flexible | ✓           | ✓                | ✓                       | ✓                                   | ✓               | ✗                 |
| SILICONE                                                                                            |                                   | Silicone Submersible | SJOW*2~3   |              |                                              | ✓           | ✓                | ✓                       | ✗                                   | ✓               | ✓                 |
| The light surface may develop a white, fluorescent substance, but this does not affect its function |                                   |                      |            |              |                                              |             |                  |                         |                                     |                 |                   |

Location: On the water or underwater (up to 5 meters deep).

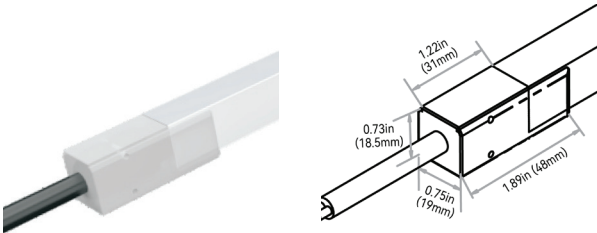
# SILICONE CONNECTOR



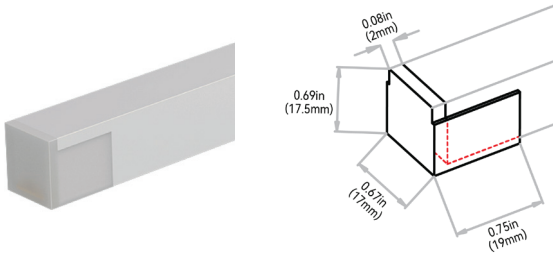
- NOTES:
- 1. Connector Tolerance  $\pm 0.02\text{in}$  (0.5mm)
  - 2. Cable diameter: Static, Tunable White & SPI Silicone = 0.26in (6.5mm)
  - 3. Do not apply force to the feed cable
  - 4. Ensure Max. Cable Lengths are followed according to wire gage to avoid voltage drop
  - 5. Silicone Submersible UL676 Connectors - Top bending fixture not available for Tunable White

IP68; extremely durable, underwater, UL676 rated. Recommended for; long-term submersed in wet environments up to the depth of 16.40ft (5m) (water is skin safe for extended periods); high temperature and humidity environments (mounting surface temperature  $<140^{\circ}\text{F}$  ( $60^{\circ}\text{C}$ )); custom predetermined lengths and larger connector; harsh working conditions & increased handling forces during installation. Custom factory assembly.

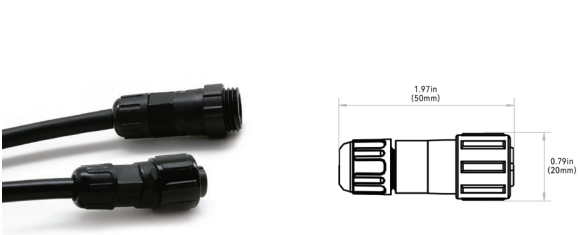
## END EXIT: 4-A-#



## END CAP: 4-I-8

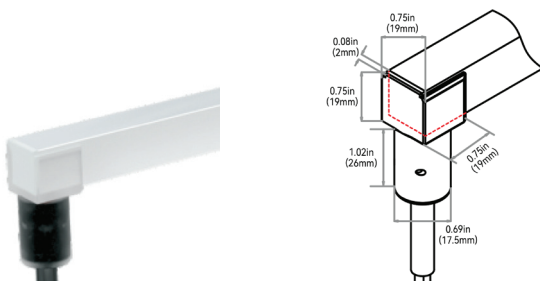


## SCREW LOCK CONNECTOR ACCESSORY - IP67

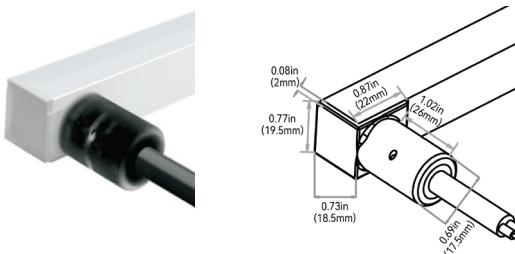


NOTE: The tolerance is  $\pm 0.08\text{in}$  (2mm).

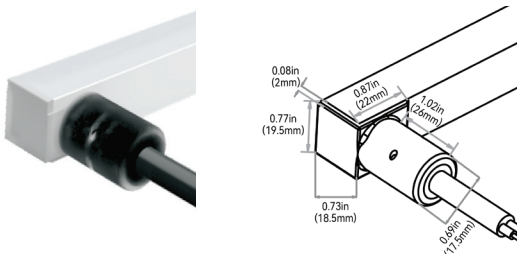
## BOTTOM EXIT: 4-B-#



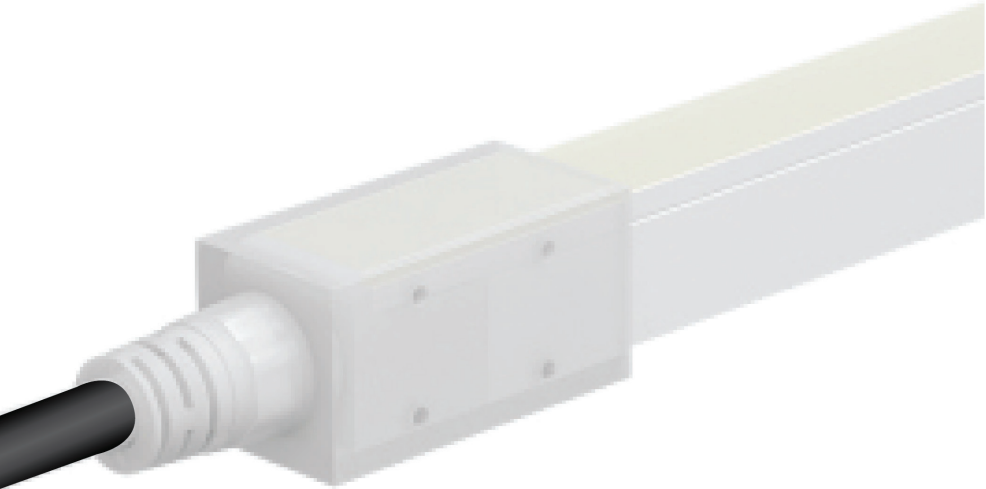
## SIDE LEFT EXIT: 4-C-#



## SIDE RIGHT EXIT: 4-D-#



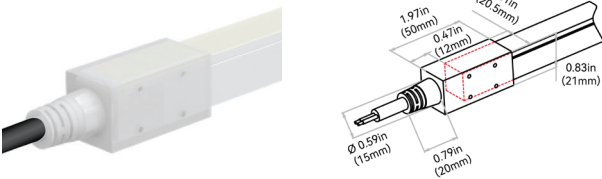
# PVC CONNECTOR



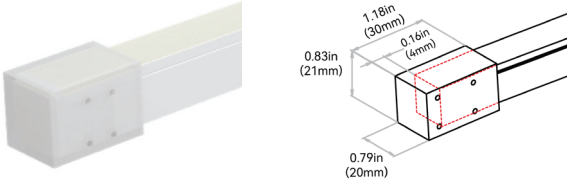
- NOTES:
- 1. Connector Tolerance  $\pm 0.02\text{in}$  (0.5mm)
  - 2. Cable diameter: Static, Tunable & SPI PVC =  $0.24\text{in}$  (6mm)
  - 3. Do not apply force to the feed cable
  - 4. Ensure Max. Cable Lengths are followed according to wire gage to avoid voltage drop

IP68; extremely durable, underwater, UL676 rated. Recommended for; long-term submersed in wet environments up to the depth of 16.40ft (5m) (water is skin safe for extended periods); high temperature and humidity environments (mounting surface temperature  $<140^{\circ}\text{F}$  ( $60^{\circ}\text{C}$ )); custom predetermined lengths and larger connector; harsh working conditions & increased handling forces during installation. Custom factory assembly.

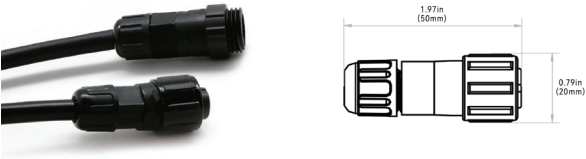
## END EXIT: 4-A-#



## END CAP: 4-I-8

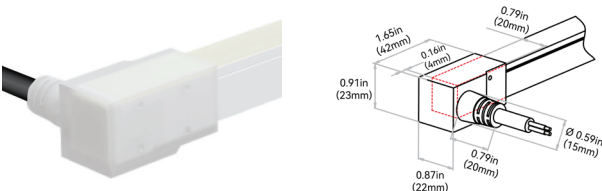


## SCREW LOCK CONNECTOR ACCESSORY - IP67

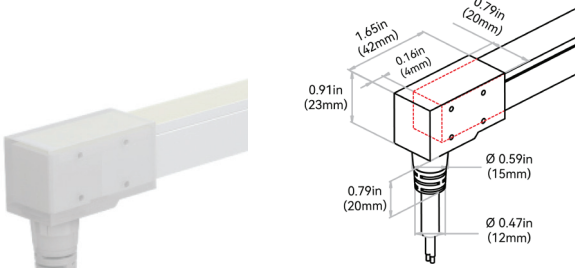


NOTE: The tolerance is  $\pm 0.08\text{in}$  (2mm).

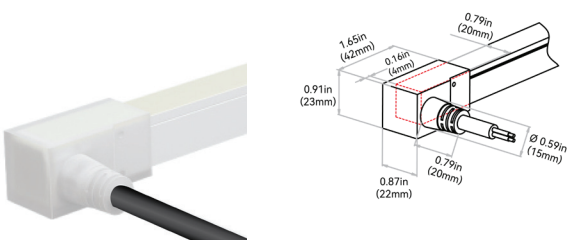
## SIDE LEFT EXIT: 4-C-#



## BOTTOM EXIT: 4-B-#



## SIDE RIGHT EXIT: 4-D-#



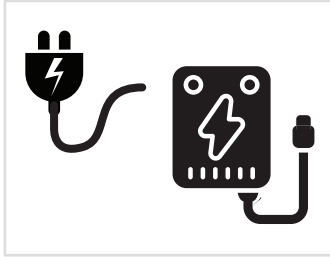
# FIXTURE PRECAUTION



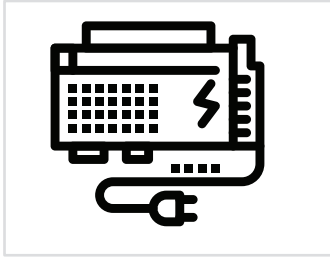
Turn off power during installation and avoid covering the light fixture while lit.



Only qualified personnel maintenance work.



Use appropriate power cables and converters to prevent flickering.



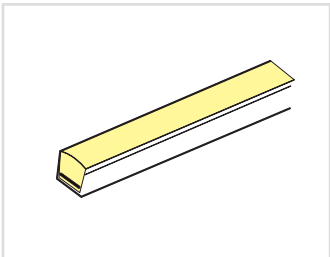
Use only recommended Power Unit.



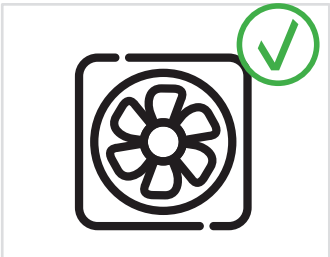
Install the product out of reach of children.



Do not exceed specified voltage. Failure to do so will result in LED life degradation.



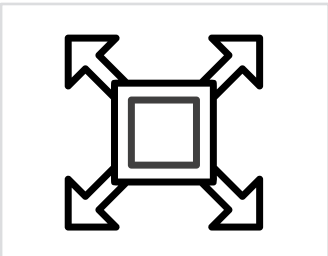
Replace the entire fixture when the light source reaches the end of life.



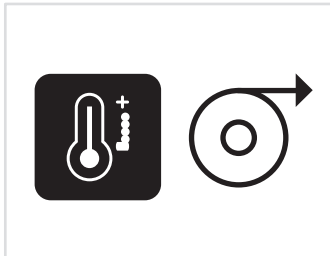
Assemble with proper ventilation and avoid assembly on vibrating surfaces.



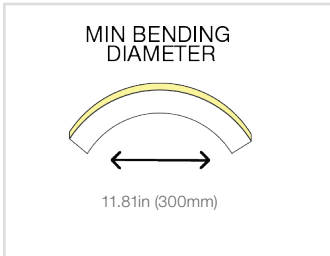
Use suitable fixing materials for installation.



Allow space for expansion in aluminum channels.



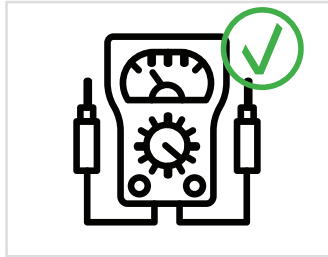
Preheat Vivid Linear Flex Light before use in low temperatures and unwind from the reel before assembly.



Do not over bend & avoid bending at the first unit of light and connector. Damage to components can result.



Do not use the product if silicone casing material is damaged.



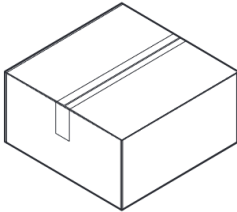
Test connections with a multi-meter

# UNPACKING THE FIXTURE KIT



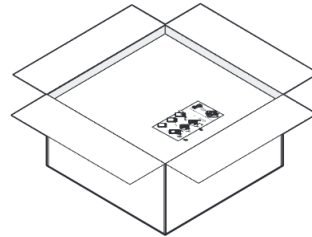
## STEP 1:

Place box on a sturdy, level surface.



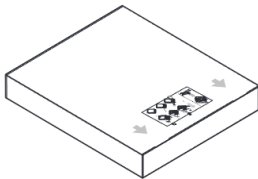
## STEP 2:

Cut the tape and open the box.



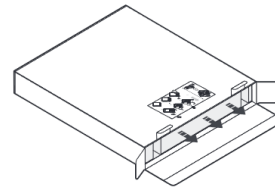
## STEP 3:

Remove the white carton.



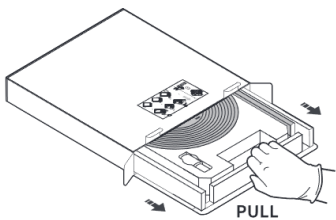
## STEP 4:

Open the white carton.



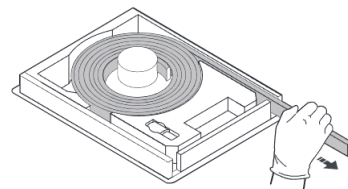
## STEP 5:

Slide the tray out.



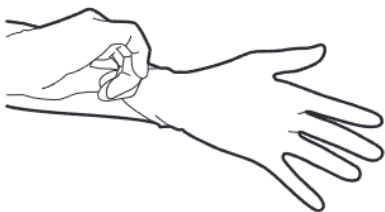
## STEP 6:

Set the tray on a sturdy, level surface.



## STEP 7:

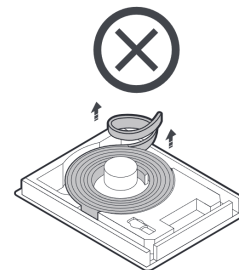
Put on the gloves in the tray.



## STEP 8:

Carefully guide the fixture straight out through the track.

DO NOT LIFT UPWARD.



To watch our unpacking video, scan this QR code:



### CAUTION

Incorrect unpacking can fracture the PCB.  
Damage to components can result.



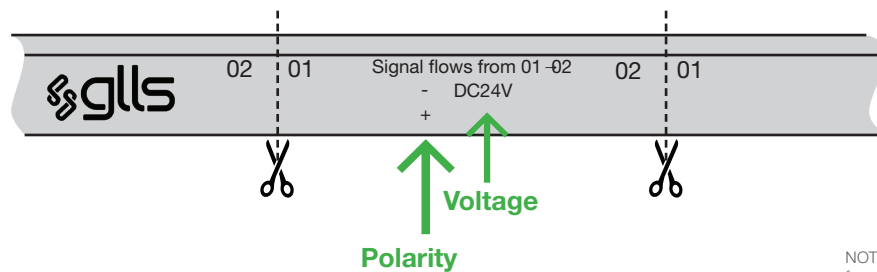
# LIGHTING TEST

## STEP 1: CHECK VOLTAGE

Verify the voltage printed on the fixture body is the desired voltage.

## STEP 2: CHECK POLARITY

Verify the polarity and signal direction printed every 20" on the fixture body. If the wiring is polarity-reversed, it must be changed for proper connection.



NOTE: The signal wire must be kept separated from the positive wire (red) to prevent the IC chip from shorting.

## STEP 3: TEST THE LIGHTING

Briefly test the lighting to ensure it is working properly.

NOTE: When testing Pixel light models without the signal wire connected:

Pixel White models - the brightness will be 1/3 normal levels.

Pixel RGB or RGBW models - will illuminate blue in color.

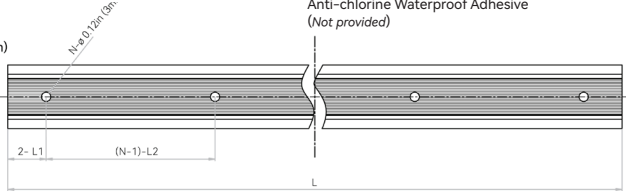
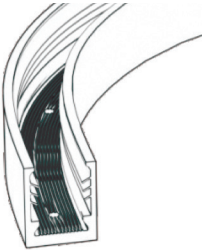
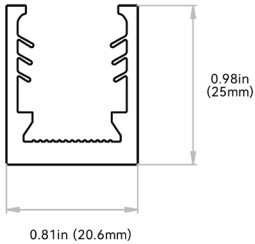
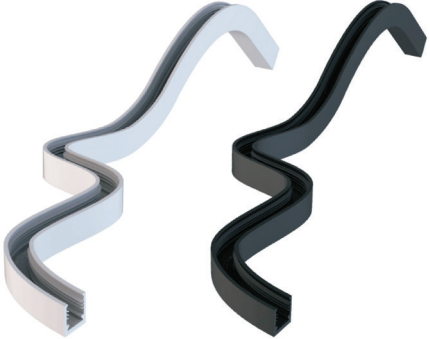
### CAUTION

Do not light up coiled product longer than 30 minutes or overheating will occur. For extended periods of light testing, uncoil the product to allow for proper heat dissipation.



SILICONE PROFILE - FLEXIBLE

An all-in-one mounting profile designed to unleash your creativity. This profile not only provides flexibility in installation methods, but also overcomes bending limitations by offering both top and side bending in a single profile. Fully encapsulated in UL-certified silicone, it excels in UV, weather, and corrosion resistance, making it suitable for underwater, high and low temperature environments. Elegant and square in appearance, it is available in black or white standard colors, or bespoke colors to blend in with the background. Supported by innovative serrated silicone fins, its clamping strength is strong enough to secure any installation method. Please refer to install manual for proper installation practices. Side and top bending. Please refer to install manual for proper installation practices.



0.98in (25mm)

0.81in (20.6mm)

Tolerance: ± 0.01in (0.3mm)

N\*0.12in (3mm)

2-L1 (N-1)-L2 L



Rubber Expansion Anchor



M3 Stainless Steel Self-tapping Screw



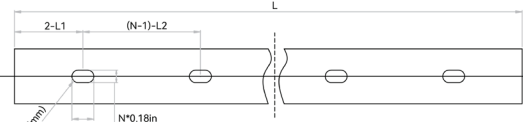
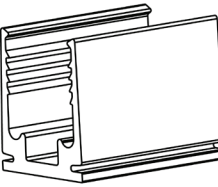
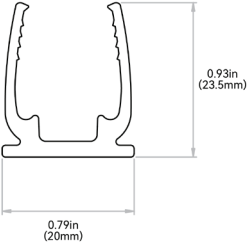
Anti-chlorine Waterproof Adhesive (Not provided)

NOTES: 1. 2-L1 refers to two of symmetric L1 in each piece of profile.  
2. (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.  
"N" hereby stands for its corresponding "Hole Number" in the below table

| ORDER CODE | LEGACY ORDER CODE: WHITE | LEGACY ORDER CODE: BLACK | STANDARD LENGTH  | L1              | L2              | SLOTTED HOLE   | HOLE # |
|------------|--------------------------|--------------------------|------------------|-----------------|-----------------|----------------|--------|
| C1-F-F-X   | CH16FAN5C5SEW            | CH16FAN5C5SEB            | 2.16in (55mm)    | 0.49in (12.5mm) | 1.18in (30mm)   | Ø 0.12in (3mm) | 2      |
| C1-B-F-X   | CH16FAN1C1SEW            | CH16FAN1C1SEB            | 4.33in (110mm)   | 0.46in (11.6mm) | 3.48in (88.4mm) | Ø 0.12in (3mm) | 2      |
| C1-C-F-X   | CH16FAN0M2SEW            | CH16FAN0M2SEB            | 7.87in (200mm)   | 0.46in (11.6mm) | 3.48in (88.4mm) | Ø 0.12in (3mm) | 3      |
| C1-3-F-X   | CH16FAN0M5SEW            | CH16FAN0M5SEB            | 19.68in (500mm)  | 1.14in (29mm)   | 3.48in (88.4mm) | Ø 0.12in (3mm) | 6      |
| C1-5-F-X   | CH16FAN01MSEW            | CH16FAN01MSEB            | 39.37in (1000mm) | 0.54in (13.8mm) | 3.48in (88.4mm) | Ø 0.12in (3mm) | 12     |

PLASTIC PROFILE - REINFORCED

High Quality rigid plastic designed to securely hold fixtures. Recommended for use in extreme environments susceptible to increased water/humidity (SPA's and pools). Please refer to install manual for proper installation practices.



0.93in (23.5mm)

0.79in (20mm)

Tolerance: ± 0.02in (0.5mm)

N\*0.18in (4.5mm)

2-L1 (N-1)-L2 L



Rubber Expansion Anchor



M3 Stainless Steel Self-tapping Screw



Anti-chlorine Waterproof Adhesive (Not provided)

NOTES: 1. 2-L1 refers to two of symmetric L1 in each piece of profile.  
2. (N-1)-L2 refers to (N minus one) of symmetric L2 in each piece of profile.  
"N" hereby stands for its corresponding "Hole Number" in the below table

| ORDER CODE | LEGACY ORDER CODE | STANDARD LENGTH  | L1              | L2             | SLOTTED HOLE          | HOLE # |
|------------|-------------------|------------------|-----------------|----------------|-----------------------|--------|
| P1-2-F-1   | CL16RTP3C5SD      | 1.38in (35mm)    | 0.69in (17.5mm) | N/A            | 0.18*0.31in (4.5*8mm) | 1      |
| P1-3-F-1   | CH16RTP0M5SD      | 19.68in (500mm)  | 1.97in (50mm)   | 7.87in (200mm) | 0.18*0.31in (4.5*8mm) | 3      |
| P1-5-F-1   | CH16RTP01MSD      | 39.37in (1000mm) | 3.93in (100mm)  | 7.87in (200mm) | 0.18*0.31in (4.5*8mm) | 5      |
| P1-6-F-1   | CH16RTP02MSD      | 78.74in (2000mm) | 3.93in (100mm)  | 7.87in (200mm) | 0.18*0.31in (4.5*8mm) | 10     |

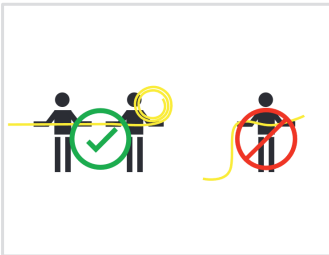
# MOUNTING PRECAUTIONS



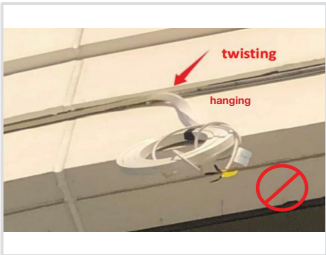
Wear Personal Protective Equipment (PPE) when handling the mounting profile. Sharp metal corners can cause serious injury.



Do not install fixtures with damaged lead wires or accessories. Water ingress can result.



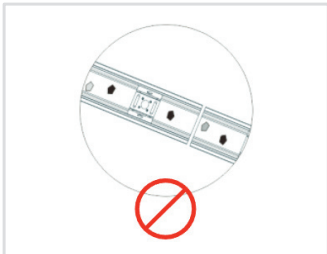
Repeated installation and removal can weaken the PCB. Two people are required for any fixture install longer than 6.5ft (2m). Damage to components can result.



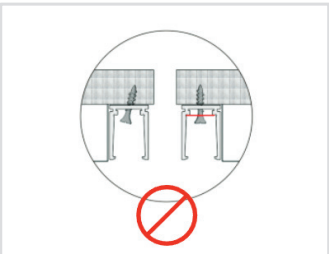
Do not allow light fixture to hang or twist while installing into mounting profile. Improper handling could lead to damage to the internal PCB of the fixture.



Do not install bent mounting profile.



When cutting the profile keep clean of debris and burrs to avoid damage to the light fixture.



Screws must be installed straight to avoid damage to the light.



Avoid angular misalignment



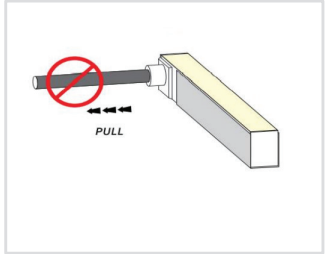
Avoid parallel vertical misalignment



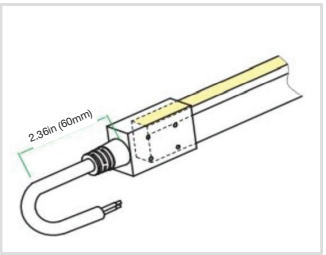
Avoid parallel horizontal misalignment



Do not join mounting profile in the same location as the wall joints. The expansion and contraction of the building surface will pull the lighting connection apart. Damage to components can result.



Do not pull the connector wire forcefully from the fixture. Water ingress can result.



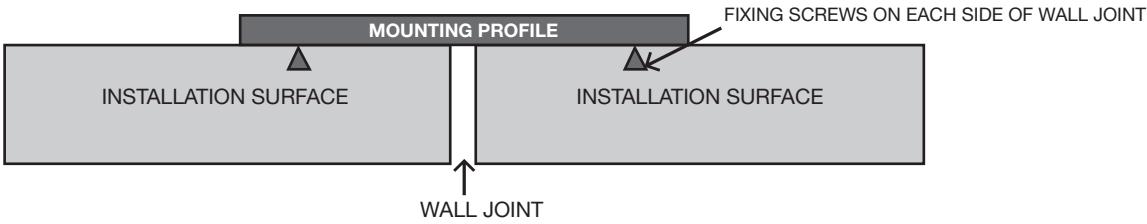
We recommend leaving 2.36in (60mm) for PVC & 0.79in (20mm) for Silicone fixtures of connector wire in its natural state. Bending too close to the fixture can result in damage.



# MOUNTING HARDWARE



## General Installation Instructions



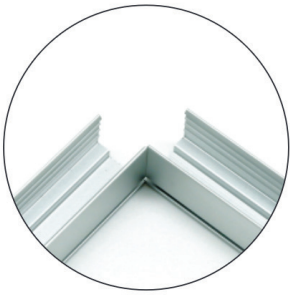
### STEP 1:

Allow for a 0.20in (5mm) gap where mounting profile joins for expansion and contraction.

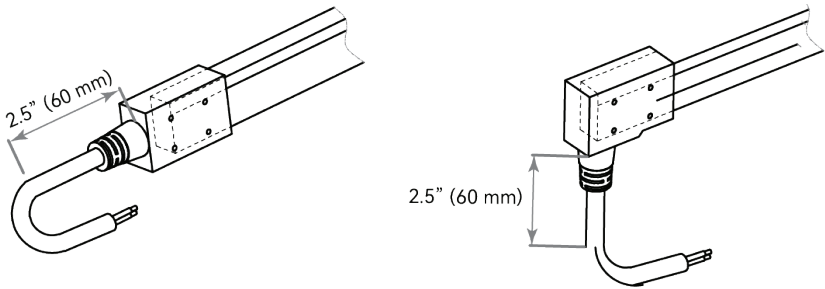


### STEP 2:

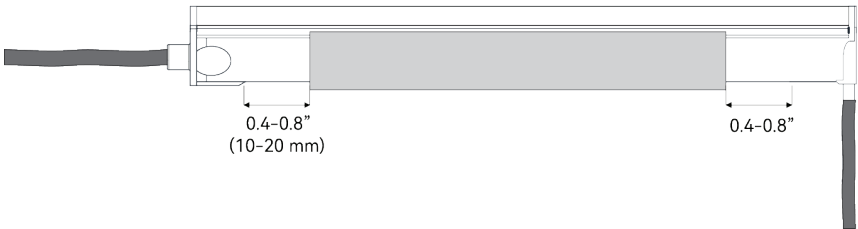
Only join mounting profile at an angle if the fixtures can also be joined at an angle.



Keep cables loose at joints: leave at least 60 mm for PVC cables and 20 mm for silicone cables. Do not pull the cable, as this may disable the connector and allow water ingress.



Leave 0.4" to 0.8" (10 - 20 mm) distance between the connector and mounting hardware to allow for expansion and contraction on of the fixture as it heats and cools.



# MOUNTING HARDWARE



## General Installation Instructions

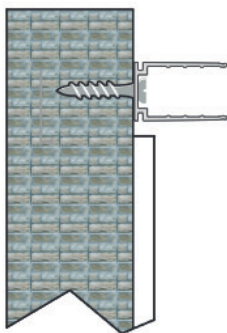
### STEP 3:

To curve fixtures, leave enough room for the channels and clips. It is suggested that the bendable channel be used in these instances.



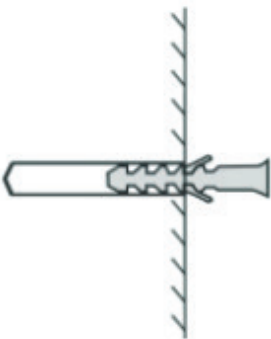
### STEP 5:

Ensure screws are installed perpendicular and in-line with or lower than the base of the profile.



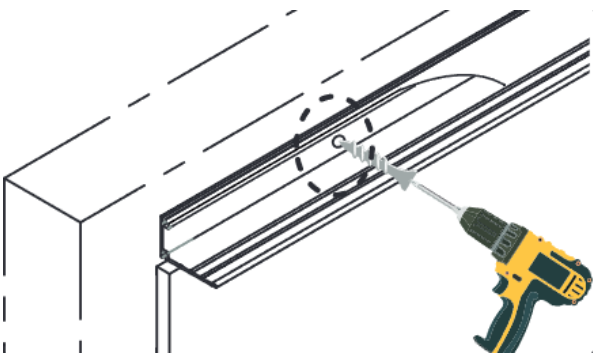
### STEP 4:

Install anchors, if necessary, to create a solid mounting surface to attach screws.



### STEP 6:

Install screws into all the mounting profile holes working down the entire track until everything is secured.



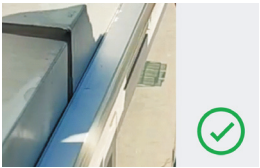
### CAUTION

Do not join mounting hardware in the same location as the wall joints. The expansion and contraction of the building surface will pull the lighting connection apart. Damage to components can result.



### CAUTION

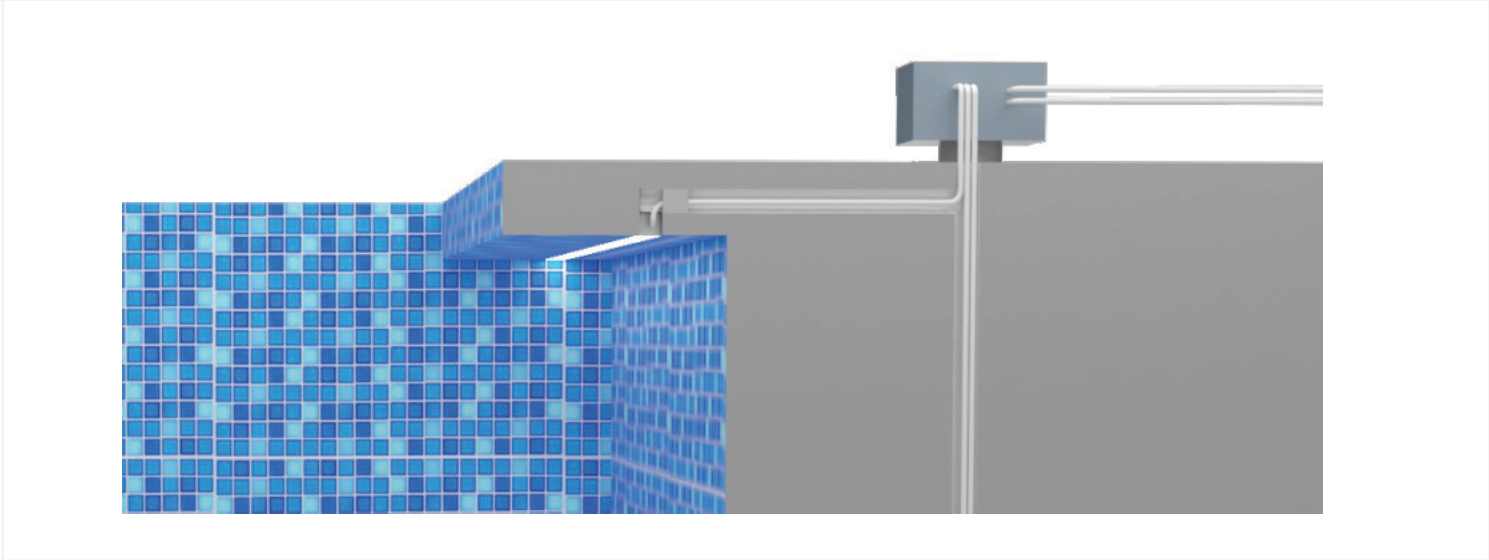
Ensure a continuous section of a fixture goes across all mounting hardware joint locations. Damage to components can result.



Use waterproof boxes and connectors for all cable joints.



For all underwater applications, use IP68 rated connectors and keep the cable joints away from the water.



 CAUTION

Electrical tape will not completely prevent water intrusion. Damage to components can result.



 CAUTION

Do not install improperly cut fixtures. Water intrusion can result.



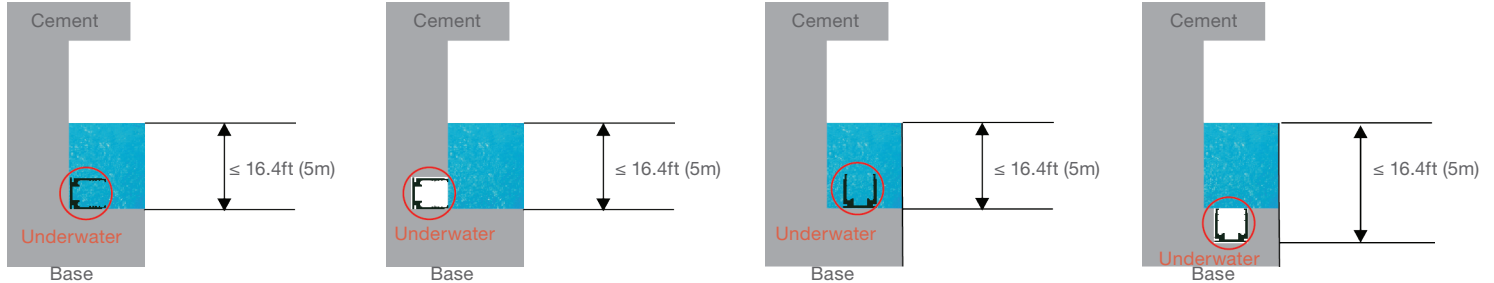
# UL676 PRODUCT INSTALLATION



## INSTALLATION POSITION

Surface and Embedded Installation

Note: Lights must be installed underwater and positioned within 16.4ft (5m) of the power source. For underwater applications, the max water temperature is 95°F (35°C).



a. Side Surface Installation      b. Side Embedded Installation      c. Bottom Surface Installation      d. Bottom Embedded Installation

## INSTALLATION SURFACE REQUIREMENT

The installation surface must be hard and flat, such as cement, brick, marble, ceramic tile, or mosaic tile. For embedded installations, the bottom of the slot where the profiles are fixed must also be level.

## BASIC CONSTRUCTION GUIDELINES

When installing pool lights:

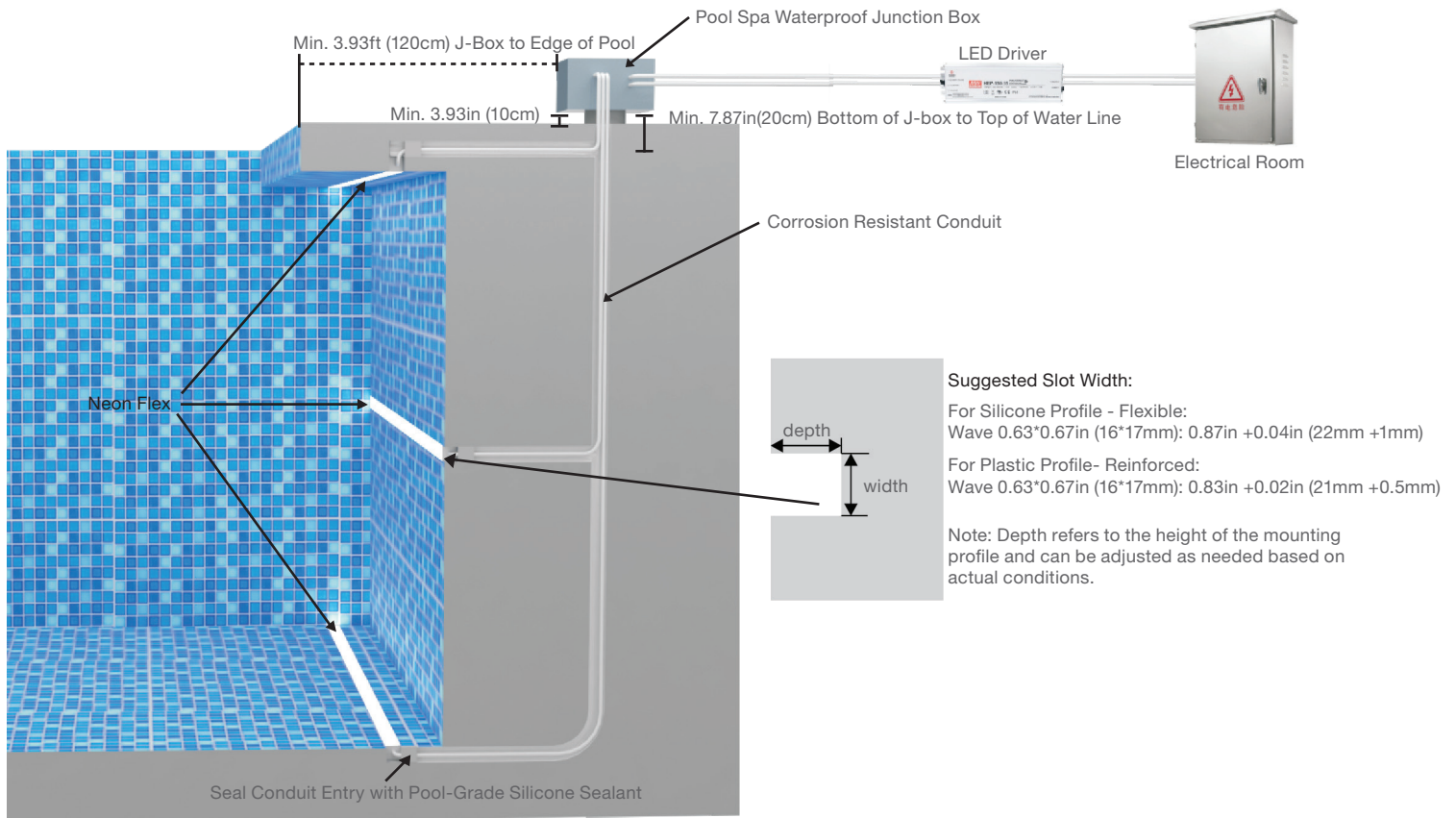
- Place the bottom of the junction box at least 3.93in (10cm) above the pool floor.
- Maintain a minimum of 7.87in (20cm) clearance below the water surface.
- Keep at least 3.93ft (120cm) horizontal clearance from the pool edge.

Requirements:

1. Always use a waterproof junction box for all cable connections, whether linking LED neon flex or connecting to the driver.
2. Run cables inside a conduit, and seal both ends and any openings with resin or silicone to prevent water or debris from entering.
3. For underwater installations, use only one cable per conduit whenever possible to make installation and maintenance easier.
4. Use a pull wire to guide the cable through the conduit. Once installed, seal both ends with epoxy or silicone to prevent
5. water ingress.



# UL676 PRODUCT INSTALLATION



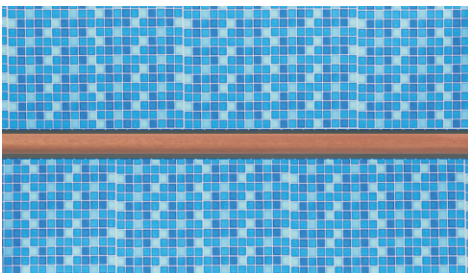
You can choose either surface or embedded installation. Embedded installation is recommended for better swimmer safety and improved light protection. When embedding, dig a slot in the installation surface.

## Notes:

1. Complete all groundwork first, including the junction box, switch installation, cable bushings, and slot cutting before installing the lights.
2. Only use an isolated low-voltage power supply with an ungrounded output rated for pool use.

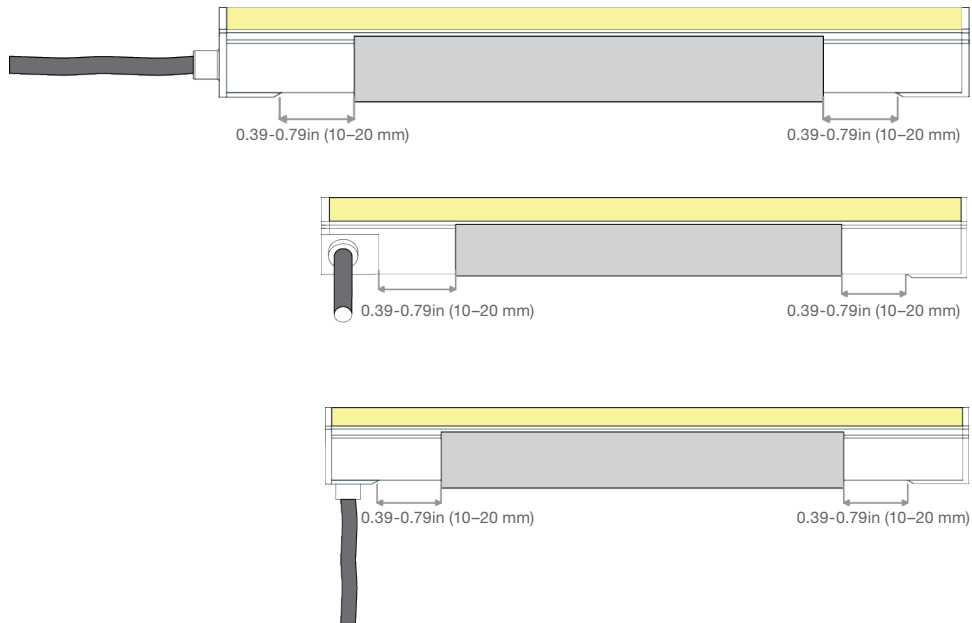
## TIPS FOR SLOTTING

1. Measure the profile and make the slot about 0.04-0.07in (1-2 mm) larger than the profile's dimension.
2. After the slot is cut, place a temporary insert inside (such as a wooden frame, a filler strip, or a cover). This ensures that during the rest of the pool construction process, the slot keeps its proper size and the strip is not damaged.



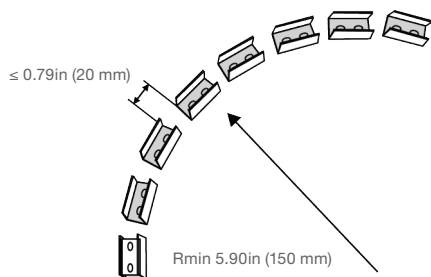
## CONNECTOR PLACEMENT

Always keep a 0.39-0.79in (10-20 mm) gap between each connector and the profile. This prevents damage caused by expansion, contraction, or movement of the profile, which could otherwise lead to water leaks or product failure.

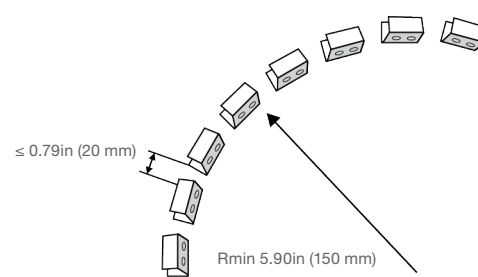


## CURVE INSTALLATION

1. Arrange the short 1.38in (35mm) plastic profiles on the mounting surface to form the required curve. Secure them with screws or adhesive.
2. Insert the light into the plastic profiles to complete the installation.



Plastic Profile Side Joint



Plastic Profile Top Joint

### Cautions:

1. Do not bend the lights to a diameter smaller than 11.81in (300mm).
2. Only bend the light in the direction indicated on the light body.
3. Keep at least 0.79in (20mm) of space between adjacent 1.38in (35mm) mounting profiles.
4. Only use factory-standard 1.38in (35mm) profiles. Cutting them on-site can create sharp edges that may damage the light or cause injury.
5. Ambient install temperatures for PVC profiles must be above 32°F (0°C) & ≥ -40°F (-40°C) for Silicone profiles, or the light may be damaged when unpacking or bending in the cold.

# UL676 PRODUCT INSTALLATION



## Mounting Instructions

### METHOD 1: SCREW FIXATION

**Advantages:** Provides a secure installation, resists loosening, and uses inexpensive materials.

**Disadvantages:** Requires professional tools and skilled installers. The process is more complicated.

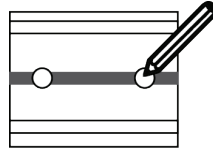
#### STEP 1: POWER OFF

Turn off the power supply for the lights to prevent electrical shock or accidents. Keep the power off for the entire installation process.



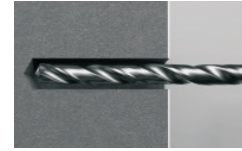
#### STEP 2: MARK DRILL POINTS

Mark hole positions on the mounting surface using the plastic profile, spacing them 7.87in (200mm) apart.



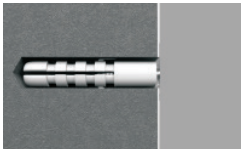
#### STEP 3: DRILL HOLES

Drill holes with a Ø0.24in (6mm) percussion bit to a depth of 1.38in (35mm), keeping the drill vertical.



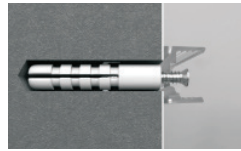
#### STEP 4: INSERT EXPANSION BOLTS

Insert the Ø6×1.81in (30mm) rubber expansion bolts into the holes.



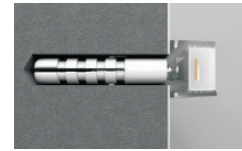
#### STEP 5: SECURE THE PROFILE

Fix the plastic profile in place with M4×1.81in (30mm) mm stainless steel screws.



#### STEP 6: INSTALL THE LIGHT

Unpack the light and press it into the plastic profile from one end to the other, ensuring the lighting surface faces outward.



#### STEP 7: CONNECT WIRING

Connect the light to the power supply or controller/dimmer.



#### STEP 8: CHECK WIRING

Verify all wiring against the provided wiring diagram.

#### STEP 9: TEST THE LIGHTS

Turn on the switch to check that the lights are working properly.

#### STEP 10: FINAL CHECK

Once confirmed, clean the site. Under professional supervision, refill the pool to its normal water level. Cycle the lights and controller 3–5 times to confirm proper operation.



# UL676 PRODUCT INSTALLATION

## Mounting Instructions

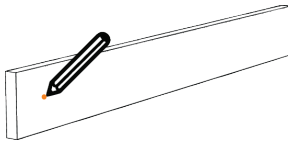
### METHOD 2: ADHESIVE FIXATION

**Advantages:** No special tools needed, easy and straightforward installation.

**Disadvantages:** Adhesive is more expensive and may weaken or loosen over time.

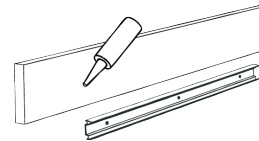
#### STEP 1:

Mark the position where the profile should be installed to the base, then clean any debris from both the base and the bottom of the plastic profile.



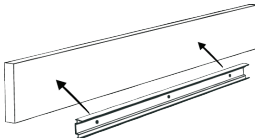
#### STEP 2:

Apply the anti-chlorine waterproof adhesive evenly to the marked surface and the bottom of the plastic profile.



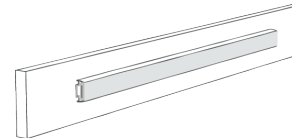
#### STEP 3:

Press the profile onto the base with the adhesive, and wait for 24 hours until the profile is completely bonded to the base.



#### STEP 4:

Insert the fixture into the slot of the plastic profile, pressing it in from one end to the other with your palm in an orderly manner.



# FIXTURE INSTALLATION



STEP 1:

STEP 2:

Ensure that is light is properly oriented and installed in a vertical position.

The prevent damage to the internal electronic components, apply pressure to the light using the palm of your hand rather than your fingers when inserting it into the profile.

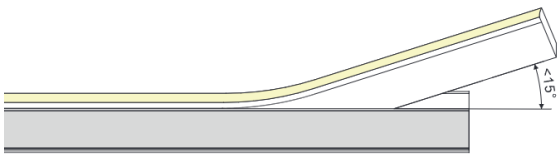


STEP 3:

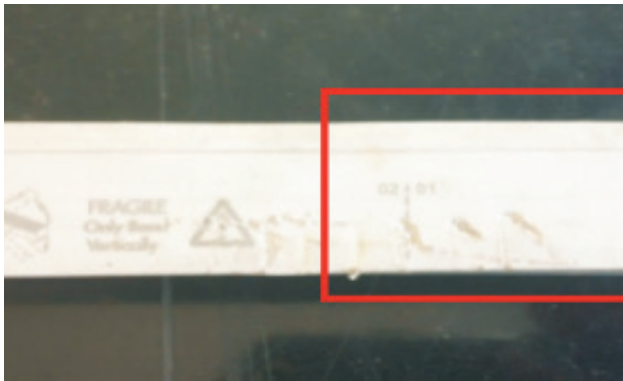
To avoid potential damage to the PCB inside the fixture, ensure that the angle between the light and the profile does not exceed 15°.

STEP 4:

When dealing with fixtures longer then 6.5ft (2m) in length, remember to seek assistance in lifting them. Improper handling could lead to the weight of the fixture causing a minor bending angle or twisting potentially, resulting in damage to the internal PCB of the fixture.



NOTE: Ensure that the light body is not grazed or scraped during installation, as any damage to the surface can puncture the light housing and result in water ingress.



# FIXTURE REMOVAL

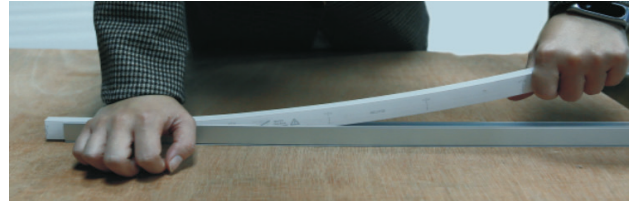
## STEP 1:

Prepare a screwdriver and position it at the base of the light fixture.



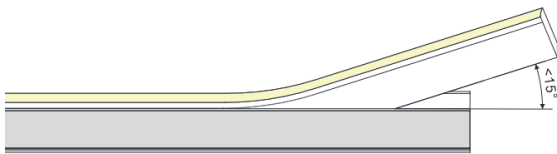
## STEP 2:

Gently pry the screwdriver upwards, carefully disengaging the light from its fixture. Ensure that the angle between the light and the profile does not exceed 15°.



## STEP 3:

When detaching the light, firmly grip both ends and steadily remove it along the profile, maintaining a controlled and deliberate motion. Ensure that the angle between the light and the profile does not exceed 15°, as this could lead to harm to the internal PCB.



## STEP 4:

When dealing with fixtures longer than 6.5ft (2m) in length, remember to seek assistance in lifting them. Improper handling could lead to the weight of the fixture causing a minor bending angle or twisting, potentially resulting in damage to the internal PCB of the fixture.



### CAUTION

It's not recommended to install the light repeatedly, otherwise the light inside may be damaged.

### CAUTION

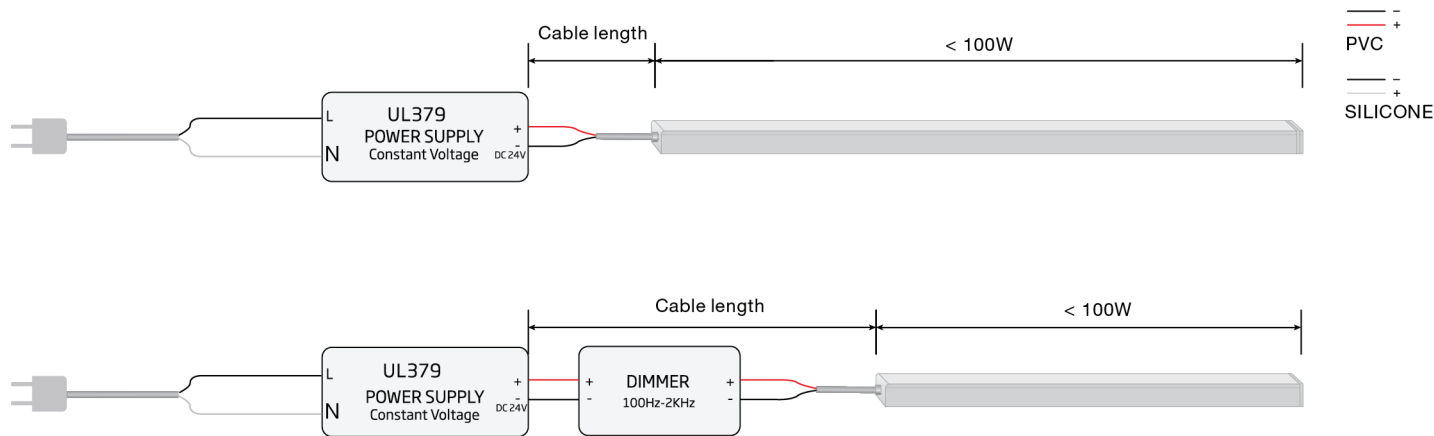
If it is too hard to install the light into the mounting profile, do not force. Contact us immediately.

# WIRING DIAGRAM

## Static

- 1. For supply connection, use only an isolating low voltage power supply with ungrounded output, evaluated for swimming pool use.
- 2. Dimming frequency ranges from 100Hz to 2000Hz, and 500Hz is recommended.

### WIRING - STATIC - SINGLE



### LIGHT LENGTH

The length of the longest single light in parallel connection or sum of lights in series connection.

### CABLE LENGTH

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

### HOW TO MINIMIZE VOLTAGE DROP

- 1. It is optimal to position the power supply in the middle of a single light or multiple lines in daisy chain to keep the equivalent cable length on both ends for double-end feed.
- 2. Please ensure the cable length is not more than the table “Max. Cable Length” according to the half of light length and its wire gauge.
- 3. Shielded Twisted Pair cable is required to be used to connect DMX master controller and decoder, and its length shall be less than 300m.

### MAX RUNNING LIGHT LENGTH 1 CONNECTOR

| CONNECTOR TYPES                      | PVC SUBMERSIBLE | SILICONE SUBMERSIBLE |
|--------------------------------------|-----------------|----------------------|
| Wire gauge                           | 18AWG*2         | 18AWG*2              |
| PVC 24V: Power 2.43W/ft (8W/m)       | 31.5ft (9.6m)   | N/A                  |
| PVC 24V: Power 3.66W/ft (12W/m)      | 21.0ft (6.4m)   |                      |
| Silicone 24V: Power 1.82W/ft (6W/m)  |                 | 42ft (12.8m)         |
| Silicone 24V: Power 2.43W/ft (8W/m)  |                 | 31.5ft (9.6m)        |
| Silicone 24V: Power 2.74W/ft (9W/m)  | N/A             | 28ft (8.53m)         |
| Silicone 24V: Power 3.66W/ft (12W/m) |                 | 21.0ft (6.4m)        |
| Silicone 24V: Power 4.57W/ft (15W/m) |                 | 16.8ft (5.12m)       |

Note: Above conclusion is based on voltage drop testing result of the light with 0.98ft (0.3m) cable only. The maximum running length is based on a static light in full load. Above running length is only the light length excluding lengths of connectors. The delivered length might be subject to the maximum packing length.



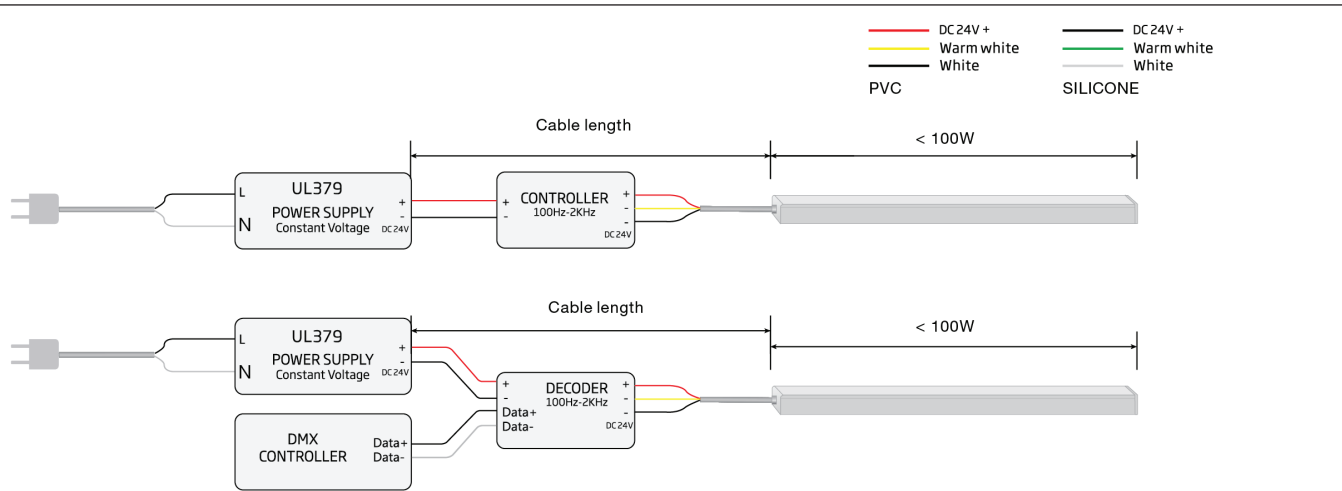
# WIRING DIAGRAM

## Tunable White

1. For supply connection, use only an isolating low voltage power supply with ungrounded output, evaluated for swimming pool use.

2. A compatible controller is required to achieve various light changing effects.
3. The rated power of controller/decoder shall be higher than the actual power consumption of light, its frequency range shall be 100~2000Hz, and 500Hz is recommended.

### WIRING - TUNABLE WHITE - SINGLE



### LIGHT LENGTH

The length of the longest single light in parallel connection or sum of lights in series connection.

### HOW TO MINIMIZE VOLTAGE DROP

1. It is optimal to position the power supply in the middle of a single light or multiple lines in daisy chain to keep the equivalent cable length on both ends for double-end feed.
2. Please ensure the cable length is not more than the table “Max. Cable Length” according to the half of light length and its wire gauge.
3. Shielded Twisted Pair cable is required to be used to connect DMX master controller and decoder, and its length shall be less than 300m.

### CABLE LENGTH

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

### MAX RUNNING LIGHT LENGTH 1 CONNECTOR

| CONNECTOR TYPES                                | PVC SUBMERSIBLE | SILICONE SUBMERSIBLE |
|------------------------------------------------|-----------------|----------------------|
| Wire gauge                                     | 18AWG*3         | 18AWG*3              |
| PVC 24V Full Load: Power 3.66W/ft (12W/m)      | 21.0ft (6.4m)   | N/A                  |
| Silicone 24V Full Load: Power 3.66W/ft (12W/m) | N/A             | 21.0ft (6.4m)        |

Note: Above conclusion is based on voltage drop testing result of the light with 0.98ft (0.3m) cable only. The maximum running length is based on a static light in full load. Above running length is only the light length excluding lengths of connectors. The delivered length might be subject to the maximum packing length.

# WIRING DIAGRAM

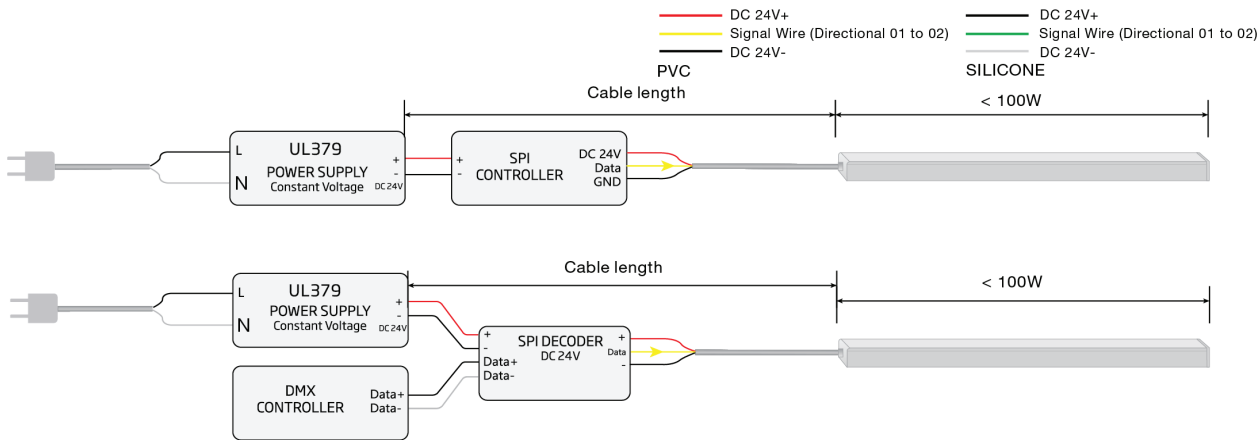
## SPI-Pixel

1. For supply connection, use only an isolating low voltage power supply with ungrounded output, evaluated for swimming pool use.

2. A compatible decoder or controller that outputs SPI signal is required for this product with UCS2903 or UCS2904 IC inside.
3. The number of pixels light used should not exceed the maximum number of pixels of controller/decoder.

4. To avoid signal attenuation, please ensure the overall cable length is within the maximum signal transmission distance according to the specification of controller/decoder.

### WIRING - SPI-PIXEL - SINGLE



### LIGHT LENGTH

The length of the longest single light in parallel connection or sum of lights in series connection.

### CABLE LENGTH

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

### HOW TO MINIMIZE VOLTAGE DROP

1. It is optimal to position the power supply in the middle of a single light or multiple lines in daisy chain to keep the equivalent cable length on both ends for double-end feed.
2. Please ensure the cable length is not more than the table “Max. Cable Length” according to the half of light length and its wire gauge.
3. Shielded Twisted Pair cable is required to be used to connect DMX master controller and decoder, and its length shall be less than 300m.

### MAX RUNNING LIGHT LENGTH 1 CONNECTOR

| CONNECTOR TYPES                                  | PVC SUBMERSIBLE | SILICONE SUBMERSIBLE |
|--------------------------------------------------|-----------------|----------------------|
| Wire gauge                                       | 18AWG*3         | 18AWG*3              |
| PVC 24V Full Load: Power 3.05W/ft (10W/m)        | 23.6ft (7.19m)  | N/A                  |
| PVC 24V Full Load: Power 3.66W/ft (12W/m)        | 21.0ft (6.4m)   |                      |
| PVC 24V Full Load: Power 5.02W/ft (16.5W/m)      | 15.26ft (4.65m) |                      |
| PVC 24V Full Load: Power 4.57W/ft (22W/m)        | 11.45ft (3.49m) |                      |
| Silicone 24V Full Load: Power 3.05W/ft (10W/m)   | N/A             | 25.2ft (7.68m)       |
| Silicone 24V Full Load: Power 3.66W/ft (12W/m)   |                 | 21.0ft (6.4m)        |
| Silicone 24V Full Load: Power 5.02W/ft (16.5W/m) |                 | 15.26ft (4.65m)      |
| Silicone 24V Full Load: Power 4.57W/ft (22W/m)   |                 | 11.45ft (3.49m)      |

Note: Above conclusion is based on voltage drop testing result of the light with 0.98ft (0.3m) cable only. The maximum running length is based on a static light in full load. Above running length is only the light length excluding lengths of connectors. The delivered length might be subject to the maximum packing length.

| TROUBLE                                | SOLUTION                                                                                                                                                                                               |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brightness and Color Temperature Drift | a. Verify that the wiring cable has sufficient wire thickness and is of appropriate length.<br>b. Check for any abnormal voltage drops in the line, ensuring the terminal voltage is above 21.6V.      |
| Some LED light sources are dark        | Verify that fixture is not bent beyond specified bending diameter. This will result in the damage of the internal circuit.                                                                             |
| Light flickers abnormally              | a. Verify power supply and dimmers meet/exceed recommendations.<br>b. Verify connections to ensure proper conductivity. GLLS recommends the use of lever-type connectors to ensure secure connections. |
| Light is on and off repeatedly         | Verify power supply is not overloaded and verify terminal voltage is above 21.6V.                                                                                                                      |