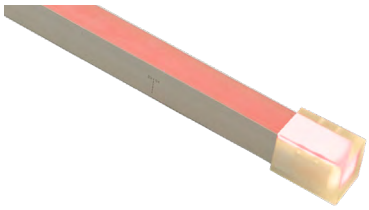
# FLEX-SQUARE STATIC COLOR POOL & SPA

FLEX LIGHT - POOL & SPA



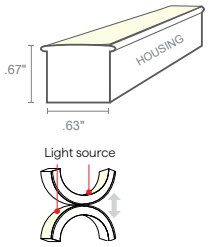
The FLEX series is ideal for spaces where the light will be in direct view. As the name implies, these LED lights are flexible and can be easily molded into different curvatures. The housing and the lens allow for a perfect monochromatic light source with no hot spots. All of QTL's FLEX series fixtures are made with high-quality SMD LED chips, are UV and flame resistant and are extremely energy-efficient.

The FLEX Square Static Color Pool & Spa is available in red, green, blue and amber and is submersible rated (IP68).

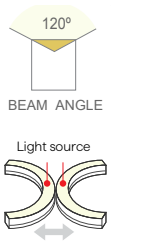
## Technical Information

| CCT | Lumen/ft | | CRI |
|---|---|---|---|
| | VB | HB | |
| Red | 89 | 78 | 632 |
| Green | 239 | 211 | 519 |
| Blue | 61 | 54 | 465 |
| Amber | 96 | 85 | 592 |

## Dimensions




**VB**: Vertical Bending
Min.11.81" bending diameter




**HB**: Horizontal Bending
Min.11.81" bending diameter

## Lead Wire Length (ft)

| LED Load (W) | Max Recommended Lead Length (ft) 18AWG |
|---|---|
| 20W | 160 |
| 30W | 95 |
| 40W | 70 |
| 50W | 55 |
| 60W | 45 |
| 80W | 30 |
| 100W | 16 |

## Part Number Builder

| Product | Series | CCT | Bend Direction | Watts/ft | Connector In | Connector In Orientation | Connector In Wire Length | Connector Out | Connector Out Orientation | Connector Out Wire Length | Illuminated Length (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **FLS-SC-PS** | **P** | | | | **DIM** | | | **DIM** | | | |
| **FLS-SC-PS**<br>FLEX Square Static Color Pool & Spa (IP68)<br>Voltage: 24 VDC | **P**<br>PVC | **RD AB** - Red - Amber<br>**GR BL** - Green - Blue | **VB** Vertical Bend<br>**HB** Horizontal Bend | **2.4**<br>**3.6** | **DIM**<br>Dual Injected-Molded | **FC BC SCL SCR** | **15' 30' 50' 100'** | **DIM**<br>Dual Injected-Molded | **FC BC SCL SCR EC** | **15' 30' 50' 100' N/A** | Red & Amber: only available in 3.28" increments<br>Green & Blue: only available in 2.19" increments<br>**Nominal max length:**<br>Red & Amber: 40'<br>Green & Blue: 26' |

- Product length = illuminated length + connector length
- For factory assembled connector information, see page 2
- For compatible power supplies, see page 2
- For extrusion options, see page 2 (sold separately)

- 5 year warranty on PVC
- UL 676 listed
- IP68 Pool & Spa rated
- Maximum submersible depth of 16.4 feet
- 2.4 W/ft Ambient temperature: -40°F to 140°F
- 3.6 W/ft Ambient temperature: -40°F to 131°F
- Ambient temperature: -40°F to 131°F
- Ambient installation temperature: -40°F
- Max Mounting Surface Temperature: 180°F (In the non-working state of light)
- Storage temperature: -40°F to 140°F
- UV & Flame resistant construction
- No diode imaging
- PVC construction
- Pool installations require end cap/no daisy chain

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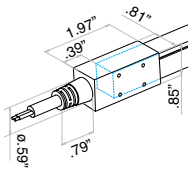
# FLEX-SQUARE STATIC COLOR POOL & SPA

FLEX LIGHT - POOL & SPA

## Dual Injected Molded Connector - IP68

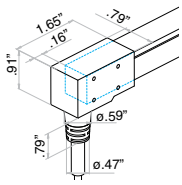
**DUAL INJECTED-MOLDED CONNECTOR - IP68 | PVC**

**DIM-FC**



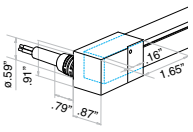

Front

**DIM-BC**



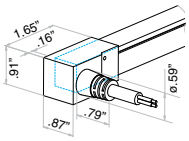

Bottom

**DIM-SCL**



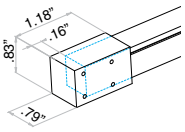

Side-Left

**DIM-SCR**




Side-Right

**DIM-EC**




End cap

## Compatible Power Supplies

See website for additional power supply options

**Q-SET-eLED**



**QOM-eLED-PS**



**QOM-PH-PS**



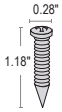
## Compatible Applications

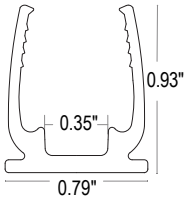
| Application | Water Type | | | | | |
|---|---|---|---|---|---|---|
| | Fresh Water | Sea Water (≤ 4%) | Pool Water | | Pool Water (O Zone 0.3PPM) | Hot Spring ≤ 45°C |
| | | | Free Chlorine ≤ 2PPM | Free Chlorine > 2PPM but ≤ 5PPM | | |
| PVC Yes/No | ✓ | ✓ | ✓ | X | ✓ | ✓ |

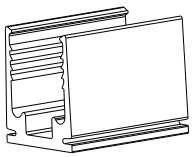
## Compatible Extrusions and Clips

NOTE: Field cuttable. 1.38" length acts as a clip when used.

**FLS-NONL-PL:** Non self-locking plastic profile
**Finish:** Clear
**Available lengths:** 1.38", 19.68", 39.37", 78.74"





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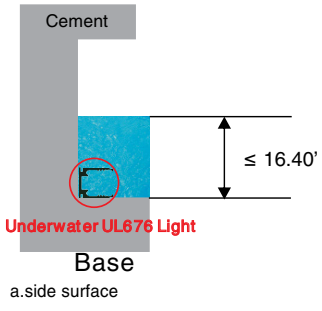
# FLEX LIGHT - FLEX SQUARE

Installation Instructions

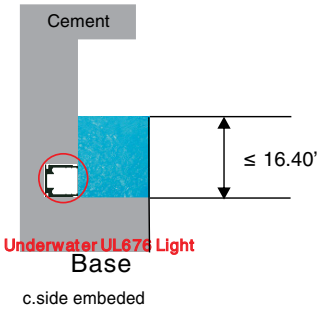
## Cautions

1. Follow the electrical safety regulations of the country, and make sure that the products are installed and maintained by qualified electrician.
2. Before making any installation, maintenance or connection, be sure the mains are disconnected.
3. Please operate the light by instructions, and ensure the working voltage meets product requirement.
4. Construction of underwater projects shall comply with NEC 680 regulation, and designated accessories are required for installation.
5. Water contact are prohibited for wiring and installation of devices.
6. The products are suitable for seawater and freshwater and not allowed to be used in therapeutic pools/ hot tubs with special chemicals that are likely to damage the light or places alike, nor in any corrosive liquid.
7. Cable junction box must be kept on the shore and above the ground at least 4".
8. Do not energize the light over 30 minutes in coil packaging.
9. Do not cut, renovate, and dismantle the light .

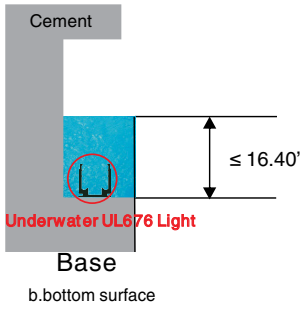
## 1. Installation Position - Surface, embedded



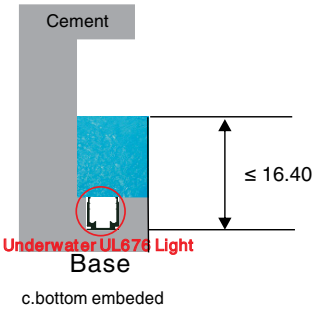
a.side surface



c.side embeded



b.bottom surface



c.bottom embeded

## 2. Requirement for Installation Surface

Hard and flat base surface is required such as cement, brick masonry, marble, ceramic tiles or mosaic tiles, and so on. In the case of embedded installation, the bottom of slot in which the profiles are fixed should also be flat.

| Application | Water Type | | | | | |
|---|---|---|---|---|---|---|
| | Fresh Water | Sea Water (≤ 4%) | Pool Water | | Pool Water (O Zone 0.3PPM) | Hot Spring ≤ 45°C |
| | | | Free Chlorine ≤ 2PPM | Free Chlorine > 2PPM but ≤ 5PPM | | |
| Silicone Yes/No | ✓ | ✓ | ✓ | X | ✓ | ✓ |

(The light surface may generate white flocculate thing which doesn't affect the function)

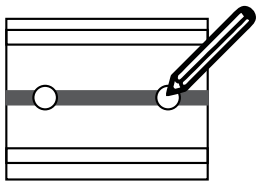
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# FLEX LIGHT - FLEX SQUARE

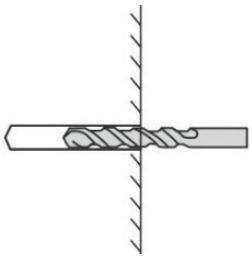
Installation Instructions

## 3. Fixing Method

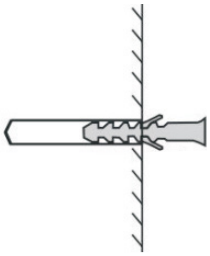
3.1. Screw fixation



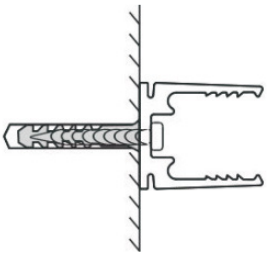
Step 1:
Mark the hole position
on mounting surface.



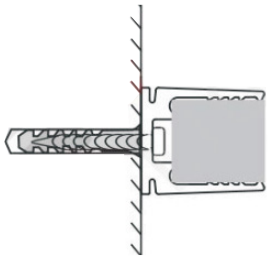
Step 2:
Punch the hole on
the marked position.



Step 3:
Drive the rubber expansion
bolt into the hole.



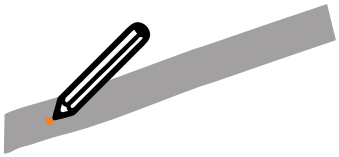
Step4:
Screw up the plastic profile.



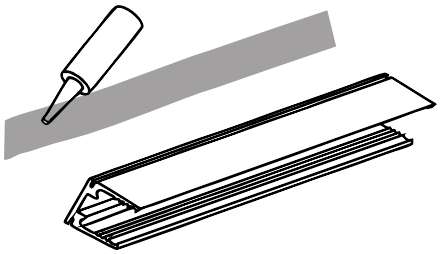
Step 5:
Fix the light into
the mounting profile

## 3. Fixing Method

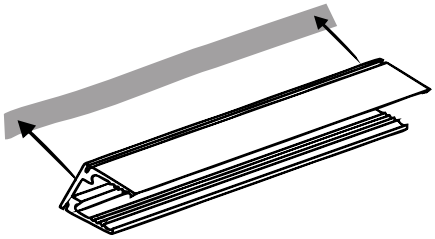
3.2. Adhesive Fixation



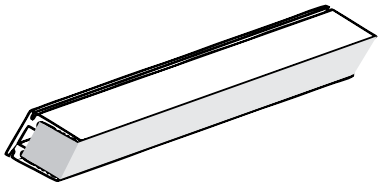
Step 1:
Mark the position where the profile should be fixed
on base first, and then clean the debris on the base and
on the bottom of plastic profile.



Step 2:
Apply the anti-chlorine waterproof adhesive evenly
on the marked surface and the bottom of plastic profile.



Step 3:
Press the profile onto the base with adhesive,
and wait for 24 hours until the profile is
completely bonded on base.



Step 4:
Press the fixture into the slot of plastic
profile from one end to another end by palm orderly.

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## 4. Comparison of Two Fixing Methods

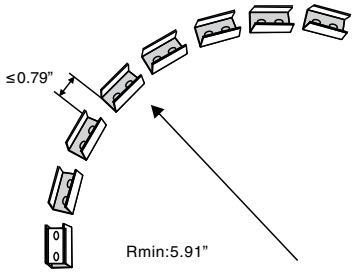
| SCREW FIXATION | |
|---|---|
| ADVANTAGES | • Reliable installation, not easy to loose and less material cost |
| DISADVANTAGES | • Professional tools are required, installers should be experienced<br>• Installation process is relatively complicated |

| ADHESIVE FIXATION | |
|---|---|
| ADVANTAGES | • No professional tool is needed and construction process is simple |
| DISADVANTAGES | • Cost is relatively high, ageing and loosening of adhesive sometimes occur |

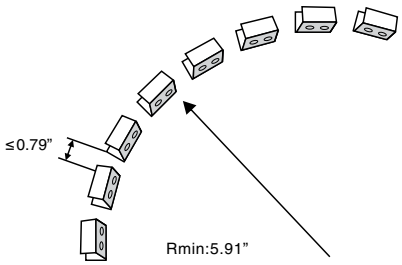
## 5. Curve Installation

5.1. Put the short plastic profiles in auxiliary material table on the mounting surface in sequence to form an arc required, and fix them through screw fixation or adhesive fixation method.

5.2. Put the light into the joined plastic profile to complete installation of light.




Plastic Profile Joint Horizontally




Plastic Profile Joint Vertically

**CAUTIONS**
a. The minimum bending diameter of lights should not be smaller than 11.81".
b. The light can only be bended in the direction lasered on the light body (which shall be known prior to purchasing).
c. The nearest distance between 1.5" short mounting profiles shall not be larger than 0.79".
d. Be sure to use standard 1.38" short mounting profiles. Site cutting would create sharp edges which would damage light or lead to wounding.

## 6. Cautions

a. Ambient installation temperature for -40°C
b. Confirm the followings before unpacking:
- Only the light with UL676 mark can be installed underwater.
- Rated voltage is DC24V

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# FLEX LIGHT - FLEX SQUARE

Installation Instructions

## Swimming Pool Installation

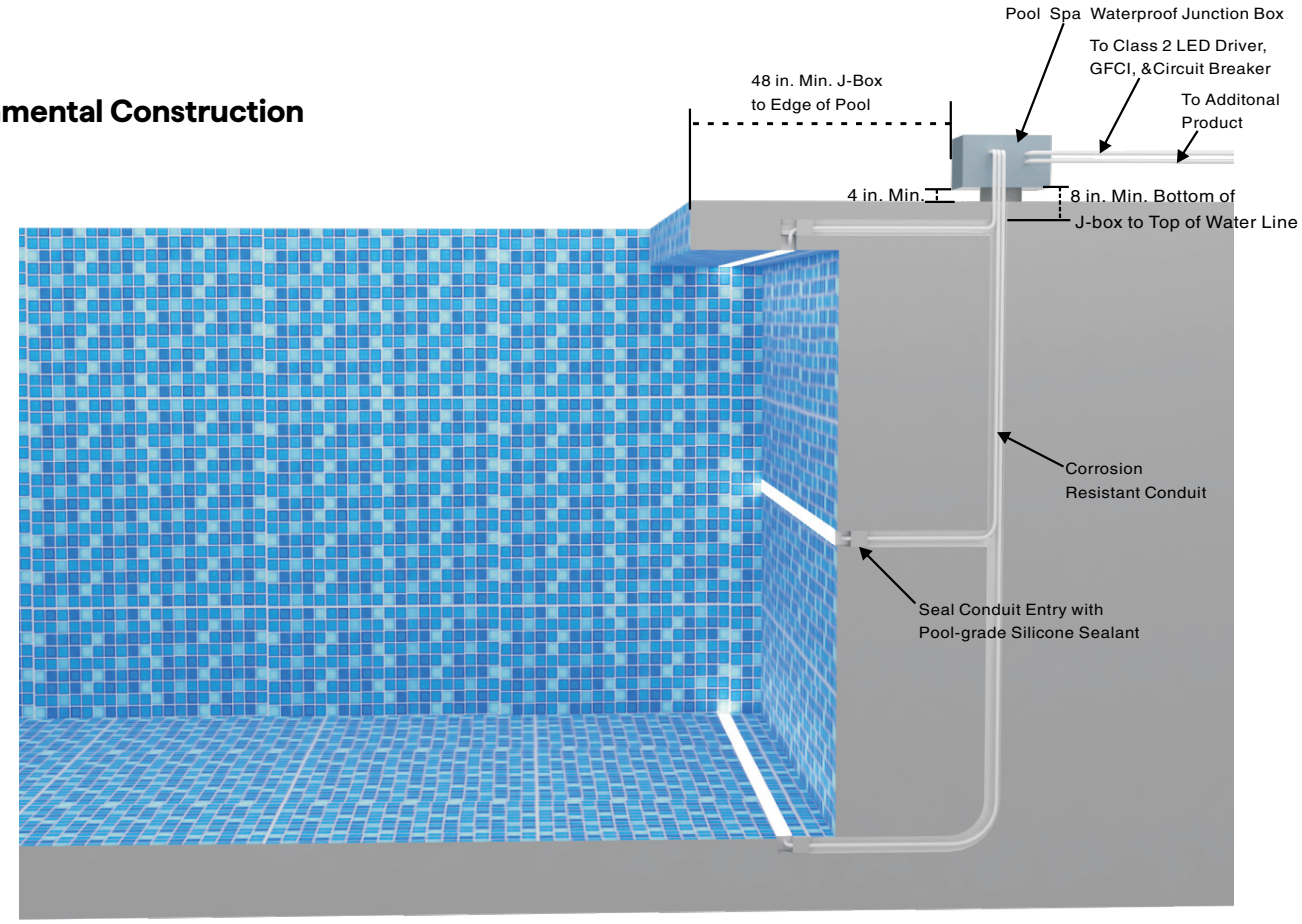
**REGULATIONS**

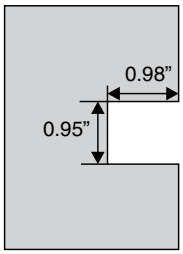
In accordance with the requirements of NEC680 regulation in the United States, when an illumination light is installed in the swimming pool, the distance from the bottom of the terminal box to the ground shall be no less than 4 inches. The vertical distance to the water surface of the swimming shall not be less than 8 inches, and the horizontal distance to the water edge of the swimming pool shall not be less than 48 inches.

**REQUIREMENT FOR POWER SUPPY**

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

## Fundamental Construction




For swimming pool, the embedded installation is strongly suggested so as to secure the swimmers' safety and avoid the damage to lights, so a slot for implanting profiles should be prepared on mounting surface first, suggested slot sizes: 0.95” in width, 0.98” in depth.

**All the fundamental constructions, including the installation of junction box and switch, cable bushing and laying, the digging of slots, etc., should be done before the light installation.**

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# FLEX LIGHT - FLEX SQUARE

Installation Instructions

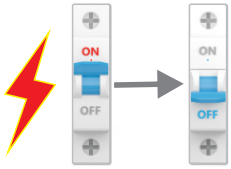
## Screw Fixation Installation

**MATERIALS**

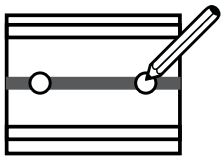
- FLS-NONL-PL Plastic profile
- ø6*30 rubber expansion bolt
- M4*30 stainless steel screw

1. Cut off the power supply for lights to avoid any electrical shock or casualty, and remember to keep the power off during the whole period of installation.

2. Use plastic profile as a tool to mark the hole positions in the bottom of slots prepared in fundamental construction as per the positions of screw holes in the plastic profile, with interval of 7.87".



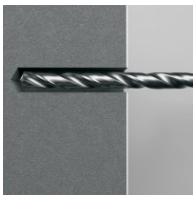

**Step 1**
Power Off



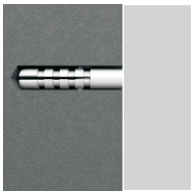
**Step 2**
Mark The Punching Position

3. Punch holes with a ø0.24" percussion bit on the marked positions, at depth of 1.38", and always keep the axial line of the holes vertical with the bottom of the slot.

4. Drive the ø6*30 rubber expansion bolt into the punched hole.



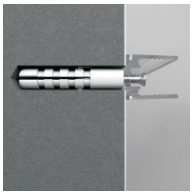
**Step 3**
Punch The Hole



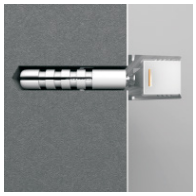
**Step 4**
Fit The Rubber Expansion Bolt

5. Fix plastic profile with M4*30 stainless steel screw.

6. Unpack and take out the light, and press it into the plastic profile from one end to another end of profile orderly by palm with lighting surface outwards.



**Step 5**
Fix The Mounting Profile



**Step 6**
Fix The Light

7. Connect the light with the power supply or controller/dimmer.

8. Check wiring carefully according to planed diagram to ensure no mistakes happen.

9. Turn on the switch to test the lights.

10. After confirmation of the whole connection, clean the site, and fill water into the swimming pool until normal working level under supervision of professional construction and electrical personnel, and check if the light works normally. Turn on and off the lights 3-5 times and observe if there's any abnormality. The controller should also be checked if involved.



**Step 7**
Wiring

**Step 8/Step 9/Step 10**
Checkup

**The installation will be completed only when the switches, controllers and lights are all in good working state.**

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## Other Installation Cases

**Referring to the above installation guidance of swimming pool, the primary procedures include:**

1. Read the user manual carefully, and remember the relevant safety clauses included.

2. Make the installation plan, such as wiring diagram, selection of power supply and controller, wire gauge and length, etc.

3. Installation:
   - Mounting Position: surface or embedded
   - Fixation Method: screw or adhesive
   - Installation Procedure:
     - Mark the places where the profiles should be fixed
     - Fix plastic profiles through screw or adhesive
     - Put lights into mounting profiles properly
     - Connect light with power supply

4. Check, power on and test.

5. Clear the site.

## Troubleshooting

| TROUBLE | SOLUTION |
|---|---|
| Brightness and Color Temperature Drift | • Check if the wiring cable is too thin in conductor section or too long in length.<br>• Check if the line has other abnormal voltage drop, and if terminal voltage is lower than 22.5V. |
| Some LED light sources are dark | • Check if light is over bended which results in damage of inner circuit. |
| Light flickers abnormally | • Check if power supply and dimmer are selected properly.<br>• Check if connection of route is in poor contact state. |
| Light is on and off repeatedly | • Check if driver is overloaded and if the terminal voltage is lower than 22.5V. |

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