

Underwater Application User Guide

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Safety Warning

1. Following the country's electrical safety regulations, and make sure the products are installed and maintained by a qualified electrician.
2. Before any installation, maintenance, or connection, make sure the power is disconnected.
3. Follow the manufacturer's instructions, and ensure the working voltage meets the product's requirements.
4. Underwater projects must comply with NEC 680 regulations, using specified accessories for installation.
5. Keep wiring and device installation away from water contact.
6. The cable junction box must be placed on shore, at least 10cm above ground.
7. Do not cut or dismantle the light.
8. These products work in seawater and freshwater but must not be used in therapeutic pools or hot tubs with chemicals that can damage the light, or in any corrosive liquids.
9. Do not leave the light powered on for more than 30 minutes while it is coiled.

Pool water disinfecting tips

**WARNING:**

Direct contact with undiluted pool chemicals may cause damage.

Proper Handling:

1. Pre-dissolve:
Pre-dissolve disinfectants in a separate container of water and ensure they are fully dissolved before adding to the pool.
2. Apply safety
Pour the diluted mixture at least 1m (3ft) away from any installed LED neon flex.

To make sure you select the suitable product and implement the pool/underwater project successfully, we will go through three parts as below:

1. What to provide us in advance.
2. How to choose the suitable product.
3. Implementation.

What to Provide Us in Advance

It would be better to share with us the CAD file or pictures of the swimming pool including the information below, as it will help us provide the correct solution.

Retrofit the Lights in the Pool

- a. The distance between the electrical room and junction box, power feed position of the product
- b. The quantity and the position of the current wiring and connection boxes (if it has) which is helpful for provide solution.
- c. Swimming pool disinfection method (ozone, chlorine...)
- d. Any special chemical thing in the water.
- e. Some other information regarding the pool if needed.

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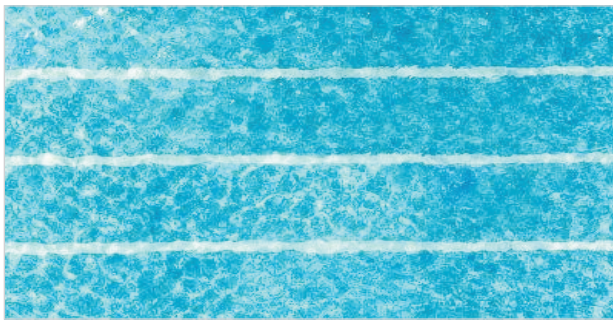
What to Provide Us in Advance

Lights for a Brand New Pool

- The position of the electrical room.
- Your requirement on the wiring, such as the quantity of connection box.
- Swimming pool disinfection method.
- Any special chemical thing in the water.
- Your any other requirement for the installation.



Connection box (waterproof junction box filled by silicone glue or epoxy resin)



Electrical Room



Connection box

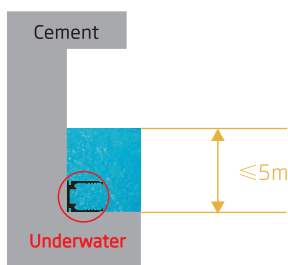


Connection box

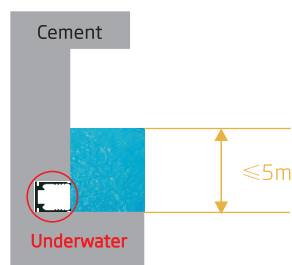
Implementation

Installation Position

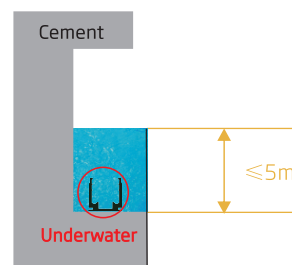
Surface, embedded installation



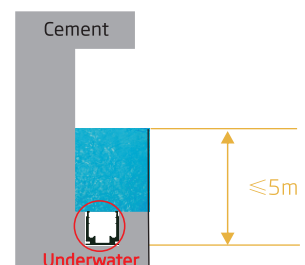
Base
a. side surface



Base
b. side embedded



Base
c. bottom surface



Base
d. bottom embedded

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Implementation

Installation Surface Requirements

A hard, flat base surface is required such as cement, brick masonry, marble, ceramic tile, or mosaic tile. For embedded installations, the bottom of the slot where the profiles are fixed should also be flat.

Installation Surface Requirements

Regulations

When installing lights in a pool, keep the bottom of the junction box $\geq 10\text{cm}$ above the floor, maintain $\geq 20\text{cm}$ vertical clearance below the water surface, and $\geq 120\text{cm}$ horizontal clearance from the pool edge.

1. Use a waterproof junction box for all cable connections, whether linking LED neon flex or connecting to the driver.
2. Run cables inside conduit, and seal both inlet and outlet holes with resin or silicone to prevent water or debris entry.
3. For underwater use, run one cable per conduit when possible to simplify installation and maintenance.



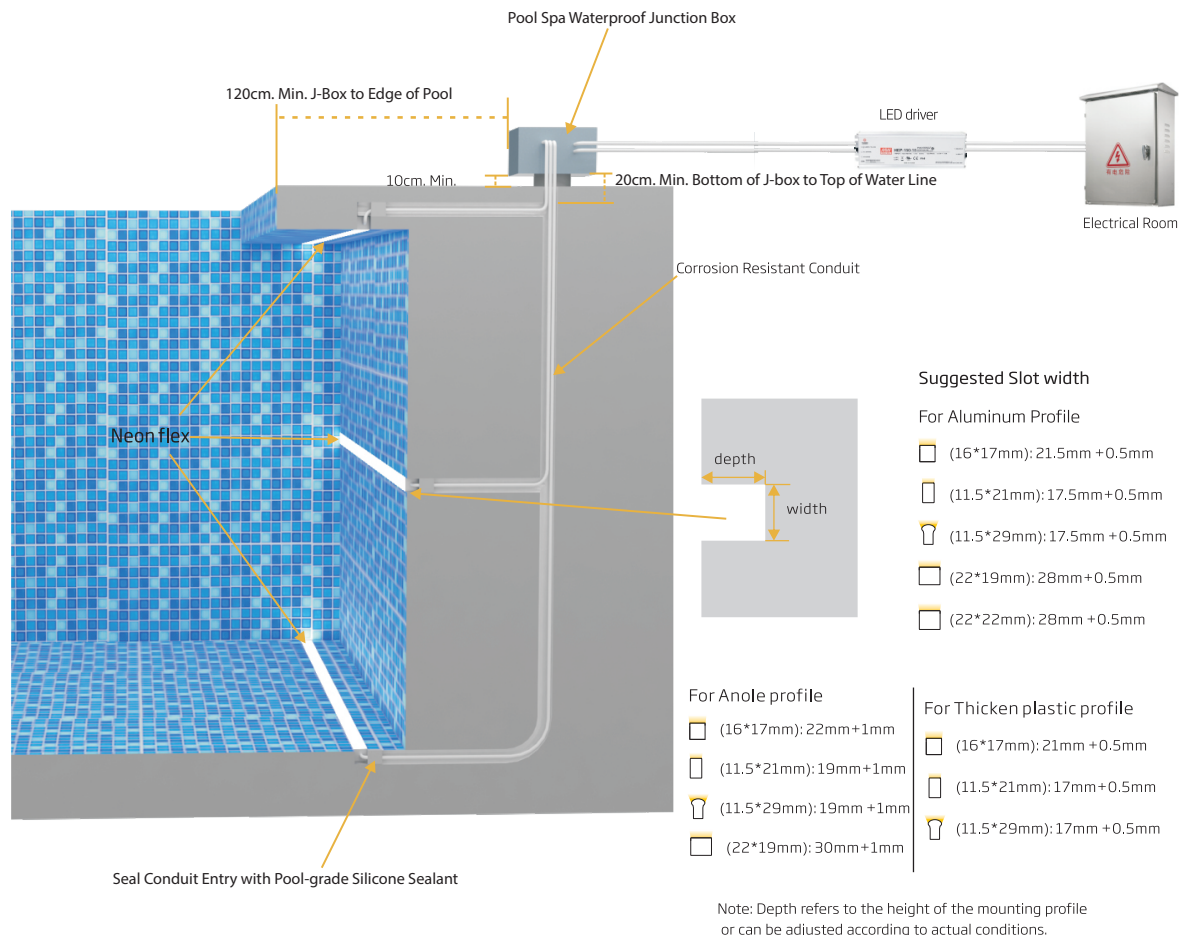
4. Use a pull wire to route the cable through the conduit. Once in position, seal both ends with epoxy or silicone to prevent water ingress.



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Implementation

Installation Surface Requirements



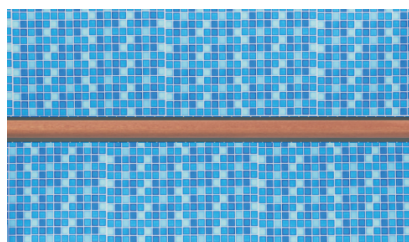
You can choose surface or embedded installation. Embedded is recommended for swimmer safety and light protection. Dig a slope in the installation surface when embedding.

Note:

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

Tips for Slotting

1. Refer to the dimension of the profile, and make the slot around 1 to 2mm bigger than the dimension of the profile.
2. After the slot is made, you could place something inside the slot, for example, put a wood frame, or useless strip or cover, which guarantees that during the rest of the construction process of the pool, it does not take away the dimension from the slot and does not damage the strip.

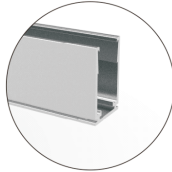


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Installation

Profile Installation

Profile Cutting

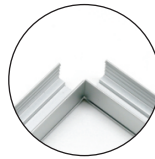


Ensure the profile's cross-section is smooth and burr-free when cutting, or the light housing may be pierced, causing water ingress.

Profile Joint



1. Leave 5mm for profile joints to allow for contraction and expansion.



2. Join profiles at right angles only when two pieces of lights meet at that angle.



3. For curves, leave enough gap between profiles or use a flexible profile.



Angular Misalignment



Parallel Vertical Misalignment



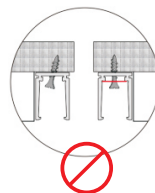
Parallel Horizontal Misalignment

Above wrong misalignments will make the light improperly bent, and lead to the wrinkle or fracture of PCB.

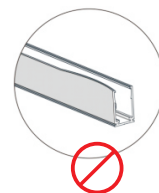
Other Notices for Profile



Remove any debris from the profile before installation to avoid impaling the housing and causing water ingress.



Ensure slots have no bulges to prevent housing damage and water ingress.



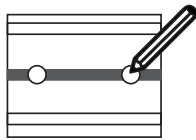
Do not use severely deformed profiles.

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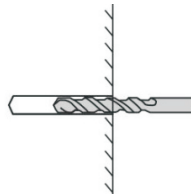
Installation

Profile Installation

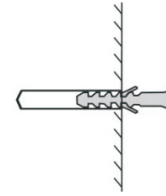
Screw Fixation



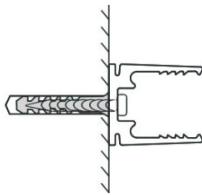
Step 1:
Mark drill points on the
mounting surface.



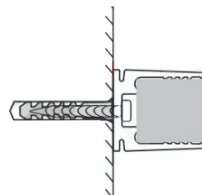
Step 2:
Drill holes at the marked
positions.



Step 3:
Insert expansion bolts.



Step 4:
Secure the plastic profile
with screws.

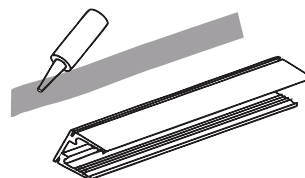


Step 5:
Fit the light into the profile.

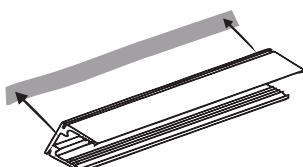
Adhesive Fixation



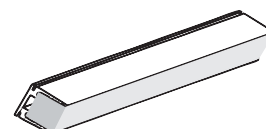
Step 1:
Mark and clean both the base
and the profile underside.



Step 2:
Apply anti-chlorine waterproof adhesive evenly.



Step 3:
Press the profile onto the base
and cure for 24 hours.



Step 4:
Press the light into the profile slot
evenly from end to end.