



EVA LED underwater lighting

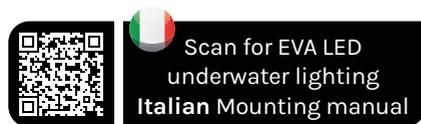
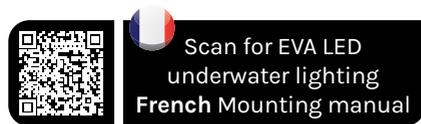


MOUNTING MANUAL

A step-by-step guide to mounting EVA LED underwater lighting

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1. ABOUT THIS MANUAL

1.1 Language

This manual is meant for qualified installers. Read and understand the information in this manual before mounting and using this product. The manual is originally written in English. All versions of this manual in other languages versions are translations of the original manual.

1.2 Symbols used

This manual contains safety instructions. Ignoring these instructions may lead to injury or damage to the appliance. Each safety instruction is indicated with a signal word. The signal word corresponds with the level of risk of the described hazardous situation.

 **DANGER** This symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** This symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION** This symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE Indicates a situation that, if not avoided, could result in damage to the product or to the environment.

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2. SAFETY

2.1 Safety warnings and regulations

DANGER

Electrical shock hazard. Fatal injury will occur. Switch off all electricity near the pool before performing the electrical installation.

WARNING

Electrical shock hazard. Risk of electric shock and injury. The product must be installed by a certified electrician. Incorrect installation will cause electrical hazards.

WARNING

Electrical shock hazard. Risk of electric shock due to incorrect mounting.

- Make sure you read the enclosed documents carefully.
- Never connect the product to the mains before connecting all loose wires properly.
- Always disconnect the product from the mains before servicing.

WARNING

Electrical shock hazard. Risk of electric shock due to current leakage..

- Make sure to install the turbine with a PE-earthing.
- It's important to connect the installation niche to the pool earthing, never to the house earthing.

NOTICE

Risk of product damage. Prolonged disturbance of frequency may permanently damage the equipment.

- Never place control and power cables together in one conduit, according the Electrical Standards.

2.2 General safety instructions

1. Follow the instructions in this guide carefully. For questions or enquiries, please contact your distributor/reseller or visit www.evaoptic.com
2. This lighting system must be installed by a qualified installer in accordance with applicable local rules and regulations. Improper installation can cause electrical hazards.
3. Switch off all relevant live electrical wiring before starting the installation.
4. Please retain these instructions for the user.
5. EVA Optic BV guarantees that its products will be free from defects in materials and/or workmanship, under normal conditions, operation and maintenance for a period of four (4) years from the original invoice date for LED lights and four (4) years for drivers/ power supplies. Visit www.evaoptic.com for datasheets and our full warranty.

2.3 Materials used

1. Ensure that any materials you use meet the requirements and guidelines that apply to your specific application.
2. Use only EVA Optic gaskets/bolts/screws/nuts.
3. Use only original EVA Optic mounting accessories. Warranty will be irrevocably voided if other materials are used.

2.4 Electrical safety installation instructions

IMPORTANT! Switch off all relevant live wiring before starting the installation!

1. Always use one power supply per light.
2. Mount the power supply box in a cool, dry area.
3. Allow at least 5 cm of space around the power supply box for efficient thermal management.
4. Always mount the power supply box with cable glands downwards.
5. Electrical connections must be executed according to the supplied wiring diagram.
6. It is important that the NTC is connected. This protects the lamp if the cooling is not sufficient.
7. Always take care to lay the cable from the technical room to the lamp in a conduit/ tube so that it can be easily replaced.

3. PRODUCT

Overview

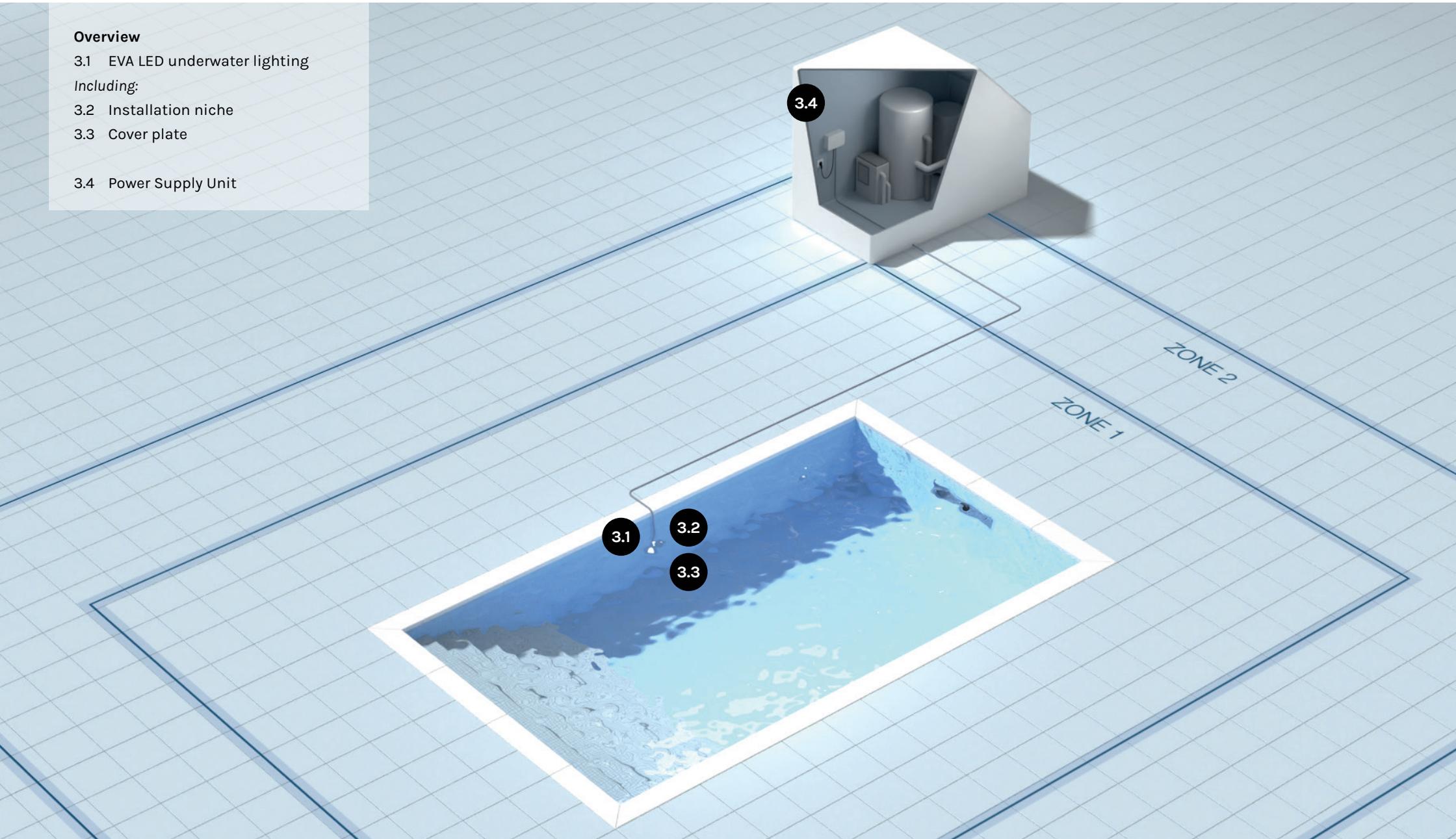
3.1 EVA LED underwater lighting

Including:

3.2 Installation niche

3.3 Cover plate

3.4 Power Supply Unit



3.1 EVA LED underwater lighting



SubAqua 25W MONO



SubAqua 25W RGBW



SubAqua 40W MONO



SubAqua 50W RGBW

Type of light	SubAqua 25W MONO / RGBW
Applications	Residential pools, instruction pools
Luminaire type	IP68 / IPX8 (zone 0)
Type of water	Fresh water, chlorinated water
Cooling	Water cooling (only use in water)
Max. water temperature	40 °C
Max. installation depth	25M
Minimum cable length	3 meters
Cable length light (ex-works)	10/20/30 meter (7 wires: 5x0,5mm ² , 2x0,25mm ²). Cable is fixed to the light to ensure watertightness.
Max. cable length	The 10m cable can be extended to a total length of 50 meters maximum (7x 1.5mm ³) or a maximum of 100 meters (7x 2.5mm ²)
DMX Cable	2 wires > 0.22mm ² + shield 110 Ohm

Type of light	SubAqua 40W MONO / 50W RGBW
Applications	Competition, recreational, instruction pools
Luminaire type	IP68 / IPX8 (zone 0)
Type of water	Fresh water, chlorinated water
Cooling	Water cooling (only use in water)
Max. water temperature	40 °C
Max. installation depth	25M
Minimum cable length	3 meters
Cable length light (ex-works)	10/20/30 meter (7 wires: 5x0,5mm ² , 2x0,25mm ²). Cable is fixed to the light to ensure watertightness.
Max. cable length	The 10m cable can be extended to a total length of 50 meters maximum (7x 1.5mm ³) or a maximum of 100 meters (7x 2.5mm ²)
DMX Cable	2 wires > 0.22mm ² + shield 110 Ohm



SubAquaXS 10W MONO



SubAquaXS 10W RGBW

Type of light	SubAqua XS 10W MONO / RGBW
Applications	Residential pool steps, small pools
Luminaire type	IP68 / IPX8 (zone 0)
Type of water	Fresh water, chlorinated water
Cooling	Water cooling (only use in water)
Max. water temperature	40 °C
Max. installation depth	25M
Minimum cable length	3 meters
Cable length light (ex factory)	10/20/30 meter (7 wires: 5x0,5mm ² , 2x0,25mm ²). Cable is fixed to the light to ensure watertightness.
Max. cable length	The 10m cable can be extended to a total length of 50 meter maximum (7x 1,5mm ³) or a maximum of 100 meter (7x 2,5mm ²)
DMX Cable	2 wires > 0,22mm ² + shield 110 Ohm

3.2 Installation niche



EVA-AA-09
Installation niche
for all pools

ABS and SS316
coverplate fits
on this niche



EVA-AA-10
Installation niche
for tiled pools

Only SS316
coverplate fits
on this niche



EVA-AA-34 / 34i
Installation niche
for surface
mounting

No coverplate
needed



EVA-AA-33
Installation set
for surface
mounting

No coverplate
needed



EVA-QA-10
Installation niche
for SubAquaXS
for all pools

EVA-QA-13 fits
on this niche



EVA-QA-12
Folie flangeset
for SubAquaXS
for poly/liner pools

EVA-QA-10 fits
on this flange

3.3 Coverplate



EVA-AA-11/11-FL/12
Cover plate
Stainless steel (SS316)



EVA-AA-02A
Cover plate
ABS anthracite



EVA-AA-02G
Cover plate
ABS silver grey



EVA-AA-02W
Cover plate
ABS white



EVA-QA-13
Cover plate
for SubAqua XS
Stainless steel (SS316)

3.4 Power Supply Unit (PSU)

The Power Supply Unit (PSU) should be installed in the technical area near the pool (a dry and condensation-free environment, zone 2). Ensure that the PSU is placed with the cable glands facing down.



PSU - 10W/25W
MONO

PSU - 10W/25W
RGBW

PSU - 40W
MONO

PSU - 50W
RGBW

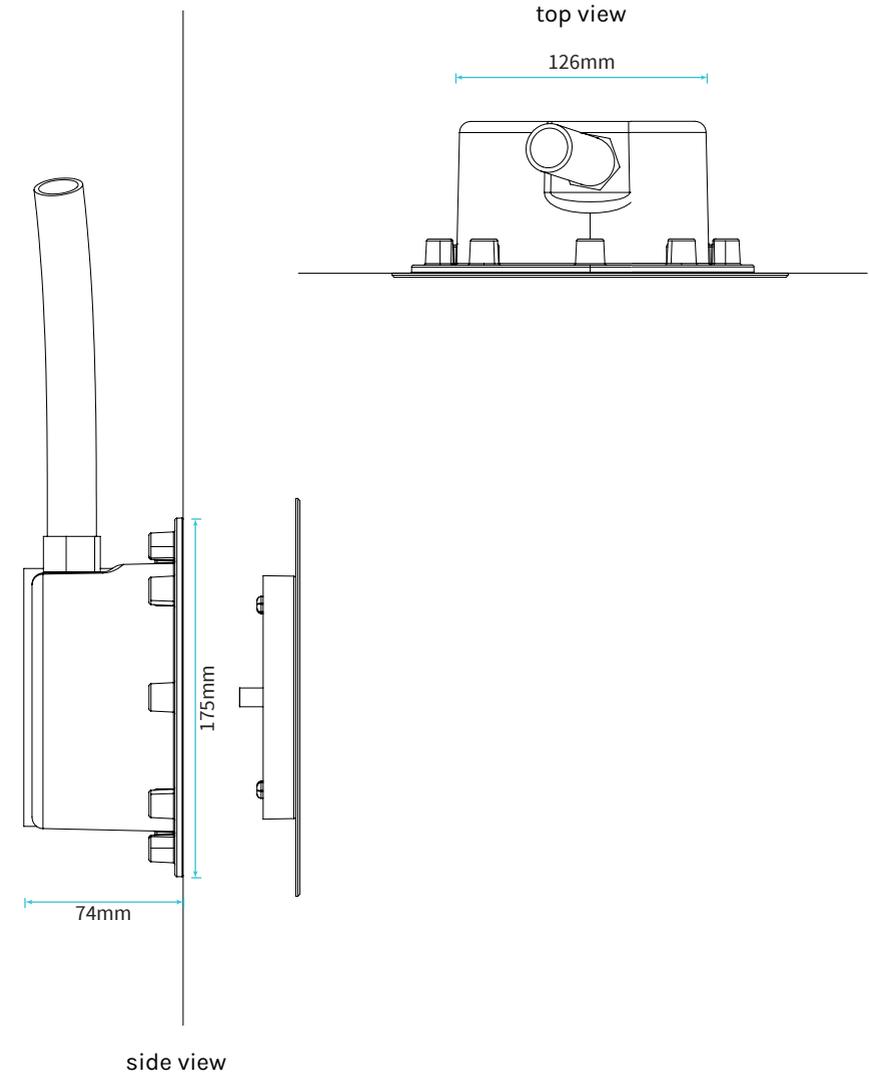
Driver - Input / Output

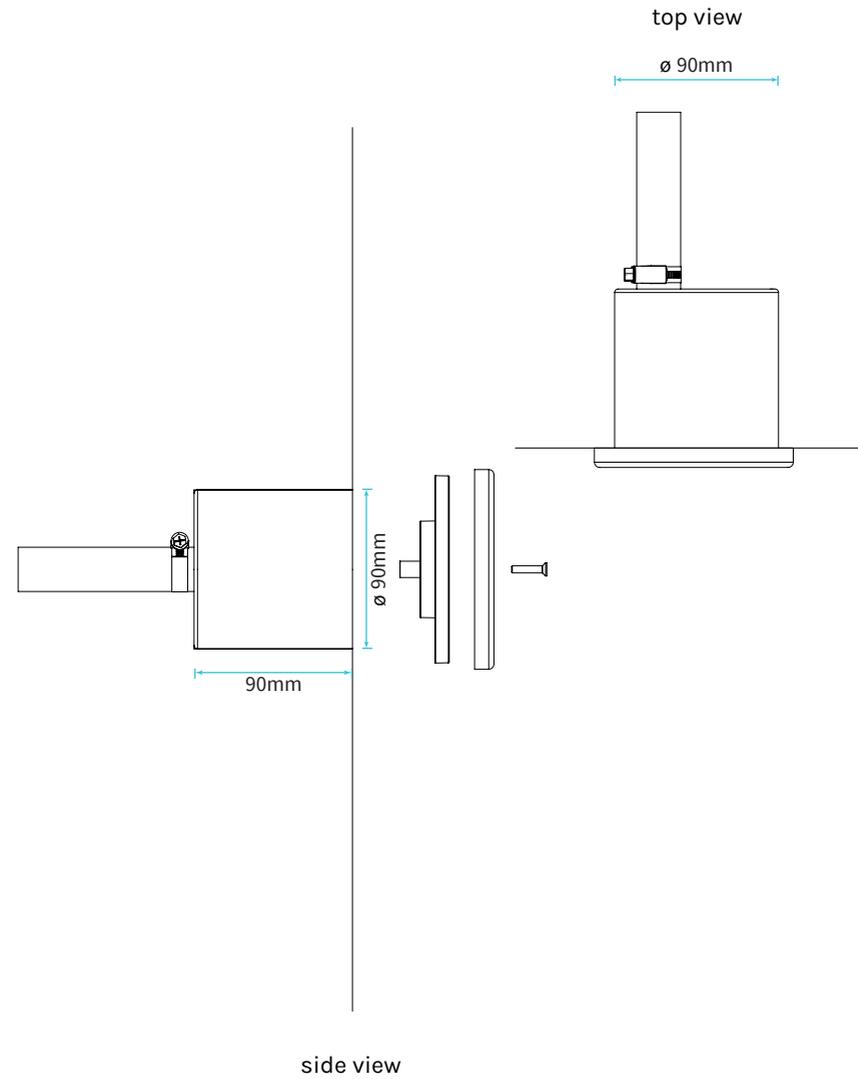
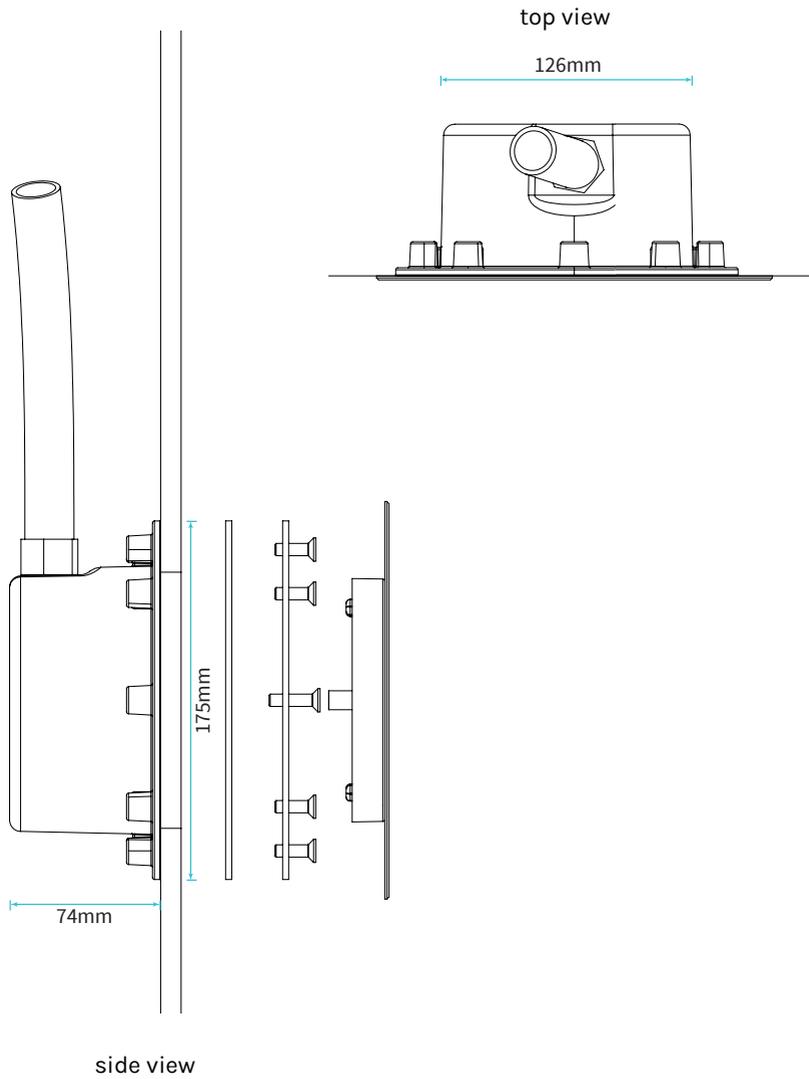
Voltage range	100-240 Vac	100-240 Vac
	30Vdc	30Vdc
Driver technology	0-10 Vdc (dimming)	DMX512
Power box operating temperature	-20°C to + 40°C	-20°C to + 40°C
Power box protection rating	IP65 housing	IP65 housing

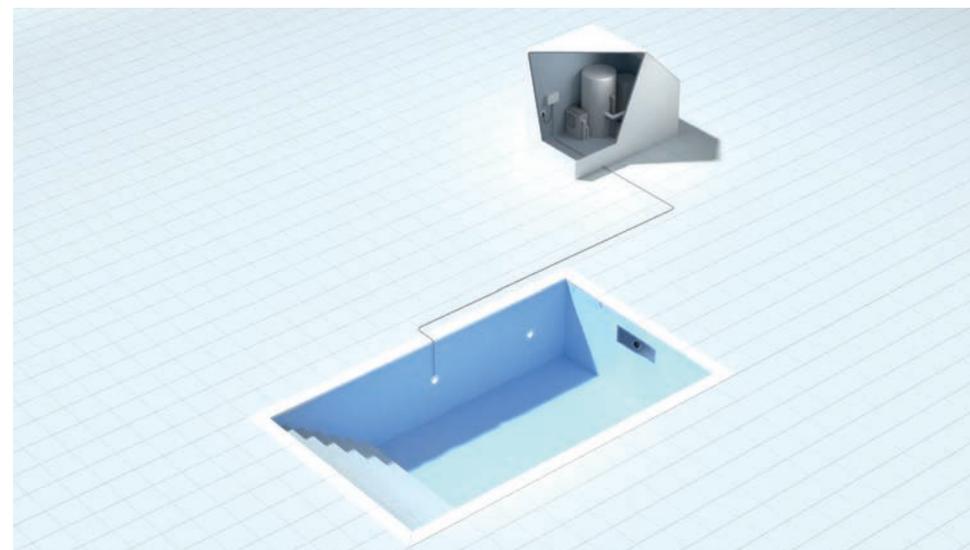
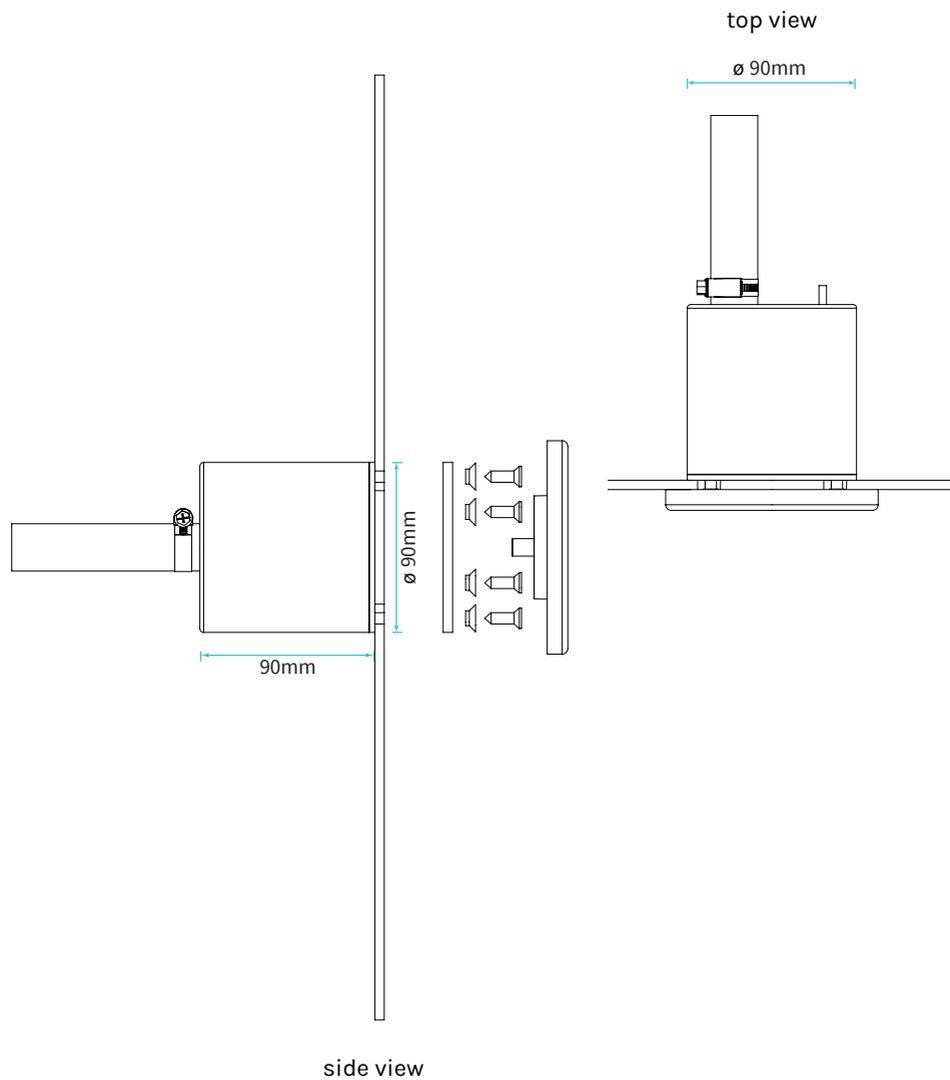
4. MOUNTING THE EVA LED UNDERWATER LIGHTING

4.1 Mounting drawings

SubAqua - Tiled pools







Always insert the lamp cable through a conduit to the PSU

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Keep approx. 1 meter of the cable length in the niche (to be able to mount the underwater light in the side of the pool).



Do not turn on the light when amovable floor or other item is in front of the light.
This may disrupt the function of the light.



All EVA LED SubAqua lamps are water-cooled

It is important that the lamp niche is filled with water before the lamp is turned on.
The lamp is cooled by the water and quickly overheats circulation water.

Use of mounting materials:

- Only use the accessories/bolts/screws/nuts that are supplied by EVAstream.
- Only use the original mounting accessories. Warranty will be irrevocably voided if other materials are used.

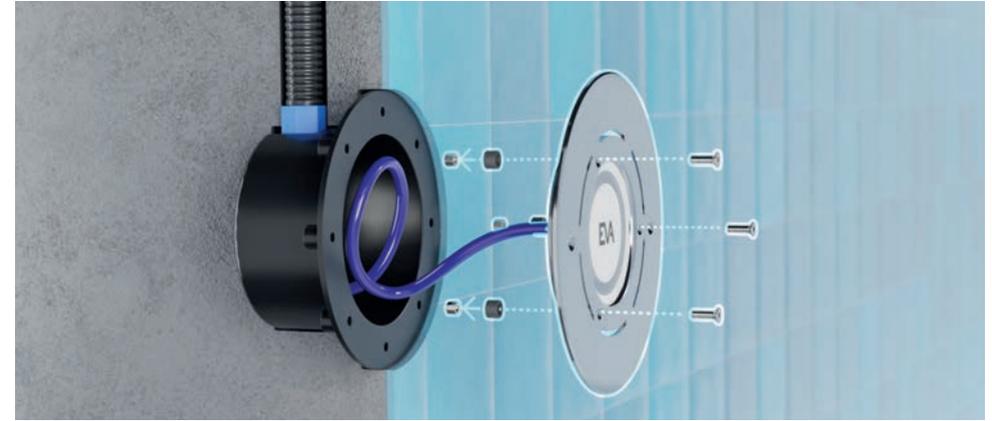
4.3 SubAqua - Recessed mounted - tiled pools

EVA-AA-10 installation niche - EVA-AA-11 coverplate



1. Make sure the niche is built in correctly

The niche is cast into the concrete pool and must fall behind the tiled wall.



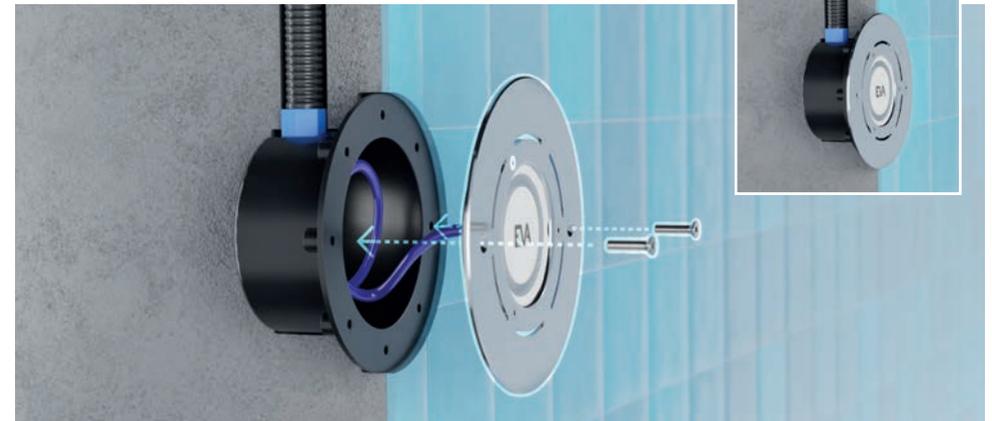
3. Mount the lamp cover plate

Put the EPDM rubbers (3x) in the screw positions and mount the underwater lamp to the cover plate with 3x M5*20 mm.



2. Insert the lamp cable through the conduit to the PSU

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Keep approx. 1 meter of the cable length in the niche (to be able to mount the underwater light in the side of the pool).



4. Mount the coverplate to the niche

Mount the cover plate (incl. underwater lamp) to the niche with 2x M6*50 mm screws.

4.4 SubAqua - Recessed mounted - poly / liner pools

EVA-AA-09 installation niche - EVA-AA-02 or EVA-AA-11-FL



1. Mount the niche in the side of the pool edge

Mount the cover ring + gasket to the installation niche + gasket with the 8x M5* 20 mm screws. Use the supplied drilling template to mount the niche in the correct horizontal position. Make sure the conduit is placed diagonally upwards. Tighten the screws hand-tight.



3. Mount the lamp cover plate

Put the EPDM rubbers (3x) in the screw positions and mount the underwater lamp to the cover plate with 3x M5*20 mm screws.



2. Insert the lamp cable through the conduit to the PSU

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Keep approx. 1 meter of the cable length in the niche (to be able to mount the underwater light in the side of the pool).

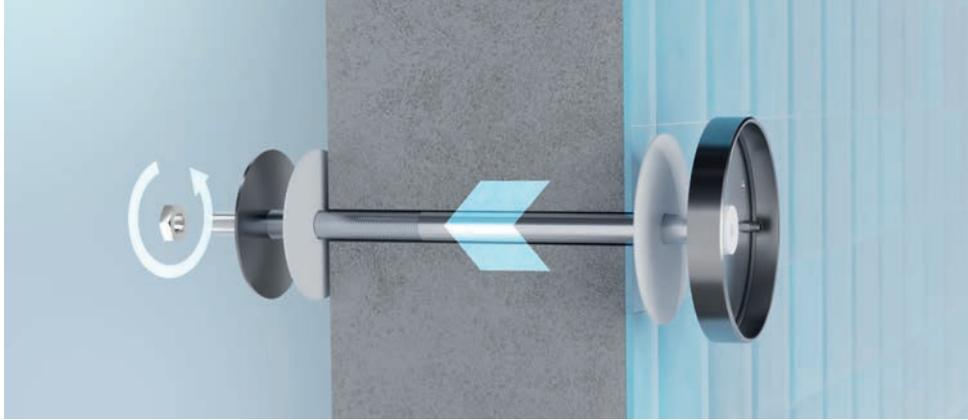


4. Mount the coverplate to the niche

Mount the cover plate (incl. underwater lamp) to the niche with 2x M5*8 mm screws.

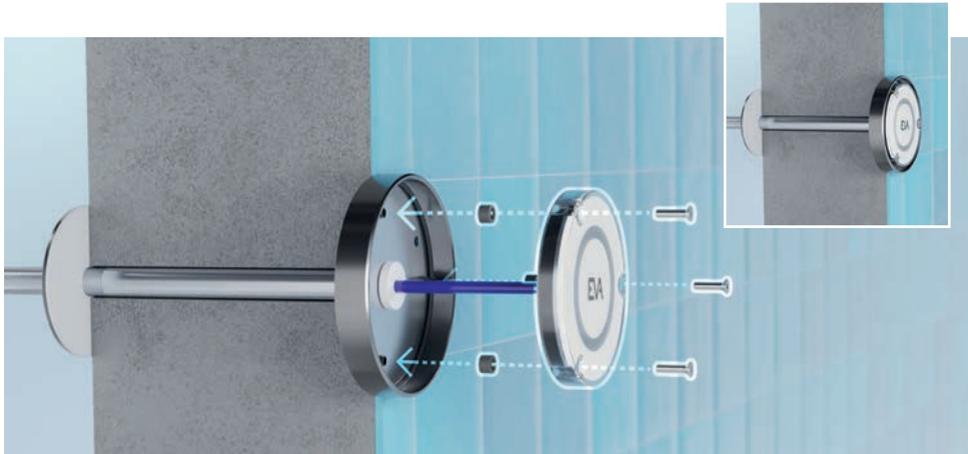
4.5 SubAqua-Surface mounted -tiled and liner pools

EVA-AA-33 installation niche - no coverplate needed



1. Mount the niche in the side of a tiled pool

Please note that the maximum concrete thickness is 300 mm. It is important to use the gaskets for watertightness. Use a wrench to tighten the screw on the back side.



2. Insert the lamp cable through the conduit to the PSU and mount the lamp to the niche

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Put the EPDM rubbers (3x) in the screw positions and mount the underwater lamp to the installation niche with 3x M5*20 mm screws. When tightening the screws, make sure water can still circulate behind and around the lamp.

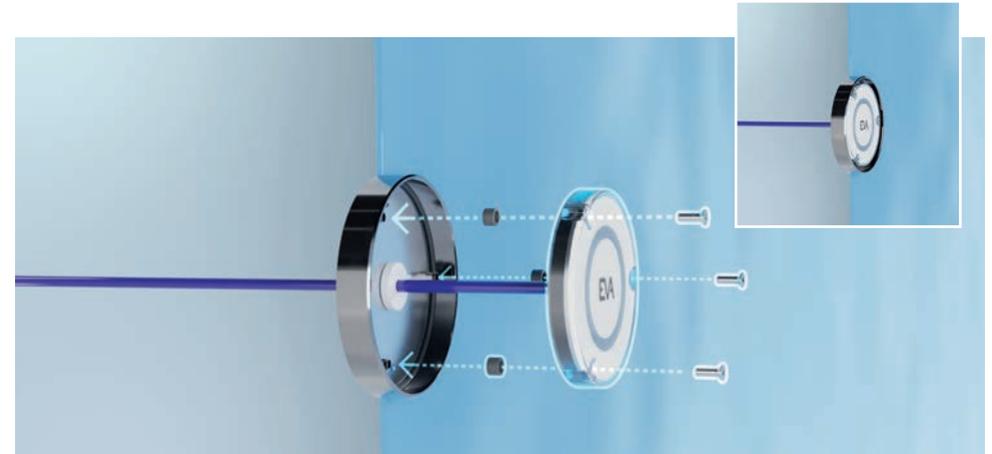
4.6 SubAqua - Surface mounted

EVA-AA-34 installation niche - no coverplate needed



1. Mount the niche in the side of the pool

Please note that the maximum wall thickness is 15 mm. It is important to use the gaskets for watertightness. Use a wrench to tighten the screw on the back side.



2. Insert the lamp cable through the conduit to the PSU and mount the lamp to the niche

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Put the EPDM rubbers (3x) in the screw positions and mount the underwater lamp to the installation niche with 3x M5*20 mm screws. When tightening the screws, make sure water can still circulate behind and around the lamp.

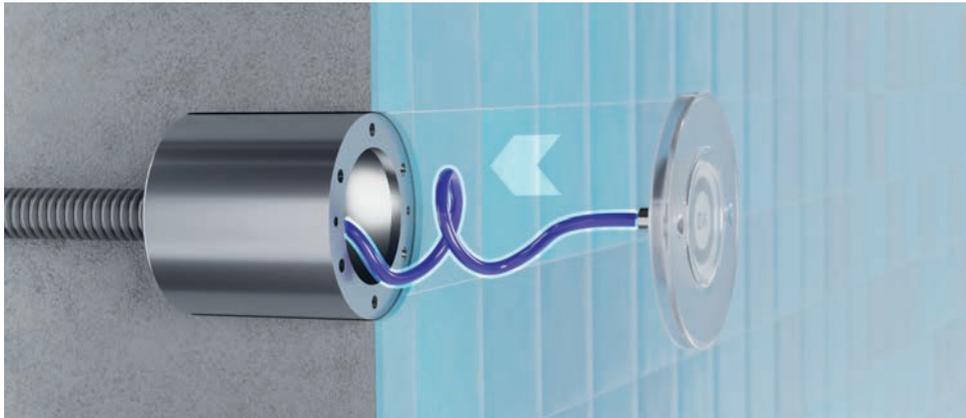
4.7 SubAquaXS - Recessed mounted - tiled pools

EVA-QA-10 installation niche - EVA-QA-13 coverplate



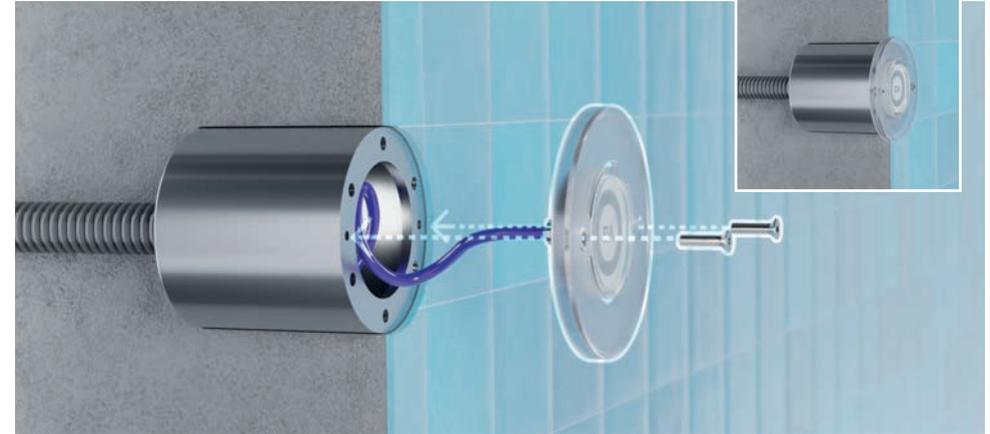
1. Make sure the niche is built in correctly

The niche is cast into the concrete pool and must fall behind the tiled wall. The horizontal M4 screw holes are intended for the cover plate, please ensure the correct horizontal position.



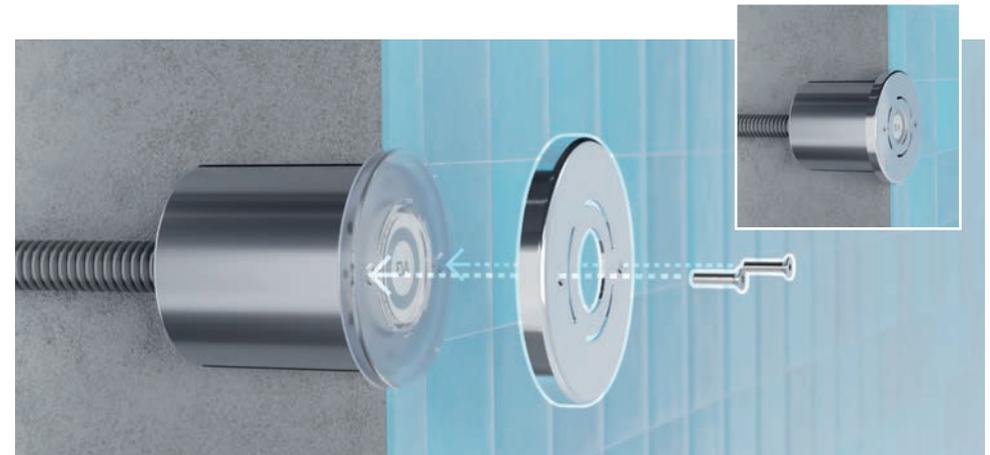
2. Insert the lamp cable through the conduit to the PSU

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Keep approx. 1 meter of the cable length in the niche (to be able to mount the underwater light in the side of the pool).



3. Mount the lamp to the niche

Use 2x M4*25 mm screws to mount the underwater lamp to the niche.

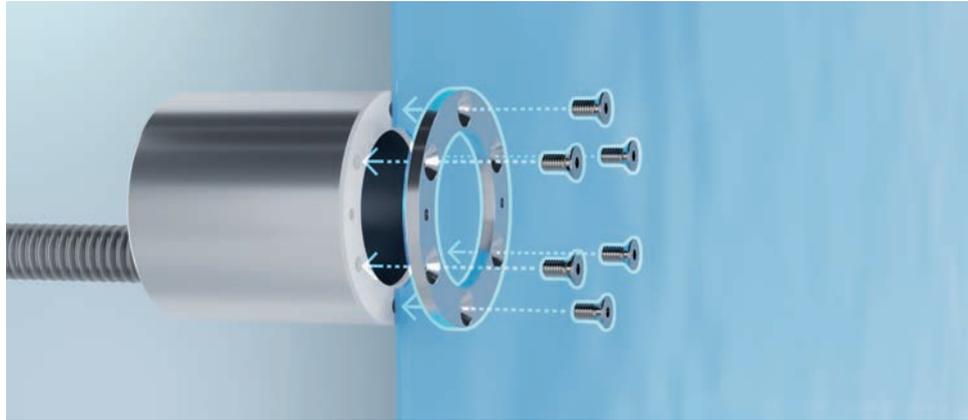


4. Mount the lamp, including the stainless steel cover plate to the niche

Use 2x M4*25 mm screws to mount the underwater lamp, including cover plate to the niche.

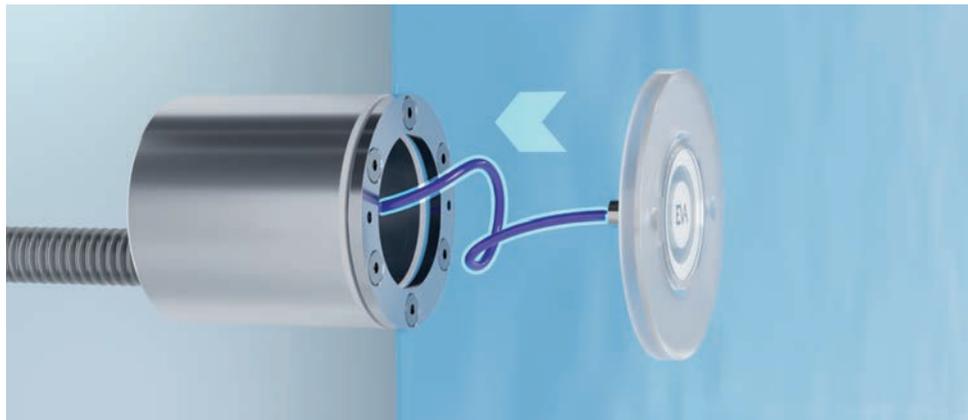
4.8 SubAquaXS - Recessed mounted - poly/liner pools

EVA-QA-10 installation niche + EVA-QA-12 folie flange set - EVA-QA-13 cover plate



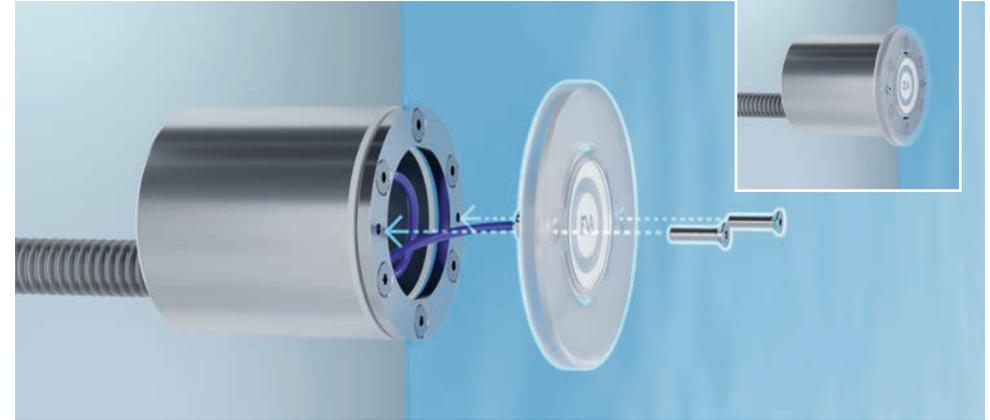
1. Mount the niche in the side of the pool

The horizontal screws holes are intended for the cover plate, please ensure the correct horizontal position. Mount the cover ring to the installation niche + gasket with the 6x M6* 20 mm screws. Tighten the screws hand-tight.



2. Insert the lamp cable through the conduit to the PSU

Please note that the minimum cable length from underwater lamp to PSU must be 3 meters for warranty reasons. Keep approx. 1 meter of the cable length in the niche (to be able to mount the underwater light in the side of the pool).



3. Mount the lamp to the niche

Use 2x M4*25 mm screws to mount the underwater lamp to the niche.



4. Mount the lamp, including a stainless steel cover to the niche

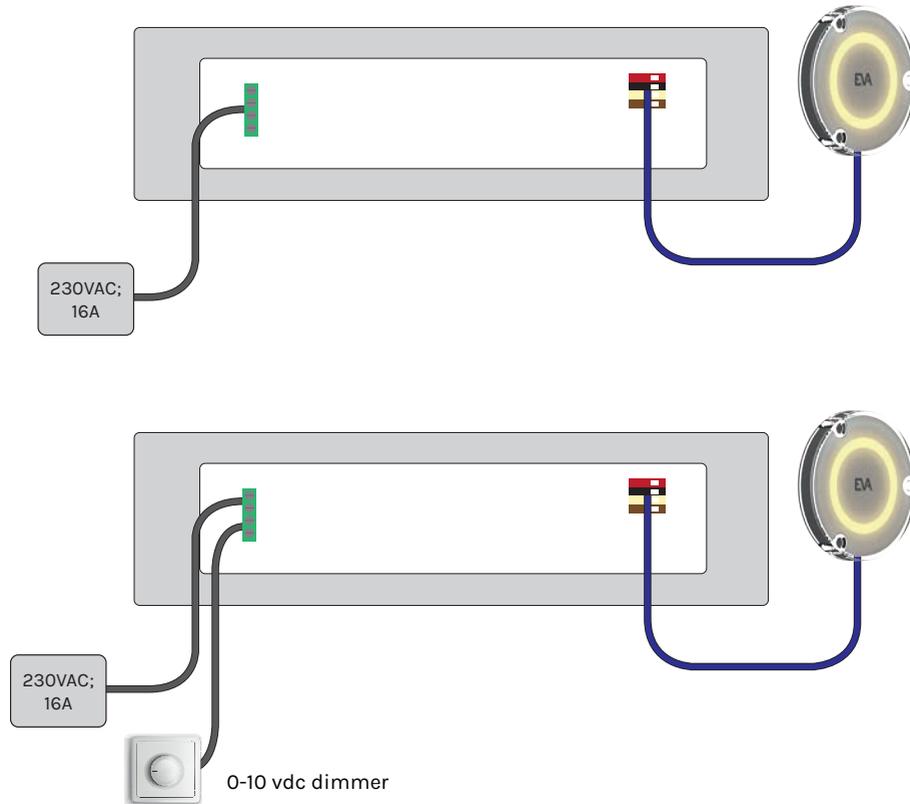
Use 2x M4*25 mm screws to mount the underwater lamp, including cover plate to the niche.

5. ELECTRICAL INSTALLATION

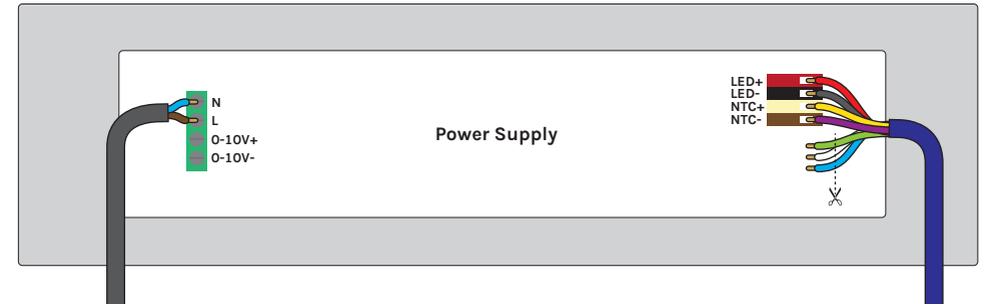
⚠ DANGER

Electrical shock hazard. Fatal injury will occur. Switch off all electricity near the pool before performing the electrical installation.

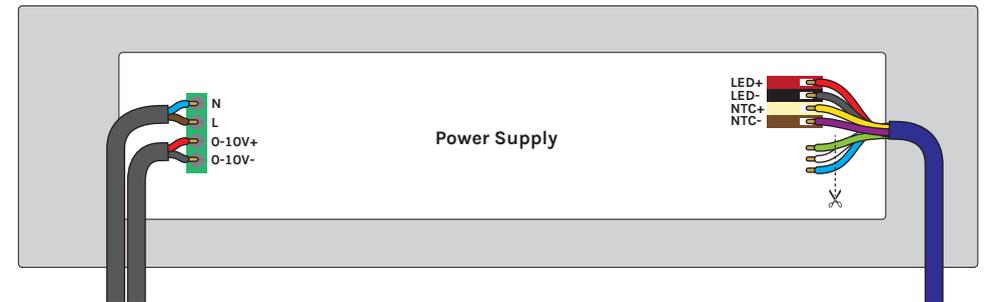
5.1 MONO - SubAqua 10W (XS) / 25W / 40W



Overview - Combination of MONO SubAqua LED underwater lights and Power Supply Units



Connections to the Power Supply Unit of the MONO underwater light (excl. dimmer)



Connections to the Power Supply Unit of the MONO underwater light (incl. dimmer)

⚠ CAUTION

Electrical shock hazard. Risk of electric shock due to current leakage:
Never connect the product to the mains before the installation is finished.

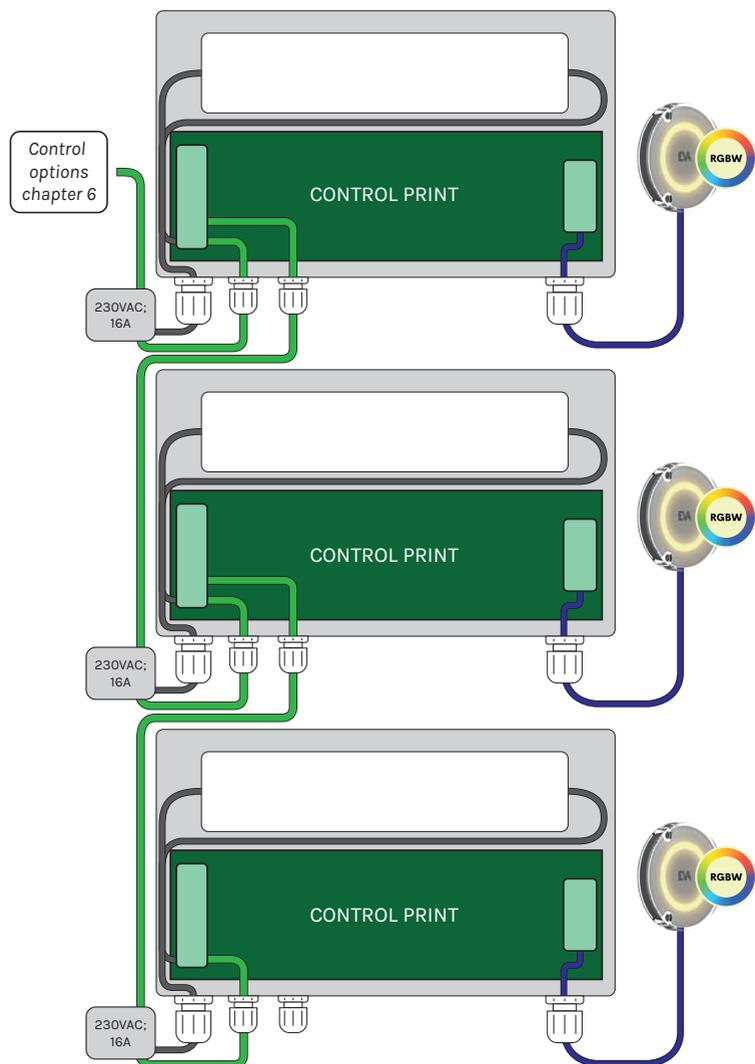
Connect the MONO SubAqua light to the Power Supply Unit:

- Connect the red, black, yellow and purple wires of the 7-wired cable from the MONO SubAqua underwater light to the colours indicated on the PSU.
- The blue, white and green wires are not needed, they can be cut off.

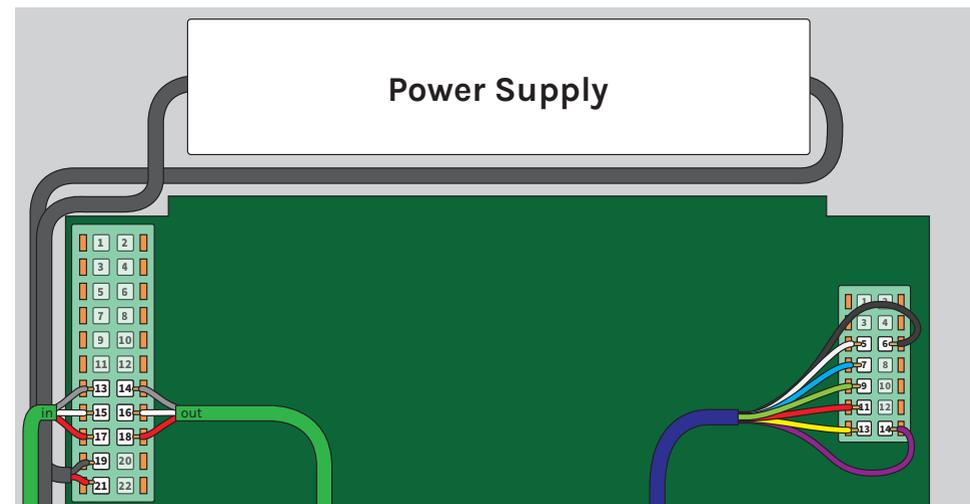
Connect the Power Supply Unit to the mains (230 VAC; 16 A)

- Without dimmer: Connect the 2-wired cable to the colours indicated on the PSU. Connect the cable from the PSU to the mains (230 VAC; 16A).
- With dimmer: Connect the 2x 2-wired cables to the colours indicated on the PSU. Connect a 0-10V dimmer to the black/red cable and connect the blue/brown cable to the mains (230 VAC; 16A).

5.2 RGBW - SubAqua 10W (XS) / 25W / 50W



Overview - Combination of RGBW LED underwater lights and Power Supply Units



Connect to the Power Supply Unit (PSU) of the RGBW underwater light:

⚠ CAUTION

Electrical shock hazard. Risk of electric shock due to current leakage:
Never connect the product to the mains before the installation is finished.

Connect the RGBW light to the Power Supply Unit (PSU):

- Connect the 7 wired cable from the RGBW light to the Control Print on the right side of the PSU on the numbers indicated (5,6,7,9,11,13,14).

Connect the Power Supply to the Control Print:

- Make sure that the 2 wired cable of the Power Supply is connected to the Control Print on the left side on the numbers indicated (19, 21).

Connect the PSU's to each other using DMX cable:

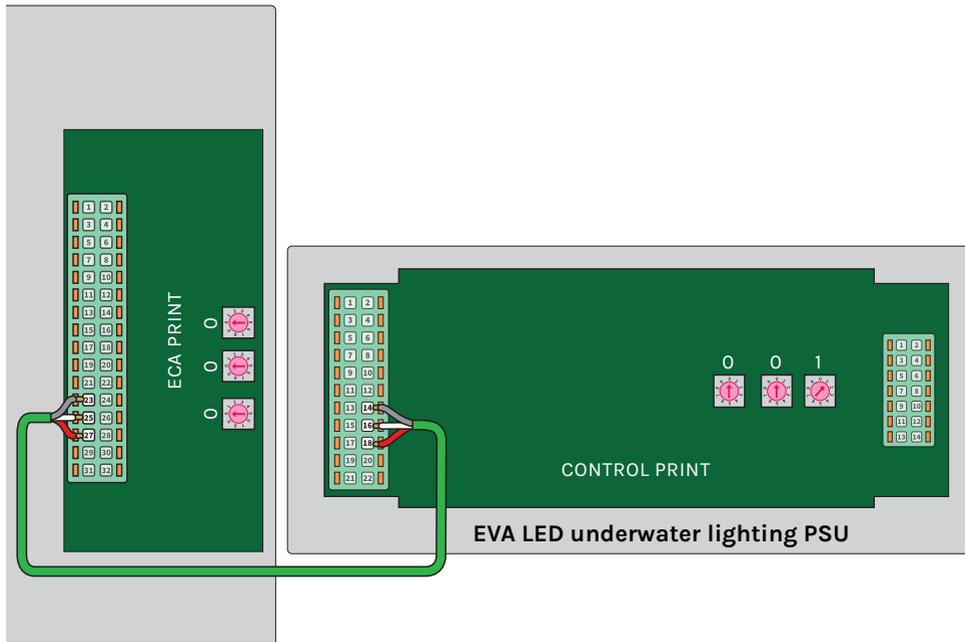
- Connect the DMX-cable (2-wires + shield) to the Control Print on the left side of the PSU on the numbers indicated (14,16,18).
- Connect the same DMX-cable to the Control Print on the left side of the following PSU on the numbers indicated (13,15,17).
- Repeat this for all PSU's.

Connect the PSU's to the mains (230 VAC; 16 A)

- Connect the cables of the Power Supply to the mains (230 VAC; 16A).

5.3 Connect the EVA LED underwater lighting to the EVAstream

The EVA RGBW LED underwater lighting completes the counter-current pool experience. The underwater lighting guides you through the EVAstream training. The changing light colours orient you within the exercise programme and motivate you as well.



- To connect the EVA LED underwater lighting to the EVAstream use a DMX cable. Connect the DMX cable (2-wires + shield) from the Control Print of the PSU (14,16,18) to the ECA Print (23,25,27) on the numbers indicated.
- The EVAstream provides the control and the rotary switches of the ECA print must be set in Master mode (000). The rotary switches of the PSU's Control print must be set in slave mode (001). These are the default factory settings.

6. CONTROL OPTIONS

The EVA LED underwater lighting can be controlled with various control options:

Remote control and EVA Experience web app (recommended):

The EVA LED underwater lighting can be controlled with the remote control and the EVA Experience web app. To connect the app and the remote control, an ECA PRO must be connected to the EVA LED underwater lights.



Remote Control

The EVA LED underwater lighting can be controlled with only the remote control. To connect the remote control, an EVA-AA-74-RC must be connected to the EVA LED underwater lights.



EVA-AA-75 or EVA-AA-77

The EVA LED underwater lighting can be controlled with an external DMX advanced controller (EVA-AA-75 or EVA-AA-77).



7. DISPOSAL

7.1 Decommissioning

 **WARNING**

Electrical shock hazard. Risk of electric shock and injury. Make sure to disconnect the product from the mains cable before decommissioning.

1. Switch off the power.
2. Switch off the power around the swimming pool.
3. Disconnect the mains cable.
4. Disconnect all other cables.

7.2 Disposal

Before disposing of the different materials, separate them into recyclables, normal waste and special waste. Comply with local legal regulations and provisions when disposing of the product and the individual components. A product marked with the WEEE symbol must be sent for separate collection of electrical and electronic devices. Contact your supplier for more information.



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