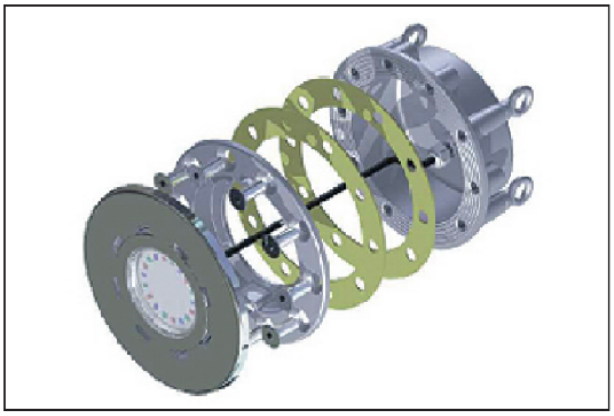

smart lamps
LED Lighting Systems

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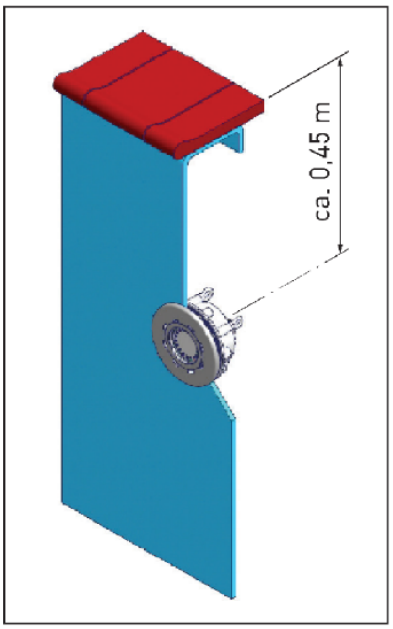
Installation Instruction

Niche and Flange for LED Underwater Illumination

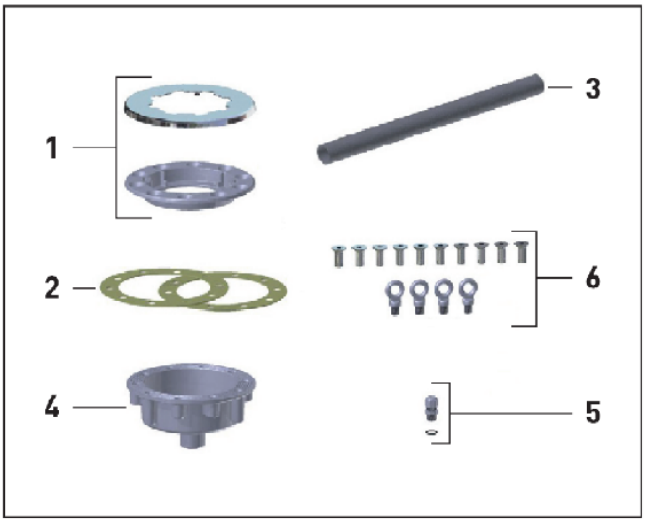
1. Installation-related Remarks



- In order to illuminate a swimming pool in an optimal way, at least 1 watt of LED light (corresponds to 120 Lumens) should be installed per 1 m³ of water.
  Example: A pool with 80 m³ content should be equipped with two 40 Watt illuminators.
- To avoid glare, the lights should not be placed towards the viewing direction. We recommend installing them at approx. 0.45 m below the edge of the swimming pool (see drawing).
- The installation always depends on type of pool. We generally recommend that the smart lamps illuminator is installed with a smart lamps niche and flange.

2. Content of Packaging

Please check content of delivery (see drawing):



1	1x	Flange, incl. cover plate
2	2x	Silicone gaskets
3	1x	Conduit Ø 25 mm, length 1 m
4	1x	Niche
5	1x	IP-68 Cable screw joint incl. gasket
6	10x	Stainless steel flat head screws M10x25
	4x	Plastic ringhead screws M10

3. Installation Instructions

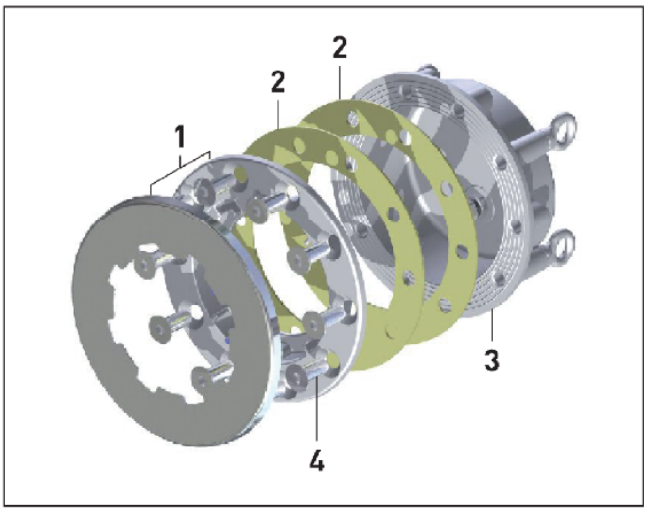
We recommend the smart lamps niche (see drawing below) for Concrete-, Steelframed-, and Liner One-Piece Pools.

3.1 Concrete Pools

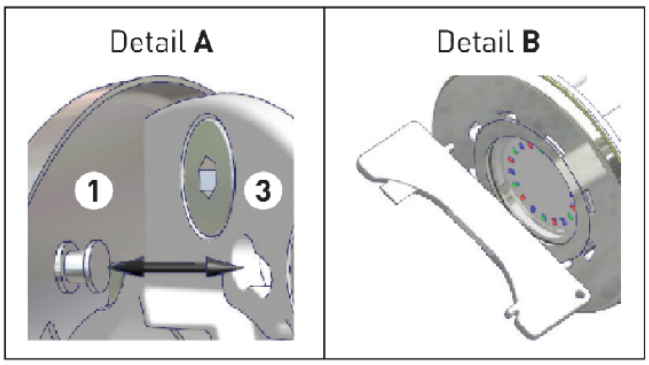
- The niche (**3**) should be installed approx. 0,45 m below the edge of the pool. Screw the four ring bolts (Pos. 6, page 1) into the reverse side of the niche. Feed galvanized steel wire through the ring bolts and fasten it to the steel support structure.

3.2 Polyester-, Steelframed- and Liner Pools

- Place the niche (**3**) on the outside of the pool at the position where the light is to be installed and use the flange (**1**) as a stencil to mark the shape of the aperture on the pool wall. Remove the flange and cut out the apertures in the pool wall as per drawing, one big hole with a diameter of 115 mm in the middle and 10x 10 mm for the fastening screws. Please make sure that the area where the illuminator will be installed is flat and smooth. This is important to create a waterproof seal.
- Position the niche and one gasket (**2**) on the outside of the pool wall and the flange and the other gasket on the inside. Secure them with the ten M10x25 mm (**4**) countersunk screws.
- Push the 2,6 m feeding cable (not shown) of the smart lamps illuminator through the IP68 cable screw joint (Pos. 5, page 1) at the rear side of the niche and leave approx. 0,5 - 0,6 m inside the niche for a possible exchange above the water level. Tighten gland of the joint carefully to create a waterproof seal.
- Connect the illuminator with the 0,25 m cable with male connector (not shown) to the corresponding female connector (not shown) in the niche. When joining both cables, please make sure that the O-ring (Pos. 5, page 1) is attached to the male connector. For closing the cable connector, turn it clockwise until it is properly locked.
- Press the smart lamps illuminator into the deepening in the middle of the mounting flange and store the surplus power cable into the remaining space in the mounting niche.
- Finally, fasten the cover plate (**1**) to the front side of the flange with the two mushroom-shaped bolts (see detail **A,** page 3). Place the bolts into the holes and turn them clockwise until the bolts snap in. For this step a modest force must be applied. The special turning tool (see detail **B,** page 3) helps to make this easier.



➲ Alternatively, an adequately sized spreading pliers can be used.



CAUTION!

All screw connections must be tighten carefully. Don't overwind the thread.

CAUTION!

Should you for any reason wish to use an adhesive, use silicone only. Under no circumstances use adhesives containing thinners which are not compatible with polycarbonate or ABS. This can lead to destruction of the niche or illuminator's parts.

4. Cable Extension

In case of replacement of an existing light cable without a connector, the remaining cable must be joined with the new cable of the illuminator. There are several possibilities:

- ▶ Complete replacement of the connecting cable
- ▶ Cable extension using water-tight heat shrink tubing
- ▶ Cable extension with epoxy cast raisin
- ▶ Cable extension with gel joint

HINT!

In case of a complete replacement of the connecting cable, it is advisable to shorten the included 2.6 m connection cable to approximately 1 m length so that it fits better into the old existing niche.

5. Electrical Installation

CAUTION!

- ☞ **The planning, installation and modification of electrical systems must be carried out in accordance with the relevant norms and legislations of the country where the system is installed.**
- ☞ **Works on low-voltage-systems must be done by a skilled and authorized electrician. The valid accident prevention regulations must be absolutly considered.**
- ☞ **To avoid an electric shock all works must be done currentless (Turn off the automatic circuit breaker).**
- ☞ **The entire electrical installation must be carried out by a skilled and authorized electrician in accordance with your country´s relevant standards.**
- ☞ **In case of changing the connector cable only use a cable with suitable wire cross section.**

☞ The entire electrical installation must be carried out by a skilled and authorized electrician in accordance with your country´s relevant standards.

☞ The low voltage cable from the back of the niche should be run to the relevant smart lamps power supply units. Place the power supply in a dry and safe area outside the danger zone, e.g. in an installation cabinet and run the low voltage cables in the shortest possible manner to the individual illuminator.

☞ Proper functioning of the smart lamps illuminator can only be secured if the low voltage cable between the power supply and the illuminator is as short as possible. If the cable has to be extended, use a cross-section of 1,5 mm² up to a length of 10 m and a 2,5 mm² up to a length of 18 m. Longer cables can cause loss of power and other malfunctions.

☞ It is recommendable to put all current lines into a conduit and use waterproof connection boxes because there can always be high wetness, splash water etc. around the pool.

V 08d/2010