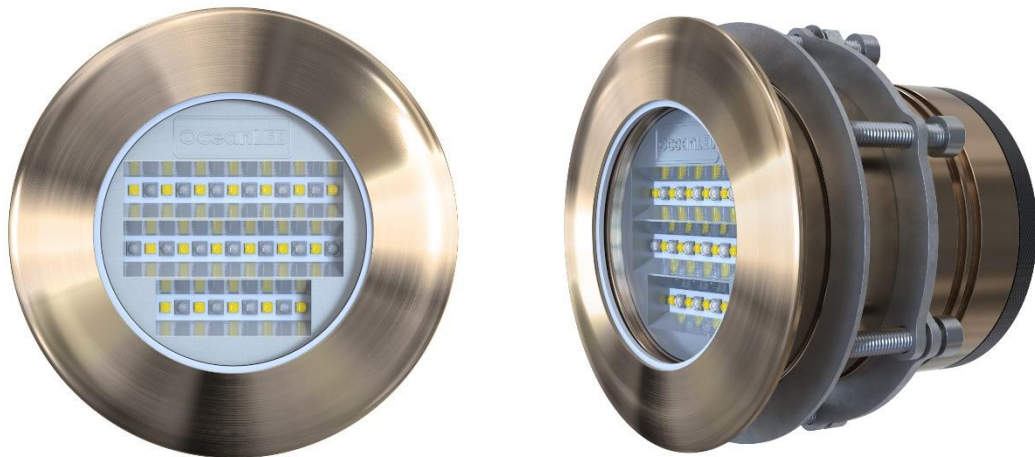




INSTALLATION & OPERATION MANUAL

## ***EXPLORE SERIES E6 & E7 XFM Single Colour***

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# Preface

READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL



## CAUTION

(Risk Group 2): Possibly hazardous optical radiation emitted from this product. Do not stare at the operating lamp. Maybe harmful to the eye.



## WARNINGS

Before installing your OceanLED Light, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in property damage, severe injury or even death.

Before installing your OceanLED Light, check local laws for restrictions regarding the use of coloured lights in your area.

Do not operate lights out of water for a period longer than 5 minutes followed by an OFF period of at least 1 hour. Exceeding this may cause damage to the light unit.

Ensure the bonding point of the light is fitted to the cathodic protection system on the vessel. Check conductivity between earth bonding point and aluminium bronze front bezel. If mounting the light to metal, carbon fibre or wooden hulls, ensure that suitable measures have been put in place to account for the effects of galvanic corrosion or wood deterioration, i.e., use of Delrin sleeve components (Isolation Kit).

Salt is an inherently corrosive material. Metal parts and certain natural and man-made surfaces are particularly susceptible to corrosion and deterioration when used in and around saltwater. Some OceanLED lights contain combinations of plastic and polymer products which are impervious to saltwater corrosion, however, screws and fasteners used for the installation must be of a marine grade type stainless steel or equivalent and monitored annually to ensure the lights remain in service for years to come.

Never connect/disconnect lights with power applied as irreversible damage may occur. Ensure polarity of power connections is correct. Failure to do this may invalidate the warranty.

Ensure front of lights are always fully submerged and not fitted on planning / running surfaces that may impact on water since this may damage the product. Also ensure the rear of the light is in a dry area and not subject to a wet environment. Failure to do this may invalidate the warranty.

Never Use Solvents! Cleaners, fuel, and other products that may contain strong solvents, such as, but not limited to, acetone, that attack many plastics greatly reducing their strength and irreversibly damaging the special lens coatings and cable sheathings.

Never clean lights using a high-pressure jet wash as this will void the warranty.

Remove the protectors from the connectors on the rear of the light **ONLY** if the connector will be used immediately. If the connectors on the light(s) are not in use, leave protector(s) on.



## DANGER

### RISK OF ELECTRIC SHOCK OR ELECTROCUTION

This underwater light must be installed by a licensed or certified electrician in accordance with all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to swimmers, installers, or others due to electrical shock, and may also cause damage to property. Always disconnect the power to the light at the circuit breaker before servicing the light.

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## PRETEST

Always test the lights prior to installation. Failure to do this may result in additional installation time and could invalidate the warranty.

## IMPORTANT NOTICE

Attention Installer: This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/ or operator of this equipment.

## WARRANTY COVERAGE

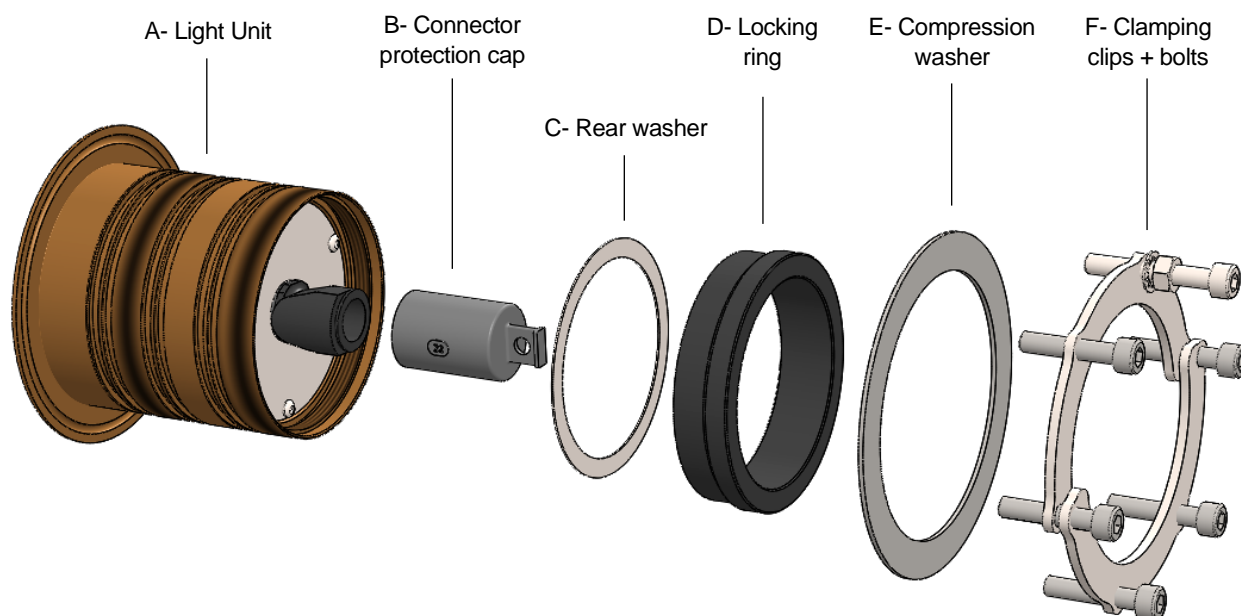
Please refer to [www.oceanled.com/warranty](http://www.oceanled.com/warranty) for full warranty statement.

# 1 Installation Checklist

1. Decide on light spacing – OceanLED recommendations available. Rear of lights and electrical connections must never be exposed to wet environments inside the hull. See page 13 for optional Rear Enclosure.
2. Decide on light angles (only applies for E7 installs) – OceanLED Personalised Service available on request.
3. Ensure the correct power kit is selected and installed (AC or DC power kit).
4. Ensure correct cable gauge is used (refer to relevant cable gauge chart).
5. Control system chosen (switch control).
6. Correct length light fixture chosen (Extension kit required for hulls thicker than 55mm).
7. Preparing the hull (Isolation kit required for conductive hull materials or wooden hulls).
8. Ensure the lights have been fitted in the correct orientation, and for E7, also with the correct beam angle.
9. Correct marine sealant applied evenly around the bezel. Ensure fully watertight seal is created after sealant cures.
10. Correct clamping of light fixture onto hull.
11. Light(s) correctly bonded and vessel bonding system check carried out (refer to relevant schematic and test procedures).
12. Test installation BEFORE entering water. Never connect/ disconnect lights whilst powered ON. Never leave lights ON out of water for longer than 5 minutes followed by an off period of 1 hour. Never leave vessel unchecked for a few days after install. Always check routinely for a few days after installation to ensure the install is correct and fully sealed.
13. Troubleshooting if required - most issues can be resolved by following the guidelines.

## 2 Overview

### Product components breakdown



### Power Source Requirements


Most installations will utilize on-board 12/24V DC power supply from a marine battery in which case the Explore DC Power Kit should be purchased.

If AC power is being used on the vessel, an Explore AC Power Kit must be purchased. If an AC to DC power supply is being used, it is important to allow for at least a 15% reserve to account for voltage fluctuations caused by variables beyond your control, such as ambient temperature and supply voltage fluctuations. This reserve ensures that your lights always receive the proper voltage and prevents overloading of the power supply, which could lead to premature failure. Please refer to the chart below to determine the power supply requirements.

### Power Consumption and Recommended Fuse Values

Model	Current @ 12V DC	Current @ 24V DC	Max Nominal Power consumption	Minimum PSU Power (15% reserve)	Recommended fuse 12V/24V DC
E6/E7 XFM White	7.8 A	4.7 A	113W	130W	10 A
E6/E7 XFM Blue	7.8 A	4.7 A	113W	130W	10 A

# 3 Preparing the Hull

 When installing an Explore unit, it is important to ensure that there is sufficient space inside the vessel to remove the insert for maintenance or after-sales services. For example, the XFM unit requires an additional 100mm / 4" of space from the rear of the mounting tube to allow for insert removal. Please refer to the overall dimensions in Appendix [Section 7.1](#) .

Make sure that the area surrounding the part of the light inside the vessel has a diameter of 100mm / 4" free from any insulation material.

OceanLED recommends using a qualified installer or technician for any modifications to your vessel. Additionally, please consult the manufacturer for more detailed information regarding modifications and installation procedures.

If lights are to be fitted to a conductive or wooden hull, an Isolation Kit must be used. Contact OceanLED for additional details.

## DELIN ISOLATION KIT

Isolation of the metal parts of the Explore XFM Series Light from conductive or wooden hulls to prevent galvanic corrosion issues. The isolation kit is easily fitted to the rear of the light fixture using a suitable adhesive.

## PART NUMBER

001-500638 - 80mm Delrin Isolation Sleeve Kit



## Depth/Spacing

Ideally mount your lights at similar depth levels to ensure matching colour consistency through the water. Deeper lights will look duller and possibly differ in colour compared to shallower mounted units.

Spacing / Install Depth	E6/E7 XFM
Recommended Spacing	2.5-3m (8-10')
Recommended Installation depth (From the light waterline)	250 - 300mm (10-12")

## Hull Thickness

Maximum hull thickness:

- Standard - 55mm (2.16")
- With Extension Kit - 119mm (4.7")

## Hole Cut Out

Hole Cut out size - 83mm (3.27") / With Isolation Kit 89mm (3.5")

## Overall Dimensions

See overall dimension schematic – See Appendix ([Section 7.1](#))

# 4 Installation

## 4.1 INSTALLING THE LIGHT FIXTURE (HULL THICKNESS UP TO 55MM)

### Explore E6/E7 XFM Kit Includes



Explore E6/E7 XFM Light



Clamping Kit



Removal Tool

### Additional items required not supplied by OceanLED:

- Marine sealant - 3M 4200 or equivalent
- Cable ties
- Waterproof Cable Connectors / Junction Box\* (optional)
- Allen key (5mm)
- Thread lock - Loctite 243 or equivalent.

\*Optional 4-Way Junction box available from OceanLED. Please contact OceanLED or your representative for further information.

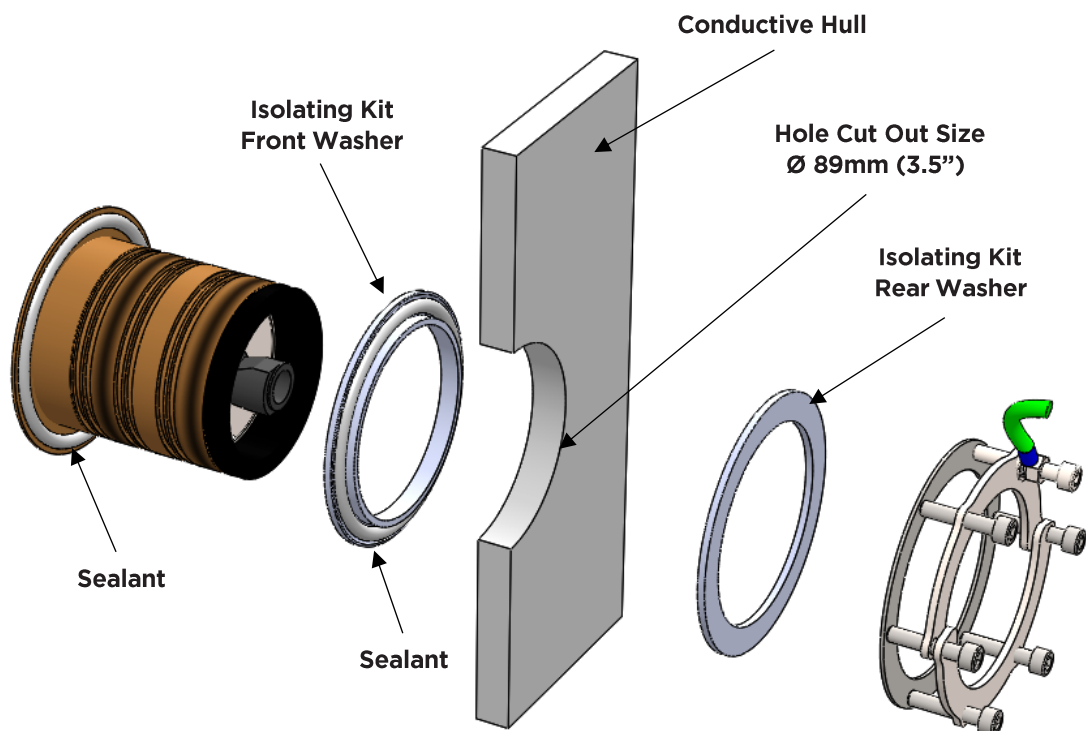
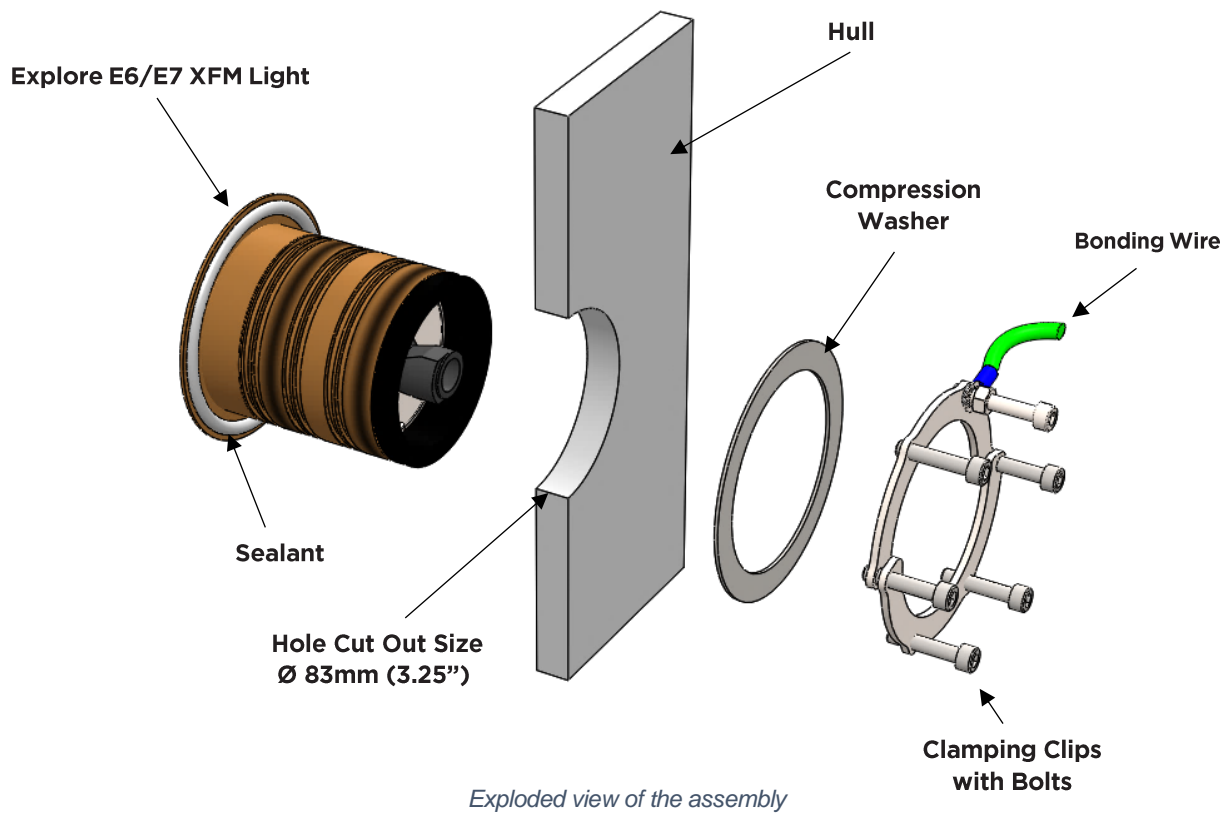
**!** **DO NOT** remove the light cartridge from the mounting tube during installation. The light cartridge **MUST** stay fitted inside the mounting tube throughout the installation process to avoid the introduction of potential contaminants that may damage the product. The light cartridge can only be removed for maintenance or after sales purposes and OceanLED must be contacted prior to any light cartridge being removed from the mounting tube.

**🔧** OceanLED recommends dry fitting all products. When installing, be sure that the light fits the area and secures to the hull using the appropriate hardware before applying any sealant.

**🔧** When applying sealant to the light fixture, use OceanLED packaging material such as the light cardboard box when placing the light on the ground face down to prevent lens damage.



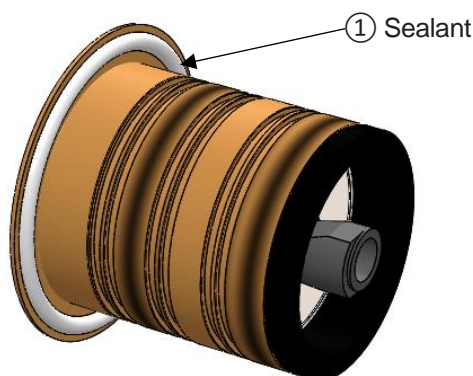
#### Installation Overview





### Installation (Once hull preparation is complete)

1. Test light(s) before fitting. Before proceeding with the fitting of the light(s), it is essential to test them to ensure their functionality. Testing the lights before installation allows you to verify that they are in proper working condition and producing the desired illumination. Once the lights have been tested and confirmed to be in good working condition, they can be safely fitted onto the hull.
2. If using a Delrin Isolation Kit, insert the Isolation Kit front washer into the drilled hole and apply marine sealant to seal between the Front Washer and the hull.
3. Apply sealant ① to the rear of the mounting tube assembly's bezel to ensure a complete unbroken seal around the light. Make sure sealant fills in the recess groove on the reverse of the light bezel.



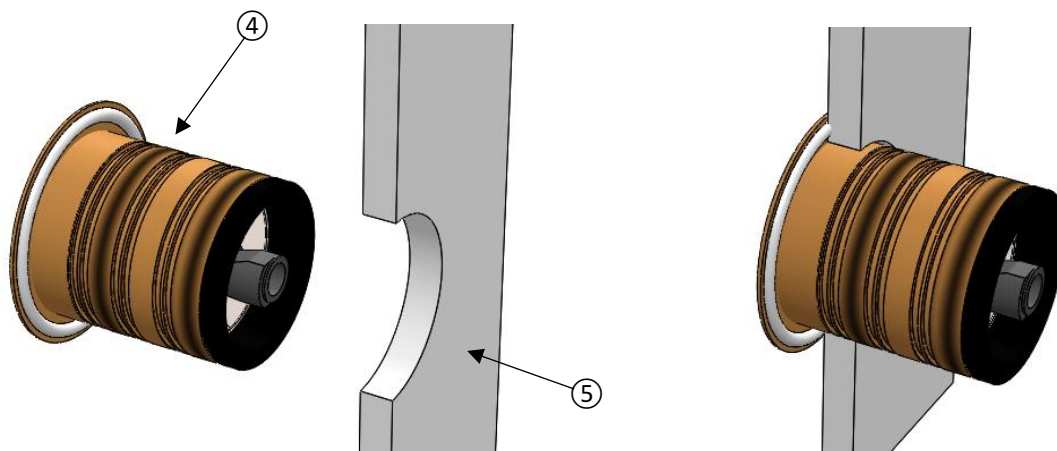
4. For the E6 single colour model, to guarantee correct light orientation ensure the OceanLED logo ② on the reflector is located at the top before inserting it in the hull. If seen from the inside of the hull, the red arrow sticker ③ on the rear lid should be pointing up (see image below).

For E7 single colour fitment, ensure the light angle is correct for the location before fitting the light. If available, follow the OceanLED Light Placement Chart (LPC) where the required angle for each light position around the hull will be detailed.

On the E7 single colour, the red arrow ③ is also used as a reference point for beam direction as well as orientation. For example, if viewed from the rear with the red arrow pointing up ③, the beam will be pointing upwards. The OceanLED logo ② on the reflector also indicates the direction of the beam – see below. For further details, see the diagram in the Appendix ([Section 7.5](#))

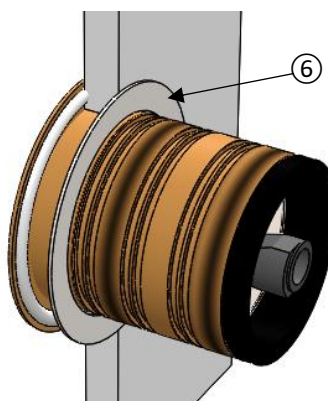


5. Insert the complete light unit ④ (mounting tube assembly + light cartridge) into the hull ⑤, pressing the light hard into the hull and twist slightly to spread the sealant behind the light to ensure good adhesion.



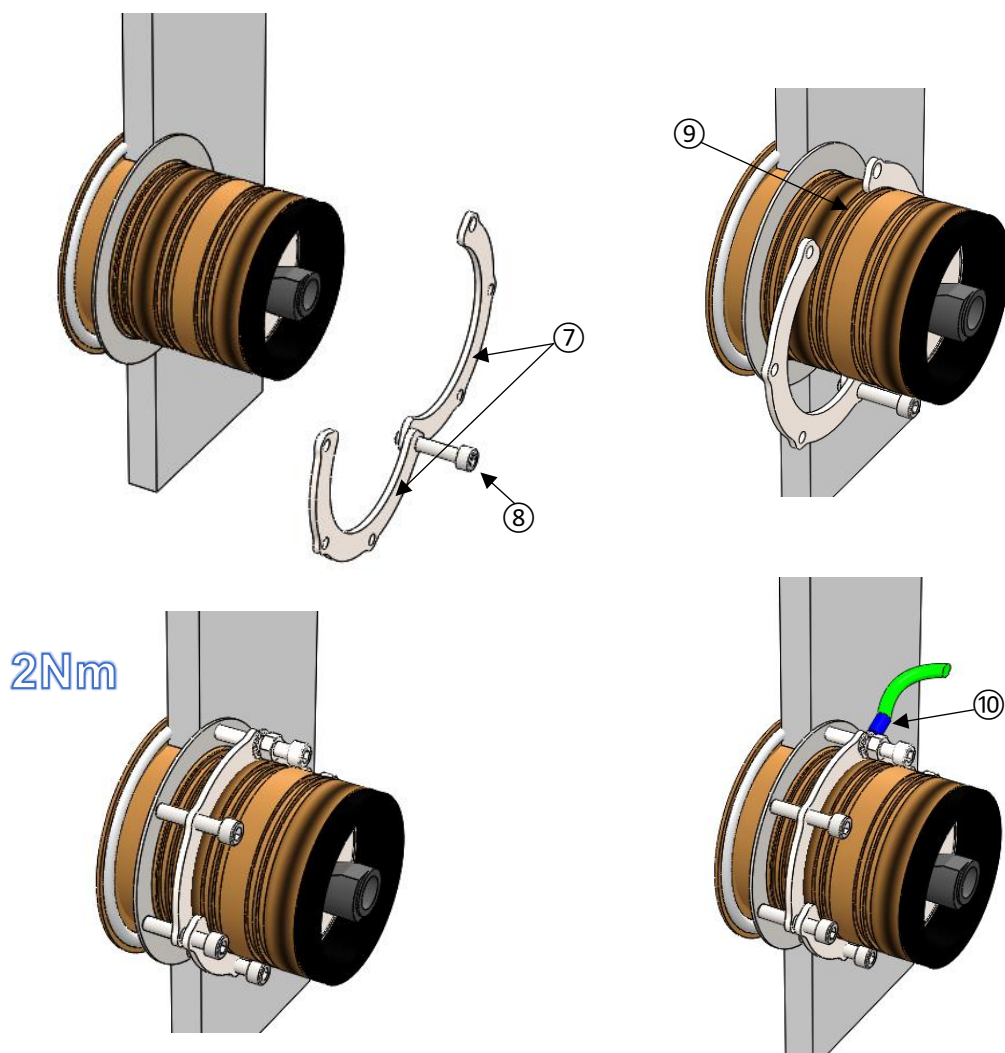
**This process is made much easier if a second person is inside the hull to receive the light and install the locking equipment whilst supporting the light from the outside. Breakages due to lights falling out of the hull are NOT covered under warranty and can cause serious bodily injury as can any falling object.**

6. If using a Delrin Isolation Kit, insert the Isolation Kit flat washer over the mounting tube and locate it flush with the hull.
7. Insert the stainless-steel compression washer ⑥ over the mounting tube.



**The stainless-steel compression washer does not need to be flat to the hull, a slightly uneven surface can be compensated by the washer.**

8. Take the two Clamping Clips ⑦ and align them to form a circle, ensuring that you pair one threaded hole with one non-threaded hole. Use one of the provided screws ⑧ to secure the clips together, positioning them approximately halfway down the length of the screw. Insert the clips into the appropriate grooves on the outside of the mounting tube ⑨, considering the hull thickness. Make sure the end of the screw is close to the washer. Use the remaining screws to fix the two clips together. Keep the longer screw aside for connecting the light to the vessel's cathodic protection system. Once connected, tighten this screw to the same position as the others.



9. Use a 5mm Allen key to tighten the locking screws, ensuring that you apply thread lock at the point where the threads make contact with the locking ring. Apply a torque of 2Nm. Take care not to over-tighten the locking screws, as this could potentially damage the mounting tube. Please note that any damage caused by over-tightening will not be covered under warranty.

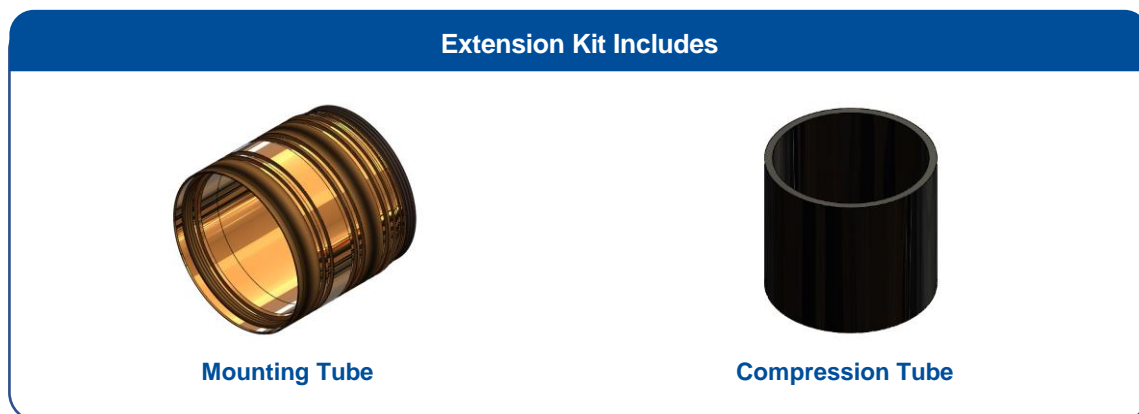
Once you have tightened the unit to your satisfaction, you will notice sealant squeezing out around the edges of the light. Take a thinner or cleaner and apply it to a cloth. Use the cloth to carefully wipe off any excess sealant, ensuring a clean seal. **Avoid any contact with the lens.** If you do not observe sealant squeezing out from the light's body, it indicates that you haven't used enough sealant, or the unit isn't tightened sufficiently to the hull. Thoroughly inspect the installation to ensure the seal you have applied is completely watertight. If you have any doubts, remove the light, re-apply sealant, and reinstall it.

10. Attach the bonding cable (10) to the remaining screw and secure it in place using the provided nut and shake-proof washer. Use a 5mm Allen key to tighten the locking screw, applying thread lock at the point where the threads make contact with the locking ring.



**BONDING:** It is essential to connect the light to the vessel's bonding/cathodic protection system. After installation, it is mandatory to ensure that there is uninterrupted continuity between the vessel's cathodic protection system and the outer bezel of the mounting tube assembly. For detailed instructions, please refer to the bonding schematic in Appendix Chapter 7.

## 4.2 INSTALLING THE LIGHT FIXTURE (HULL THICKNESS ABOVE 55MM)

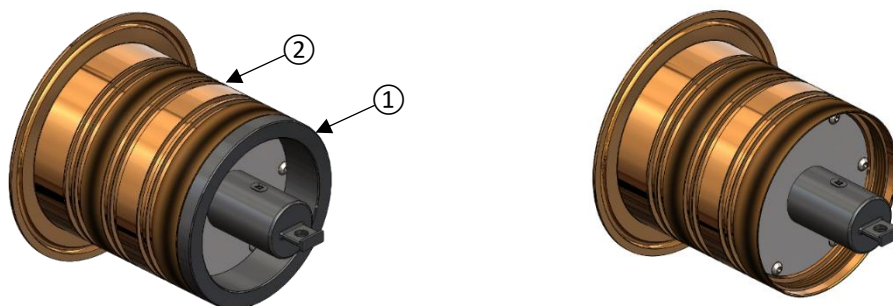


### Additional items required not supplied by OceanLED:

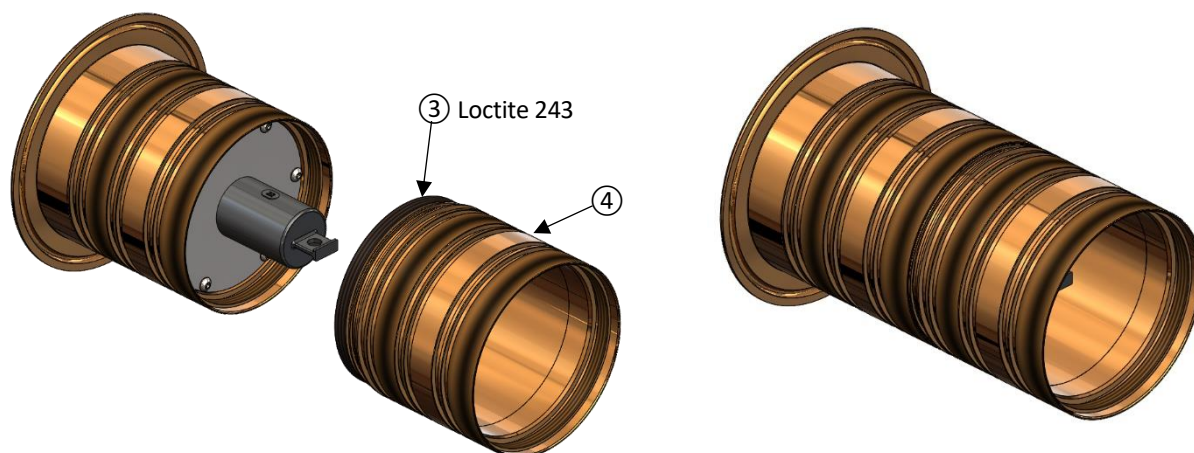
- Thread lock - Loctite 243 or equivalent.

Attach the mounting tube extension kit to the rear of the standard light mounting tube, and subsequently follow the instructions provided in section [4.1](#).

1. Remove the locking ring ① from the mounting tube ②.

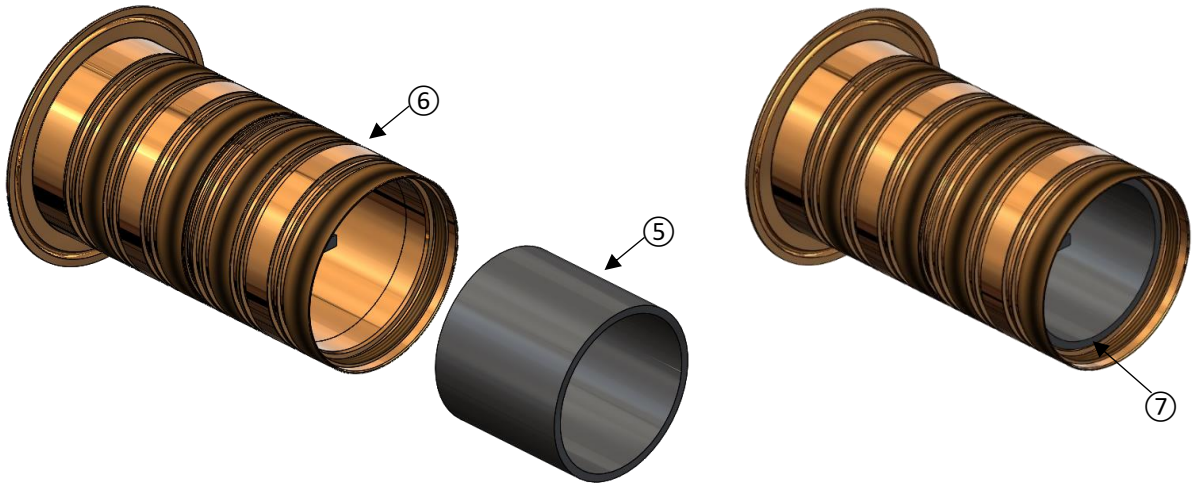


2. Apply thread lock (such as Loctite 243 or an equivalent product) to the threaded part ③ of the additional mounting tube ④. Then, firmly fasten the additional tube ④ by screwing it all the way down onto the rear of the mounting tube.

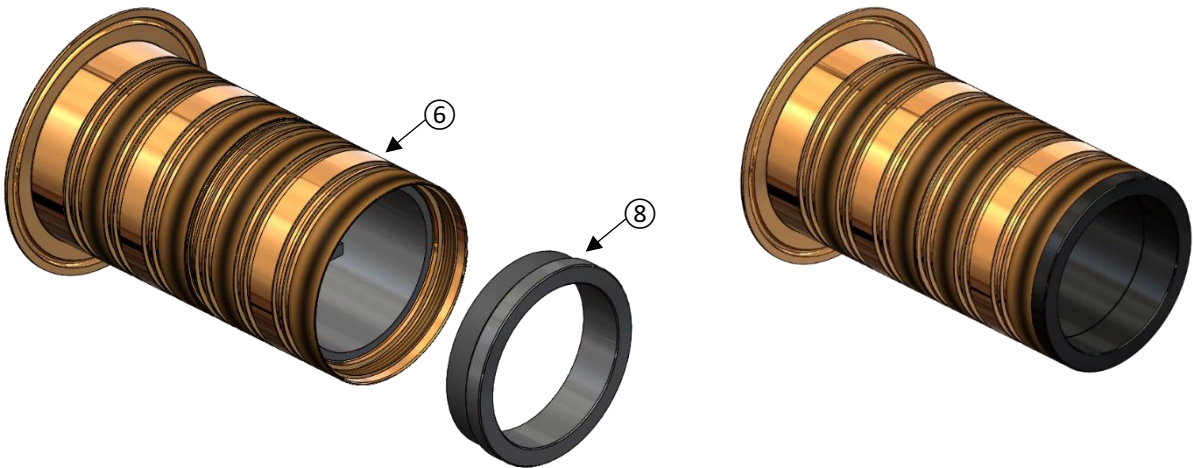




3. Insert the compression tube (5) into the mounting tube extension (6) and carefully slide it down until it reaches the light cartridge, ensuring it is fully inserted into the tube (7).

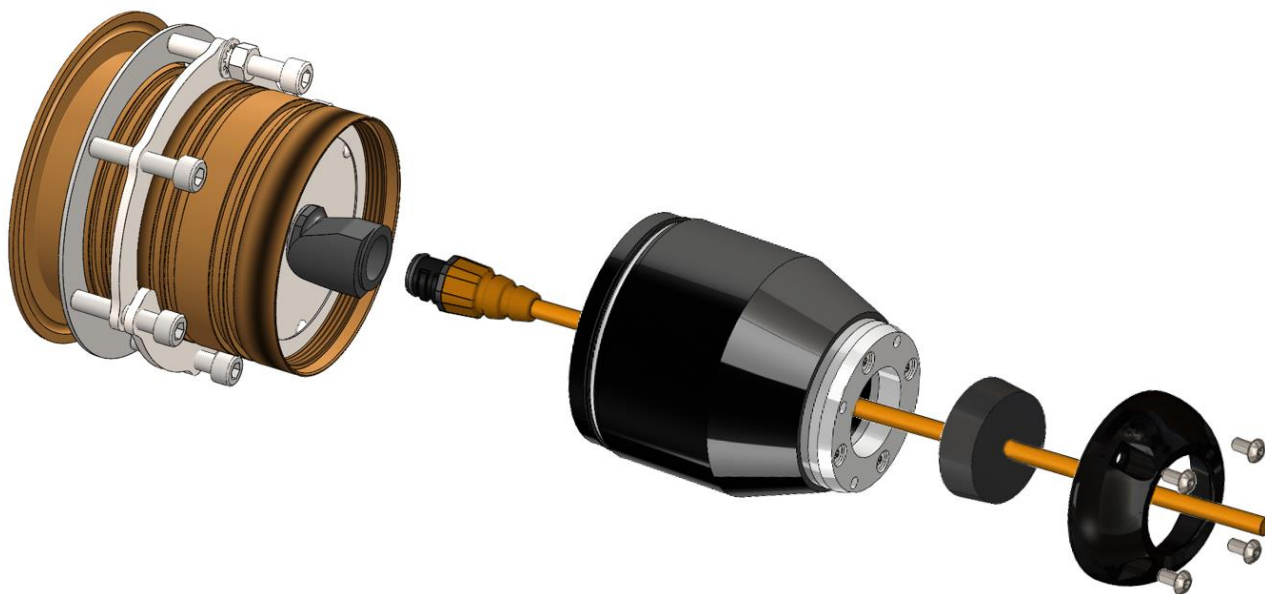


4. Tightly screw the locking ring (8) back onto the mounting tube extension (6). Proceed to follow the steps outlined in section [4.1](#).

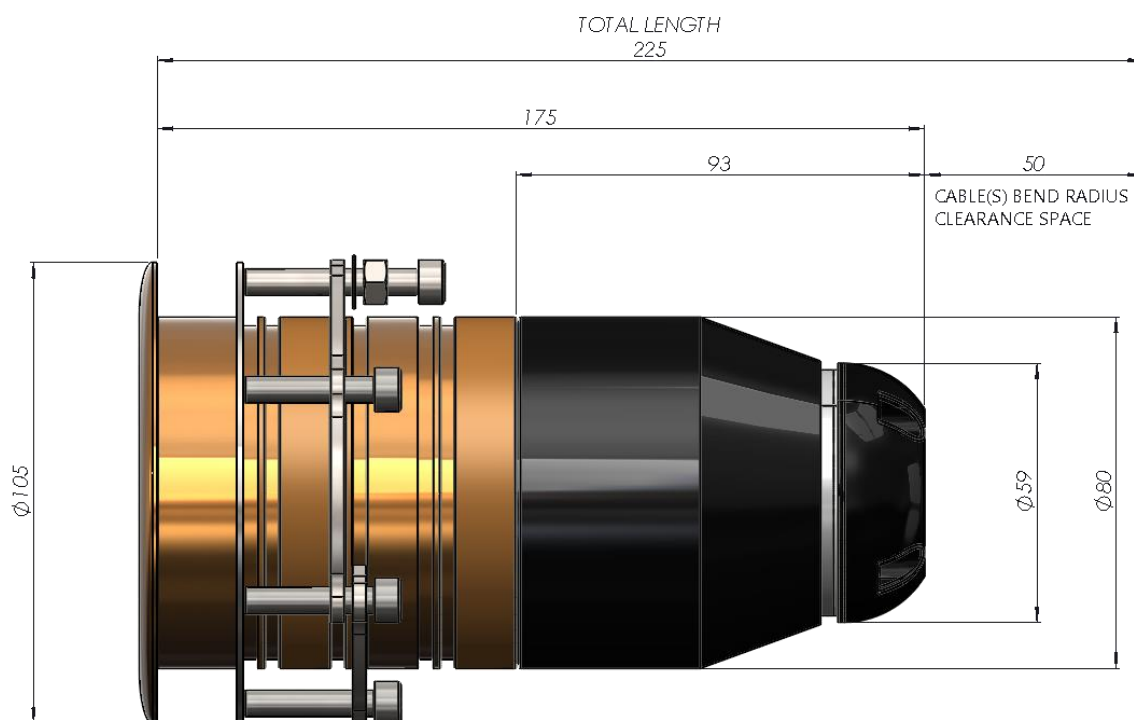


### 4.3 INSTALLATION OF OPTIONAL REAR ENCLOSURE

The OceanLED Explore Series XFM Rear Enclosure is designed to provide enhanced protection from temporary submersion inside the hull, making it ideal for installations that require increased protection. The Enclosure can be easily retrofitted to existing Explore XFM installations or incorporated into new installations. For detailed instructions on how to install the rear enclosure, please refer to the installation manual supplied with the rear enclosure.

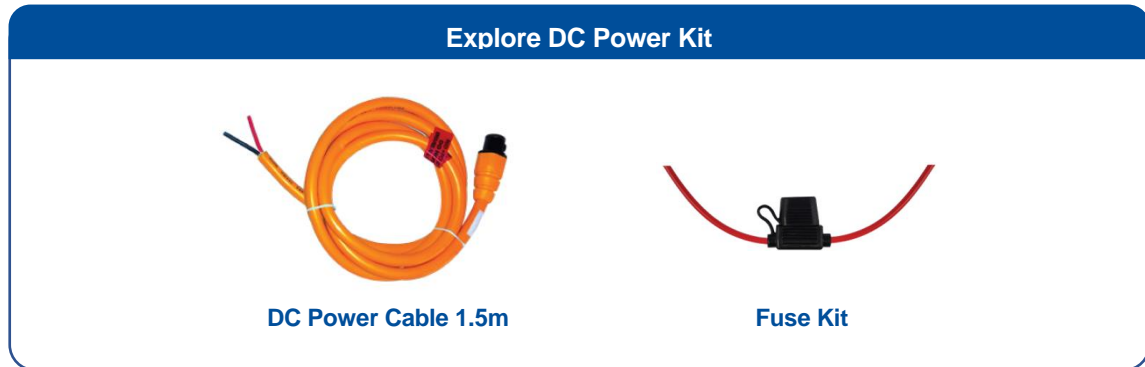


*Explore Rear Enclosure Assembly Overview*



*General Dimensions of the Rear Enclosure Assembly*

### 4.4 INSTALLATION OF EXPLORE DC POWER KIT



#### Additional items required not supplied by OceanLED:

- Waterproof connectors/ Junction Box\* (optional)
- Sufficient cable to run connections to power source.
- Suitable fuse / breaker(s)

\*Optional 4-Way Junction box available from OceanLED. Please contact OceanLED or your representative for further information.



**Always consult a qualified electrician when connecting OceanLED light fixtures.**

**When connecting light units, please note that all OceanLED lights will operate within a specific voltage range. Please check the electrical information to ensure cable gauge follow the recommendations.**

**Always ensure that the bare cables are adequately protected. Be cautious not to expose the bare wire ends to bilge water before making waterproof connections. Accumulated water in the connectors and cables can lead to corrosion. Additionally, over time, water can also work its way into the unit along the inside of the cable due to capillary action causing the light to fail. Please note that such failures caused by water damage will NOT be covered under warranty.**



**For comprehensive instructions on DC connections, please refer to the ABYC codes of practice and other relevant codes and ordinances governing DC connections.**



**Where multiple lights are fitted, and especially on 12V systems, it is advised to use a relay system to supply the switched power to the lights, to reduce load on the switch and voltage drops caused by long cable runs to the switch location.**

The Explore XFM E6/E7 single-color lights are operated by a simple on/off switch of adequate rating, which needs to be installed somewhere along the power line between the power source and the lights. The rating of the switch will depend on the system voltage used and the number of lights installed.

1. Depending on the model and the number of lights installed, it is necessary to select the appropriate power cable size to connect the DC power source (breaker/fuse panel) to the light locations. This ensures a consistent power supply to the light units. To prevent voltage drop problems, it is crucial to use tinned marine-grade cables of the correct gauge. Please refer to the tables in the Appendix ([Section 7.3 & 7.4](#)) as a guide for selecting the required cable gauge.

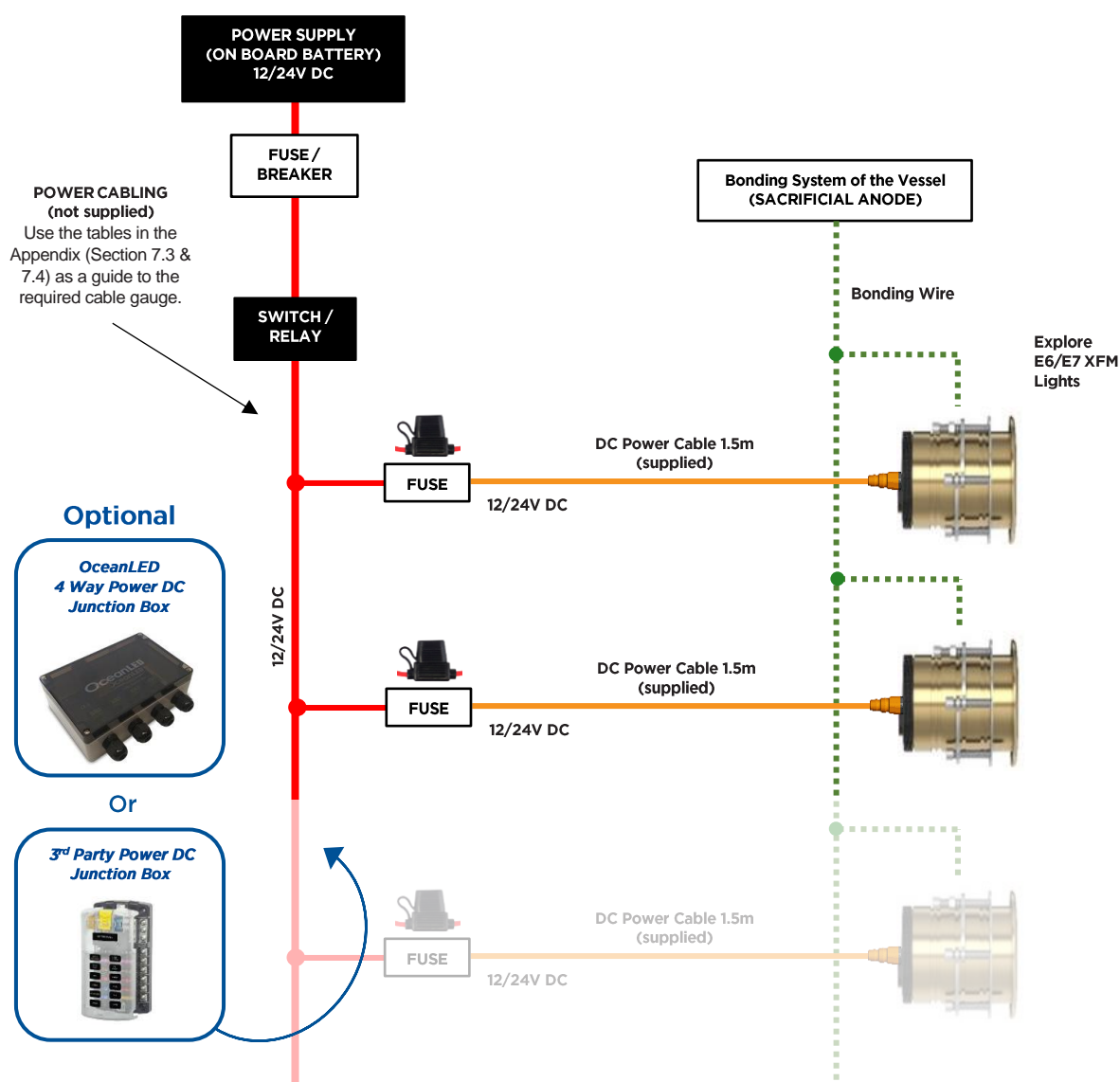


- To ensure proper protection of the cable/light unit, it is imperative to either fit the OceanLED supplied fuse to the power circuit of each light or use a suitable protection device. Additionally, it is important to ensure correct polarity. Failure to adhere to these requirements will result in voiding the unit's warranty. We recommend utilizing our 4-way fused junction box for optimal performance. Please refer to the [table](#) in Section 2 for information on power consumption and the recommended fuse values.
- To connect the lights to the DC system, use waterproof butt splices or IP66 waterproof junction boxes at both ends of the system. Remember, the red wire corresponds to +12/24V DC, and the black wire represents the ground (GND). When using heatshrink, ensure it fully covers the outer wire sheath. It is highly recommended to use glue-lined heatshrink for optimal water tightness.

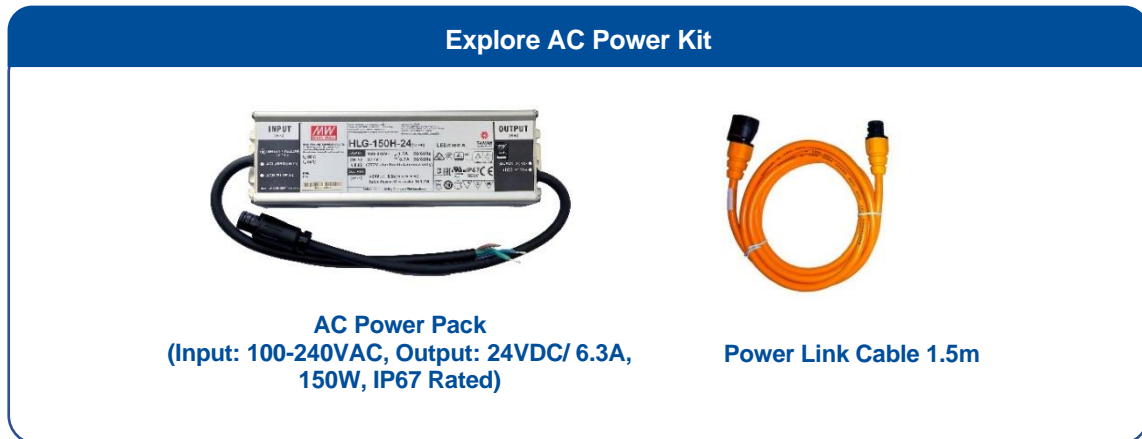
**!** Please note that corrosion of the wire and/or water ingress into the light unit through the cable are NOT covered under warranty.

- Secure the cables, making sure that the cable is not subjected to excessive stress where it exits the light. It is essential to finish and test the light units **BEFORE** the vessel is submerged in water. Never install a new light fixture and then leave the vessel unchecked in the water for several days.

### Example of the DC Installation (with DC Power Kit)



#### 4.5 INSTALLATION OF EXPLORE AC POWER KIT



#### Additional items required not supplied by OceanLED:

- Screws to secure the Explore AC Power Pack
- Junction box / waterproof connectors
- Sufficient cable to connect the Explore AC Power Pack
- Suitable fuse / breaker(s)

**!** Always consult a qualified electrician when connecting OceanLED light fixtures.

When connecting light units, please note that all OceanLED lights will operate within a specific voltage range. Please check the electrical information to ensure cable gauge, fuse and breakers size follow the recommendations.

Never use power tools to secure the Explore AC Power Pack: hand tighten only. Always mount the Explore AC Power Pack in a dry location, it should not sit in standing water at any time.

Always ensure that the bare cables are adequately protected. Be cautious not to expose the bare wire ends to bilge water before making waterproof connections. Accumulated water in the connectors and cables can lead to corrosion. Additionally, over time, water can also work its way into the unit along the inside of the cable due to capillary action causing the light to fail. Please note that such failures caused by water damage will NOT be covered under warranty.

**🔧** The 3-core input ① is for power (Brown=Live; Blue=Neutral; Green/Yellow=Earth) and the two pin Deutsch Connector ② is for the light.



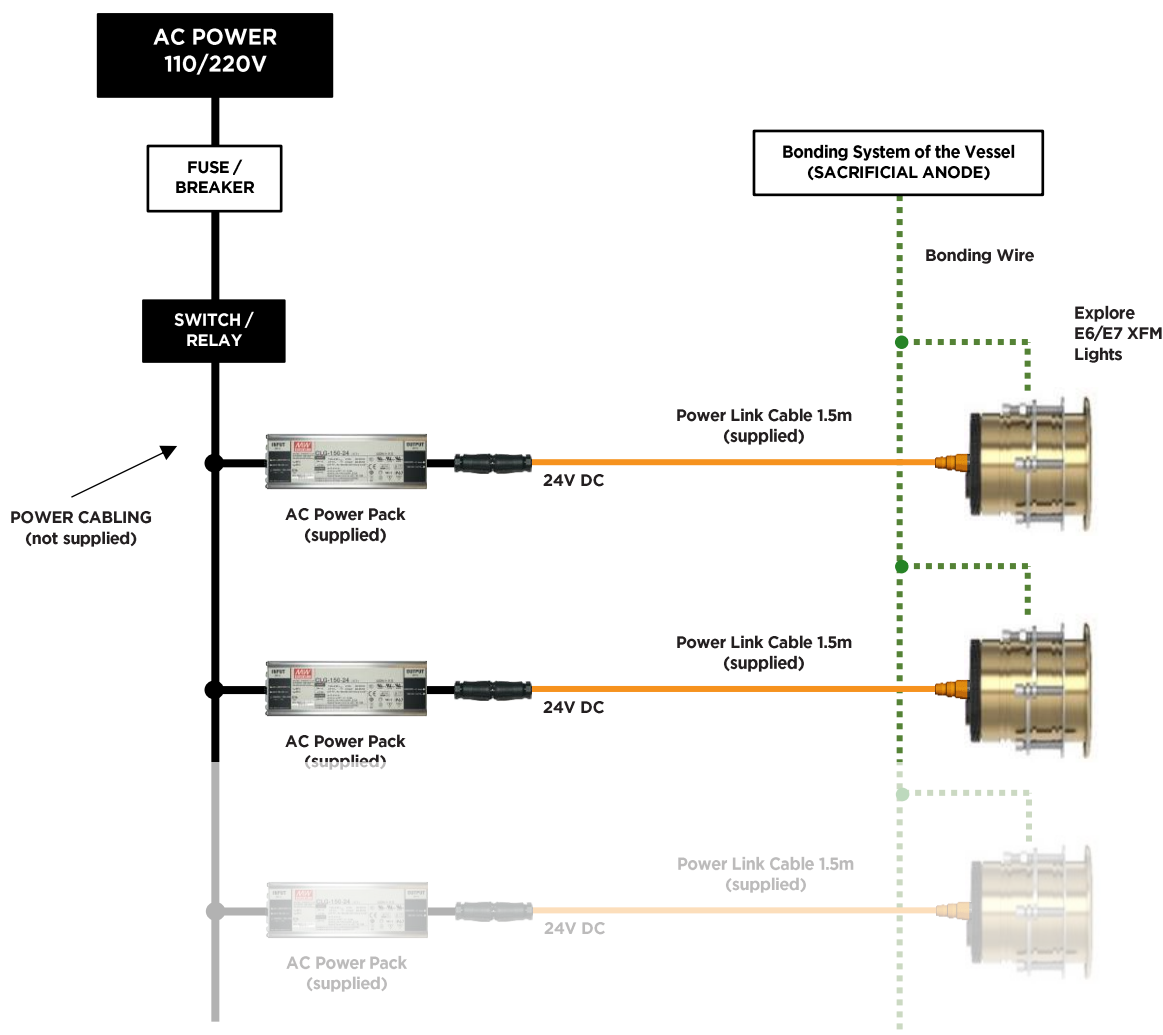
The Explore XFM E6/E7 single-color lights are operated by a simple on/off switch of adequate rating, which needs to be installed somewhere along the power line between the power source and the lights. The rating of the switch will depend on the system voltage used and the number of lights installed.

1. Depending on the model and number of lights installed, you will need to pull the correct sized power cable from the AC Power (breaker/fuse panel) to the Explore AC Power Pack locations. It is important to ensure that the correct-sized tinned marine-grade cable is used to prevent voltage drop issues. Please note that each power pack will only work with one light unit.
2. Secure the Explore AC Power Pack in the desired position, ensuring that the chosen location is close enough to connect the light cable without subjecting it to excessive stress.
3. Connect the Explore AC Power Pack to the AC Power source, ensuring that the fuse/breaker, cable, and connector have the correct specifications and are watertight. When using heatshrink, make sure it fully covers the outer wire sheath. It is highly recommended to use glue-lined heatshrink for optimal water tightness.

**! Please note that corrosion of the wire and/or water ingress into the light unit through the cable are NOT covered under warranty.**

4. Connect the Deutsch connector from the Power Pack to the light using the Power Link Cable. Ensure that the cables are securely fastened, making sure that the cable is not subjected to excessive stress where it exits the light. Before immersing the vessel in water, complete the finishing touches and perform thorough testing of the light units.

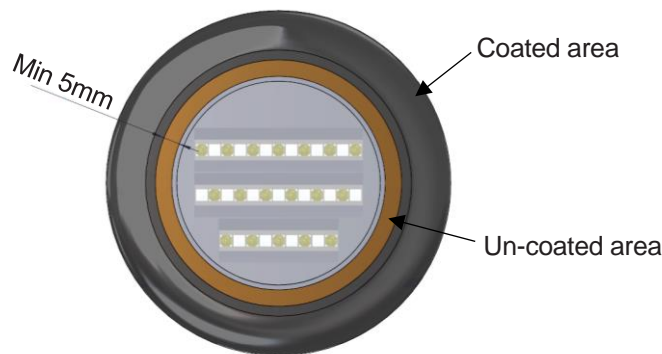
#### Example of the AC Installation (with the AC Power Kit)



### 4.6 FINALISING THE INSTALLATION

The Explore XFM mounting tube is constructed from corrosion resistant Aluminium Bronze and does not require further protection. The glass is pre-coated with a specialized Tritonium® coating which makes the surface of the glass lens a non-stick layer.

**OceanLED does not recommend that bottom paint or any type of anti-fouling agent is applied to the glass and/or bezel**, as damage may occur due to chemical incompatibility. If bottom painting of the bezel is deemed essential, then an area of at least 5mm should be left uncoated around the glass lens:



The protective lens sticker should be removed once all work on the vessel is complete.

### 4.7 TEST YOUR INSTALLATION

Always test the lights **BEFORE** the vessel goes back into the water. During this final stage, ensure that the entire system is operational. If you encounter any issues, please contact your local OceanLED representative for assistance.



**Never install a new light fixture and leave the vessel unchecked in the water for an extended period of time.**

Upon placing the vessel in the water, promptly check for any leaks. Please note that even small leaks may not be immediately noticeable. It is recommended to check the vessel again within 3 hours of immersion. If a small leak is present, significant bilge water accumulation may occur within 24 hours. If you observe a leak, it is crucial to TAKE IMMEDIATE ACTION to prevent any potential damage.

# 5 Operation / Maintenance

## 5.1 OPERATION

The Explore XFM E6/E7 single-color light is available in either Blue or White models, and as a result, it operates exclusively in standard single-color power mode.

## 5.2 MAINTENANCE

Marine growth can accumulate rapidly on the light, leading to a decrease in performance within a few weeks. To prevent this, all OceanLED lights are coated with a specialized Tritonium® coating, which creates a non-stick layer on the glass lens surface. It is recommended to clean the lights biweekly using a boat brush or a similar tool to keep the lens clean.

The extent of marine growth can vary significantly around the world, making regular maintenance crucial for optimal performance and longevity of the product. If heavy fouling occurs, barnacles can be removed from the lens by using a plastic scraper with moderate pressure underwater. When cleaning the lens while the boat is out of the water, wet the lens before scraping. Never attempt to scrape or remove barnacles from a dry lens.



**Do not use a high-pressure jet wash to clean the lens/bezel, as this can damage the seals and void the warranty.**

## 5.3 REPLACEMENT PARTS

The light source of this luminaire (light cartridge) shall only be replaced by the manufacturer or his service agent or a similar qualified person.

If the external flexible cable of this unit is damaged, contact your local OceanLED representative to arrange for replacement (cable must only be replaced by OceanLED, service agent or a similar qualified person).

Lost, broken and worn parts can be replaced on request and can be obtained through your local OceanLED representative.

### 5.4 LIGHT CARTRIDGE REMOVAL – SINGLE MOUNTING TUBE

**!** Before proceeding with this operation, you **MUST** seek permission from either OceanLED or your OceanLED representative.

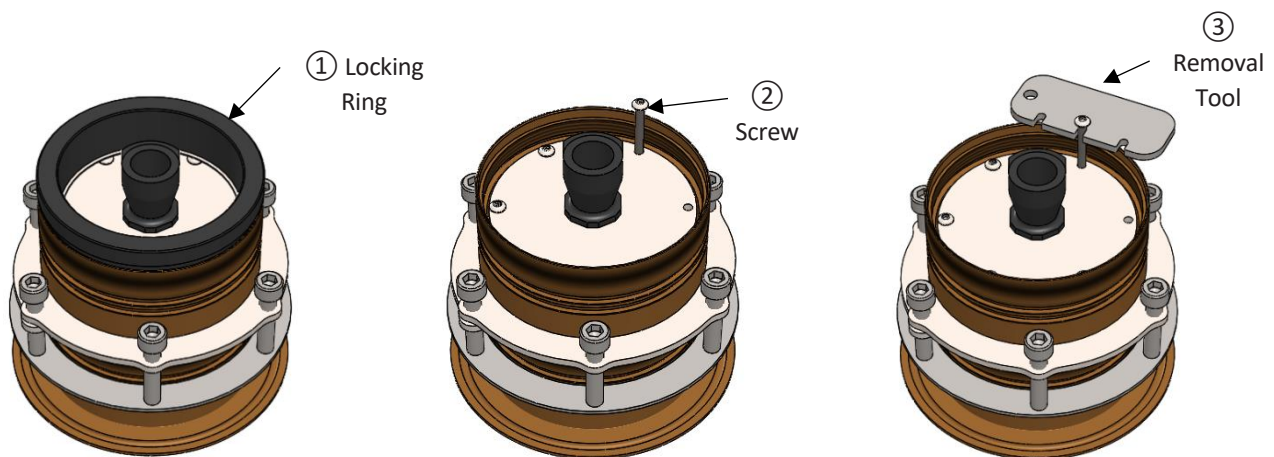
**DO NOT** remove the light cartridge from the mounting tube during installation. The light cartridge **MUST** remain fitted inside the mounting tube throughout the installation process to prevent the introduction of potential contaminants that could damage the product.

#### Additional Tools required not supplied by OceanLED

- Allen key (2mm).

#### Removal Process

1. If the vessel is in the water, verify that the front glass is present and undamaged. Never attempt to remove a cartridge while the vessel is in water if there is suspected damage to the glass lens.
2. Turn power off and unplug all the connectors on the back of light.
3. Remove the locking ring ① and compression washer from the mounting tube.
4. Undo one of the six screws ② from the back of the light cartridge to allow the Explore Removal Tool ③ to be placed. To ease the removal process, another screw can be removed to act as a breather.



5. Place the Explore Removal Tool ③ under the head of the undone screw making sure that the screw engages with the slot on the tool, then fasten the screw in a clockwise motion. By tightening down the screw the light cartridge will be pulled out of the mounting tube.
6. Finish pulling the light cartridge out by hand with the help of the tool to fully remove it from the mounting tube.



## 5.5 LIGHT CARTRIDGE REMOVAL – EXTENDED MOUNTING TUBE

**!** Before proceeding with this operation, you **MUST** seek permission from either OceanLED or your OceanLED representative.

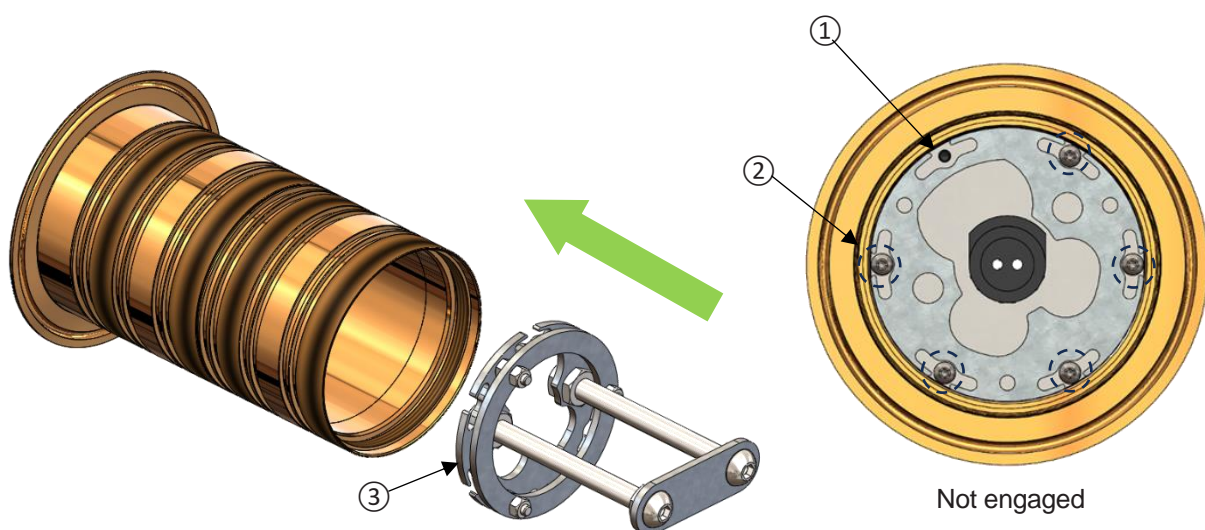
**DO NOT** remove the light cartridge from the mounting tube during installation. The light cartridge **MUST** remain fitted inside the mounting tube throughout the installation process to prevent the introduction of potential contaminants that could damage the product.

### Additional Tools required not supplied by OceanLED:

- T-Handle Allen key (2mm) 80mm length.

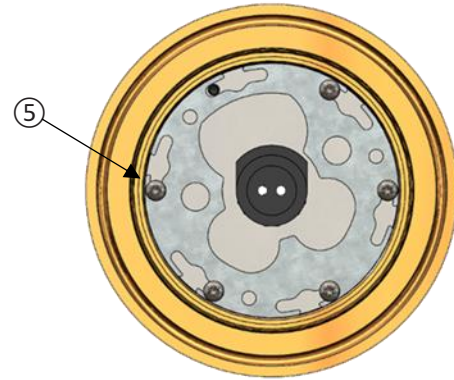
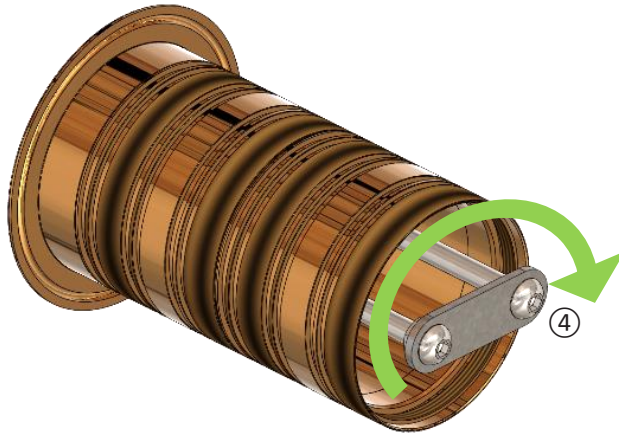
### Removal Process

1. If the vessel is in the water, verify that the front glass is present and undamaged. Never attempt to remove a cartridge while the vessel is in water if there is suspected damage to the glass lens.
2. Turn power off and unplug all the connectors on the back of light.
3. Remove the locking ring and the compression tube from the mounting tube.
7. Undo and remove one of the six screws ① from the back of the light cartridge to ease removal.
4. Loosen the other 5 screws ② by the same height (approx. 15-20 full rotations of the Allen key) without removing them.
5. Insert the Explore Extended Removal Tool ③ into the mounting tube ensuring the cut-outs in the tool align with the screws. Twist the tool to align.

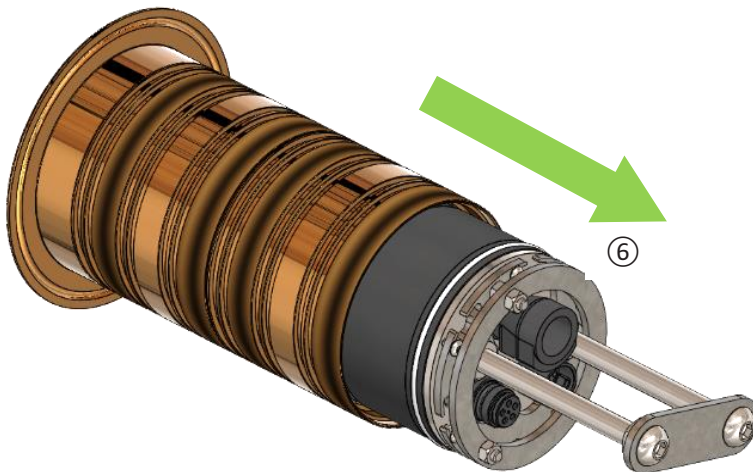




5. Twist the tool ④ to engage the screw heads. Once the screw heads are engaged ⑤ twist and pull the tool outwards ⑥ to extract the light.



Engaged



## 5.6 LIGHT CARTRIDGE INSTALLATION

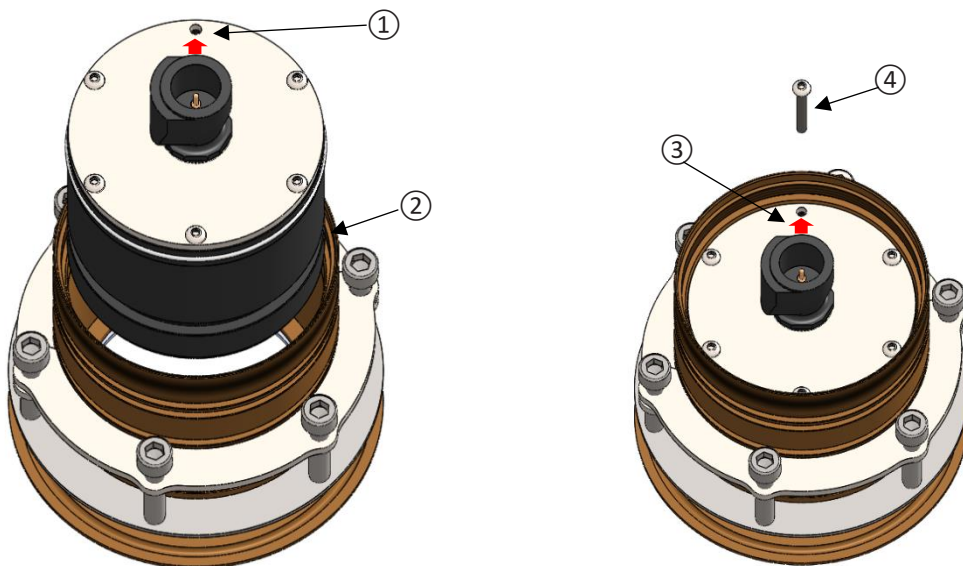
### Additional Tools required not supplied by OceanLED:

- Allen Key (2mm)

**Before installing the light cartridge, clean the inside of the mounting tube with isopropyl alcohol cleaner and let it dry. Failure to do this may introduce potential contaminants that may damage the product.**

**Do not use any lubricant substances to facilitate the insertion of the light cartridge into the mounting tube. If assistance is needed during the insertion, OceanLED recommends using a small amount of Isopropyl Alcohol sprayed onto the O-Ring on the back of the light cartridge.**

1. Inspect the mounting tube and light cartridge to ensure there are no contaminants (such as grease, debris, or dirt) or water present.
2. Use the 2mm Allen key to remove one of the screws ① on the back of the light cartridge to serve as a breather. Failure to do so will make the installation process significantly more difficult.
3. Align the light cartridge with the mounting tube ②, ensuring that the Red Arrow Indicator ③ is positioned at the top and centrally located on the back of the light cartridge.
4. Slowly push the light cartridge in until it reaches the front bezel, ensuring that the light cartridge remains aligned.



5. Using a 2mm Allen key (hexagonal key), re-install the screw ④. Also, re-install the compression washer and locking ring, ensuring they are properly seated against the light cartridge.
6. Connect the power cable and test the light to ensure it is functioning properly.

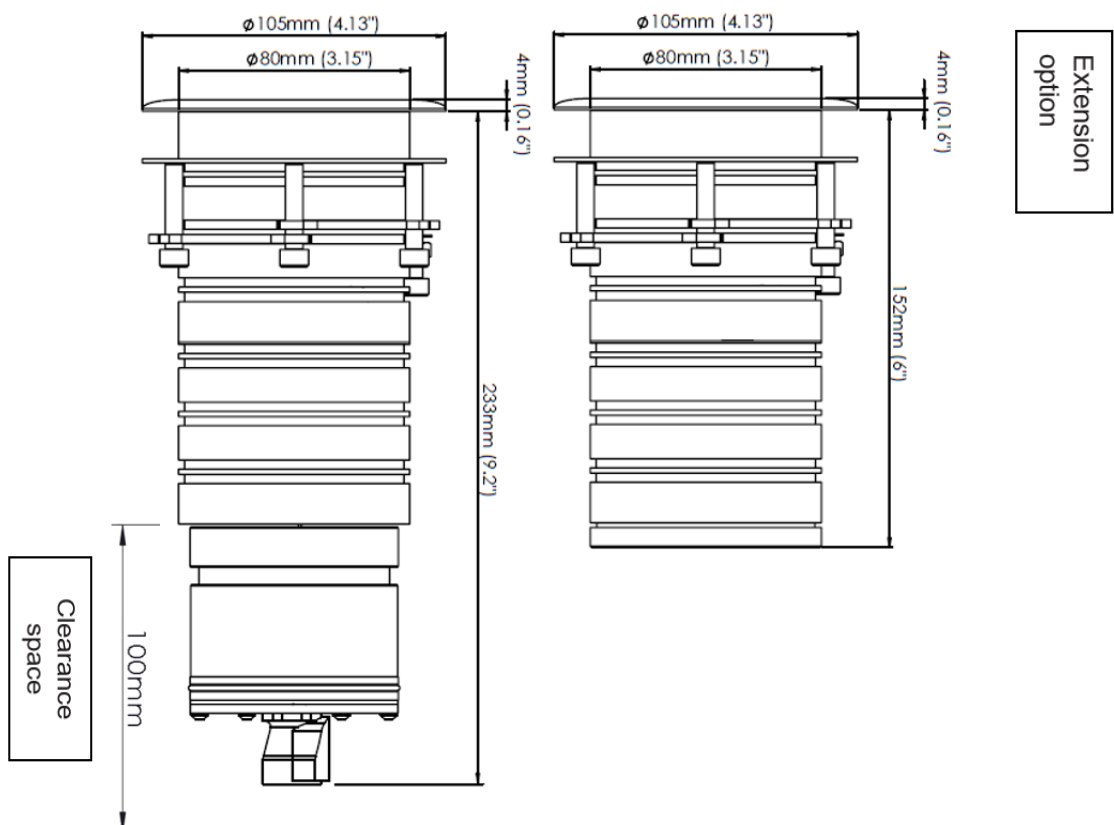
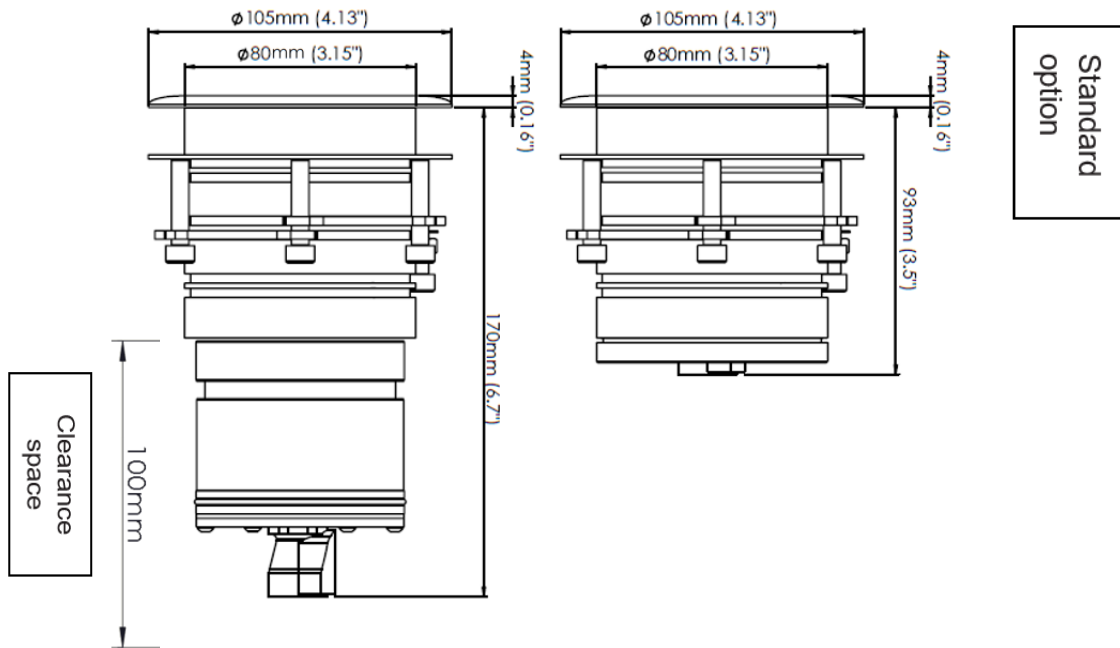
# 6 Troubleshooting

EXPLORE SERIES E6/E7 XFM			
PROBLEM	CHECK	CAUSE	FIX
Light does not look bright	Check that there is no marine growth on the lens	Marine growth	Clean the lens as per maintenance advice
	Check voltage supply to the light is between 11V and 32V DC (The light will still work between 10 and 11 volts however at reduced brightness)	Voltage is either too high or too low	Investigate reason for high or low voltage and fix
	Check voltage supply is stable and does not fluctuate	Voltage is fluctuating	Investigate reason for voltage fluctuation and fix
	Check that the electrical connections between the light and the supply cable have been made correctly and recommended cable gauge has been used	Poor electrical connection	Remake connection and seal joint correctly
	Confirm all LEDs are illuminated	1 or more LEDs are not working	Contact your dealer.
	Check lights to see if water is present inside the light	Water present	Contact your dealer.
	Check cable connections for corrosion	Corrosion is present	It is not advised to reuse the cable if water is present inside. Contact your dealer for a replacement. This is NOT covered by the warranty
Light has water inside	Check integrity of lens	Light will require replacing	This is not covered by the warranty - Contact your dealer for a replacement light. Only use genuine OceanLED parts
	Check connections to make sure they are not submerged in water	Light will require replacing	This is not covered by the warranty
	Check cable to make sure there is no damage to the cable	Cable will require replacing	This is not covered by the warranty. Only use genuine OceanLED parts
	Checked all factors that are above, and the light still does not work	Light faulty	Contact your dealer for a replacement light

EXPLORE SERIES E6/E7 XFM			
PROBLEM	CHECK	CAUSE	FIX
Light does not light up	Check that the electrical connections between the light and the supply cable have been made correctly	Poor electrical connection	Remake connection and seal joint correctly
	Check the cable gauge is sufficient for the current draw of the light	Cable gauge insufficient resulting in voltage drop	Increase cable gauge
	Check that the wiring polarity is correct, red to positive and black to negative	Polarity incorrect	Change the wiring polarity and seal joint correctly. Damage to light may have occurred.
	Check that there is power supply to the light cable connection	Poor electrical connection	Trace the cables back, checking at joints until break has been located. Then rectify the problem and seal joint correctly
	Check that the electrical connections between the supply cable and the light circuit breaker or fuse have been made correctly	Poor electrical connection	Remake connection and seal joint correctly
	Check that the in-line fuse is intact and not blown	Replace fuse	If fuse keeps blowing, then there is a short circuit in the light system that must be traced and rectified. If no external short can be located contact your dealer
	Exchange the power cable (between light and power supply) with one from a working light	Light works, faulty cable	Contact your dealer for a replacement cable
	Check that the light supply circuit breaker is closed, or the fuse has not blown	Close circuit breaker / replace fuse	If breaker / fuse keeps blowing, then there is a short circuit in the light system that must be traced and rectified. If no external short can be located contact your dealer

# 7 Appendix

## 7.1 OVERALL DIMENSIONS

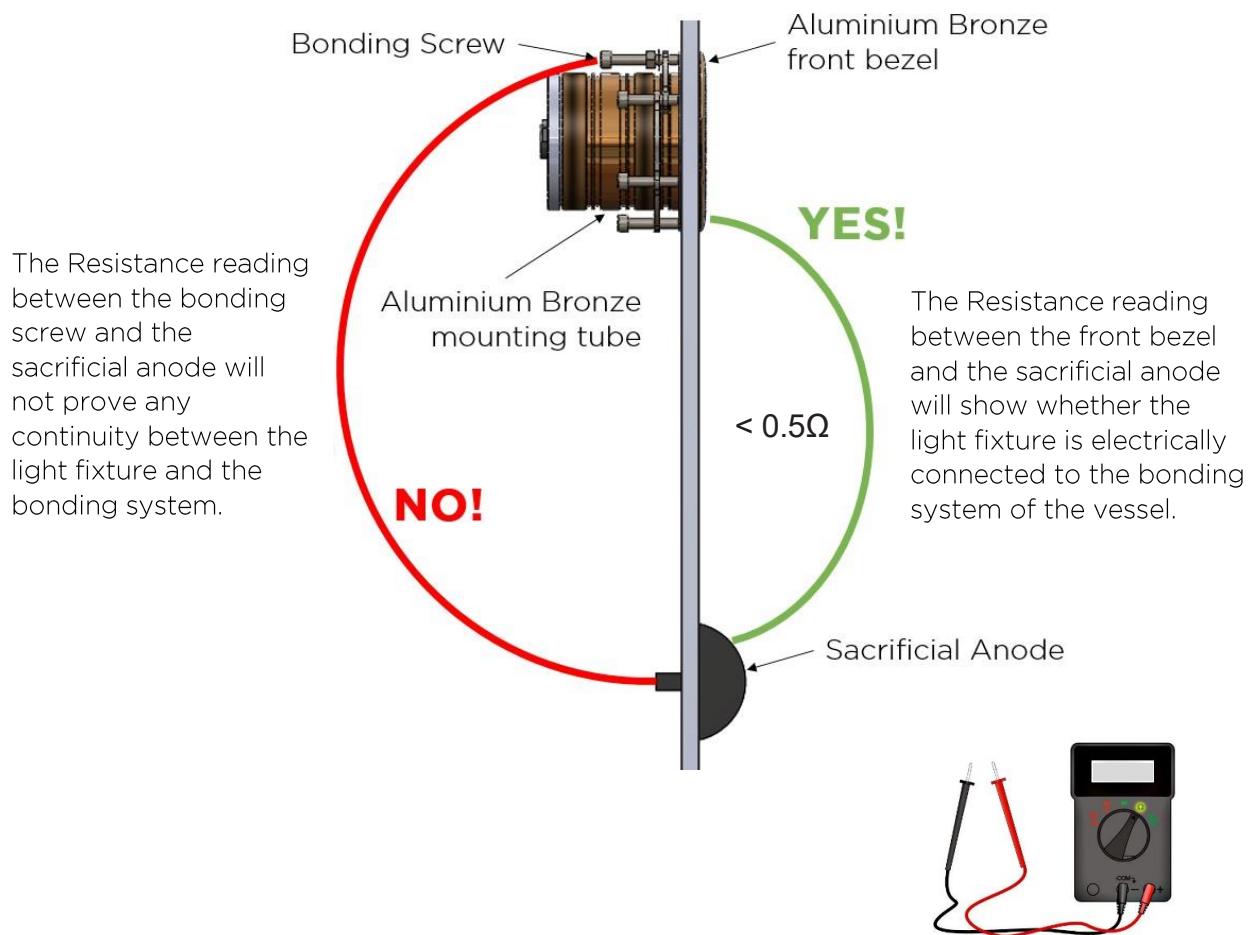


## 7.2 ESSENTIAL TEST

**!** Perform this bonding check after installation of the light and before moving the vessel back into the water.

Refer to bonding information in the installation sections in this manual. If in doubt, please contact OceanLED.

1. Connect the light assembly to the cathodic protection system as explained in Section 4.
2. Measure the electrical continuity between the front bezel and the sacrificial anode. This test should give a reading of up to  $0.5 \Omega$  (Ohms). This procedure ensures proper electrical continuity between the front bezel, the mounting tube, and the sacrificial anode.



If you have any questions regarding the above, please contact OceanLED:

+44 (0) 1455 637505 or [info@oceanled.com](mailto:info@oceanled.com)



### 7.3 CABLE GAUGE CHART 12V

Supply & Return Cable Conductor Size Chart 3% drop for when using 12V DC supply												
Cable length (feet)*	Cable length (m)**	Circuit Current										
		2 Amp	4 Amp	6 Amp	8 Amp	10 Amp	15 Amp	20 Amp	25 Amp	30 Amp	40 Amp	50 Amps
0-5	0-2	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
5-10	2-3	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
10-15	3-5	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
15-20	5-6	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
20-25	6-8	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
25-30	8-9	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
30-35	9-11	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
35-40	11-12	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
40-45	12-14	12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
45-50	14-15	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG
50-55	15-17	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG
55-60	17-18	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0 AWG	3/0 AWG	4/0 AWG
60-65	18-20	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG
65-70	20-21	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG
70-75	21-23	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	0 AWG	2/0 AWG	2/0 AWG	4/0 AWG	
75-80	23-24	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG	
80-85	24-26	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG	
85-90	26-27	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG	
90-95	27-29	8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	2/0 AWG	3/0 AWG	3/0 AWG		
95-100	29-30	8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	0 AWG	2/0 AWG	3/0 AWG	4/0 AWG		

\*One-way cable length from supply (usually battery) to load.



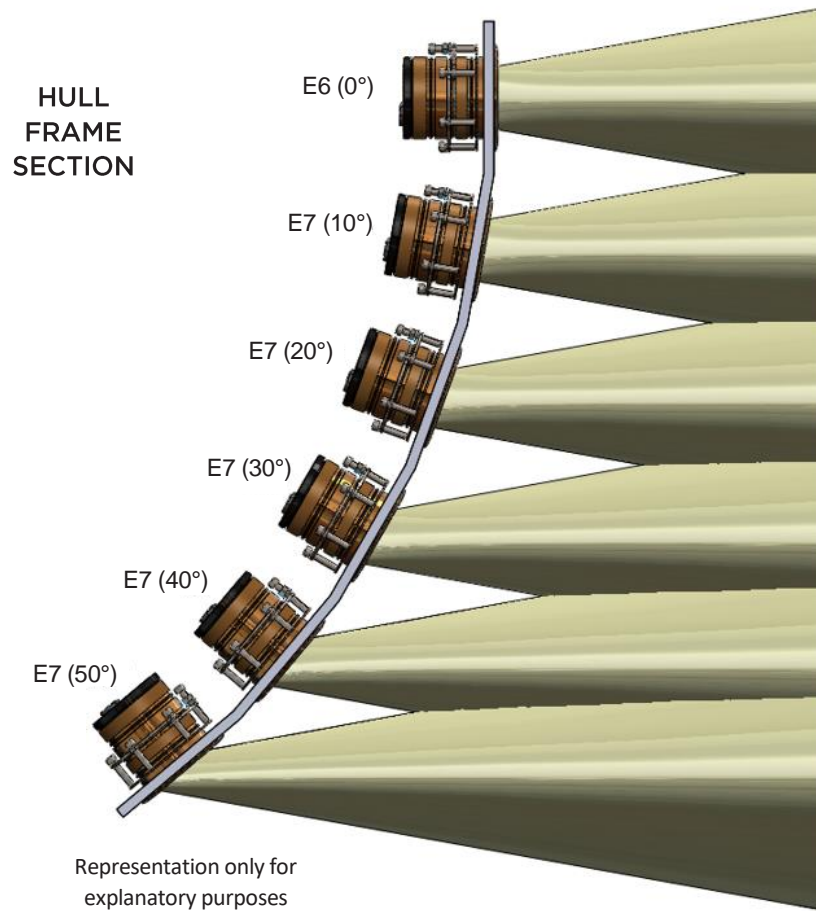
### 7.4 CABLE GAUGE CHART 24V

Supply & Return Cable Conductor Size Chart 3% drop for when using 24V DC supply												
Cable length (feet)*	Cable length (m)**	Circuit Current										
		2 Amp	4 Amp	6 Amp	8 Amp	10 Amp	15 Amp	20 Amp	25 Amp	30 Amp	40 Amp	50 Amps
0-5	0-2	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG
5-10	2-3	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
10-15	3-5	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG
15-20	5-6	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
20-25	6-8	18 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG
25-30	8-9	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
30-35	9-11	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
35-40	11-12	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
40-45	12-14	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG
45-50	14-15	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
50-55	15-17	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
55-60	17-18	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
60-65	18-20	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
65-70	20-21	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
70-75	21-23	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	2 AWG	0 AWG	2/0 AWG
75-80	23-24	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
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85-90	26-27	12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
90-95	27-29	12 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	1 AWG	2/0 AWG	2/0 AWG
95-100	29-30	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG	3/0 AWG

\*One-way cable length from supply (usually battery) to load.

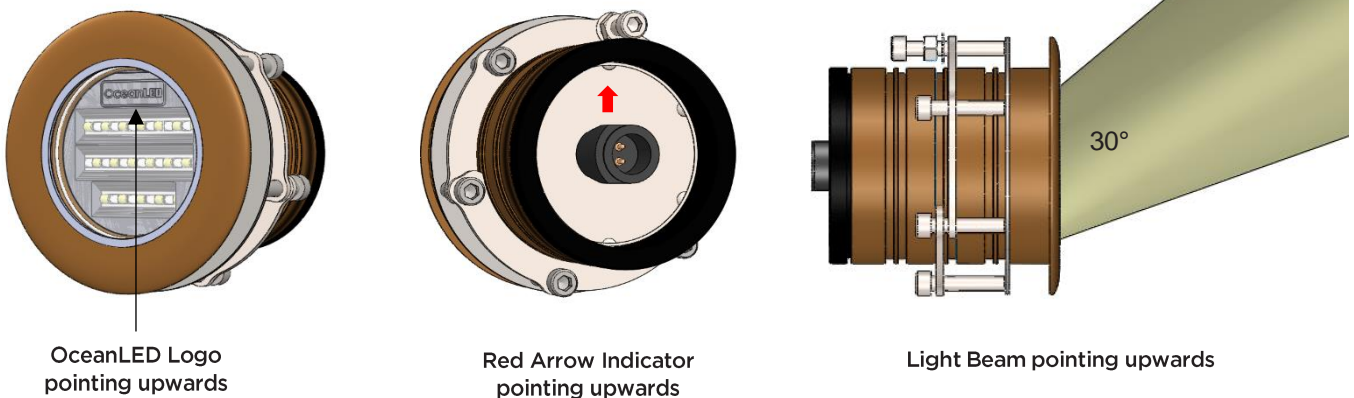
## 7.5 EXPLORE E6/E7 XFM ANGLED BEAM DETAILS

Mounting Tube follows Hull geometry while the Light Optics angle the beam in the desired direction.



The Red Arrow on the back of the light cartridge and the OceanLED logo at the front both serve as a reference for the orientation of the Light Beam. When the Logo or Red Arrow is pointing upwards, it corresponds to the light beam pointing upwards. Please refer to the illustration below for further guidance.

Example: Explore E7 - 30°



# 8 Warranty

Please remove this page and keep for your files

For technical assistance:

Europe: [service@oceanled.com](mailto:service@oceanled.com)

The Americas: [warranty@oceanledusa.com](mailto:warranty@oceanledusa.com)

Warranty Serial Code(s):


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**Ocean LED Marine LTD**  
Unit 1 Jacknell Road  
Dodwells Bridge Industrial Estate  
Hinckley,  
Leicestershire LE10 3BS  
United Kingdom

Tel: +44 (0) 1455 637505  
Fax: +44 (0) 1455 238553  
[sales@oceanled.com](mailto:sales@oceanled.com)

**Ocean LED USA LLC**  
778 South Military Trail  
Deerfield Beach  
Florida  
FL 33442-3025  
USA

Tel: +1 954.523.2250  
Fax: +1 954.523.2249  
[sales@oceanledusa.com](mailto:sales@oceanledusa.com)

[www.oceanled.com](http://www.oceanled.com)