![OceanLED]

INSTALLATION & OPERATION MANUAL

X-SERIES
X4 / X8 / X16

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.

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.

X Series light is for mounting directly to a flat surface, with the cable passing through a ½" (12.5mm) hole.

Do not submerse your cable ends in water; cable and connections exposed to underwater submersion will not be covered by warranty.

Mounting the light in any other configuration, other than those described in this guide, will invalidate its warranty.

Never Use Solvents! Cleaners, fuel, and other products that may contain strong solvents, such as acetone, that attack many plastics greatly reducing their strength and irreversibly damaging the special lens coatings and cable sheathings.

If bottom painting your lights, ensure lens is free of any paint / residue.

Not suitable for use as on docks, piers or pilings. See our Dock Light products.

OUT OF WATER LOCATION
X Series light output differs in performance from the previous Xtreme XT range of lights when viewed out of water. Do not mount X Series lights alongside previous Xtreme variations to maintain a consistent light display.

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.

Contents

PRE-TEST

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 for full warranty statement.

1 <u>Installation Checklist</u>

1. ☐ Decide on light spacing – OceanLED recommendations available.

2. ☐ Ensure correct cable gauge is used (refer to relevant cable gauge chart).

3. ☐ Control system chosen (switch control, OceanLED DMX RC control kit, 3rd party DMX control)
   Max 32 lights per DMX chain (as per recommended by the DMX standard).

4. ☐ Preparing the hull.

6. ☐ Correct marine sealant applied evenly around the cable and around the perimeter of the light unit.

7. ☐ Correct hardware used for fixing of light fixture onto hull. 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.

8. ☐ Test installation BEFORE entering water. Never connect/ disconnect lights whilst powered ON.

9. ☐ Troubleshooting if required - most issues can be resolved by following the guidelines.

2 Overview

Identifying your model

X4 White / Blue / Colours DMX **X8 White / Blue / Colours DMX** **X16 White / Blue / Colours DMX**

Product Kit Includes:

X Light Unit with Bezel
(Bezel choice: White, Black, Stainless Steel)

4x Mounting Screws

Fuse Kit

Power Source

Most installations will utilize on-board 12/24V DC power supply from a marine battery. However, if AC to DC power supply is being used, allow at least 15% reserve for voltage fluctuations due to variables beyond your control such as ambient temperature and supply voltage fluctuations to ensure your lights are always receiving the proper voltage and to ensure the power supply is not "overworked" causing premature failure. Use 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
X4	0.8A	0.4A	10W	12W	1.25A
X8	1.65A	0.75A	20W	23W	2A
X16	3.2A	1.5A	37W	43W	4A

3 Preparing the Hull

OceanLED recommends using a qualified installer / technician when making modifications to your vessel. Please also consult the manufacturer for more detail on modifications and installation.

OceanLED recommends use of provided screws: No.6 (3.5mm) x 1 inch (25mm) Pozi Self Tapping Pan Head Screws - Stainless Steel. If alternative screws are used, do not use counter sunk or non-flat shoulder screws to secure your lights to the hull (failure to do so will invalidate your warranty).
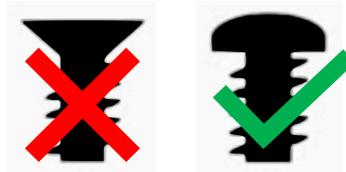
OceanLED does not recommend using the stainless steel bezel on conductive hulls (e.g., carbon fibre, aluminium/steel).

If the lights (with plastic bezel) are to be fitted to a conductive hull or any other metal surface/ outboard jet bracket, Isolating Mounting Kit must be used. Please contact OceanLED for additional details.

Isolating Mounting Kit	
4x M3.5 x 35mm Nylon Bolt 4x Nylon Washer 4x M3.5 Nylon Nut (1x spare of each component) **Part Number:** 019913 - D3 and X-Series Isolating Mounting 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	X4 / X8 / X16
Recommended Spacing	0.5-1m (2-3')
Recommended Installation depth (From the light waterline)	100-200mm (4-8")

Hole Cut Out
Hole Cut out size: 12.5mm (1/2")

Overall Dimensions
See overall dimension schematic – See Appendix (Section 7.1)

Mounting location considerations:

- If positioning lights on a transom, more small lights look better than few bigger lights. E.g., 4x X8's look better than 2x X16's.
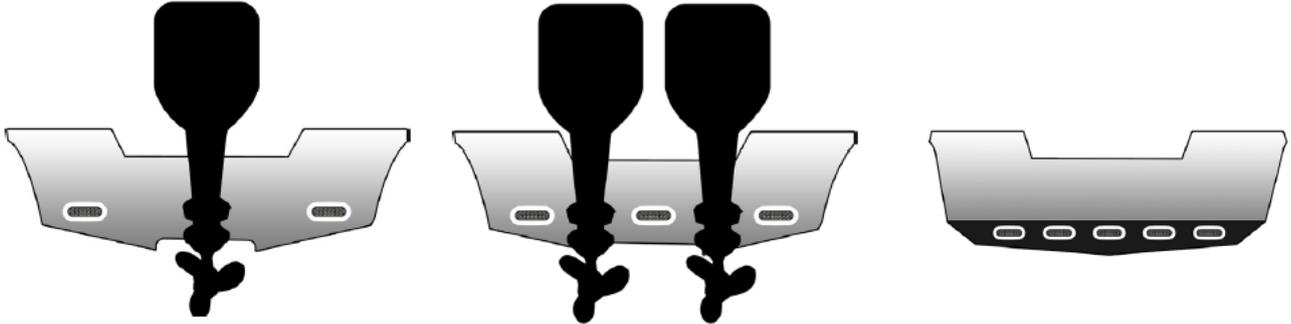
- When lights are pointing downwards, the light can reflect off a sandy seabed giving a mirrored effect, and light will bounce back creating even more illumination.

- If positioning lights on a transom, take into consideration swim platforms and obstacles that may block the initial portion of the light, it may be necessary to use the next model size up.

4 Installation

4.1 INSTALLING THE LIGHT FIXTURE

X Series (X4 / X8 / X16)

Kit Includes

X Light

4x Mounting Screws

Additional items required not supplied by OceanLED:

- Marine sealant - 3M 4200 or equivalent
- Cable ties
- Waterproof cable connectors / Butt splices glue lined heat shrink / Junction Box* (optional)
- Philips Screwdriver or Pozidrive #2 Screwdriver Bit
- 12.5mm (1/2") Hole Saw Cutter
- Drill Bit for Screws pilot hole

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

Ensure mounting location is flat and check internally for ease of access or if there is a rib, strut, stringer or other hull irregularity that may interfere with the installation.

OceanLED recommends dry fitting all products. Before applying sealant, please ensure the surface is clean of any dust, dirt or grease. 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.

Never use power tools to secure your lights; hand tighten only.

Installation Overview:

Pilot hole for screw

X Light

Sealant

Mounting Screw

Hull

Hole Cut Out Size: Ø 12.5mm (1/2")
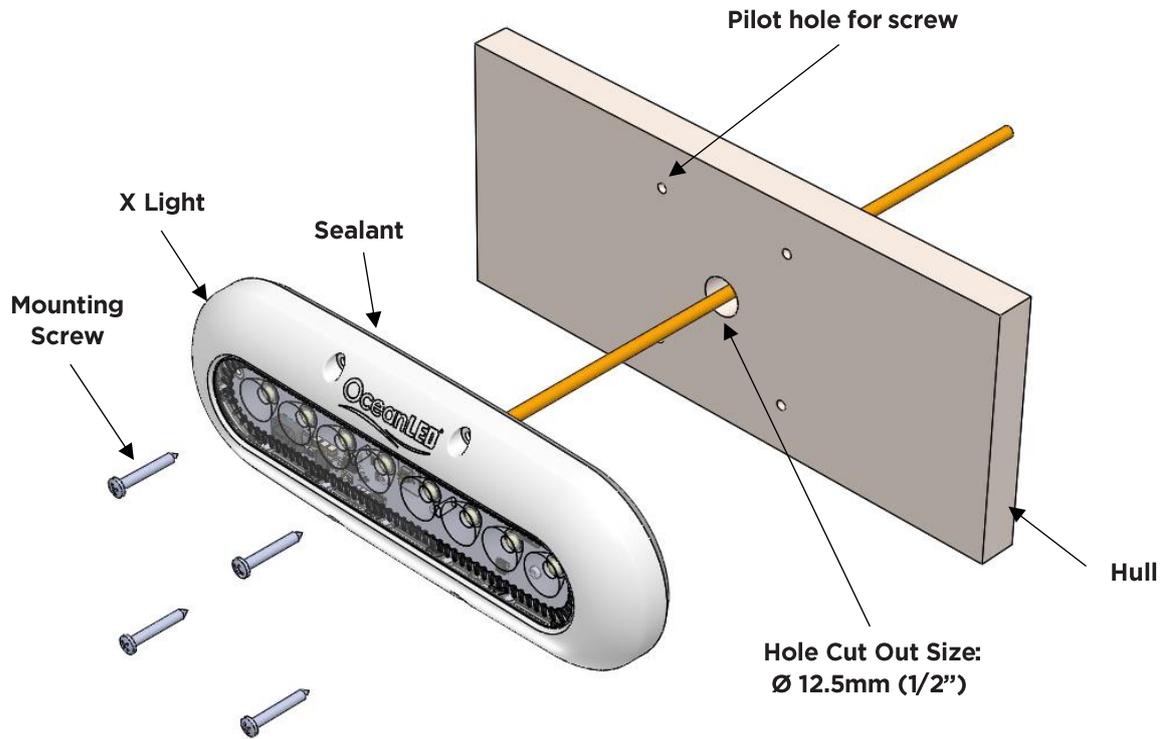
Exploded view of the standard assembly.

Isolating nut

Isolating washer

X Light

Sealant

Isolating screw

Conductive hull, metal surface/ outboard jet bracket

Hole Cut Out Size: Ø 12.5mm (1/2")
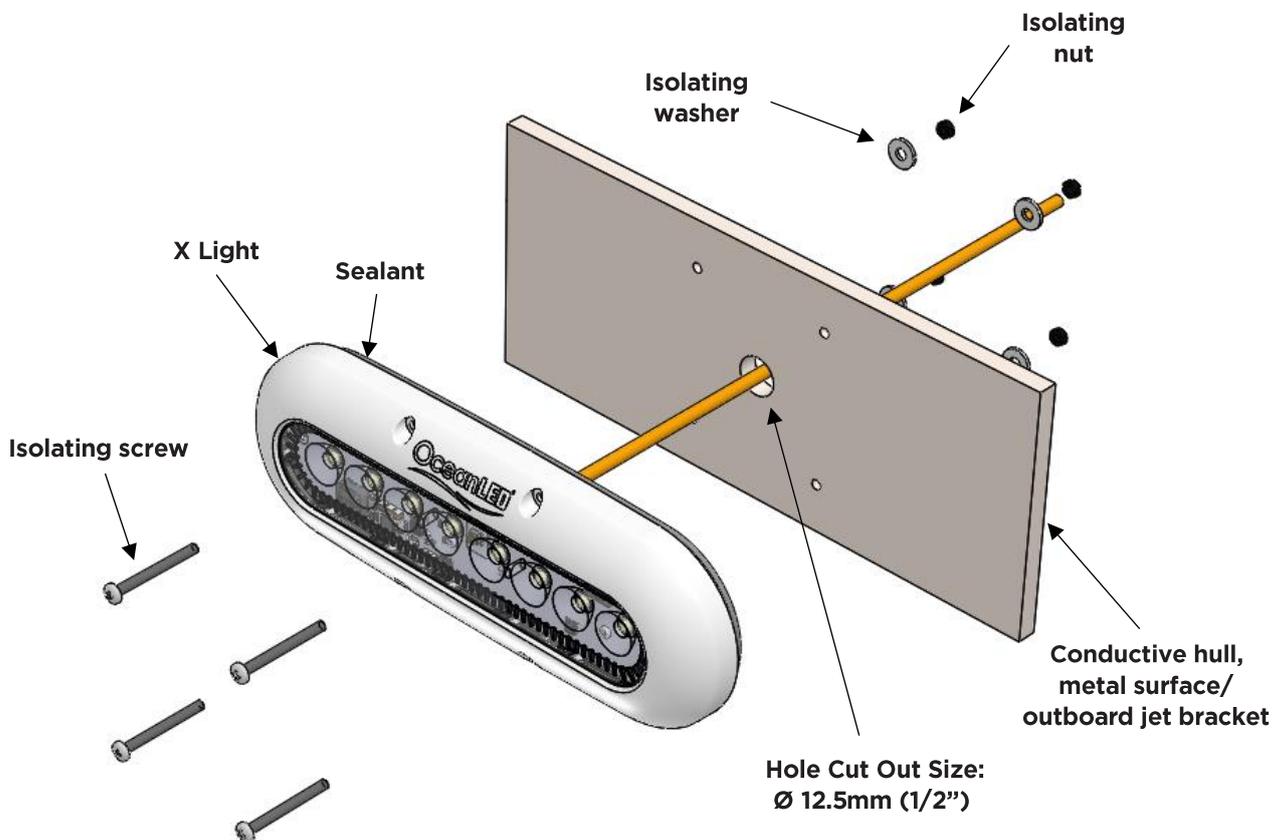
Exploded view of the assembly with Isolating Mounting Kit.

Installation (Once hull preparation is complete)

1. Test light(s) before fitting.

2. Fit the bezel over the light unit.

3. Apply generous amounts of the sealant to the back perimeter of the light body ① and around cable where it meets the back of the light ②. There should be an unbroken bead of sealant around the perimeter of the light unit ①.
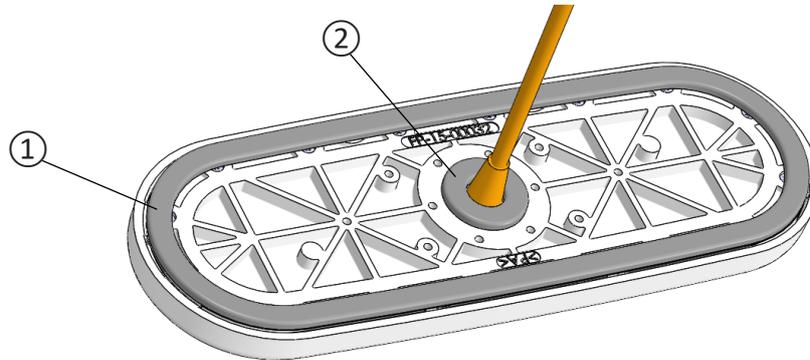
> **It is critical to cover the entire body and circle the mounting screw holes so that there is a continuous and unbroken bead of sealant.**
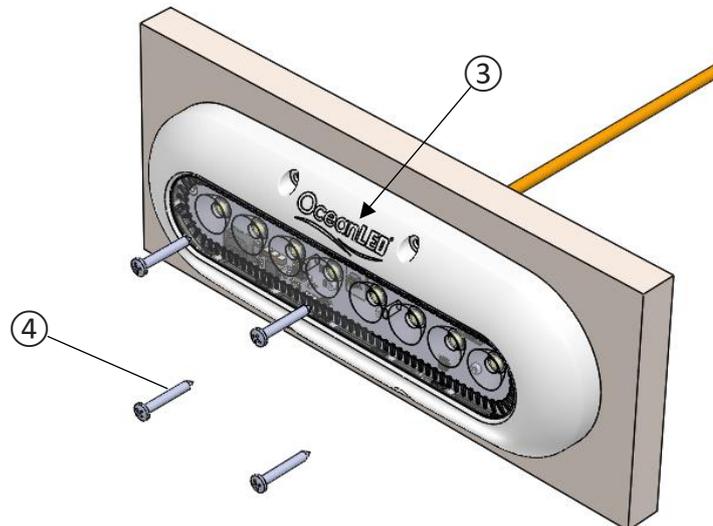
4. To guarantee correct light orientation ensure the OceanLED logo ③ on the front is facing upwards. Insert the light on to the hull, feeding the cable through first and seat into place. Press the light hard into the hull and twist slightly to spread the sealant around behind the light to ensure good adhesion.

5. Cover the screws ④ threads with the sealant and screw into the pre-drilled pilot holes.

6. <u>Tighten the screws with a hand tool ONLY!</u> DO NOT over-tighten the screws, as you could damage the light enclosure, and will void your warranty.

7. Once you are satisfied that the unit is fully tightened, you will notice that sealant has squeezed out from around the perimeter of the light. Using a thinner or cleaner, apply to cloth and wipe off excess sealant to leave a clean seal. **<u>AVOID CONTACT WITH LENS</u>**. If you do not see sealant squeeze out from the body, you have not used enough sealant or tightened the unit enough to the hull. Carefully examine the installation to make sure the sealant you have installed on the unit is fully watertight. If in doubt, remove light, re-apply sealant and re-install.

4.2 ELECTRICAL INSTALLATION (12/24V DC)

Additional items required not supplied by OceanLED:

- Waterproof cable connectors / Butt splices glue lined heat shrink / Junction Box* (optional)
- Sufficient cable to connect to DC Power Source

*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, fuse and breakers size follow the recommendations.
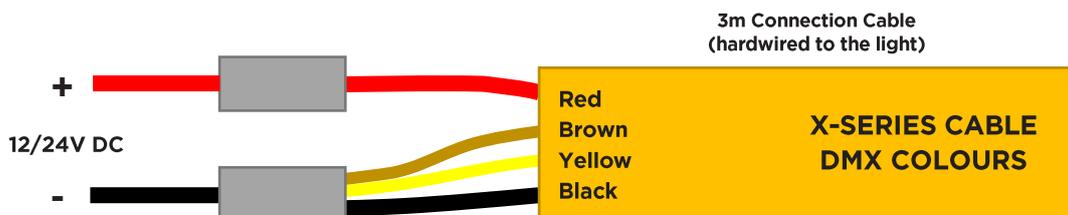
For complete instructions on DC connections, please refer to ABYC codes of practice and other applicable codes and ordinates for DC connections.

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.

Connecting the light fixture

X-Series DMX Colours

The X4, X8 & X16 Colour change models can either be used in DMX mode (using the OceanDMX RC controller kit) or simple DC switch mode, where a simple toggle of the power switch can be used to change colour modes. To use in DC switched mode; connect DC power +Ve to the RED wire, and DC power -Ve to the BLACK, BROWN & YELLOW wires:

3m Connection Cable
(hardwired to the light)

+
12/24V DC
-

Red
Brown
Yellow
Black

X-SERIES CABLE
DMX COLOURS

For connecting X Series Lights with the OceanDMX RC Controller Kit, please refer to the OceanDMX RC Installation Manual. Note that when using with the DMX controller, the cable from the light to the junction box cannot be extended.

X-Series Single Colour

For the X-Series single colour connect DC power +Ve to the RED wire, and DC power -Ve to the BLACK wire.

3m Connection Cable
(hardwired to the light)

+
12/24V DC
-

Red

Black

X-SERIES CABLE
SINGLE COLOUR
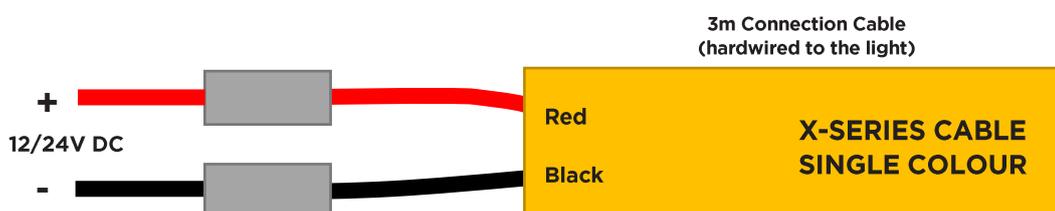
Electrical Installation

1. Depending on the model and number of lights installed, you will need to pull the correct sized power cable from the DC power source (breaker/fuse panel) to the light locations to supply constant power to the light units. It is imperative that the correct sized tinned marine grade cable is used to avoid voltage drop issues.

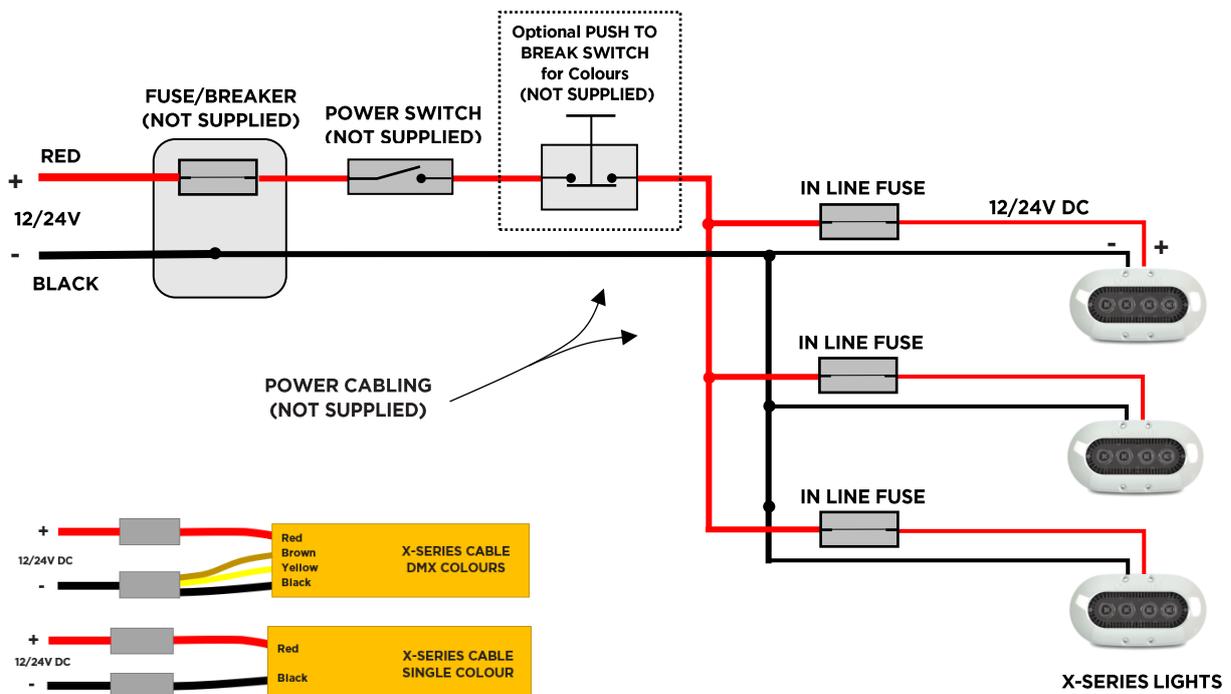   See Chapter 7: Appendix for recommended cable gauges.

2. Using waterproof butt splices or IP66 waterproof junction boxes, make the connections at either end of the system to attach the lights to the DC system. Make sure any heatshrink used completely encapsulates the outer wire sheath (the use of glue-lined heat shrink is highly recommended to ensure water tightness).

Never leave the bare cables unprotected. Take care to not leave the bare wire ends in bilge water before making the waterproof connections. Water deposits in the connectors and cables will cause corrosion. 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. This will NOT be covered under warranty.

3. It is imperative that either the OceanLED supplied fuse on each power line to each light or a suitable protection device is used to protect the cable/light unit. Failure to do so will void the warranty. See table in Chapter 2: Power Consumption and Recommended Fuse values. Make sure any heatshrink used completely encapsulates the outer wire sheath (the use of glue-lined heat shrink is highly recommended to ensure water tightness).

4. Secure cables ensuring where the cable exits the light it is not under undue stress. Finish and test the light units **BEFORE** the vessel goes into the water.

Fuse Kit wiring/assembly diagram.

O RING

BARE ENDS
8MM MAX

CUT HERE
2>2.7MM (.079>.106")
CABLE

CUT HERE
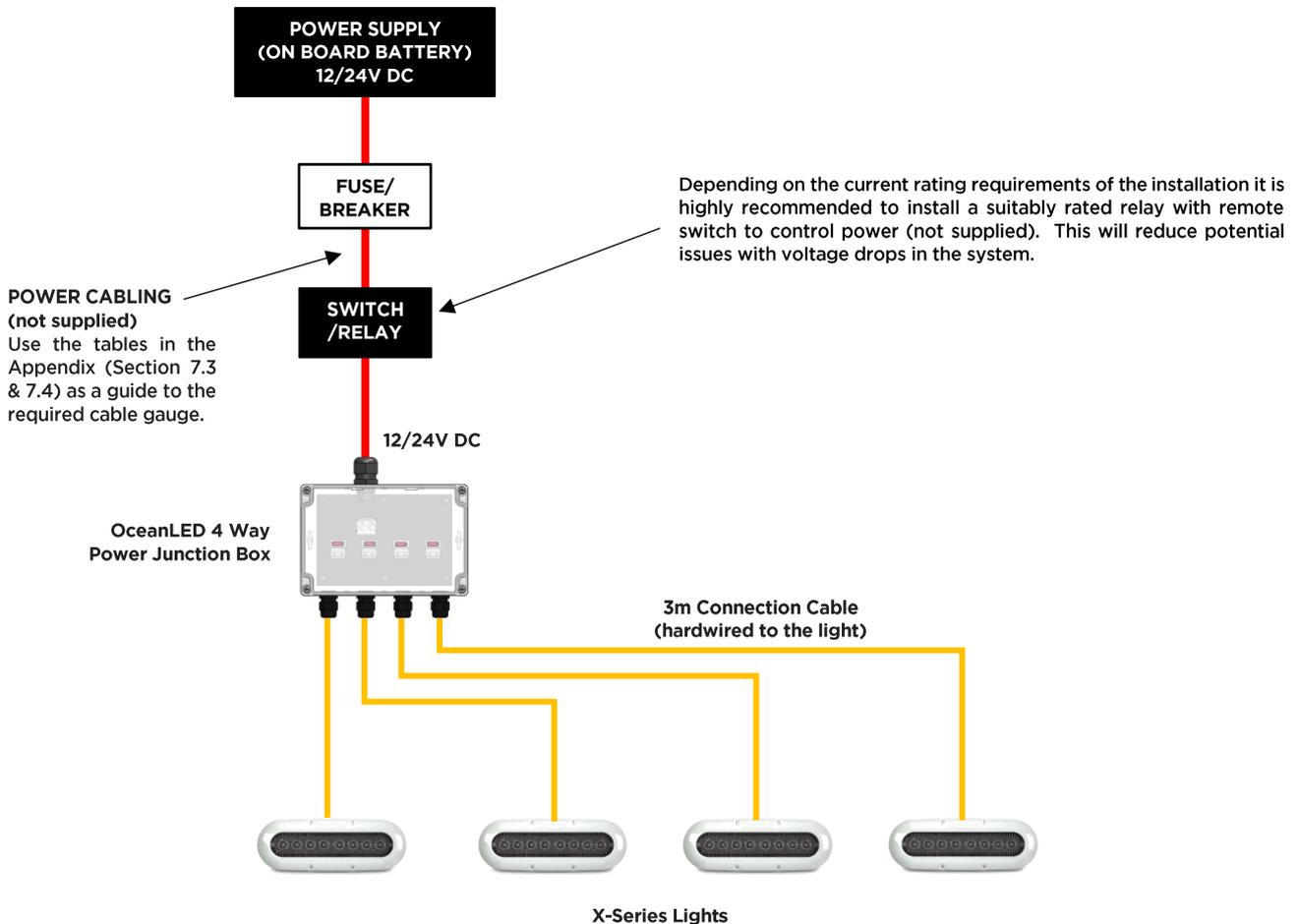1.5>1.9MM (.059>.075")
CABLE

TERMINAL   FUSE
5X20MM

TERMINAL   SPRING

TERMINAL
SCREW

TERMINAL
SCREW

CUT HERE
1>1.4mm (.040>.055")
CABLE
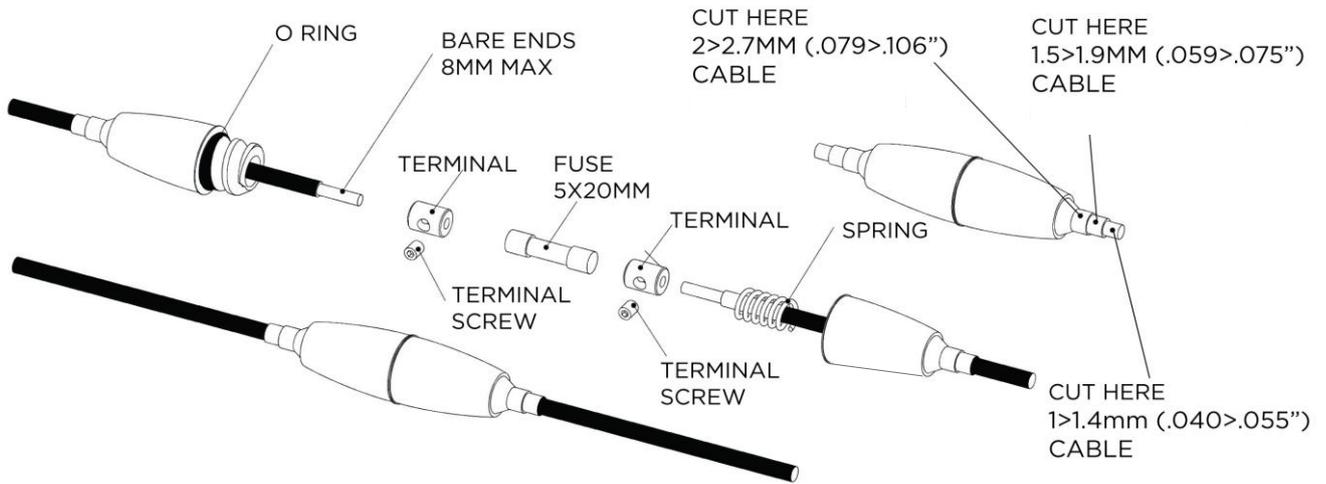
Example of the DC Installation – X-Series with the OceanLED Junction Box

POWER SUPPLY
(ON BOARD BATTERY)
12/24V DC

FUSE/
BREAKER

Depending on the current rating requirements of the installation it is highly recommended to install a suitably rated relay with remote switch to control power (not supplied). This will reduce potential issues with voltage drops in the system.

POWER CABLING (not supplied)
Use the tables in the Appendix (Section 7.3 & 7.4) as a guide to the required cable gauge.

SWITCH
/RELAY

12/24V DC

OceanLED 4 Way Power Junction Box

3m Connection Cable (hardwired to the light)

X-Series Lights

Example of the DC Installation – X-Series DMX Colours with the OceanDMX RC Controller

The DMX standard recommends a maximum of 32 devices to be connected in one chain. If installation requires more lights than this, please contact OceanLED for advice.

For the X-Series installation do not extend the 3m cable length to the DMX junction box, for longer connection use of additional DMX junction boxes will be required.

POWER SUPPLY
(ONBOARD BATTERY)
12/24V DC

Depending on the current rating requirements of the installation it is highly recommended to install a suitably rated relay with remote switch to control power (not supplied). This will reduce potential issues with voltage drops in the system.

FUSE/
BREAKER

SWITCH
/RELAY

POWER CABLING
(not supplied)

SWITCH

3m Maximum
Cable Length

X-Series
DMX Colours Light

Optional Switch can be used to power on/off the DMX Receiver unit – this will also switch power to the lights from the DMX junction box(es).

FUSE

DMX Control Cable – 3m
(supplied)

DMX
Junction
Box

DMX Receiver

DMX Control Cable
(not supplied)

Remote Colour

OceanDMX Controller

LAST JUNCTION
BOX TO BE
TERMINATED
WITH ONBOARD
SWITCH

DMX
Junction
Box

X-SERIES LIGHT CABLES MUST
NOT BE EXTENDED

Do not submerse your cable ends in water; cable and connections exposed to underwater submersion will not be covered by warranty.

4.3 CONTROL SYSTEM INSTALLATION

Switch Control

Additional items required not supplied by OceanLED:
- Power switch
- Push switch (Normally closed, momentary type) – optional for DMX Colours

The X-Series Single Colour and X-Series DMX Colours (used in the DC switch mode) installations will utilize simple power switch to control the lights. For the X-Series DMX Colours used in the DC switch mode additional in line push switch maybe installed to simplify the changing mode operation.

> **!** **Ensure power is disconnected before attempting to connect or solder any wire.**

OceanLED DMX Control (X-Series DMX Colours only)

> **To use OceanLED DMX Control, OceanDMX RC Controller Kit must be purchased from OceanLED. Please consult the X Series Light Choice Diagram for details (see Chapter 7.2).**
>
> **To enable the DMX Control of all lights, OceanLED DMX Junction Box must be used. One junction box can be used to power and control maximum of four X-Series Colour DMX lights. If the installation consist of more than four lights additional DMX Junction Box/es will be required. The DMX Junction boxes can be linked in chain.**

Please consult the manual for the purchased OceanDMX RC Controller for more information on installation and operation.

DMX Addressing (X-Series DMX Colours only)
- OceanLED X-Series Colour DMX lights use 4 Channels DMX-512 standard for communication.
- The default addresses of the colour lights are:

Channel 1, DMX address: 1	Red
Channel 2, DMX address: 2	Green
Channel 3, DMX address: 3	Blue
Channel 4, DMX address: 4	White

> **!** **The DMX standard recommends a maximum of 32 devices to be connected in one chain, and a maximum network length of 300m. If installation requires more lights than this, or a longer network length then please contact OceanLED for advice.**

4.4 FINALISING THE INSTALLATION

The X Series body is constructed from chemically resistant optical polymer and does not require further protection. The lens is pre-coated with a specialized Tritonium® coating which makes the surface of the lens a non-stick layer.

OceanLED does not recommend that bottom paint or any type of anti-fouling agent is applied to the light body apart from the front bezel, as damage may occur due to chemical incompatibility.

4.5 TEST YOUR INSTALLATION

Always test the lights **BEFORE** the vessel goes back into the water. At this final stage make sure all of the system is operational. If you have any issues, please contact your local OceanLED representative.

Never install a new light fixture then leave the vessel in the water unchecked for several days.
When the vessel is placed in the water, immediately check for leaks. Note that very small leaks may not be readily observed. It is best not to leave the vessel in the water for more than 3 hours before checking it again. If there is a small leak, there may be considerable bilge water accumulation after 24 hours. If a leak is observed, you must TAKE ACTION IMMEDIATELY to prevent damage.

5 <u>Operation / Maintenance</u>

5.1 OPERATION

X-Series lights have active thermal protection. This means that while underwater, they run at full power due to water cooling. Moderate dimming may be noticeable with above water installations when high ambient temperatures are reached to avoid damage.

Single Colour Strobe

To enter strobe mode, toggle the power on and off quickly twice (on → off → on → off → on). They should now strobe in a pseudo-random pattern. To reset from strobe mode, turn off then back on again.

DMX Colour Change

Please refer to the purchased DMX Controller for details about how to use it.

Colours control with DC switch operation:

The colour change has three modes of operation, single colour mode, cycle / programming mode, and strobe mode:

1. **Single colour mode** – this mode is entered when the light is first turned on. The light will be a single colour, either a default blue, or a previously selected colour.

2. **Strobe mode** – to enter this mode, turn off the light for less than 1 second, then back on again. The light will flash in a pseudo-random pattern - the colour will be the same as that in single colour mode.

3. **Cycle / Program mode**, to enter this toggle the power to the unit off twice for less than 1 second each time (on → off → on → off → on). The light will then slowly cycle and fade through the colour spectrum (see diagram below for cycle order). It can be left in cycling if required, or alternatively, once the light shows the desired colour this can be stored by switching the light off for more than 2 seconds. When the light is switched back on it will be back in single colour mode, displaying the previously selected colour. Single colour mode – this mode is entered when the light is first turned on. The light will be a single colour, either a default blue, or a previously selected colour.

Blue → Red → Green → Blue → White → Blue/White → Red/White → Green/White

Colour Change Fade Cycle Order

NOTE: If during the above operations, one or more lights connected go out of sync, simply switch off the lights for more than 2 seconds, then re-enter cycle mode to re-select the colour.

Diagnostic LEDs

The X-Series is fitted with an advanced diagnostic indicator system. The X-Series X4 Colours have one small orange diagnostic LED, while the rest of the X-Series lights have two small indicator LEDs (one red and one orange) within the unit, visible through the front lens.

X-Series X4 Colours (One Diagnostic LED):

When the X-Series X4 Colours unit is first turned on, the single orange diagnostic LED will flash briefly. This is normal operation and is part of the start-up procedure, to show that the LED is functioning. During normal operation the diagnostic LED should not be illuminated. Please see the table in chapter 6.1 for more details.

X-Series lights excluding X4 Colours (Two Diagnostic LEDs):

When the unit is first turned on, both red and orange indicator LED's will flash briefly. This is normal operation and is part of the start-up procedure, to show that the LEDs are functioning. During normal operation, the indicator LEDs should not be illuminated. Please see the table in chapter 6.1 for more details.

5.2 MAINTENANCE

Marine growth can build up quickly on the light and can reduce the light's performance in just a few weeks.

To help prevent this, all OceanLED lights have been coated with a specialized Tritonium® coating which helps to prevent marine growth from adhering to the glass. Lights should be cleaned with a boat brush or similar bi-weekly, or as needed to keep the lens of the light clean.

Growth varies greatly around the world and maintenance is imperative to the proper operation and longevity of the product. If heavy fouling occurs, growth can be removed from the lens using a plastic scraper and moderate pressure under water. If cleaning the lens while the boat is out of the water, wet the lens before scraping. Never scrape or try to remove barnacles from a dry lens.

! **Harsh cleaning solvents will damage the light and Tritonium coating.**
Never use high pressure jet wash to clean the lens / bezel as this will damage the seals and void the warranty.

Corrosion of wire, and/or water ingress into the light unit via cable is NOT covered under warranty.

5.3 REPLACEMENT PARTS

The light source of this luminaire is not replaceable; when the light source reached its end of the life the whole luminaire shall be replaced.

If the external flexible cable from the back of the light 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.

6 <u>Troubleshooting</u>

6.1 TROUBLESHOOTING PROBLEMS AND THEIR SOLUTIONS

The X-Series is fitted with an advanced diagnostic indicator system. The X-Series X4 Colours have one small orange diagnostic LED, while the rest of the X-Series lights have two small indicator LEDs (one red and one orange) within the unit, visible through the front lens.

X-Series X4 Colours (One Diagnostic LED):

When the X-Series X4 Colours unit is first turned on, the single orange diagnostic LED will flash briefly. This is normal operation and is part of the start-up procedure, to show that the LED is functioning. During normal operation the diagnostic LED should not be illuminated.

The table below summarizes the detected fault modes:

X-Series - X4 Colours		
Orange LED	**Main LEDs**	**CHECK**
On	Off	Input voltage is too low – less than ~9V. Check voltage of power source and cabling for bad connections and rectify.
Flashing	Off	Input voltage is too high – above ~32V. Check voltage of the power source and rectify.
Quick Flash	Off	Unit has detected a fault with the wiring, or the power source is not capable of supplying the required current. The input voltage is dropping below the minimum allowed during start-up. After five start-up attempts the unit will shut down and both indicator LEDs will flash continuously. This could be due to a poor power source (e.g., discharged battery) or voltage drops caused by poor connections or incorrect wire gauge.
On	On	Internal fault detected with temperature sensor – if this issue persists contact your dealer.

X-Series excluding X4 Colours (Two Diagnostic LEDs):

When the unit is first turned on, both red and orange indicator LED's will flash briefly. This is normal operation and is part of the start-up procedure, to show that the LEDs are functioning. During normal operation, the indicator LEDs should not be illuminated.

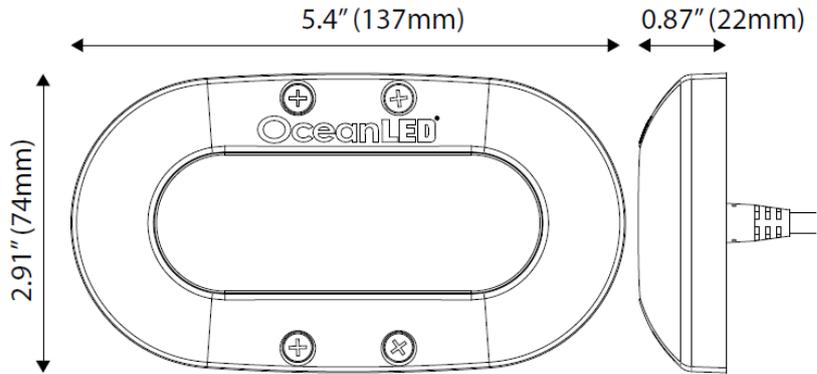The table below summarizes the detected fault modes:

X-Series (excluding X4 Colours)		
Red LED	**Orange LED**	**CHECK**
Flashing	Off	The unit has been shut down if the temperature is too high.
Off	On	Input voltage is too low – less than ~9V. Check voltage of power source and cabling for bad connections and rectify.
Off	Flashing	Input voltage is too high – above ~32V. Check voltage of the power source and rectify.
Flashing	Flashing	Unit has detected a fault with the wiring, or the power source is not capable of supplying the required current. The input voltage is dropping below the minimum allowed during start-up. After five start-up attempts the unit will shut down and both indicator LEDs will flash continuously. This could be due to a poor power source (e.g., discharged battery) or voltage drops caused by poor connections or incorrect wire gauge.
Flashing	On	Internal fault detected with temperature sensor – if this issue persists contact your dealer.

If the light doesn't recognize the fault but the fault is still present, please check the table on the following page.
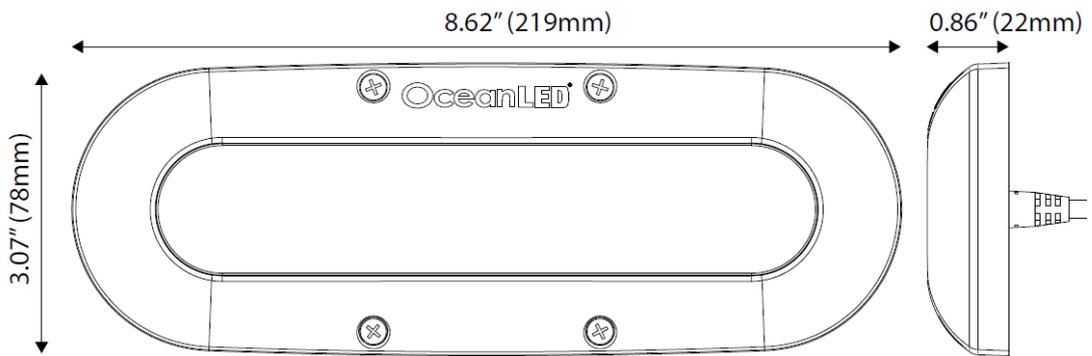
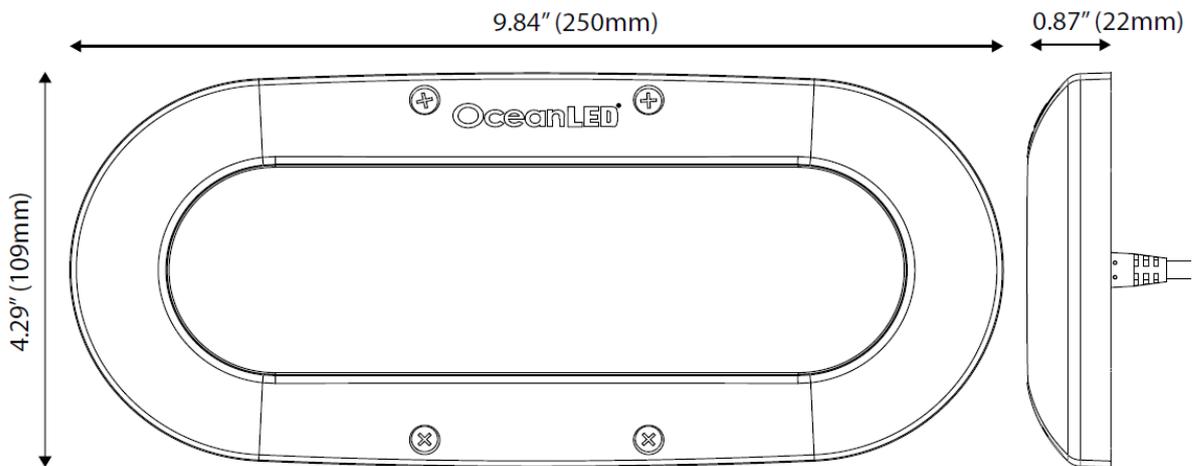| X Series			
PROBLEM	**CHECK**	**CAUSE**	**FIX**
Light does not look bright.	Check that there is no marine growth on the lens.	Marine growth.	Clean the lens as per maintenance advice.
	Check voltage supply to the light is between 11V and 32V DC (The light will still work between 10 and 11 volts however 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.	Contact your dealer for a replacement. This is NOT covered by the warranty.
Light does not light up.	Check that there is power supplied to the light cable connection.	Poor electrical connection.	Trace the cables back, checking at joints until break has been located.
	Check that the wiring polarity is correct, red to positive and black to negative.	Polarity incorrect.	Change the wiring polarity and seal joint correctly.
	Check that there is power supplied to the light cable connection.	Replace fuse.	If fuse keeps blowing, then there is short circuit in the light system that must be traced and rectified. If no external short can be located contact your local OceanLED representative.
Light has water inside	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.	Light will require replacing.	This is not covered by the warranty.
	Checked all factors that are above, and the light still does not work.	Light faulty.	Contact your dealer for a replacement light.

7 Appendix

7.1 OVERALL DIMENSIONS

5.4" (137mm)   0.87" (22mm)

2.91" (74mm)

X4

8.62" (219mm)   0.86" (22mm)

3.07" (78mm)

X8

9.84" (250mm)   0.87" (22mm)

4.29" (109mm)

X16

7.2 LIGHT SETUP

The Explore Light Choice Diagram is also available at www.oceanled.com.

X4
#012301W
(Ultra White)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X4
#012302B
(Midnight Blue)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X4
#012312C
(Colours DMX)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X8
#012304W
(Ultra White)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X8
#012305B
(Midnight Blue)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X8
#012307C
(Colours DMX)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X16
#012308W
(Ultra White)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X16
#012309B
(Midnight Blue)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

X16
#012311C
(Colours DMX)
- LED Light and Cable
- Fuse Kit
- Mounting Screws

CONNECT POWER & FUSE KIT

**Fuse Kit
(Included with all models)**

**#011702
DMX Juncton Box
(Required for 5+
DMX Controlled Lights)**

**#019901
4 Way V DC Power
Junction Box**

CONTROL VIA SWITCH OR OCEANDMX KIT

ON OFF

X4/X8/X16 Single Colour Models
3rd Party control via power switch

ON OFF

X4/X8/X16 Colours DMX Models
3rd Party control via power switch

OceanDMX RC
See OceanDMX RC Product Guide for more Information

7.3 CABLE GAUGE CHART 12V

Cable length (feet)*	Supply & Return Cable Conductor Size Chart 3% drop for when using 12V DC supply — 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	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
5-10	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
10-15	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
15-20	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
20-25	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
25-30	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
30-35	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
35-40	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 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
45-50	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	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	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	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	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	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	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	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	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	8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	2/0 AWG	3/0 AWG	3/0 AWG		
95-100	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

Cable length (feet)*	Supply & Return Cable Conductor Size Chart 3% drop for when using 24V DC supply 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	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG
5-10	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
10-15	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG
15-20	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
20-25	18 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG
25-30	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
30-35	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
35-40	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
40-45	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 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
50-55	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
55-60	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
60-65	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
65-70	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
70-75	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	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
80-85	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	2/0 AWG
85-90	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	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	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.

NOTES

8 Warranty

Please remove this page and keep for your files

For technical assistance:

Europe: service@oceanled.com

The Americas: warranty@oceanledusa.com

Warranty Serial Code(s):

www.oceanled.com