INSTALLATION & OPERATION MANUAL

SPORT SERIES

S3116s Single Colour

S3124s Dual Colour

S3166s Multi Colour

Sport Colours DMX

Sport Colours Camera Edition

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. It may be harmful to the eye.

CLASS 3

This equipment is designed to operate at voltages of less than 50V DC.

WARNINGS

Prior to installing your OceanLED Light, carefully review and adhere to all included safety warnings and instructions to prevent potential property damage, serious injury, or fatality. Furthermore, ensure compliance with local regulations regarding the use of coloured lighting in your area.

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

If mounting the light to a metal, carbon fibre or wooden hull, 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).

Ensure the front of the lights is 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.

Do not operate lights out of water for a period longer than 5 minutes. Lights that have been switched on out of water should be left off for at least one hour before switching back on. Exceeding this may cause damage to the light unit.

Salt is highly corrosive, especially to metal and certain surfaces. While OceanLED lights use saltwater-resistant materials, installation screws and fasteners must be marine-grade stainless steel or equivalent and should be inspected annually to ensure long-term performance.

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

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

Never clean lights using a high-pressure jet wash – this will invalidate the warranty.

Do not coat the light's glass/lens with any product, including but not limited to clear antifouling paints or similar, without consulting OceanLED for advice. Failure to do so will void your warranty.

If bottom painting your lights, ensure the lens and the white plastic retaining ring are free of any paint or residue.

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

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.

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 for full warranty statement.

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.

Contents

1 Installation Checklist

1. Decide on light spacing – OceanLED recommendations available. Ensure mounting location is flat and check internally for ease of access if there is a rib, strut or other hull structure that may interfere with the installation. Avoid mounting lights on surfaces that are subjected to high-speed water impact, e.g., planing surfaces. If positioning lights on a transom, take into consideration swim platforms and obstacles that may block the initial portion of the light.

2. Electrical wiring - Selecting the correct cable gauge is crucial for safe and efficient electrical wiring. Referring to a cable gauge chart helps determine the appropriate wire diameter based on the expected current load and other factors. By using the right gauge, the risk of overheating, voltage drops, and other electrical issues can be minimized, ensuring the overall reliability and safety of the electrical system. Ensure the correct cable gauge is used (refer to the relevant cable gauge chart in the appendix of this manual).

3. Control system chosen - There are various options available, including switch and DMX control. Switch control involves using simple switches to manually turn on or off the lights. DMX control, such as the OceanLED or third-party controllers, provides a more sophisticated solution. DMX control allows for centralized and programmable control of multiple devices, enabling advanced lighting effects, colour changes, and synchronization. These systems offer enhanced flexibility, scalability, and customization options, making them ideal for complex lighting installations.

4. Preparing the hull. Please follow the manufacturer's instructions and guidelines for preparing the hull and installing the lights to ensure a safe and effective installation process. If lights are to be fitted to a conductive or wooden hull, an Isolation Kit must be used.

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

6. Correct hardware used for fixing of light fixture onto the hull (marine-grade stainless steel screws provided). When installing Sport Lights, it is essential to follow the manufacturer's instructions and recommendations. This includes properly sealing and waterproofing the installation area to maintain the integrity of the hull and prevent any potential water damage. Adhering to these guidelines will help ensure the lights perform optimally and maintain the longevity of the hull.

7. Waterproof connections: When installing electrical components, such as underwater lights, in a marine environment, it's crucial to use waterproof connections. These connections are designed to prevent water from entering, which can lead to corrosion, electrical shorts, and other issues. Waterproof cable connectors, butt splices with glue-lined heat shrink, and junction boxes are commonly used to create reliable and watertight seals at connection points. These measures safeguard the electrical wiring, ensuring its durability and protecting the overall system from water damage.

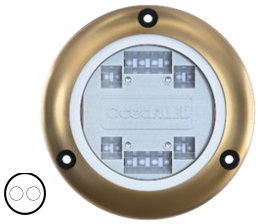
8. Test installation BEFORE entering water. Never connect/ disconnect lights whilst powered ON. When installing underwater lights on a hull, it is crucial to thoroughly test the installation before immersing the vessel in water. This step ensures that everything is functioning correctly and minimizes the risk of any potential issues or complications.

9. Troubleshooting if required - If any issues arise during or after the installation of underwater lights, it is important to troubleshoot them promptly. By following the guidelines provided by the manufacturer, most problems can be resolved. Common troubleshooting steps may include checking electrical connections, inspecting wiring for damage and verifying the power supply. Prompt troubleshooting helps identify and resolve issues, ensuring the optimal performance of the lights.

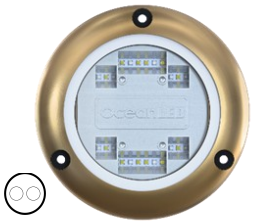
2 Overview

Product Overview

Identifying your model



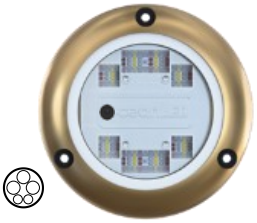
Sport S3116s Blue
Sport S3116s White



S3124s Dual Colour

S3166s Multi Colour

Sport Colours DMX



Sport Colours
Camera Edition (PAL / NTSC)

 - Connected cable type

Packaging contents

BOX CONTENTS
Sport Light & Cable
In-line Fuse Kit
Mounting Screws or Isolating Kit (if ordered)
Quick Install Guide
SMB to BNC Adaptor Interface (Sport Colours - Camera Edition only)

Power Source Requirements

Most installations will utilize an on-board 12/24V DC power supply from a marine battery. However, if an 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	15% reserve in Watts	Recommended fuse 12/24V DC
S3116d Single Colour	5.5A	2.3A	66W	76W	7A
S3124d Dual Colour	3.6A	1.7A	43W	50W	7A
S3166s Multi Colour	5.5A	2.3A	66W	76W	7A
Sport Colours DMX	5.5A	2.3A	66W	76W	7A
Sport Colours – Camera Edition	5.5A	2.3A	66W	76W	7A

Depth/Spacing

Spacing / Install Depth	SPORT Single/Dual/Colours
Recommended Spacing	0.5-1.2m (2-4')
Recommended Installation depth (from the light waterline)	20-25cm (8-10")

Hole Cut Out

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

Overall Dimensions

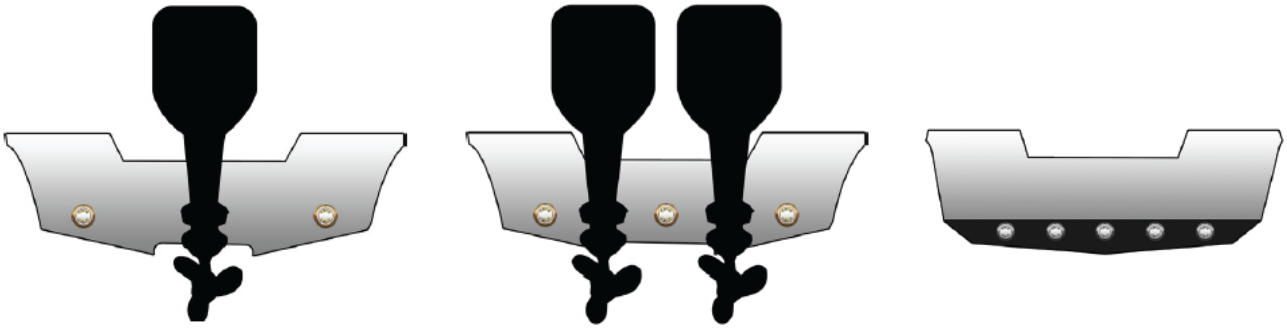
See overall dimension schematic – See Appendix (Section 6.1)

Sport Colours Camera Edition – Camera Specification:

- Lens: 3.6mm
- Image Sensor: 1/4" CMOS
- Viewing angle: 65° (H), 49° (V)
- TV System: PAL and NTSC options available
- PAL: 720 x 576 pixels - 25fps
- NTSC: 720 x 480 pixels - 30fps
- Minimum Illumination: 0.01 Lux
- Auto White Balance
- Auto Exposure
- Video Output: 1.0Vp-p 75Ω BNC

Mounting location considerations:

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. To ensure correct dispersion of light underwater, ensure all Sport Lights are mounted with the correct orientation, with the logo facing upwards.



- 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.
- When installing the Camera Edition, ensure that the camera's field of view covers the required viewing area.

3 Installation

Additional items required, not supplied by OceanLED:

- Marine sealant - 3M Marine Adhesive Sealant Fast Cure 4200FS or equivalent
- Philips Screwdriver or Pozidrive #2 Screwdriver Bit
- Drill
- 12.5mm (1/2”) Hole Saw Cutter
- 3mm (1/8”) Drill Bit for Screws pilot hole
- Sandpaper
- IPA (Isopropanol Alcohol)

3.1 PREPARING THE HULL

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

Sport lights, such as the OceanLED Sport series, are specifically designed and suitable for surface mounting on boats with GRP (Glass Reinforced Plastic) and wooden hulls. Also available to use on carbon and metal-hulled boats with the inclusion of the Isolating Kit.

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

General steps for preparing a fiberglass or wooden hull

TIP: Always wear safety goggles and a dust mask.

1. Drill a 3mm / 1/8” pilot hole square to the mounting surface from inside the hull if possible. If there is a rib, strut, or other obstacle in the hull near the selected mounting location, this will need to be taken into account in the planning phase and the location adjusted accordingly, or the obstruction safely removed or modified. If the pilot hole is found to be drilled in the wrong location, drill a second hole in a better location and repair the first pilot hole.

2. Using a suitable drill, make a 1/2" (12.5mm) hole. Ensure the light will fit flush and will be square to the mounting surface.

3. Sand the area around the hole using a heavy grit sandpaper to remove the previous bottom paint and to ensure that the sealant will adhere properly to the hull. Clean and degrease the sanded area with a suitable solvent.

4. Place the light fixture into position or use the mounting template provided, ensuring the light fixture is correctly orientated with the logo in an upright position to maximise the beam spread effect. Mark the screw hole position and pilot drill using the correct-sized drill bit for the included screws.

5. Always dry-fit units before applying any sealant.

3.2 INSTALLING THE LIGHT FIXTURE

If using the Isolating kit, please refer to the instructions provided with the kit.

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 countersunk or non-flat shoulder screws to secure your lights to the hull (failure to do so will invalidate your warranty).
Please check all components prior to installation. If there is any damage to connectors, cables, and/ or any other component, please notify OceanLED BEFORE installation. Failure to notify OceanLED of damage in transit prior to installation will lead to a violation of the warranty.
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.

Light is for mounting directly to a flat surface on the hull, with the cable passing through a 1/2" (12.5mm) hole in the hull. 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 power tools to secure your lights; hand-tighten only.
Do not use any unauthorised cleaning products to remove excess paint or antifoul off the front face of the light unit. OceanLED recommends using Isopropyl Alcohol (IPA) only.
Never install a new light fixture and then leave it in the water unchecked for several days.

Installation Overview:

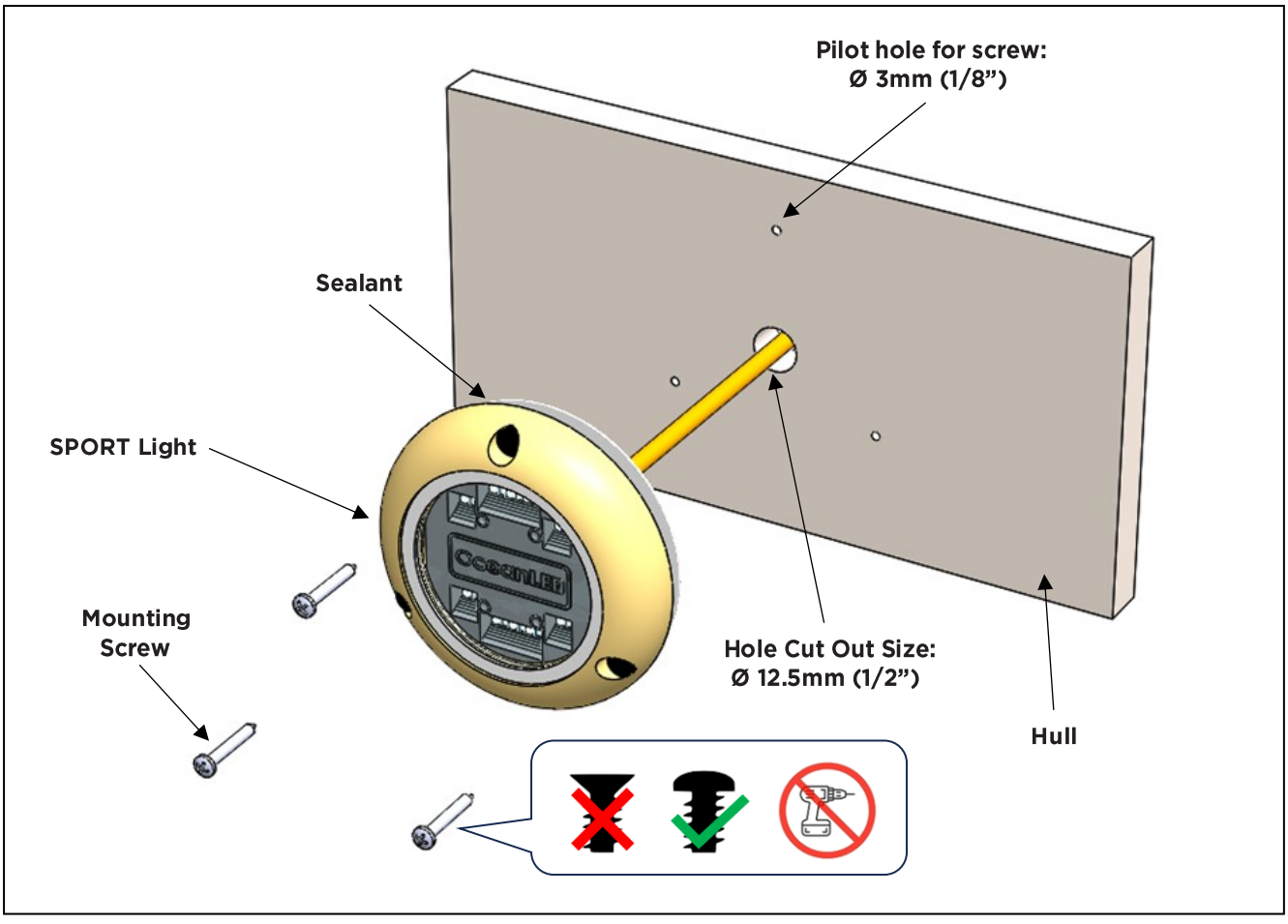


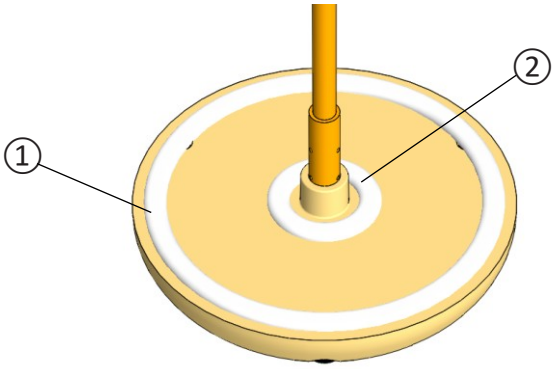
Figure 1 Exploded view of the Sport underwater light assembly (without Isolating kit)

Installation (Once hull preparation is complete)

If installing an Isolating kit, please refer to the supplied instructions.

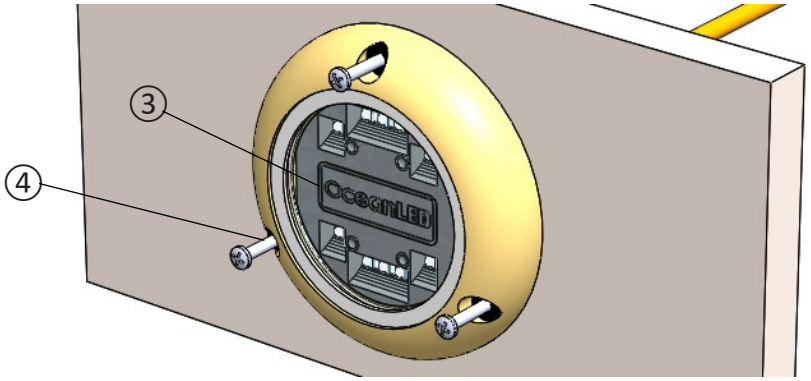
1. Test light(s) before fitting. Before proceeding with the fitting of the light(s), it is essential to test them to ensure their functionality. Testing the lights before installation allows you to verify that they are in proper working condition and producing the desired illumination. For camera edition models, also ensure the video feed is checked and functioning correctly. Once the lights (and video feed, if applicable) have been tested and confirmed to be in good working condition, they can be safely fitted onto the hull.

2. Apply a generous amount of the chosen sealant to the back perimeter of the light body ①. Ensure that the cable of the light is thoroughly coated where it meets the back of the light ②. There should be a continuous and unbroken bead of sealant around the perimeter of the light unit, including the screw holes and cable exit. When applying sealant to a light fixture, be careful to protect the lens from any abrasive surface/floor so as not to remove the protective Tritonium coating.



3. Insert the light onto the hull, feeding the cable through first, and then seat it into place. Press the light firmly onto the hull to ensure a secure and adhesive attachment.

4. To ensure proper dispersion of light underwater, make sure all Sport Lights are mounted with the correct orientation, with the logo ③ facing upwards. For camera edition models, correct orientation is also crucial to ensure the video feed displays an upright and correctly aligned image. An incorrect orientation may result in an inverted or skewed camera view.



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

6. Tighten the screws ④ with a hand tool ONLY!

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 the cloth and wipe off excess sealant to leave a clean seal. AVOID CONTACT WITH LENS. If you do not see sealant squeezing out from the body, it means you haven't used enough sealant or haven't tightened the unit enough to the hull. Carefully examine the installation to ensure that the sealant you have applied to the unit is completely watertight. If you have any doubts, remove the light, reapply the sealant, and then reinstall it.

3.3 ELECTRICAL INSTALLATION (12/24V DC)

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 the cable gauge, fuse and breaker 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.

Additional items required, not supplied by OceanLED:

- Cable ties
- Waterproof cable connectors / Butt splices, glue-lined heat shrink / Power Junction Box *
- DMX Junction Box ** (required for DMX-controlled lights) or DMX Junction Box - Camera Edition*** (required for Sport Colours Camera Edition light)
- Sufficient cable to connect to DC Power Source
- BNC to BNC Video Cable**** Extension (required for Sport Colours Camera Edition light)
- Power switch / Fuse / Breaker

* Optional 4-Way Junction box – simple fused Junction Box for splitting and distributing DC power (12/24V DC), available from OceanLED. Please contact OceanLED or your representative for further information.

** 2-Way DMX Junction box, for splitting and distributing DC power (12/24V DC) and DMX signals, available from OceanLED. Please contact OceanLED or your representative for further information.

*** 2-Way DMX Junction Box - Camera Edition, for splitting and distributing DC power (12/24V DC), DMX signals and video signals.

**** Optional BNC to BNC Video Cable (10m or 20m length)

Power Supply and Installation Guidelines

Power Requirements: OceanLED Sport models require a 12V or 24V DC supply. This supply should be a minimum of 6A @12V or 3A @ 24V DC per light.

Connection Recommendations: If not using one of the OceanLED junction boxes, it is recommended to connect the light to the DC power source using a two-pole, screw type terminal block with a minimum voltage rating of 50V and a current rating of at least 6A. The ends of the cable should be stripped back (if required) and suitable ferrules fitted. The terminal block should be fixed inside a waterproof enclosure (IP66 minimum).

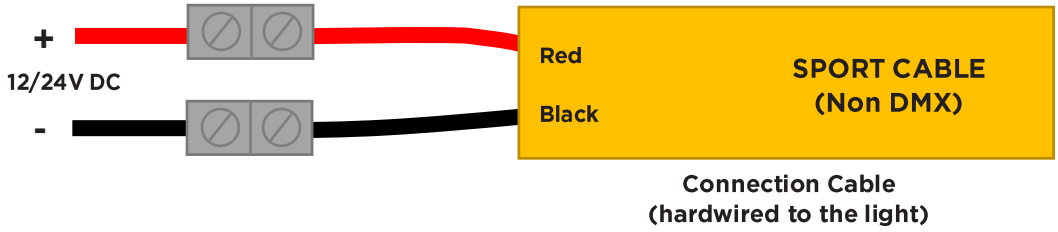
Camera Edition Light Specific Requirements: For the Camera Edition light, if not using the 2-Way Junction Box Camera Edition, the video adapter and all connections should also be fitted inside a waterproof enclosure with a minimum IP66 rating.

Multiple Lights Installation: When fitting multiple lights, particularly in 12V systems, use a relay system to supply switched power to the lights. This reduces the load on the switch and minimises voltage drops caused by long cable runs to the switch location.

Connecting the Light Fixture

Sport Single / Dual Colour / Multi Colour (Colour Scroll)

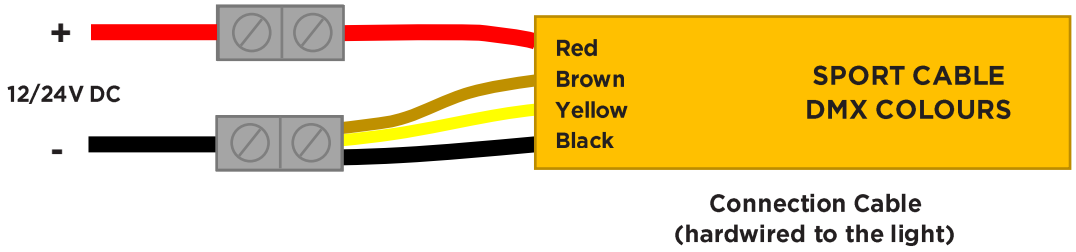
For the Sport single, dual colour, and multi colour connect DC power +Ve to the RED wire, and DC power -Ve to the BLACK wire.



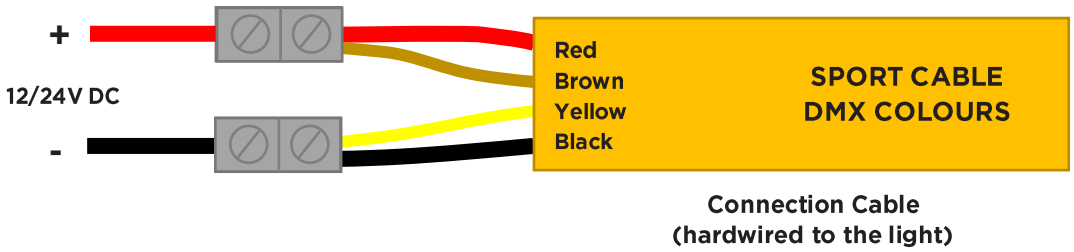
Sport Colours DMX operated by switch

The Sport Colours DMX can either be used in DMX mode (e.g., using the OceanBridge Multizone Controller) or simple DC switch mode, where a simple toggle of the power switch can be used to change colour modes. For mixing the Sport Colours DMX with the Sport Colours Camera Edition, use the extended DC switch configuration.

To use in the **default DC switched mode** (three modes of operation); connect DC power +Ve to the RED wire, and DC power -Ve to the BLACK, BROWN & YELLOW wires:



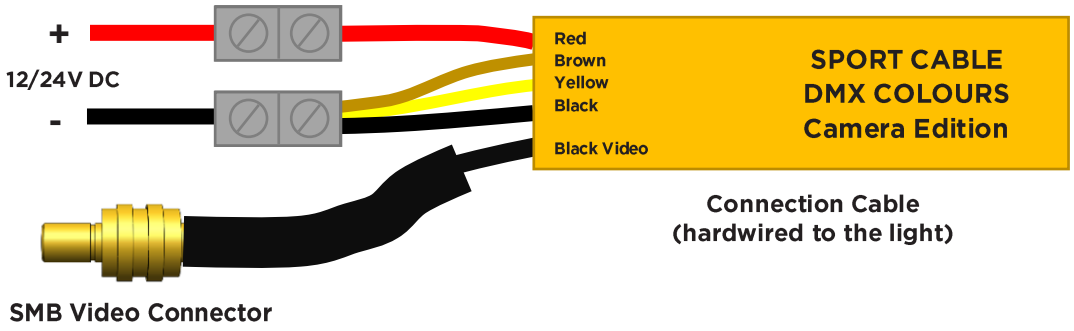
To use in the **extended DC switched mode** (eight modes of operation, to match Camera Edition Light modes); connect DC power +Ve to the RED and BROWN wires, and DC power -Ve to the BLACK and YELLOW wires:



The extended functionality support starts from S/N: 43000

Sport Colours Camera Edition operated by switch

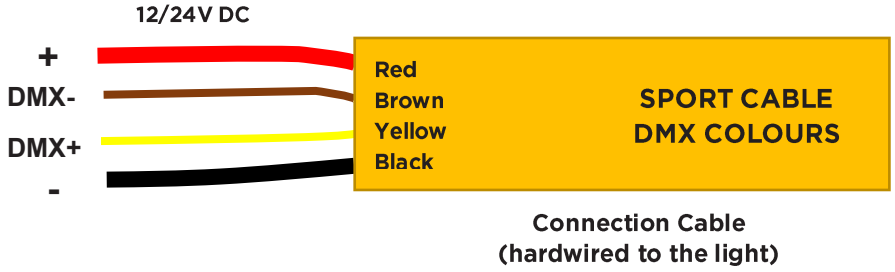
The Sport Colours Camera Edition can either be used in DMX mode (e.g., using the OceanBridge Multizone Controller) or simple DC switch mode, where a simple toggle of the power switch can be used to change colour modes. To use in DC switched mode, connect DC power +Ve to the RED wire, and DC power -Ve to the BLACK, BROWN & YELLOW wires:



Sport Colours DMX operated by DMX controller

When connecting Sport Colours DMX lights with an OceanLED DMX controller or a third-party DMX controller, please refer to the table below and consult the installation manual of the 2-way DMX Junction Box and controller for the correct connection method. It's important to note that when using the lights with a DMX controller, the 2m cable from the light to the junction box cannot be extended. When installing Sport Colours DMX, OceanLED requires a 2-way DMX Junction Box for efficient distribution of power and the DMX signal.

Sport DMX Colours	
Cable colour	**Signal**
Black	-Ve
Yellow	DMX +
Brown	DMX -
Red	+Ve

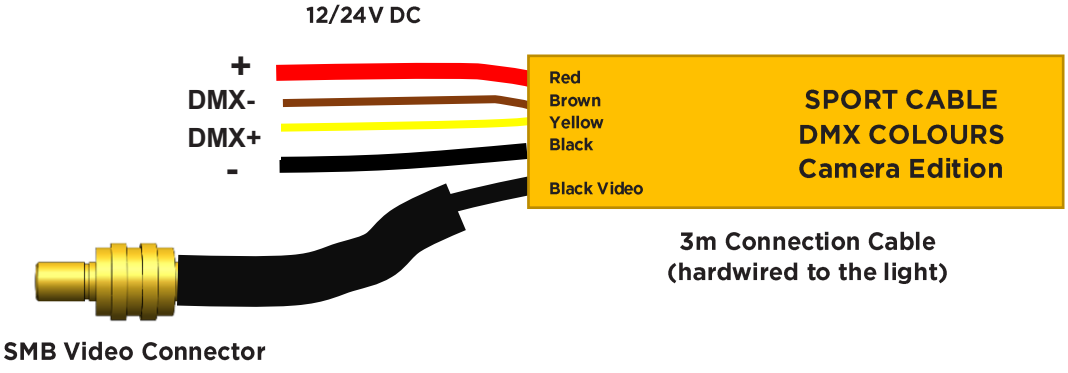


Sport Colours Camera Edition operated by DMX controller

When connecting Sport Colours DMX - Camera Edition lights with an OceanLED DMX controller or a third-party DMX controller, please refer to the table below and consult the installation manual of the 2-way DMX Junction Box – Camera Edition and the controller for the correct connection method. It's important to note that when using the lights with a DMX controller, the 3m cable from the light to the junction box cannot be extended.

When installing Sport DMX Colours Camera Edition, OceanLED requires a 2-way DMX Junction Box Camera Edition for efficient distribution of power and the DMX signal and for secure waterproof connection of the camera signal.

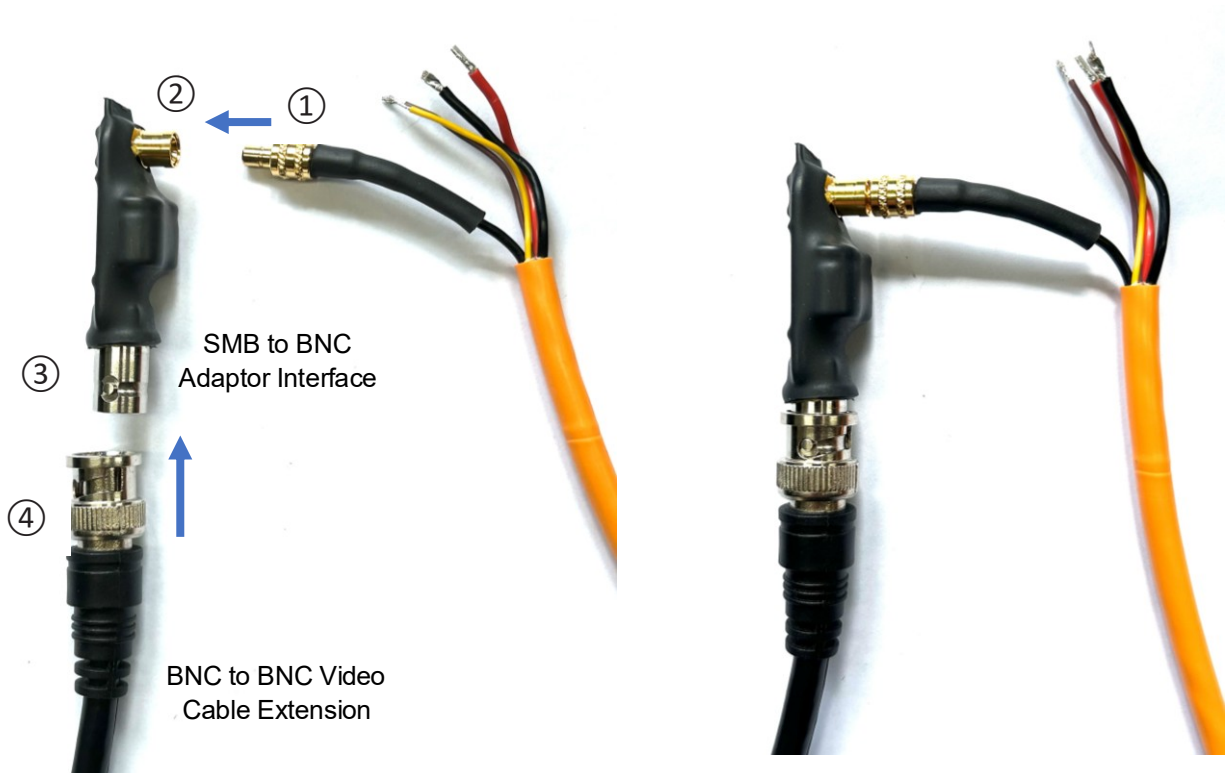
Sport DMX Colours - Camera Edition	
Cable colour	**Signal**
Black	-Ve
Yellow	DMX +
Brown	DMX -
Red	+Ve
SMB Video Connector (the video signal is connected via the provided SMB-to-BNC adaptor)	Composite Video (1.0Vp-p, 75Ω)



Sport Colours Camera Edition – Camera Connection

For connecting the camera, use the provided SMB to BNC Adaptor Interface. Connect the light camera video output SMB connector ① into the adapter's SMB socket ② and then connect one end of the BNC Video extension cable ④ to the adapter's BNC output ③. Connect the other end of the BNC video extension cable to the appropriate video input port on your display device (e.g., chart plotter or monitor). Most marine display devices use a BNC-type video input connector; however, some devices may require an RCA-type connector. In such cases, a BNC-to-RCA adapter must be used. The video connection, along with the Power/DMX connections, should be adequately waterproofed, ideally using an enclosure with a minimum IP66 rating. OceanLED recommends using the optional 2-Way DMX Junction Box - Camera Edition.

Cables and connections exposed to underwater submersion will not be covered by warranty.



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 correctly sized tinned marine-grade cable is used to avoid voltage drop issues. See Chapter 6.3 & 6.4: Appendix for recommended cable gauges.

   Depending on the current rating requirements of the installation, it is highly recommended to install a relay with a remote switch, rated accordingly to the system's needs, to control power (not supplied). This will help minimise potential issues with voltage drops in the system and sync issues for the colour change lights.

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).

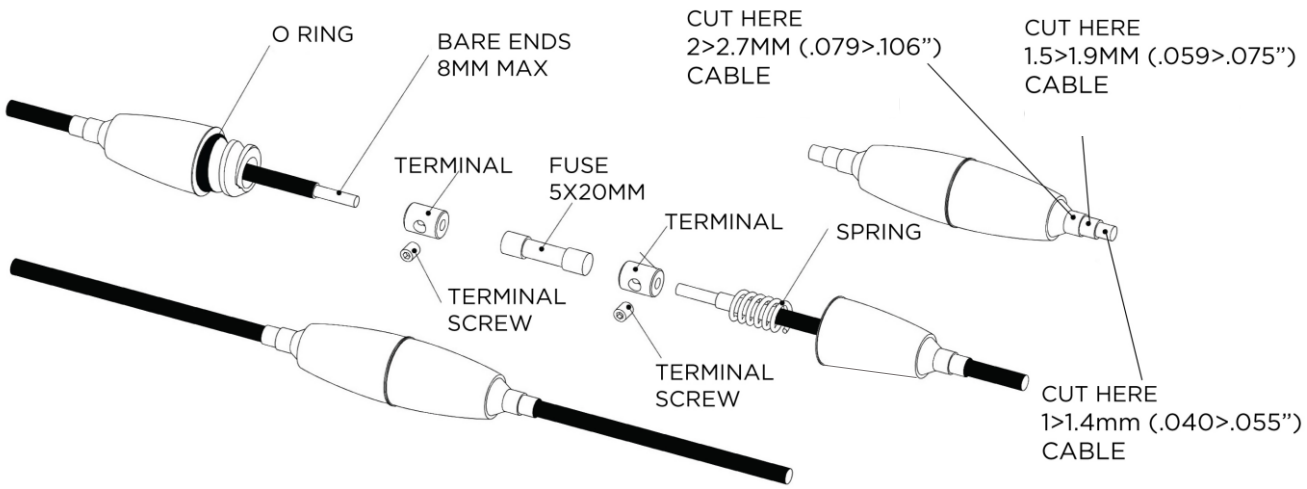
3. It is imperative to either use the OceanLED supplied fuse on each power line to each light or employ a suitable protection device to safeguard the cable/light unit. Failure to do so will void the warranty. Refer to the table in Chapter 2 for Power Consumption and Recommended Fuse values. Additionally, ensure that any heat shrink used fully encapsulates the outer wire sheath, and it is highly recommended to use glue-lined heat shrink for optimal water tightness. If using the OceanLED Junction Box, fuse protection is built into the junction box, and therefore, the external fuse kit is not required.

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

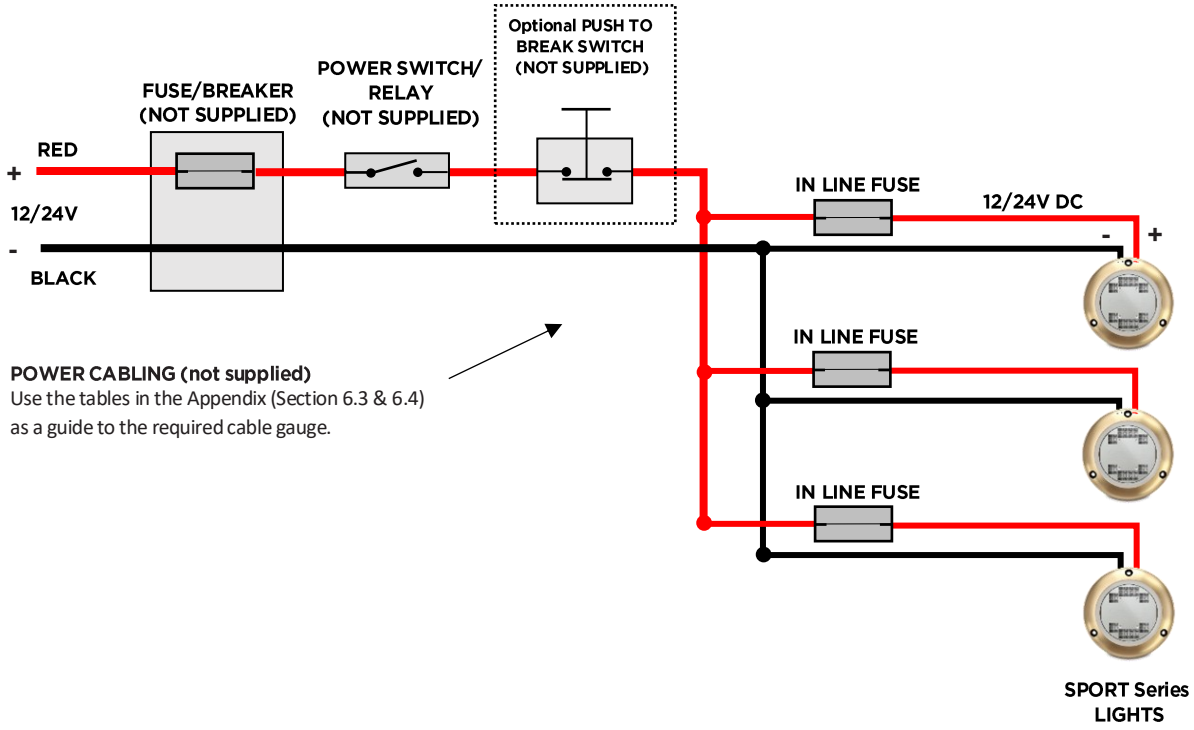
4. Secure the cables, making sure that the cable exit point from the light is not subjected to undue stress. Complete the finishing touches and perform a thorough test of the light units BEFORE the vessel is immersed in water.

Never leave the bare cables unprotected. Take care not to 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.

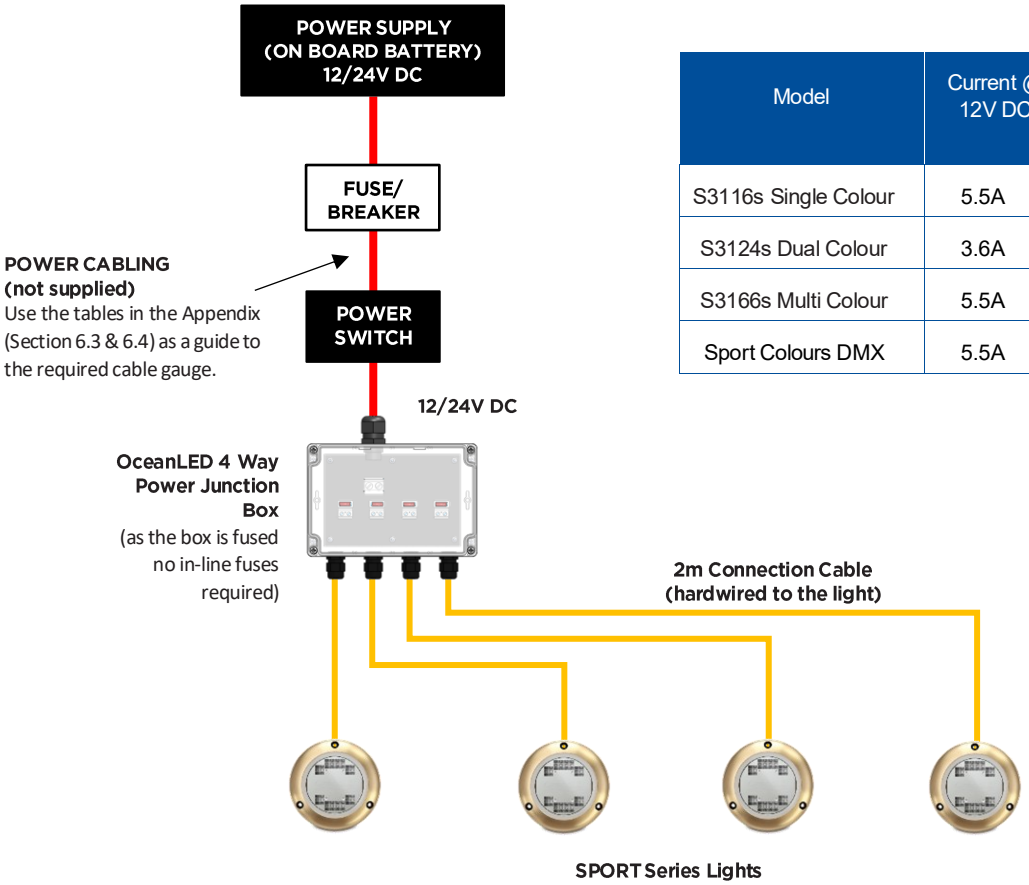
Fuse Kit wiring/assembly diagram



Basic Electrical Connections Diagram (lights operated by power switch)

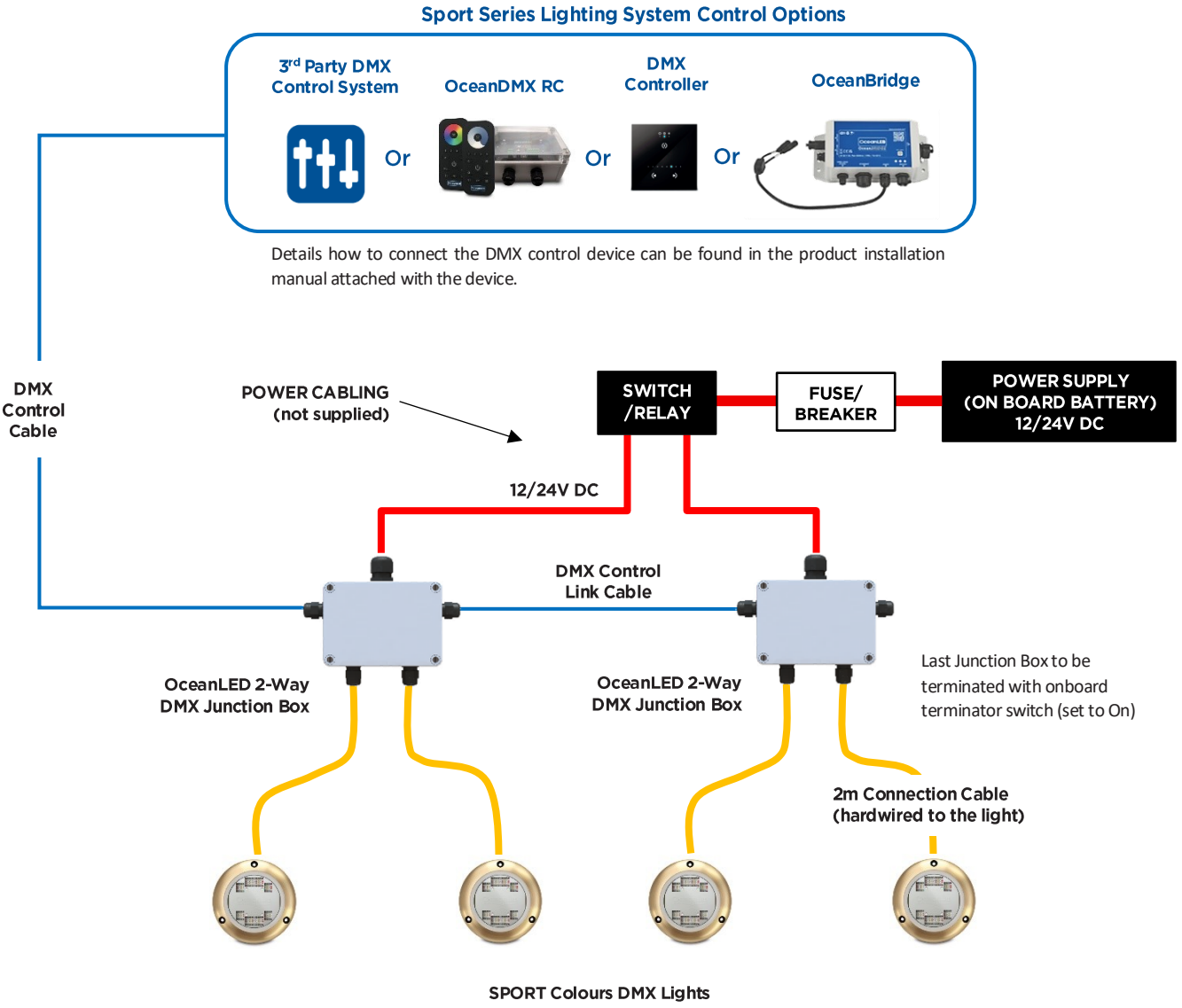


Example of the DC Installation
Sport Series (non DMX) with the OceanLED 4-Way Junction Box



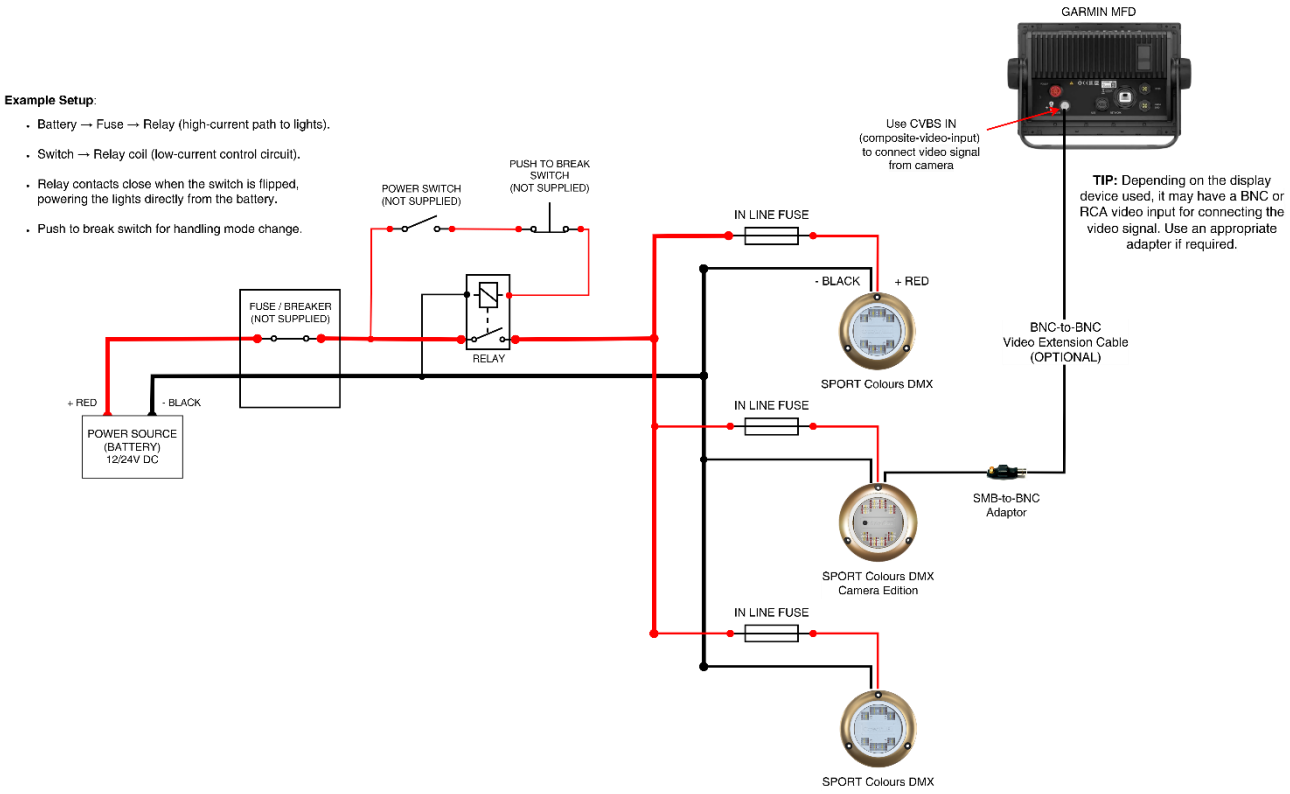
Model	Current @ 12V DC	Current @ 24V DC	Max Nominal Power consumption
S3116s Single Colour	5.5A	2.3A	66W
S3124s Dual Colour	3.6A	1.7A	43W
S3166s Multi Colour	5.5A	2.3A	66W
Sport Colours DMX	5.5A	2.3A	66W

Example of the DC Installation
Sport Colours DMX with the OceanLED 2-Way DMX Junction Box

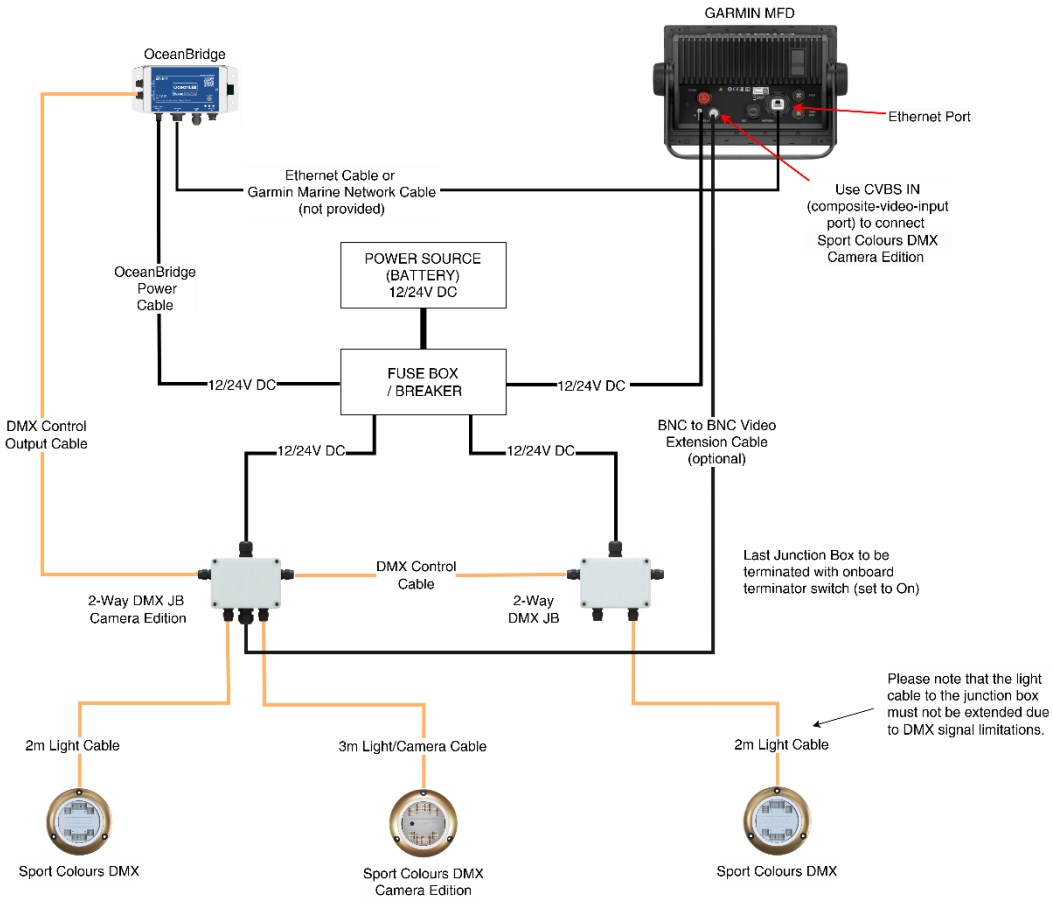


Model	Current @ 12V DC	Current @ 24V DC	Max Nominal Power consumption
Sport Colours DMX	5.5A	2.3A	66W

Sport Colours Camera Edition - Connection Diagram (DC Switch Control via Relay)

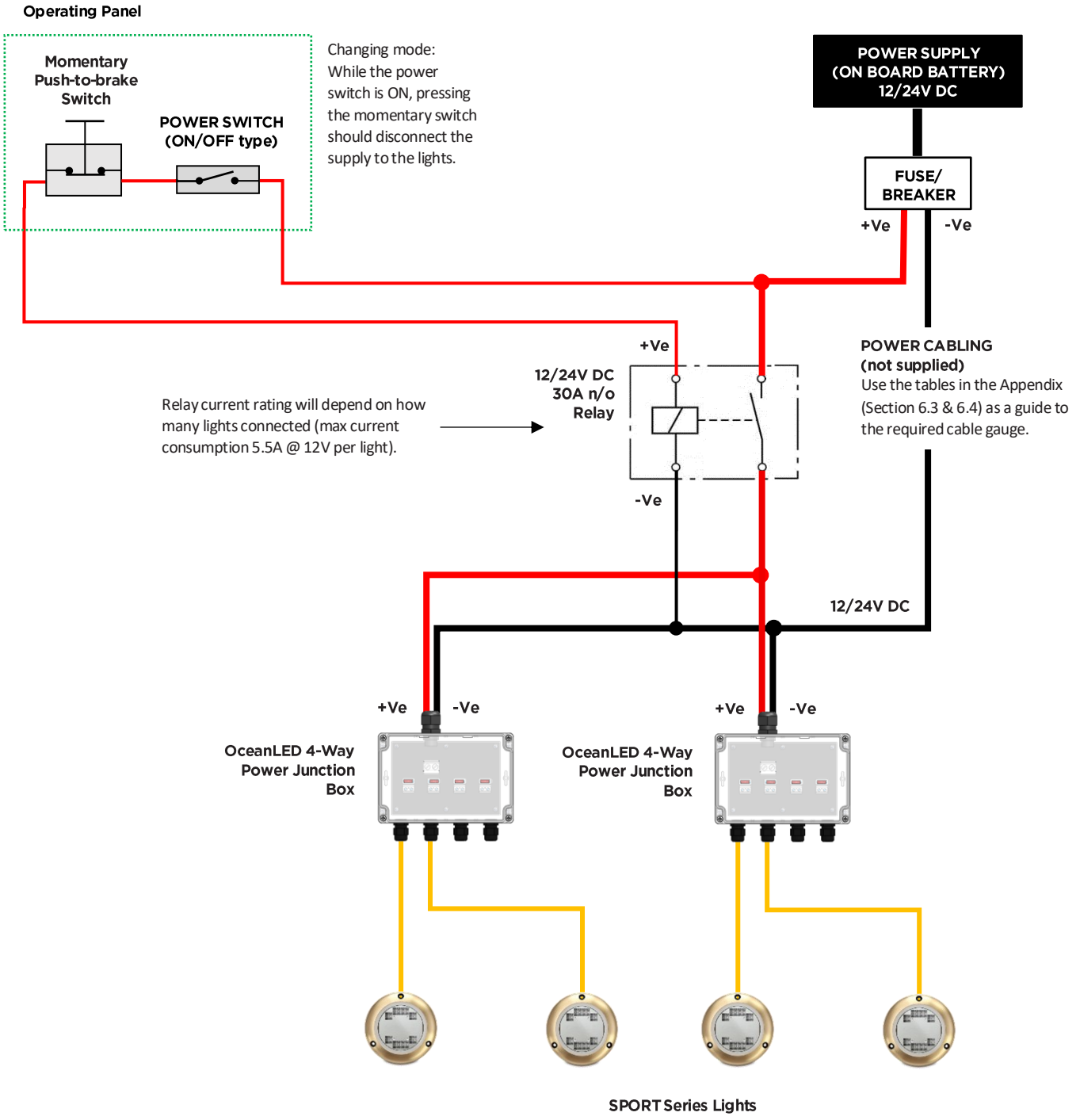


Sport Colours Camera Edition - Connection Diagram (DMX Control)



Example of the DC Installation of Sport Series with relay control

Model	Current @ 12V DC	Current @ 24V DC	Max Nominal Power consumption
S3116s Single Colour	5.5A	2.3A	66W
S3124s Dual Colour	3.6A	1.7A	43W
S3166s Multi Colour	5.5A	2.3A	66W
Sport Colours DMX	5.5A	2.3A	66W



3.4 CONTROL SYSTEM INSTALLATION

SWITCH CONTROL

Additional items required, not supplied by OceanLED:

- Power switch
- Push switch (Normally closed, momentary type) – optional

The SPORT Single Colour, Dual Colour, Multicolour, DMX Colours and DMX Colours Camera Edition (used in the DC switch mode) installations will utilise a simple power switch to control the lights. For the Sport Dual Colours, Multicolour, DMX Colours and DMX Colours Camera Edition used in the DC switch mode additional in-line push switch may be installed to simplify the changing mode operation. The push switch should disconnect the supply to the lights.

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

OceanLED DMX Control (SPORT DMX Colours & Colours Camera Edition)

To enable DMX control of all lights, the OceanLED 2-Way DMX Junction Box standard or Camera Edition must be used, depending on the light models used. Each standard junction box can power and control a maximum of two SPORT Colours DMX lights. Each Camera Edition Junction Box can power and control a maximum of two lights, where one is Camera Edition and the other is the standard Colours DMX. Please note that the light cable to the junction box must not be extended due to DMX signal limitations. If the installation consists of more than two lights or the distance between the lights is too great, additional DMX Junction Boxes will be required. The DMX Junction Boxes can be linked in a chain. Each junction box has a built-in DMX terminator that can be turned on or off.

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.

Please consult the manual for the purchased Ocean DMX Controller for more information on installation and operation.

DMX Addressing (SPORT DMX Colours & Colours Camera Edition)

- OceanLED SPORT Colours DMX & Colours Camera Edition lights use 4 Channels DMX-512 standard for communication.
- By default, the base address of the lights is set to DMX address 1.
- Colours lights use four DMX channels :

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

- The default base address of the lights can be changed if required. This can either be done using the OceanBridge, a third-party RDM (Remote Device Management) controller, or by using the OceanLED Explore Configuration Tool.

3.5 FINALISING THE INSTALLATION

The SPORT Series 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, as damage may occur due to chemical incompatibility. If bottom painting your lights, ensure the lens and the white plastic retaining ring are free of any paint or residue. Please note that an incorrect application will invalidate your warranty.

3.6 TEST YOUR INSTALLATION

Always test the lights **BEFORE** the vessel goes back into the water. It is advised not to operate lights out of water for a period longer than 5 minutes. Lights that have been switched on out of water should be left off for at least one hour before switching back on. Exceeding this may cause damage to the light unit.

At this final stage, make sure that 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.

4 Operation / Maintenance

4.1 SINGLE COLOUR – STROBE MODE

To enter strobe mode, toggle the power on and off quickly twice, then back on. They should now strobe in a pseudo-random pattern. The lights can be reset from strobe mode after 20 seconds of use by simply turning the lights off and then back on again.

4.2 DUAL COLOUR - OPERATION

The Dual colour change has seven modes of operation:

1. Solid White *(default stage after power cycling)*
2. Solid Blue
3. Fade between White and Blue
4. Random Strobe White
5. Random Strobe Blue
6. Random Strobe White / Blue
7. 50% White and 50% Blue

To cycle between the above modes, turn off the light for less than 1 second, then back on again.

NOTE: Fade mode is not guaranteed to stay in sync between lights over time.

4.3 DUAL COLOUR - CONFIGURATION MODE

Enables selection of either white or blue colour as the default at power up.

To enter configuration mode:

1. Turn on light(s)
2. Wait around 1 second (or until light(s) illuminate)
3. Turn off light(s)
4. Wait for a minimum of 5 seconds, then turn the light(s) back on again.
5. Repeat steps 2-4 another 4 times. (If the light changes mode on re-power up, then the light has not been turned off for long enough in step 4)
6. On the 5th power up, the light(s) should enter the configuration mode – this will be confirmed with a sequence of five blue/white flashes followed by a steady white (the steady colour indicates the default start-up colour).

Setting the default start-up colour:

1. Once the configuration mode has been entered (see above). Toggling off the power and back on again quickly (as in a normal mode change) will toggle between the default start-up colours (blue & white). This is indicated by the colour displayed after the blue/white flash sequence.

2. To save the selected state, simply turn off the light(s) when the required start-up colour is displayed and wait for 5-10 seconds.

3. The light(s) should now be configured to start with the selected colour as the default.

4.4 MULTI COLOUR / COLOURS DMX - CONTROL WITH DC SWITCH OPERATION

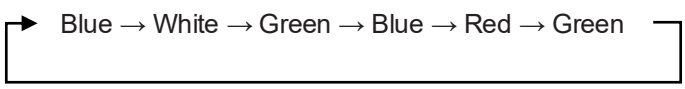
NOTE: If mixing your underwater lighting system with Sport Multi Colour and Sport Colours DMX, then operational and/or functional issues may occur, such as but not limited to, changing between modes and Colour Cycle sync.

The Sport Multi Colour or Colours DMX has three modes of operation: single colour mode, strobe mode, and cycle/programming 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 white 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 mode, toggle the power to the unit off twice for less than 1 second each time. 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 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.



Colour Change Fade Cycle Order

NOTES:

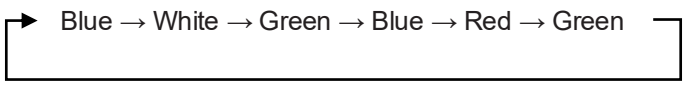
If during the above operations, one or more lights connected go out of sync, simply switch off the lights for more than 2 seconds, then re-enter cycle mode to re-select the colour. Cycle mode is not guaranteed to stay in sync between lights over time.

The **Sport Colours DMX** light modes of operation **can be extended** to match the **Sport Colours Camera Edition** if the lights are intended to work and be controlled together. For details on the extended mode, please refer to section 4.5: COLOURS DMX CAMERA EDITION – CONTROL WITH DC SWITCH OPERATION.
Note: Extended mode supported from S/N:43000

4.5 COLOURS CAMERA EDITION - CONTROL WITH DC SWITCH OPERATION

The SPORT Colours Camera Edition light has eight modes of operation, which can also be activated on the standard Colours DMX light (Extended Mode) when mixing lights.

1. **Single colour mode**, camera off – this mode is entered when the light is first turned on. The light will be a single colour, either a default white or a previously selected colour.
2. **Strobe mode**, camera off – 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**, camera off - to enter this mode, toggle the power to the unit off twice for less than 1 second each time. 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 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.



4. **Light off**, camera on - to enter this mode, toggle the power to the unit off three times. Once the light is switched off and then back on, it will return to this mode.
5. **Solid White**, camera on - to enter this mode, toggle the power to the unit off four times. Once the light is switched off and then back on, it will return to this mode.
6. **Solid Blue**, camera on - to enter this mode, toggle the power to the unit off five times. Once the light is switched off and then back on, it will return to this mode.
7. **Solid Green**, camera on - to enter this mode, toggle the power to the unit off six times. Once the light is switched off and then back on, it will return to this mode.
8. **Solid Red**, camera on - to enter this mode, toggle the power to the unit off seven times. Once the light is switched off and then back on, it will return to this mode.

NOTES

When controlling the camera light via the switch, the camera will operate only in solid colour modes 4 to 8.

Switch off the power for more than 3 seconds to reset the mode.

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. Cycle mode is not guaranteed to stay in sync between lights over time.

4.6 DMX CONTROL

Please refer to the purchased DMX Controller for details about how to use it. For 3rd party DMX control connection, see section 3.4.

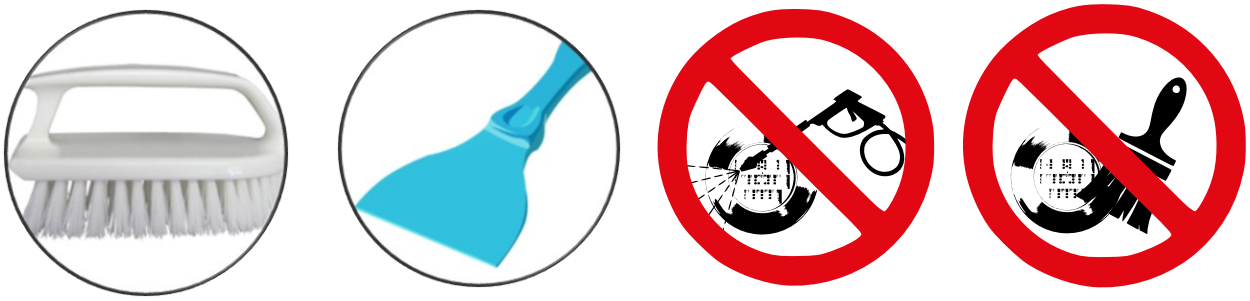
Colours Camera Edition

When controlling the camera light via DMX, the light's camera operates only when the light is set to off state (power to light on, DMX off) or one of the four basic colours: Red, Green, Blue or White.

4.7 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.



Never use a high-pressure jet wash to clean the lens/bezel, as this will damage the seals and void the warranty. Do not use harsh cleaning solvents, as they will damage the light seals and Tritonium coating.

Do not coat the light's glass/lens with any product, including but not limited to clear antifouling paints or similar, without consulting OceanLED for advice. Failure to do so will void your warranty.

If bottom painting, ensure the coating is applied as instructed in the "Finalising The Installation" section. Failure to do so will invalidate your warranty.

4.8 REPLACEMENT PARTS

The light source of this luminaire is not replaceable; when the light source reached its end of 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.

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

5 Troubleshooting

5.1 TROUBLESHOOTING PROBLEMS AND THEIR SOLUTIONS

SPORT 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 the 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 the reason for high or low voltage and fix.
	Check voltage supply is stable and does not fluctuate.	Voltage is fluctuating.	Investigate the reason for the voltage fluctuation and fix.
	Check that the electrical connections between the light and the supply cable have been made correctly, and the recommended cable gauge has been used.	Poor electrical connection.	Remake the connection and seal the joint correctly.
	Confirm all LEDs are illuminated.	1 or more LEDs are not working.	Contact your dealer.
	Check the 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 the 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 the joint correctly.
	Check that there is power supplied to the light cable connection.	Replace the fuse.	If the 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 local OceanLED representative.

SPORT Series			
PROBLEM	**CHECK**	**CAUSE**	**FIX**
Light has water inside.	Check the integrity of the lens.	Light will require replacement.	This is not covered by the warranty - Contact your dealer for a replacement light.
	Check connections to make sure they are not submerged in water.	Light will require replacing.	This is not covered by the warranty.
	Check the cable to make sure there is no damage to it.	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.

SPORT Series Dual / Multi-Colour			
PROBLEM	**CHECK**	**CAUSE**	**FIX**
Lights do not stay in sync when changing modes	How is the power to the lights connected, and how are they controlled?	Separate power lines, lights not controlled together.	It is recommended to fit relays into the DC supply side of the installation to allow lights to be controlled together and kept in sync.
	Are all the lights of the same type (Single, Dual, Multi-Colour)?	Mixed light types.	As the mixed light types will have different modes, it would not be possible to have the same effects on all of them.

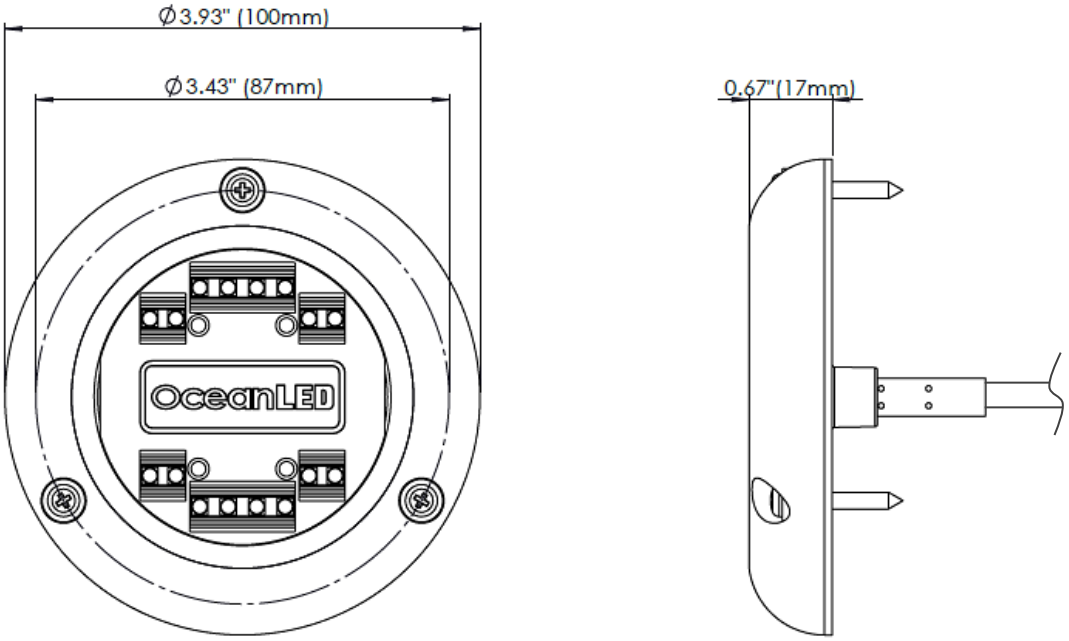
SPORT Colours DMX & Colours Camera Edition			
PROBLEM	**CHECK**	**CAUSE**	**FIX**
Light/s do not respond to the DMX controller.	Check that the DMX electrical connections between the DMX controller and the light unit / Junction Box(es) have been made correctly.	DMX is not connected or has a poor electrical connection.	Remake connection.
	Check the link cable connection between the Junction Boxes.	Damaged link cable.	Contact your dealer.
	Ensure the terminator has been turned ON in the last DMX Junction Box in the chain.	Terminator switched OFF.	Turn ON the onboard terminator in the last DMX Junction Box.
	If all of the above is ok, most likely there is a fault with the DMX controller. Ensure the controller is working fine – please refer to the controller manual troubleshooting guide for more information.	Faulty DMX Controller.	Contact your dealer.

SPORT Colours Camera Edition			
PROBLEM	**CHECK**	**CAUSE**	**FIX**
No video feed	Check that there is power supplied to the camera light cable connection.	No power	Investigate and amend the power issue.
	Check the video cable connections between the light and the adapter, between the adapter and the extension cable, and between the extension cable and the display device.	No video output	Remake connection.
	Check the video cable connections for corrosion.	No video output, corrosion is present.	Contact your dealer for a replacement. This is NOT covered by the warranty.
	Check the selected mode (if switch operated) or selected colour if DMX operated.	Please refer to Chapter 4 for camera-supported operating modes or DMX settings.	Use the correct mode or DMX settings.
	Check the display device settings.	Wrong video source selected, wrong video format selected.	Correct the display device settings.

SPORT Colours Camera Edition			
Problem	**Check**	**Cause**	**Solution**
Flickering, disturbance, or repeated lines in the video	Check if power and video signal cables are running next to other cables, such as those supplying power to pumps, motors, or other electrical devices	Cables running alongside power lines to pumps, motors, or other electrical devices can cause interference	Re-route the cables so they are not placed next to sources of electrical interference
Distorted video	Check if the video settings of the display device match the supplied camera format (NTSC or PAL)	Incorrect video settings on the display device	Adjust the display device settings to match the camera format (NTSC or PAL)

6 Appendix

6.1 OVERALL DIMENSIONS

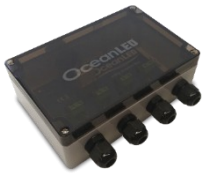


PHYSICAL	
Total Weight (standard / camera edition)	700g / 760g
Cable Length (standard / camera edition)	6.56’ (2m or 3m*) / 9.84’ (3m)

6.2 ACCESSORIES

4-WAY DC POWER JUNCTION BOX
P/N: #019901

Simple fused Junction Box for splitting and distributing DC power (12/24V DC).
Provides 1x DC power input and 4x individually fused independent outputs.



2-WAY DMX JUNCTION BOX
P/N: #013205

IP66-rated DMX and Power distribution box for the SPORT Colours DMX and E3 Colours DMX. Distributes power and DMX signals (12/24V DC). Provides 1x DC power input, DMX-In and DMX-Out and two DMX/ Power outputs. Boxes can be linked in a chain. Each box has an in-built on-board DMX terminator which can be turned on or off depending on the installation requirements.

2-WAY DMX JUNCTION BOX – Camera Edition
P/N: #013207

IP66-rated DMX and Power distribution box for the Sport Colours Camera Edition. Distributes power and DMX signals (12/24V DC). Provides 1x DC power input, DMX-In and DMX-Out, two DMX/ Power outputs and an extra input for connecting the video BCN extension cable. Boxes can be linked in a chain. Each box has an in-built on-board DMX terminator which can be turned on or off depending on the installation requirements.

DMX Cables to link between 2-Way DMX Junction Boxes (standard or camera edition)

DMX Control Cable (3m), P/N: # 011703
DMX Control Cable (5m), P/N: # 011706
DMX Control Cable (10m), P/N: # 011707
DMX Control Cable (15m), P/N: # 011708
DMX Control Cable (20m), P/N: # 011709
DMX Control Cable (25m), P/N: # 011710

AC POWER SUPPLY (for the AC installations)
P/N: #001-600072

Input: 100-240VAC, Output: 24VDC/ 6.3A, 150W, IP67 Rated

Model	Current @ 24V DC	Max Nominal Power consumption	Number of lights that can be connected to AC Power Supply (including 10% power reserve)
S3116d Single Colour	2.3A	66W	2
S3124d Dual Colour	1.7A	43W	3
S3166s Multi Colour	2.3A	66W	2
Sport Colours DMX & Sport Colours Camera Edition	2.3A	66W	2

Products may vary from image shown.

6.3 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.

6.4 CABLE GAUGE CHART 24V

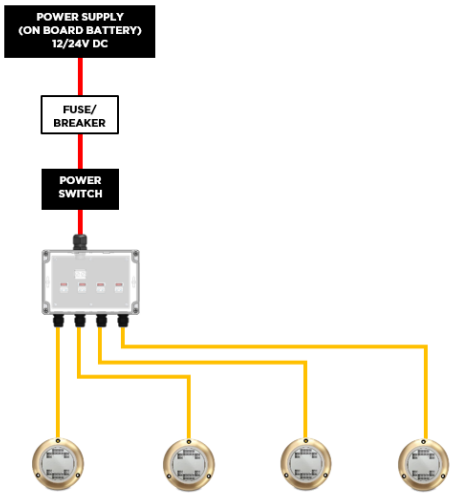
Cable length (feet)*	Cable length (m)**	Supply & Return Cable Conductor Size Chart 3% drop for when using 24V DC supply Circuit Current										
		2 Amp	4 Amp	6 Amp	8 Amp	10 Amp	15 Amp	20 Amp	25 Amp	30 Amp	40 Amp	50 Amps
0-5	0-2	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 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
80-85	24-26	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	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.

6.5 HOW TO USE CABLE GUAGE CHART

Example of installation:

4x S3116s (Single Colour White)
1x Power Junction Box
12V DC Power System (On-Board Battery)
Estimated cable length from power supply to the Junction Box: 30 feet



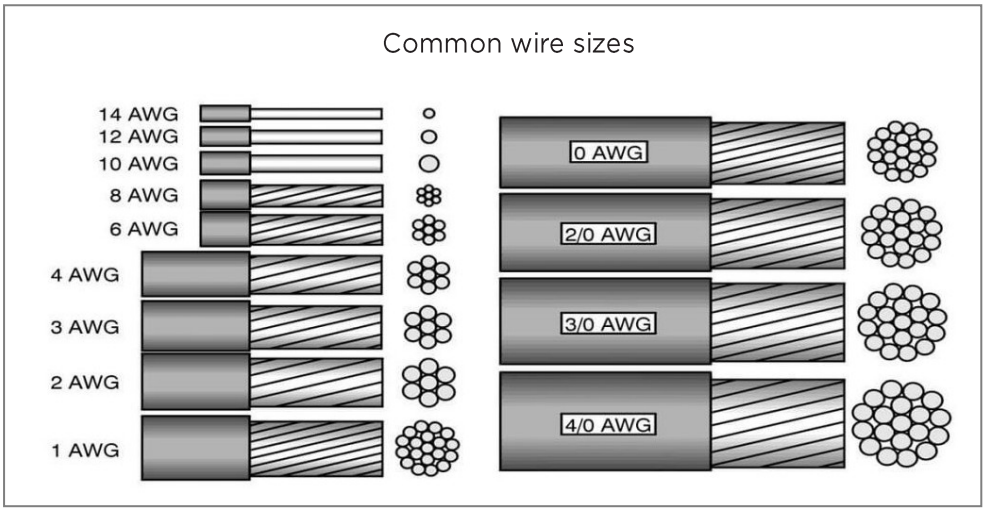
The total current consumption for 4x S3116s @ 12V → 4x 5.5A = 22A

Model	Current @ 12V DC	Current @ 24V DC	Max Nominal Power consumption
S3116s Single Colour	5.5A	2.3A	66W
S3124s Dual Colour	3.6A	1.7A	43W
S3166s Multi Colour	5.5A	2.3A	66W
Sport Colours DMX & Sport Colours Camera Edition	5.5A	2.3A	66W

From the 6.3 CABLE GAUGE CHART 12V table → the calculated cable gauge for 22A @ 30 feet = 6 AWG

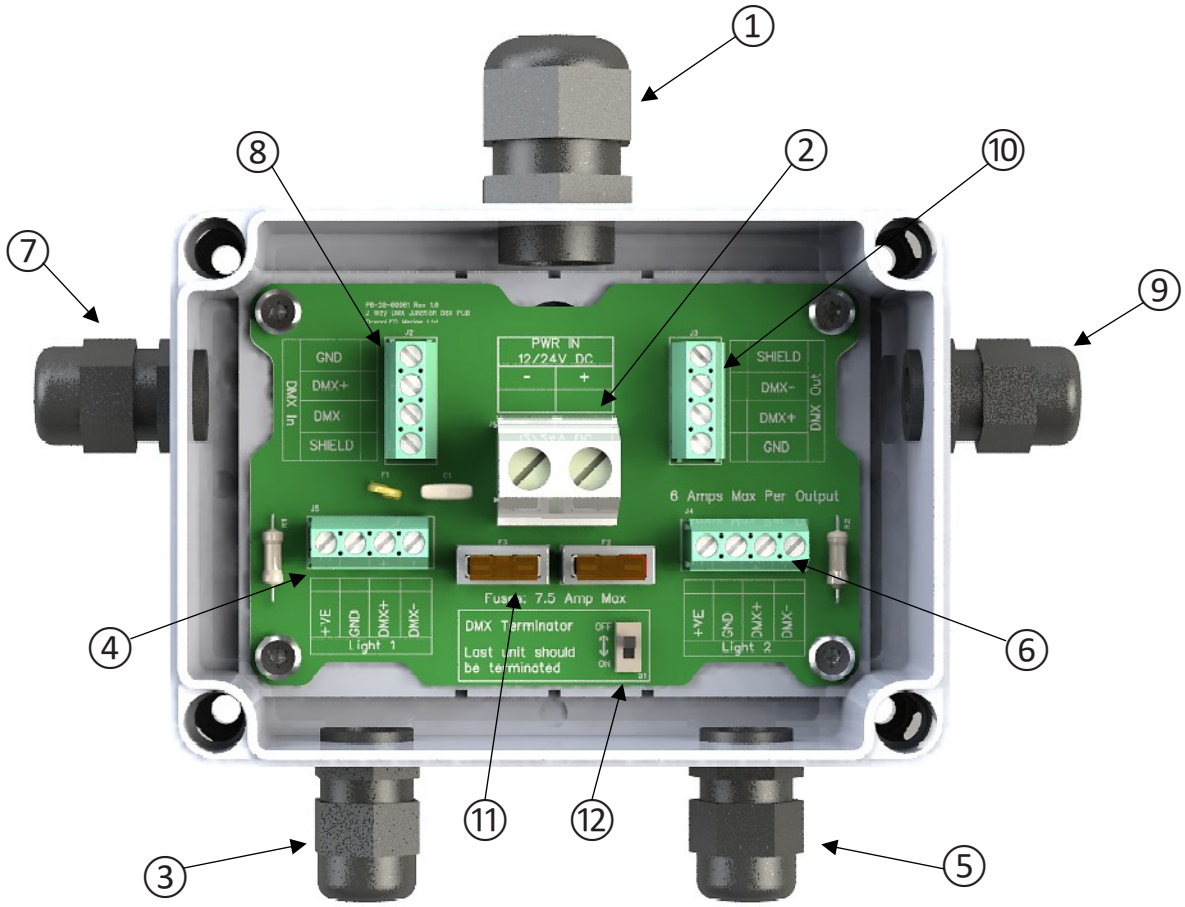
Supply & Return Cable Conductor Size Chart 3% drop for when using 24V DC supply

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		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	8 AWG	8 AWG
10-15	3-5	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8	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	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	6 AWG	4 AWG	4 AWG
25-30	8-9	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG		4 AWG	4 AWG	2 AWG
30-35	9-11								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	12	10	10							



6.6 INSTALLATION OF 2-WAY DMX JUNCTION BOX

1. Remove the lid of the Junction Box.



2. Loosen the M20 cable gland cap ① and feed the main power wires through the power input cable gland. The appropriate gauge of the supply cable will depend on the current draw of the connected lights and the length of the cable run from the fuse/breaker panel to the junction box. For the latest specifications of the lights being used, please refer to the spec sheet available at www.oceanled.com.

3. Insert the bare ends of the wires into the screw terminal ②, ensuring correct polarity (usually red for positive and black for negative). Tighten the screw terminals using a screwdriver and secure the M20 cable gland (hand-tight only).

Name		Function	Connection
PWR In	+	DC Power +VE	Connect to a fuse +12/+24 VDC from the fused panel / battery
	-	DC Power -VE	Connect to battery GND return.

4. Loosen the “Light 1” M16 cable gland cap ③ and feed the first light cable through the gland and into the screw terminal ④ in the correct order. Use a flat-head screwdriver to tighten the screws on the screw terminal and secure the cable gland.

OceanLED SPORT DMX Colours Connections:

Light 1 / Light 2	Wire colour
+VE	RED
GND	BLACK
DMX+	YELLOW
DMX-	BROWN

5. Loosen the "Light 2" M16 cable gland cap ⑤ and feed the cable of the second light through the gland and into the screw terminal ⑥ in the correct order. Use a flat-head screwdriver to tighten the screws on the screw terminal and secure the cable gland.

6. Loosen the DMX In cable gland cap ⑦, pass the DMX cable through the gland, and connect it to the DMX In screw terminal ⑧ in the correct order. Tighten the screws and secure the cable gland.

OceanLED DMX Link Cable connections:

Light 1 / Light 2	Wire colour
GND	BLACK
DMX+	YELLOW
DMX-	BROWN
SHIELD	SCREEN
Not Connected	RED

7. If only one DMX Junction Box is being used, switch on the DMX terminator ⑫ and seal the DMX Out cable gland with a blanking plug (not provided). Proceed to step 8.

8. If multiple boxes will be used, loosen the DMX Out cable gland cap ⑨, pass the DMX Link cable through the gland, and connect it to the DMX Out screw terminal ⑩ in the correct order. Tighten the screws and secure the cable gland. Keep the DMX terminator ⑫ off, but switch on the terminator ⑫ in the final Junction Box in the chain.

9. Ensure that the appropriate value fuses are installed for each output ⑪. The supplied fuses are rated 7.5 Amps. Refer to the corresponding light manual for the required fuse values. (Note: The required fuse type is mini-blade.)

10. Close the lid of the junction box and secure it using the provided four screws. Seal any unused cable glands with blanking plugs (not provided).

11. Repeat the procedure for the next Junction Box.

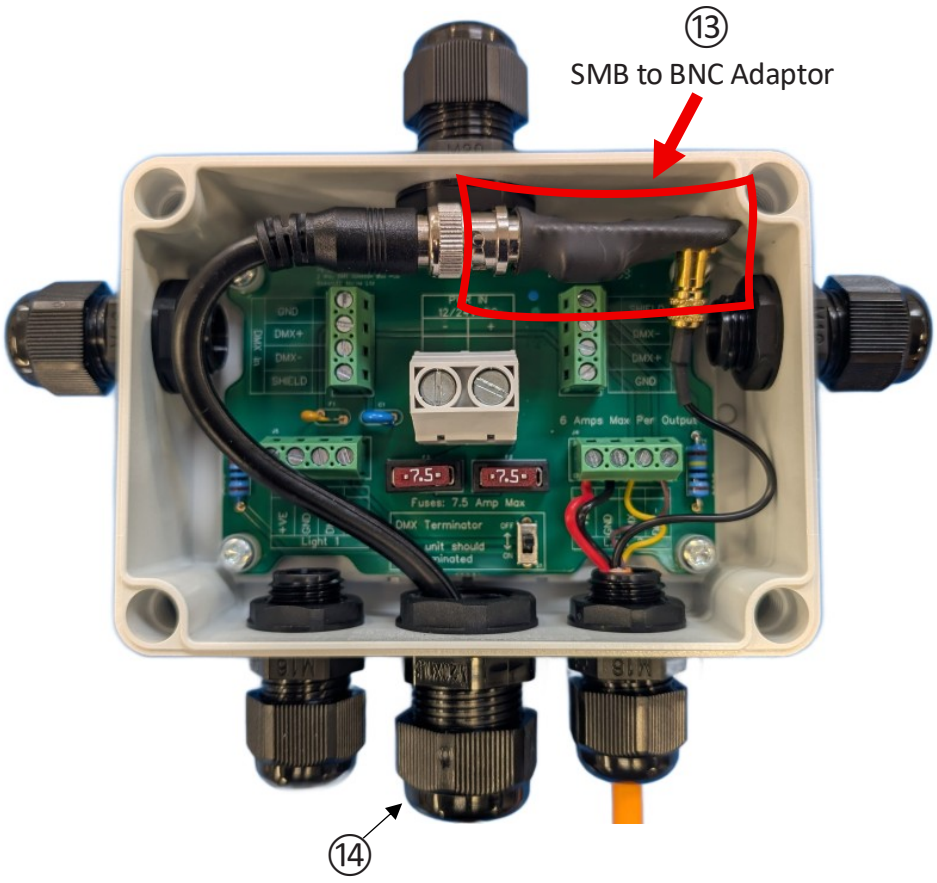
Note: Before closing the junction box and supplying power to the lights, please double-check all connections to ensure their accuracy. Test the whole system BEFORE the boat goes back into the water.

6.7 INSTALLATION OF 2-WAY DMX JUNCTION BOX – CAMERA EDITION

Note: The primary difference between the standard 2-Way Junction Box (JB) and the 2-Way JB Camera Edition is the additional cable gland for the BNC video extension cable. The Camera Edition supports only one camera light per junction box; the second light must be a standard Sport Colours DMX type.

1. Please follow the steps 1 to 9 from Chapter 6.6 for the Installation of the standard 2-Way DMX Junction Box, as they are identical.

2. To connect the camera, use the provided SMB to BNC Adaptor Interface ⑬. First, remove the M20 cable gland ⑭ nut and the grommet kit. Place the gland nut and the split grommet on the cable, then feed the cable through the gland ⑭, leaving some slack inside the box. Secure the cable by fixing the grommet and nut into the gland. Connect the light camera's video output SMB connector to the adapter's SMB socket, then connect the BNC video extension cable to the adapter's BNC output. Finally, connect the other end of the BNC video extension cable to the appropriate video input port on your display device (e.g., chart plotter or monitor).



2 Way Junction Box Camera Edition - Camera Light Connections Example

3. Close the lid of the junction box and secure it using the provided four screws. Seal any unused cable glands with blanking plugs (not provided).

Note: Before closing the junction box and supplying power to the lights, please double-check all connections to ensure their accuracy. Test the whole system BEFORE the boat goes back into the water.

7 Warranty

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Warranty Reminder:

- **Never use a high-pressure jet wash to clean the lens or bezel, as this can damage the seals and void the warranty.**
- **Do not coat the light's glass/lens with any product, including but not limited to clear antifouling paints or similar, without consulting OceanLED for advice. Failure to do so will void your warranty.**
- **If applying bottom paint, ensure the coating is applied as instructed in the "Finalising the Installation" section. Failure to follow these instructions will void your warranty.**
- **Do not submerge the cable ends in water. Cables and connections exposed to underwater submersion are not covered by warranty.**
- **Ensure the cable entry point at the back of the light is adequately sealed and is not exposed to a wet environment. Failure to do so may invalidate the warranty.**

Please remember that failure to follow these guidelines may result in the denial of warranty claims.

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The Americas: warranty@oceanledusa.com

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