

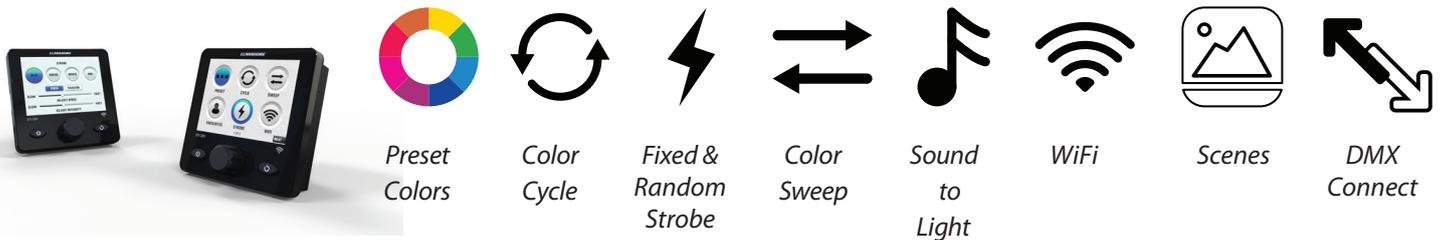
EOS STV 2203-i Color Controller Operating Guide



The Lumishore Color Change system takes the concept of marine underwater lighting installations to new levels of brightness, color and underwater experience. The innovative EOS Color Controller allows the boat owner to achieve unrivalled levels of color options and lighting modes over the full color spectrum.

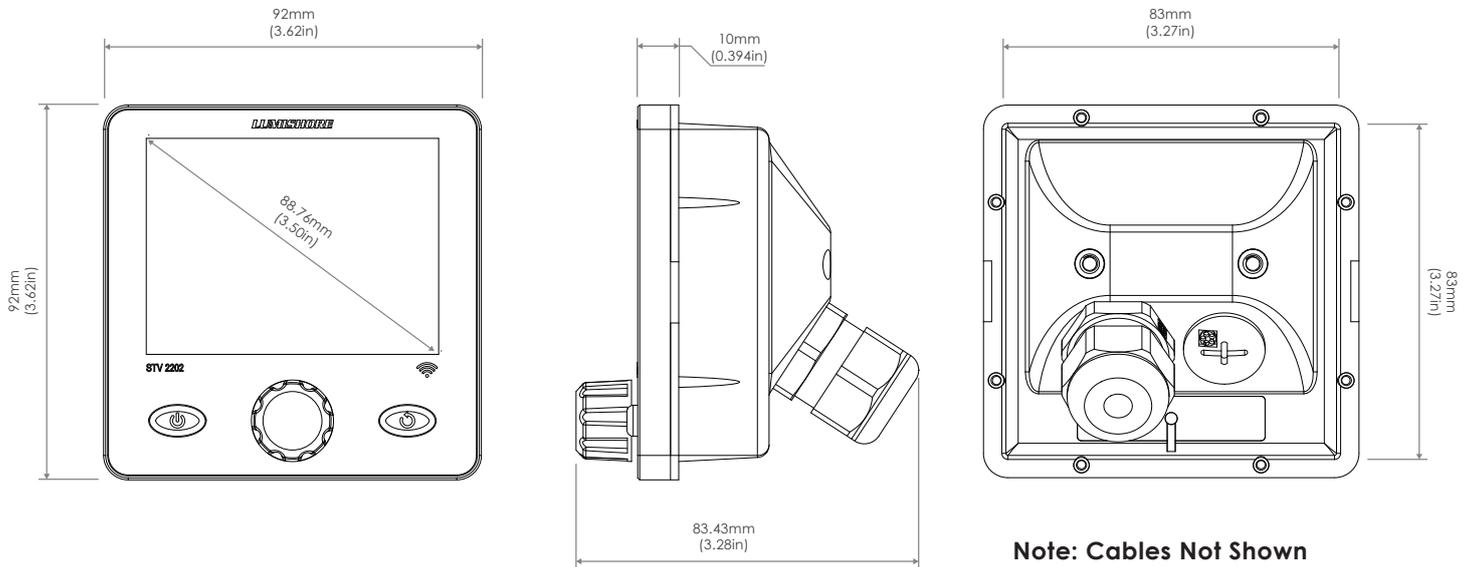
The Color Controller allows you to choose and easily adjust your light color, and by scrolling through the various inbuilt lighting modes, you can select from a number of predefined colors, color cycle sequences and underwater scenes. The Controller also incorporates fish attraction modes with variable strobe rates to enhance your fishing trip or sea life observation requirements.

Color cycles and color sweeps bring dynamic moving light scenes to the boat. Scenes mode allows you to sculpt your own lighting environment creating different colors for each light around the vessel. Pressing play in scenes merges one scene to the next creating moving underwater light shows. With inbuilt Wi-Fi, the lights can be activated and controlled using an iPad or iPhone. From on board, at the swim platform or on the dock the lights can be controlled remotely. For the ultimate party boat, The EOS Controller has built in sound to light capabilities. The lights can be setup to synchronise their color change with the beat and frequency of your favourite music.

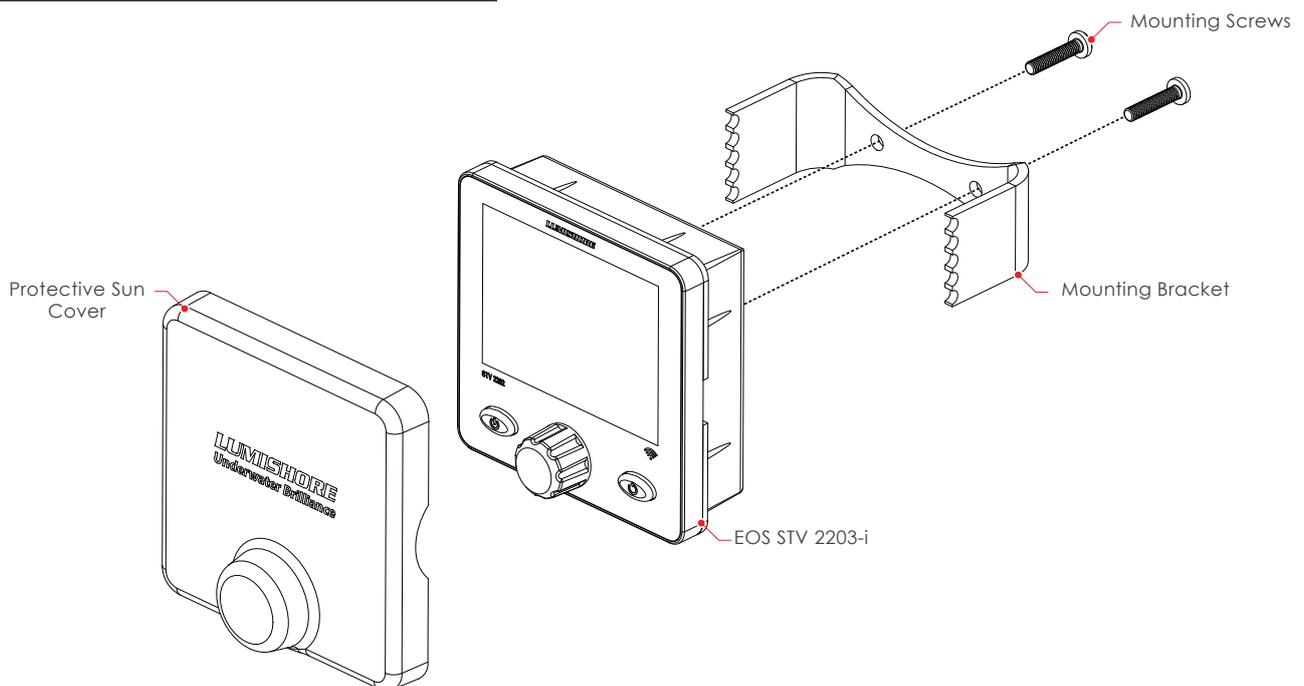


The world's first marine lighting API (Application Programming Interface) allowing plug-&-play integration of Lumishore underwater lighting systems with certified Multi-Function Displays (MFDs) creating a centralized control platform for the entire vessel reducing helm clutter and simplifying vessel operation. www.lumishore.com/lumi-link

EOS STV 2203-i Basic Dimensions



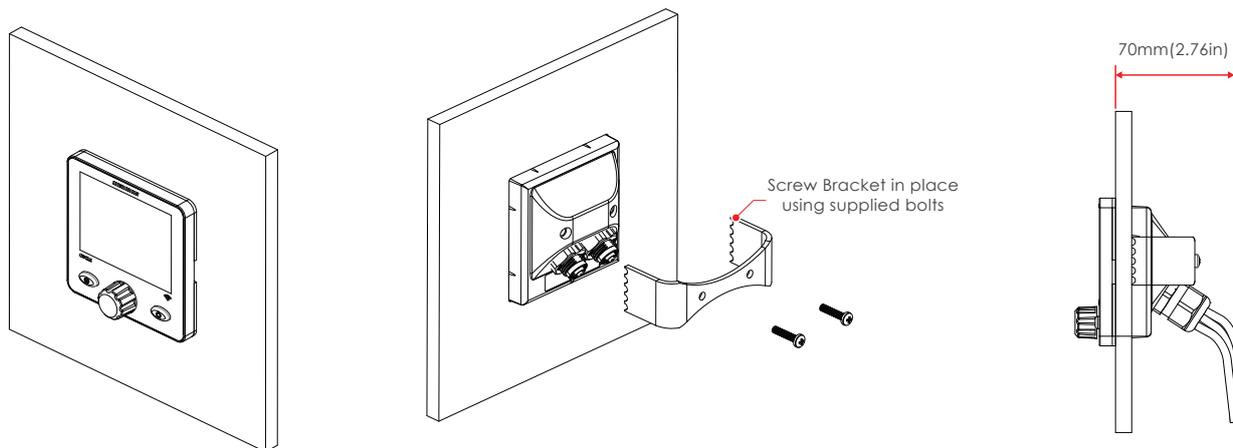
EOS Controller Components



STV 2203-i Mechanical Installation

The Color Controller has been designed to be mounted inside or outside within the cockpit or dash board of the vessel.

For external installations or where water may access the unit it is recommended that an appropriate Marine sealant is used between the back of the controller and the surface.

**Installation Considerations:**

- Select a suitable flat surface that is accessible from behind.
- Ensure there are no obstructions and there is adequate clearance behind the surface to allow for the Color Controller cable entry and positioning. (Ensure the chosen position also has easy cable routing to the first Driver or light connection in the series)

Installation Procedure:

1. Cut the hole to the correct size (83mm x 83mm), and ensure there is enough clearance behind the mounting panel for the controller to fit into, and enough room behind to connect the cables and fit the bracket.

NB: Extreme care should be taken to cut the hole to the correct size. Always cut a smaller hole than necessary and file outwards until it is the correct size.

2. Feed the EOS Controller through the hole and then using the bracket provided lock in place. Using the screws supplied screw the bracket to secure controller in place. **Do not exceed 1Nm torque force on each screw.**

NOTE: The EOS Controller is designed to fit panels between 2mm to 25mm in thickness

The controller uses a proprietary form of DMX to communicate between the lights and controller. Whilst Lumishore lights can be controlled by any DMX controller, the EOS controller can only be used to control Lumishore product. The EOS Controller is plugged into the first Driver in the series. The installation is terminated using a DMX Terminator plugged into the last Driver in the series - refer to the THX / TIX EOS installation manuals for further information.

- The EOS controller is for 12/24volt DC operation. **Under no circumstances should the Controller be connected directly to Mains AC voltage.**
- Always use a suitable fuse or circuit breaker to protect the complete system.

Connecting the 3 pin data cables:

1. Using the supplied DMX cable connect one end to the 3 pin connector on the back of the controller. Connect the other end to the first driver in the series.
2. Use a DMX extension cable to link the next Driver. **Do not cut or extend the DMX link cable.**
Pre-molded Extension cables are available in 1 meter, 5 meter and 15 meter lengths as required. Multiple extensions cables can be combined together if a further distance is required.
3. Plug the supplied DMX terminator into the DMX output connector of the last driver in the chain.

DMX Extension cables (NOTE: Do Not Cut and Splice DMX cables)

Length	Part Number
1m	24-0077
5m	24-0078
15m	24-0099



Always ensure the DMX Terminator is used and securely in place, without the terminator environmental noise and interference can cause faults in the communication. For a full electrical installation guide please refer to the THX / TIX EOS installation manual

Cable Connections

The EOS Controller has 4 cables pre attached at the back of the device. These provide connection for power, sound to light, 3rd party DMX controller and Lumi-Link accessories. (see next page)

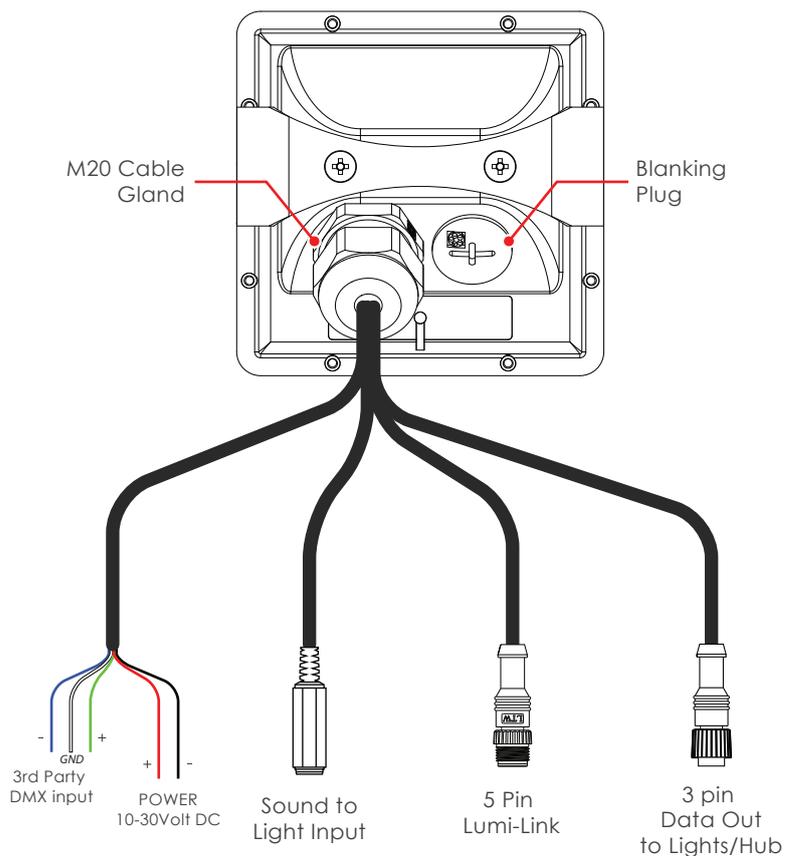
Power Cable Key:

Cable Color Key	Function
Red	Controller Power V+
Black	Controller Power V-
External (3rd Party) DMX Input	
Green	DMX+
Blue	DMX-
White	DMX Ground

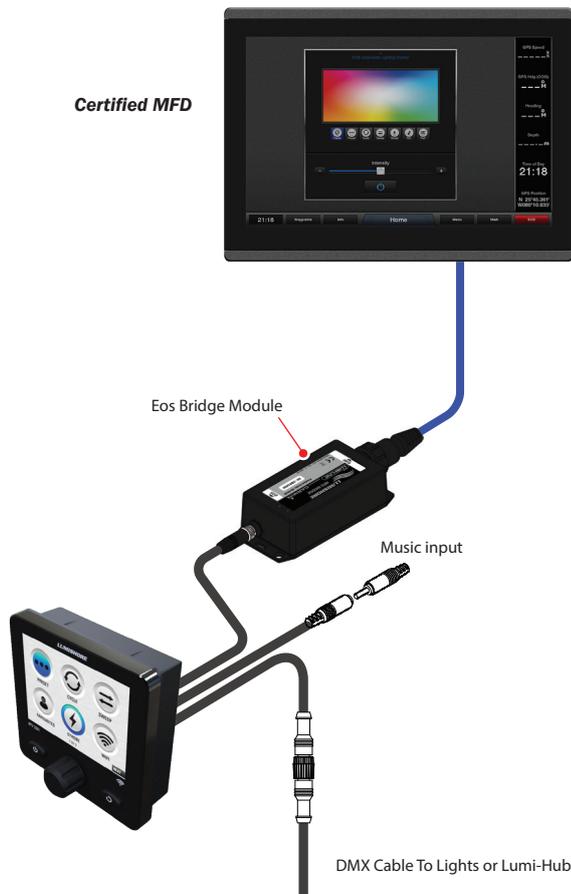
Power to the controller is fed via the Red and Black wires. Care should be taken to ensure the correct voltage and polarity

- Red V+ (10 - 30V DC)
- Red V- (Ground)
- Max Current Draw @ 12V = 300mA

Lumi-Link Accessories Example MFD Control Using EOS Lumi-Link Bridge Module (PN: 45-0110)



Certified MFD



Sound To Light Connection:

A3.5mm Jack Socket is supplied as part of the combi cable. Use a "Jack to Jack" cable or "Jack to Phono" cable as required to plug the "Line out" from a stereo or iPad/iPhone

For best results use a stereo output that has constant output irrespective of volume, i.e. when using an iPad or iPhone use the line out rather than the headphone socket. That way the sensitivity of the controller will not need continuous adjustment when changing volume.

3rd Party DMX Controller (Optional):

A 3rd Party DMX controller can be used to control the lights in place of the EOS controller. The DMX connection wires are provided as part of the Combi- Power cable. (See page 4 for the color key.)

Lumi-Link Accessory Connection (Optional):

A 5 pin socket is provided to connect Lumi-Link accessories such as the **Eos Lumi-Link Bridge module** for control via certified Multi-function Displays.



Do not connect the external DMX wires to anything other than an external DMX module
If an external DMX module is not used then the DMX wires should be cut back and
insulated to prevent a short circuit on the wires.

ALL DMX CABLES MUST MEET THE REQUIREMENTS OF THE DMX STANDARD



The EOS control interface is very easy to use, use the rotary dial to move the cursor around the screen, pressing the rotary dial will select the icon/slider bar or text that is highlighted. The icon will change color to show it has been selected.

Pressing the back button at any point will return to the previous mode or screen.

- **Power/Standby Button** – Press once to turn the Controller ON. Note: The lights will not turn on until a mode is selected. Press again to turn controller and lights OFF (Standby mode).
- **Back button** – press the back button to return to the previous mode or page.
- **Rotary Dial** – Use the rotary dial to scroll through the icons, the cursor position will be shown by an outer glow around the icon. Push the centre of the Rotary dial to select an Icon or slider.
- **Cursor** – move the cursor around the screen to highlight the icons, sliders and buttons.
- **Active mode** – the centre of the icon will change color to indicate this mode is currently active.
- **Next page** – selecting this icon will take you to the next screen where you will find more useful features.

NOTE: When in standby mode, power to the system will still be active until power is disconnected using a master switch or circuit breaker.



A Suncover is provided to protect the controller from harmful UV rays from the Sun and general weathering and also protects the device from accidental operation. Always ensure the Suncover is in place when the controller is not in use.

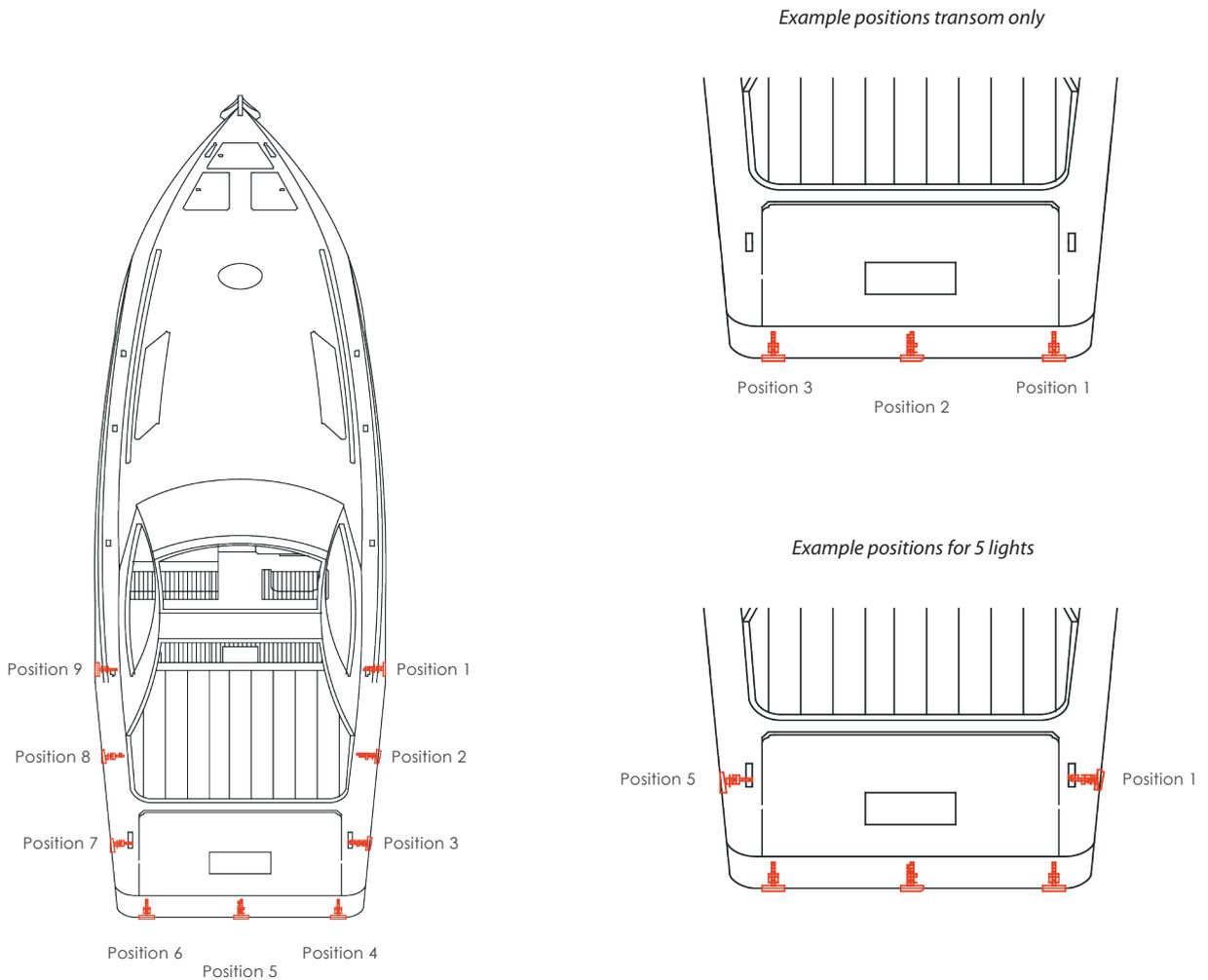
The Initial Light Setup tells the controller what position the lights are installed on the vessel so that they can be sent information in the correct order and color change in the correct sequence.

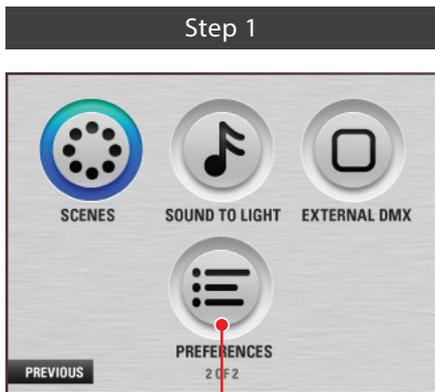
Setting up the lights with their correct position ensures modes such as "Color Sweep" and "Scenes" function correctly.

Set up is very straightforward and will only take a short amount of time. Once setup is complete the system will memorise the light positions so this process only needs to be carried out once.

To set up the lights use the following steps and the example positions shown below. The diagrams show typical positions of installed lights for three scenarios.

*NOTE: In each installation, Position number 1 should be the furthest light forward on the Starboard side.
Note at each stage how each light will be numbered in accordance with these schematics.*





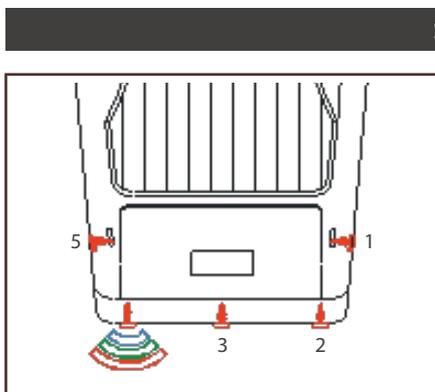
Go to Preferences



Select Light Setup Mode. If this is a new setup, the Controller will then enter "Discovery" mode where it searches for connected lights. To "Add" lights or "Modify" an existing setup - see next section.

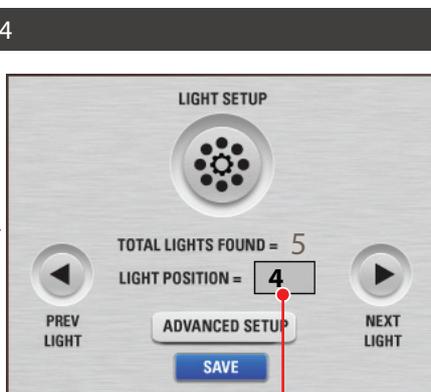


The controller will detect how many lights are connected and then display the result on the screen. Check if the number of lights matches the number of installed lights, if not please refer to the troubleshooting guide at the back.



The first light detected will then start to flash a color sequence of "Blue, Green, Red".

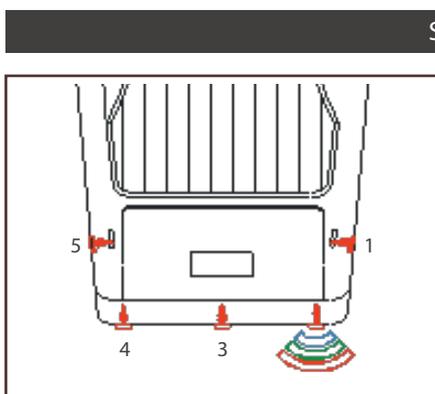
Note: Lights are discovered in a random order. The position of the light is not yet assigned so it may be at any installation point on the vessel.



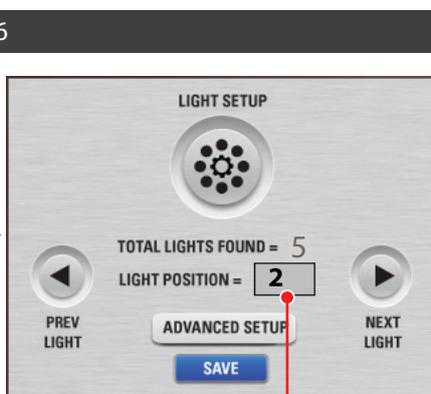
Use the rotary dial to change the number to correspond to its correct position on the vessel and press again to confirm.



Press next light to continue with the setup



The second light discovered will start to flash a color sequence of "Blue , Green and Red"



Again using the rotary dial, change the light position of this light to match its position on the vessel.

Repeat these steps until all lights have been assigned the correct position.



Press "Save" to store the lights in the controller memory.



Carrying out a full Light Discovery will erase any previously saved setup information. To "Add" a light to an existing setup or to "Modify" the light positions in an existing setup follow the steps below.

Add a Light to an existing setup:



In Preferences, select Light Setup



Select "Add Light" the controller will detect any new lights discovered on the system.



Allocate a position to the new lights and select save.

Modify the Light Positions within an existing setup:



In Preferences, select Light Setup



Select "Modify" the controller will enter the Light positions page without performing a full discovery.

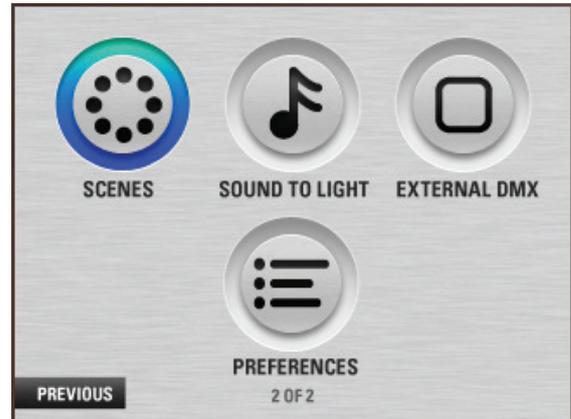


Modify the position of the lights as required and select save.

Home Page 1



Home Page 2



Tip : To select between home pages either use the rotary dial to select the "Next" and "Previous" icons or use the back button to flip between the two pages.

Use the rotary dial to move the cursor to the desired mode. Press the centre of the rotary dial to make your selection.

Preset Color Mode



Scroll through the stored colors, selecting a preset color will turn all lights to that color.

Presets available: Blue, Green, Red, White, Cyan, Magenta, Sky, Lime & Rose

The centre of the icon will change color to indicate that this mode is currently active.

Color Cycle Mode



All Lights cycle through the selected color modes;
 Spectrum – Full Color Spectrum
 Ice Blues – Whites, Blues and Greens
 Sunset – Reds and Ambers
 Miami – Blues and Reds

Adjust speed of cycle from 30 seconds to 30 minutes

Color Sweep Mode

Individual lights will sweep through the selected spectrum creating dynamic moving lighting effects.

Change direction of sweep from "left to right" or "right to left".

Adjust speed of cycle from slow to fast.



Favourites

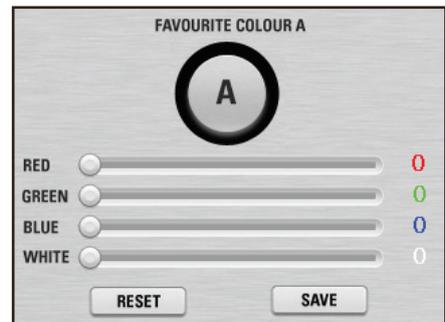


Up to 6 favourite colors can "fine tuned" and stored by the controller for future selection.

Selecting one of the 6 favourite colors (A to F) will open a new page where the Red, Green, Blue and White color balance can be adjusted and saved.

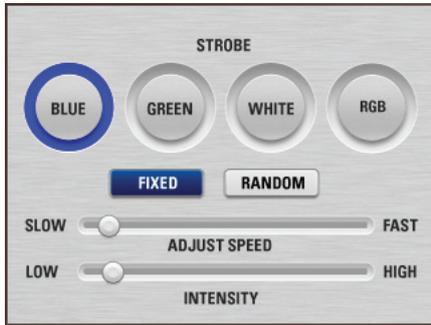
Adjust the color balance using the sliders, select "Save" to confirm the selection.

Select "Reset" to resume back to the previously stored setting.



Tip : Hold down the rotary dial when turning if you want to make big changes when adjusting the colour.

Strobe Mode



All lights will flash with the selected color.

Preset Strobe colors available: Blue, Green and White.

The strobe can be set to a fixed or random frequency. The speed and intensity of strobe can also be adjusted. Adjustments to speed and intensity may be made whilst the light is operating.

Selecting the RGB icon will open a new page where the Red, Green, Blue and White color balance can be adjusted and saved as a favourite Strobe color. The Controller will remember this color for future use.

Adjust the color balance using the sliders, select "Save" to confirm the selection.

Select "Reset" to resume back to the previously stored setting.



Wi-Fi Mode



Using Wi-Fi mode hands over control of the lights to an iPad or iPhone used with the Lumishore EOS App turns the phone or tablet into a portable EOS controller. Alternatively you can use any device installed with third party DMX software such as "Luminair" or "Alcorn McBride Inc. LightingPad"

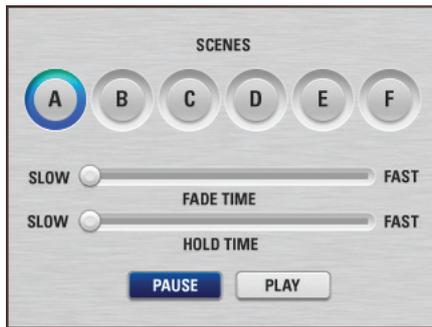
Note: for this mode to function the iPhone or iPad will need to be set up first. See section iPad / iPhone setup.

The inbuilt Wi-Fi will only function when Wi-Fi mode is activated, returning from this menu and selecting another mode will switch the inbuilt Wi-Fi off.

Note: The Lumishore EOS app is only currently available on iOS, to download simply search "Lumishore" in the App Store.



Scenes Mode



A scene allows multiple lights around the vessel to display different colors and intensities at any one time. For example the lights installed on the port side can be programmed to display Red whilst the lights on the starboard side can be programmed to display Green.

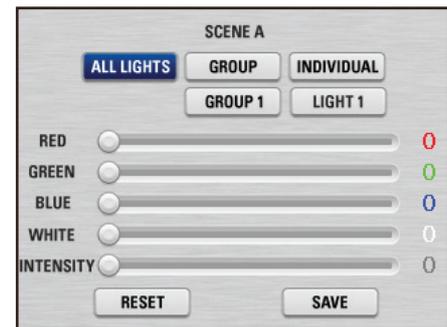
Creating custom scenes can be carried out very easily.

Selecting one of the scenes (A to F) will open a new page where you can change the color and intensity of either "all lights", "groups of lights" or "individual lights".

To set the lights into groups see the section "Group setup" in preferences

Either groups of lights or individual lights will be displayed.

Use the rotary dial to select group or light and scroll from one to the next setting the color balance and intensity as you go.

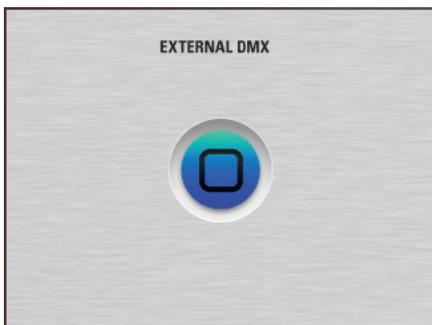


Once the scenes have been setup, selecting "Play" will allow the controller to play through the programmed scenes one after the other to create a dynamic underwater lighting show.

The fade time (slow transition between scenes) and a Hold time (time that any particular scene will stay before starting the transition to the next), can also be adjusted.

Note: The highest Intensity setting in this mode is governed by the maximum Global intensity setting of the system. To change the Global Light Intensity see section Light intensity mode in preferences.

External DMX Mode



Using External DMX mode hands over all control to a third party DMX device. In this mode the controller acts as a pass through DMX device and does not interfere with the DMX data.

To regain control, exit this mode using the back button.

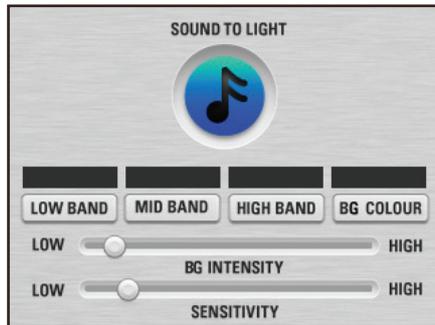
External DMX can also be used with the EOS controller in standby mode. However if the controller is switched on and another function other than External DMX is selected then the controller will take precedence and regain control.

For wiring installation of the third party DMX device see the EOS Color change installation Guide.



Tip: If an external DMX controller is being used then it will work when the EOS is in standby mode. You don't need to select external DMX for the system to work

Sound To Light Mode



The EOS controller has built in sound to light capabilities. The lights can be setup to synchronise their color change with the beat and frequency of the music.

The controller splits the audio input into low, mid and high frequencies. The color for these frequency bands can be selected and changed. For best effect choose a different color for each frequency band.

Adjust the sensitivity slider to compensate for variation in volume of the input music. Choose a low sensitivity for quieter music and a high sensitivity for louder music. This sensitivity will affect the response of the lights, set it to a level that obtains the desired effect.

Note, if the input music is supplied by a stereo that does not have a fixed line level output then the sound to light sensitivity will be dependent on music volume. If little or no lighting effect is observed ensure the volume of the stereo is turned up to a high enough level.

Home Page 2



Preferences



Group Setup



The position of lights can be placed into groups for easier reference and control within "Scenes" mode.

For example, all lights on the Port side of the vessel can be put into the "PORT" group, all lights on Starboard side can be put in "STRBD" group.

Selecting one of these groups within "Scenes mode" will make every light in that group respond at the same time.

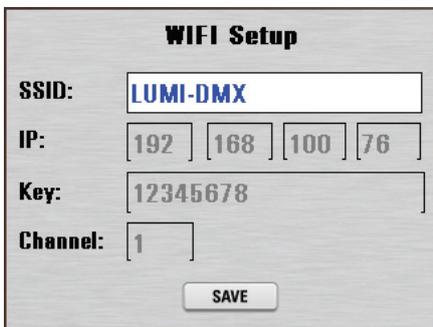
There are 8 groups available....
PORT, STARBOARD, TRANSOM, GROUP 1, GROUP 2, GROUP 3, GROUP 4, GROUP 5.

To put a light into a specific group first select the light position, then select the Group to allocate it to.

Note: a light position can only be allocated to one Group name.

Once all lights have been allocated to their specific groups select "Save" to confirm the selection.

Wi-Fi Setup



This screen allows the user to view or change the network name (SSID) for the controller Wi-Fi and also set the Wi-Fi password key.

Note the default Key is : 12345678

The SSID and password key will be required to configure the wireless network within an iPhone or iPad device.

To configure the iPad / iPhone refer to the next section.



Tip : It is highly recommended that the SSID and Key are changed when Wi-Fi is set up for the first time.

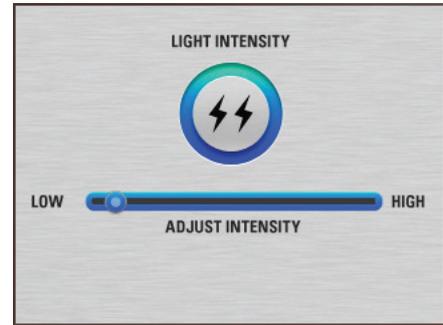
Light Intensity (Global)

Adjust the global light intensity of all lights from low to high.

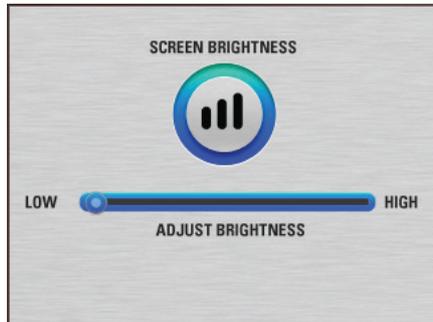
GLOBAL intensity sets the maximum brightness for all lights in EVERY MODE.

Note: "Strobe" mode and "Scenes" mode have their own intensity settings which will be a percentage of this global setting.

For brightest results ensure the Light Intensity setting is set to its Highest level.



EOS Screen Brightness



The screen brightness can be adjusted from low to High.

Adjust this setting as required

Light Setup



FOR BASIC LIGHT SETUP REFER TO THE START OF THIS OPERATING MANUAL.

Light Setup Mode also has an Advanced Setup Option. Only choose this option if you wish to allocate specific DMX addresses to each light.

You may wish to allocate specific DMX addresses if the lights are to be controlled by a 3rd party DMX controller in conjunction with other DMX lights on the network.

NOTE: If DMX addresses are non-sequential, or do not flow from light to light it may affect the operation of some modes such as 'Sweep' mode.

Advanced Light Setup



UID (unique Identification number): This number is an identification code that is unique to every Driver. The code cannot be changed and is for reference only.

DMX Start Address

Setting the DMX Start address
Each light requires 5 DMX channels...

- Channel 1 = RED
- Channel 2 = GREEN
- Channel 3 = BLUE
- Channel 4 = WHITE
- Channel 5 = INTENSITY

The first three channels are used to adjust the color balance of the light (or Hue). The fourth channel changes the intensity of the light (or brightness).

The start address for light position 1 can be any DMX address. However for inbuilt "Scenes" and "Sweep" modes to function correctly, it is important that each light in the series is assigned a group of sequential DMX addresses. For example...

Light Position	Assigned Start Address
1	1
2	6
3	11

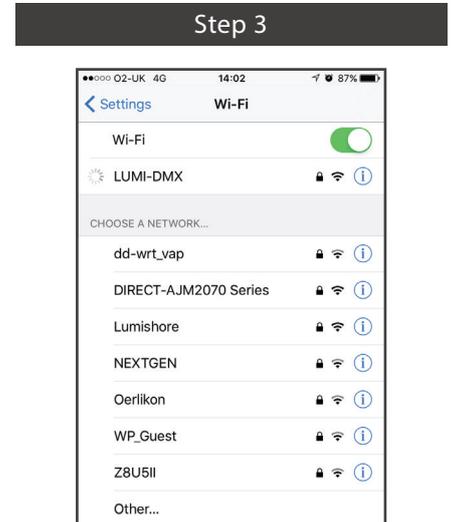
To control the lights using an iPhone or iPad the device first has to be configured to link with the EOS controller. This setup only needs to be carried out once per device. The following guide shows how to pair the controller with an iPhone device. (The same procedure applies for an iPad.)



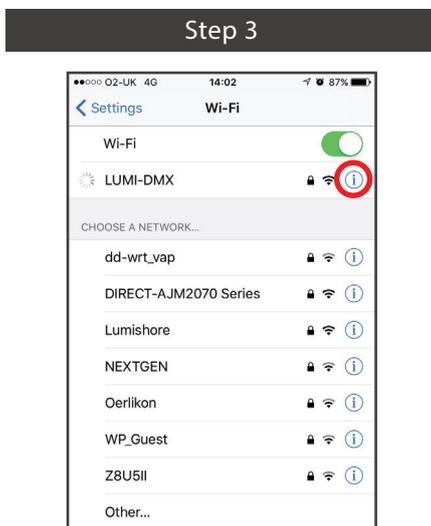
Make a note of the SSID name and password KEY in the Wi-Fi setup Mode in setup.



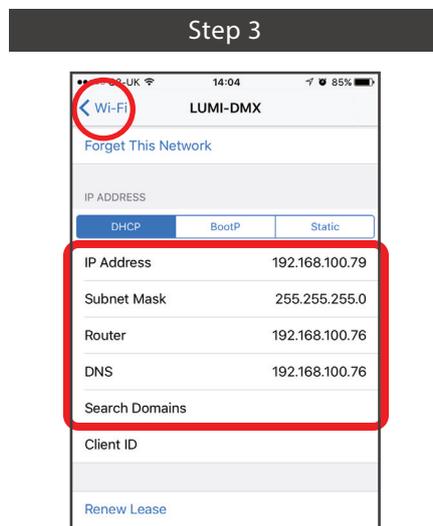
Once the information has been recorded return to home page and select Wi-Fi mode. The internal Wi-Fi will be activated. Note: exiting this mode will turn the Wi-Fi off again and the controller will not be found by the iPhone.



Next, using your iPhone search for local Wi-Fi networks. Select the SSID name for the controller and enter the password.

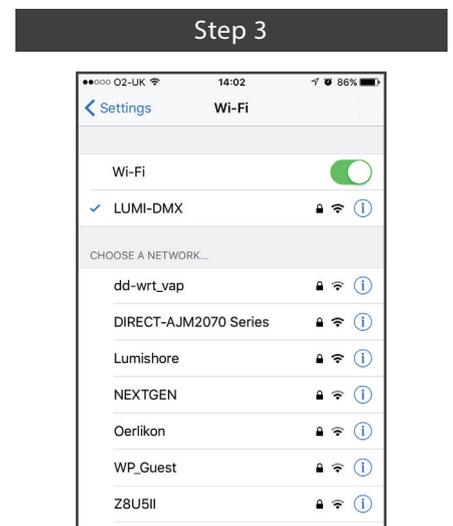


Tap the blue info icon to show more settings
You have Made a note of the SSID name and password from the Wi-Fi setup Mode.



Tap on 'DCHP' address and type in the 3 settings above for subnet mask, Router and DNS number.

Once complete tap the Wi-Fi icon at the top left of the screen.



Note: The iPhone can take up to 60 seconds to connect with the EOS controller at which time the Wi-Fi signal strength icon will be shown in the top left hand corner of the display.

iPhone Pairing is now complete!

Product Support

If you have questions or comments, please e-mail info@lumishore.com or call USA (941) 405-3302, United Kingdom +44(0)208 144 1694, or France +33(0)493 582 537.

Warranty

LUMISHORE Ltd warrants the EOS Controller to be free from defects in workmanship for a period of two years, starting from the date of original purchase. Should your lighting system have a problem during this period, please contact your dealer as soon as you become aware of the defect.

Misuse, abuse, improper installation, neglect, improper shipping, damage caused by disasters (e.g. fire, flood and lightning), installation by unqualified personnel, unauthorized repair or modification will void this warranty. For the avoidance of confusion and doubt, non compliance with all installation, maintenance and operating instructions in this document constitute non conformance with warranty terms.

Full warranty details are available at www.lumishore.com.

Troubleshooting

Problem	Things to check
Not all light discovered, or too many lights discovered	<ul style="list-style-type: none"> • Check DMX Connections • Check DMX terminator is fitted to the last driver in the chain • Check power is on to all lights (check blue LED on light driver is on for all lights) • Bypass the DMX connection on the first driver and repeat the discovery process. Repeat, bypassing each driver in turn. This checks all drivers are healthy and communicate with the EOS controller
Lights do not come on	<ul style="list-style-type: none"> • Check global intensity setting in preferences screen • Check power connections and supply voltage • Check LED status on driver / light (see light manual for further information)
Lights come on randomly, or unexpectedly when EOS is switched Off	<ul style="list-style-type: none"> • Check DMX terminator is correctly installed in the last driver in the chain
Some modes (e.g. sweep Mode) do not function correctly	<ul style="list-style-type: none"> • Check light discovery procedure has been carried out • Check DMX addresses are in ascending order with the lights (light 1=1, light 2=6, light 3=11)

If problems persist, or in the event of one or more of the lights not lighting up then check the LED status on the driver (at the back of the light). The LED will either be continually ON (healthy), OFF (no power to driver) or flashing. Please refer to the lights manual for further help.

Thank you!
For purchasing LUMISHORE lights