



2020

INSTALLATION MANUAL

4 Way Power DC Junction Box



Preface

READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL

WARNINGS

Before installing your 4 Way Power DC Junction Box, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in property damage, severe injury or even death.

Salt is an inherently corrosive material. Metal parts and certain natural and man-made surfaces are particularly susceptible to corrosion and deterioration when used in and around saltwater.

Some combinations of plastic and polymer products are impervious to saltwater corrosion, however, screws and fasteners used for the installation must be of a marine grade type stainless steel or equivalent and monitored annually to ensure the junction box remains in service for years to come.

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 can cause irreversible damage.

DANGER **RISK OF ELECTRIC SHOCK OR ELECTROCUTION**

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



Contents

1 Overview 3

2 Mounting 4

3 Electrical Installation 5

4 Troubleshooting 8

5 Appendix 9

6 Warranty 11

IMPORTANT NOTICE

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

WARRANTY COVERAGE

Please refer to www.oceanled.com/warranty for full warranty statement.

1 Overview

Description:

A Waterproof (IP66) low voltage DC (9-32V) power distribution box recommended for OceanLED installs. Provides one power input, and four individually fused power outputs (10A max per output) to allow connection of up to four lights. Mounting screws and grommets included.

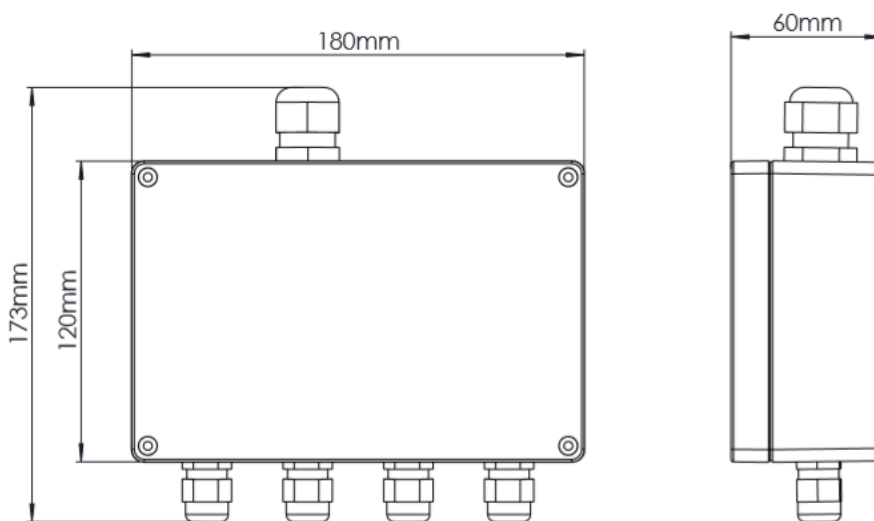
Contents:

- 1x DC Junction Box (including 4x 10A Blade Fuses)
- 1x Fixing Kit

Specifications:

Technical info	4 Way Power DC Junction Box
Voltage:	12/24v DC (Max 32V DC)
Input / Output cable glands:	IP68 (1x M20, 4x M16)
Input terminals wire gauge:	8 to 20 AWG
Output terminal wire gauge	12 to 22 AWG
Outputs:	4 x individual fused 10 Amp each max.
Physical Specifications	
Dimensions:	180mm x 173mm x 60mm (7" x 6.8" x 2.3")
Enclosure:	IP66 robust polycarbonate
Weight:	460g

Dimensional Drawing:



2 Mounting

2.1 FINDING THE MOUNTING LOCATION

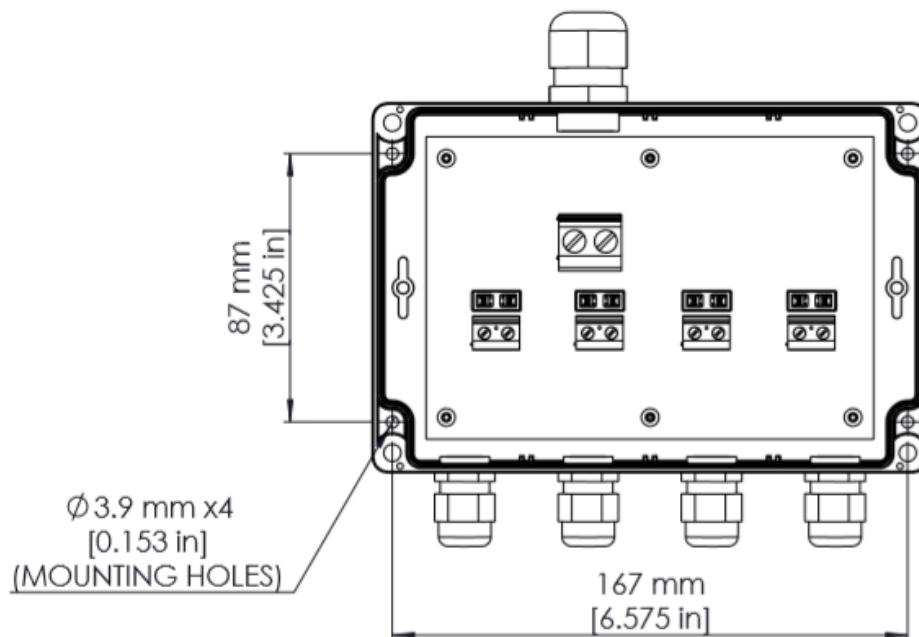
When choosing a mounting location for the 4 Way Power DC Junction Box the following recommendations need to be followed:

1. Consider the wiring routing / connections:
 - The distance to the 12 / 24 V DC power source.
 - The distance to the lights/drivers.
2. Select flat surface in a dry location away from sources of heat.

2.2 MOUNTING THE JUNCTION BOX

Once a suitable location has been found, use the following steps to mount the unit:

1. Unscrew the 4 case screws on the box and remove the lid.
2. The mounting holes for the unit are located inside the box, near to each corner - see diagram below.



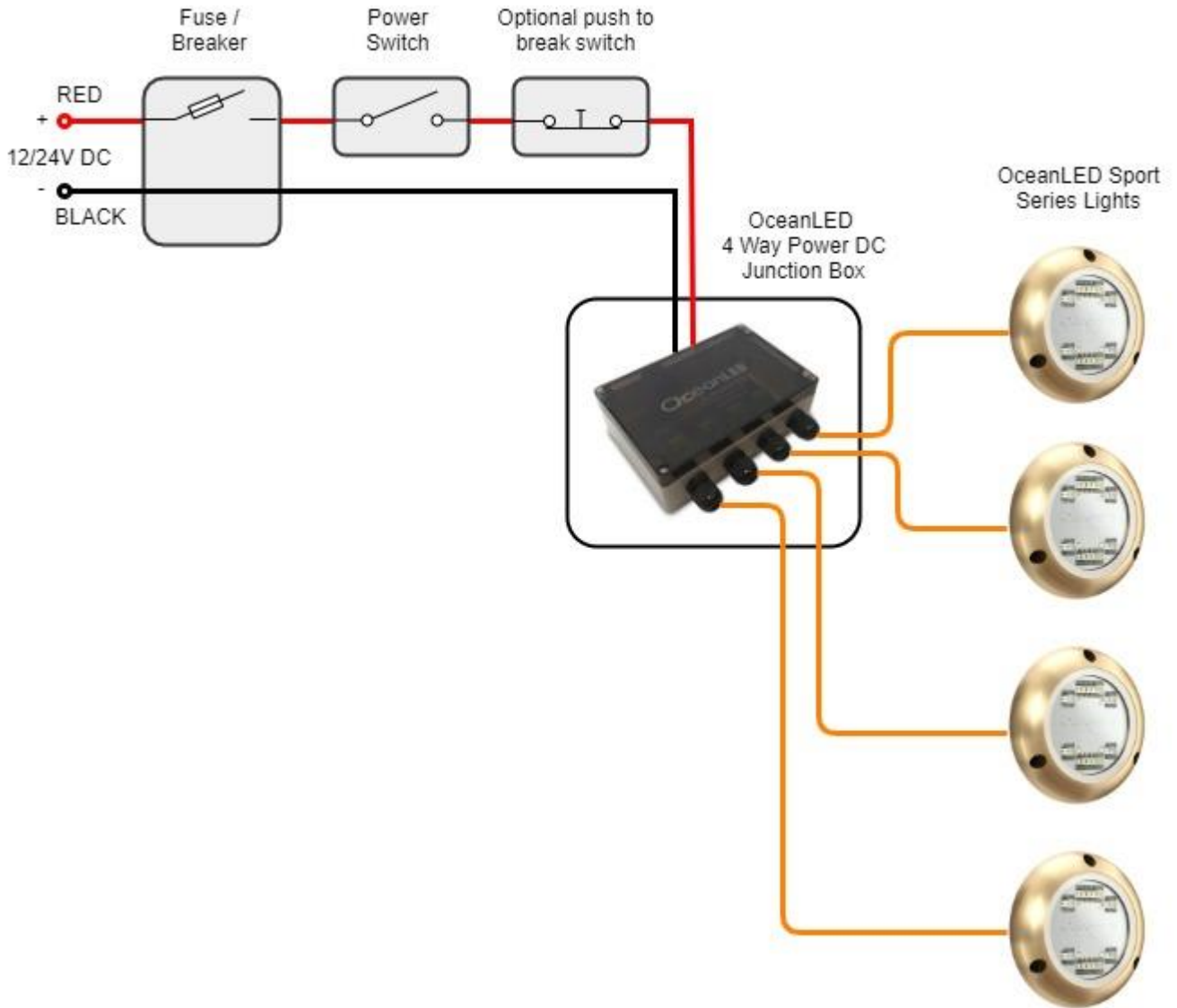
3. The mounting screws that are provided should be suitable for most surfaces (such as wood / fibreglass). Mark out the required mounting hole centres and drill pilot holes as required – being careful to check for obstructions such as cables / pipes behind the area being drilled.
4. Screw the unit to the surface using the screws provided.



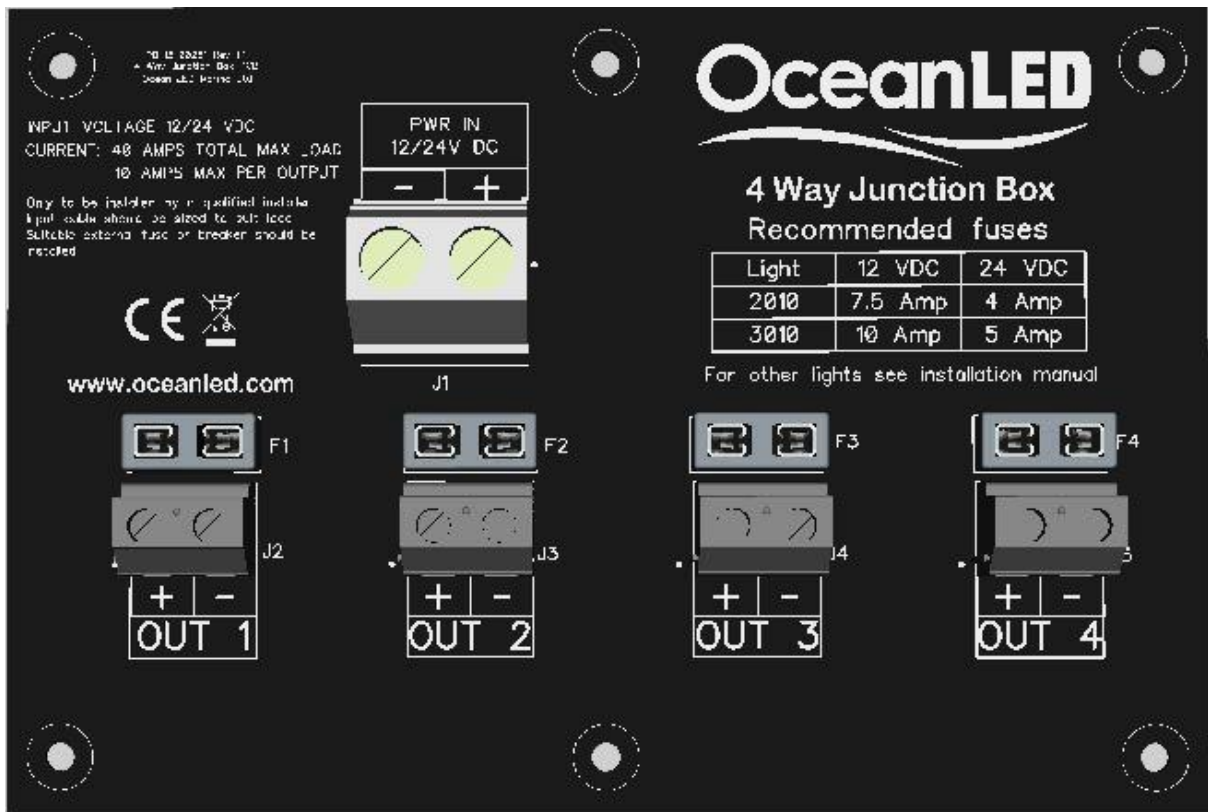
Never use power tools. Hand tighten only!

3 Electrical Installation

See the following example of Sport Series connections.



3.1 OCEANLED 4 WAY JUNCTION BOX CONNECTIONS:



Name	Function	Connection			
PWR In	+	DC Power +VE Connect to a fuse +12/+24 VDC from fused panel / battery			
	-	DC Power -VE Connect to battery GND return			
Out 'X' ('X' can range from 1 -4)	+	DC Power 'X' +VE Connect to <table border="1"> <tr> <td>Light</td> <td rowspan="2">+VE (Red)</td> </tr> <tr> <td>Driver</td> </tr> </table>	Light	+VE (Red)	Driver
	Light	+VE (Red)			
Driver					
	-	DC Power 'X' -VE Connect to <table border="1"> <tr> <td>Light</td> <td rowspan="2">-VE (Black)</td> </tr> <tr> <td>Driver</td> </tr> </table>	Light	-VE (Black)	Driver
Light	-VE (Black)				
Driver					

3.2 INSTALLATION OF 4 WAY POWER DC JUNCTION BOX

1. Remove the lid of the Junction Box.
2. Loosen the M20 cable gland cap and feed the main power wires through the power input cable gland. The required supply cable gauge will depend on the current draw by the connected lights and the length of the cable run from the fuse / breaker panel to the junction box. See appendix 5 for required cable gauge depending on total current draw. Please visit www.oceanled.com for the latest spec sheet of the lights being used.
3. Insert the bare ends of the wires into the screw terminal (ensure correct polarity, usually red for positive and black for negative).



4. Using a Philips screwdriver, tighten the screw terminal.
5. Tighten the cable gland.
6. Loosen the M16 cable gland cap and feed the light/driver cable trough the gland and into the screw terminal.



7. Tighten the screws on the screw terminal using the flat head screwdriver.
8. Repeat step 6-7 for the remaining lights/drivers.
9. Tighten the cable glands.
10. Ensure the correct value fuses are fitted to each output (supplied fuses are 10 Amp rated) -see corresponding light manual for required fuse values. (Note - required fuse type are mini-blade)
11. Close the lid of the junction box and secure it using the four screws provided. Note: Please double check all connections before closing the junction box and applying power to the lights.



Never use power tools. Hand tighten only!

Always test the system BEFORE the boat goes back into the water.

4 Troubleshooting

4.1 TROUBLESHOOTING PROBLEMS AND THEIR SOLUTIONS

4 WAY JUNCTION BOX			
Problem	Check	Cause	Solution
No power on output terminals. (lights don't light up)	Check power input to Junction Box.	No power	Check main supply fuse / breaker
			Check Power Input Connections
	Check the internal fuses (F1 – F4).	Fuse blown	Replace fuse. If fuse keeps blowing, then there is a short circuit on the connected light(s) that must be traced and rectified.

5 Appendix

5.1 CABLE GAUGE CHART 12V

Supply & Return Cable Conductor Size Chart 3% drop for when using 12V DC supply

Cable length (feet)*	Circuit Current										
	2 Amp	4 Amp	6 Amp	8 Amp	10 Amp	15 Amp	20 Amp	25 Amp	30 Amp	40 Amp	50 Amps
0-5	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
5-10	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
10-15	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
15-20	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
20-25	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
25-30	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
30-35	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
35-40	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG
40-45	12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG
45-50	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG
50-55	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG
55-60	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0 AWG	0/3 AWG	0/4 AWG
60-65	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG
65-70	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG
70-75	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	0 AWG	0/2 AWG	0/2 AWG	0/4 AWG	
75-80	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG	
80-85	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG	
85-90	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG	
90-95	8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0/2 AWG	0/3 AWG	0/3 AWG		
95-100	8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	0 AWG	0/2 AWG	0/3 AWG	0/4 AWG		

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

5.2 CABLE GAUGE CHART 24V

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

Cable length (feet)*	Circuit Current										
	2 Amp	4 Amp	6 Amp	8 Amp	10 Amp	15 Amp	20 Amp	25 Amp	30 Amp	40 Amp	50 Amps
0-5	18 AWG	18 AWG	18 AWG	18 AWG	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG
5-10	18 AWG	18 AWG	16 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG
10-15	18 AWG	16 AWG	14 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG
15-20	18 AWG	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG
20-25	18 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG
25-30	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
30-35	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG
35-40	16 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG
40-45	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG
45-50	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
50-55	14 AWG	12 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG
55-60	14 AWG	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
60-65	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
65-70	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG
70-75	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	2 AWG	0 AWG	0/2 AWG
75-80	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG
80-85	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG
85-90	12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG
90-95	12 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	1 AWG	1 AWG	0/2 AWG	0/2 AWG
95-100	12 AWG	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	0 AWG	0/2 AWG	0/3 AWG

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

6 Warranty

Please remove this page and keep for your files.

For technical assistance:

Europe: service@oceanled.com

The Americas: warranty@oceanledusa.com

Warranty Serial Code(s):

**©2020 Ocean LED Marine LTD
All Rights Reserved**

Specifications are subject to change without notice.

Trademarks are the property of Ocean LED Marine LTD



Ocean LED Marine LTD

Unit 1 Jacknell Road
Dodwells Bridge Industrial Estate
Hinckley,
Leicestershire LE10 3BS
United Kingdom

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

Ocean LED USA LLC

778 South Military Trail
Deerfield Beach
Florida
FL 33442-3025
USA

Tel: +1 954.523.2250
Fax: +1 954.523.2249
sales@oceanledusa.com

www.oceanled.com