



**Bluefin Led Underwater lights.**

**OR16/OR20/OR48CC Installation manual.**

Thank you for choosing Bluefin LED underwater lights, our products have been designed and tested rigorously to ensure the optimum performance and longevity.

All Bluefin Led lights are water tested so please be aware there may be moisture present on the light. This light is designed for use on fibre glass hulls only and **not to be mounted to any Metal hull or your warranty will be void.**

Please ensure that your product is installed as per our instructions below, failure to do so may invalidate your warranty.

**If you are installing a H48CC please refer to the Driver instructions for electrical installation.**

**Specs: electrical/fuse ratings**

	Voltage	Current	Fuse rating
ORCA OR20	24V only ( <b>Absolute min of 19V under load @ light</b> ).	24v-5.1	8amp
ORCA OR16	12/24V only ( <b>Absolute min of 10V under load @ light</b> ).	12V-7.5 24V-3.8	10amp

**Warnings:**

- Do not attempt to install the lights whilst the boat is in the water.
- Ensure that the correct voltage is used for the light.
- Ensure that the in line fuse is installed with the correct fuse rating per the light installed or your **warranty will be void.**
- Ensure that you use the Screws provided and only hand tightened (**failure to do so will invalidate your warranty**).



- **Do not remove the inline HYDRO LOCK or your warranty will be void.**
- Ensure the Gel Connector supplied is used or your **warranty will be void.**
- Do not hold the light by the cable.
- Do not use abrasives on the lenses.
- Lights must be mounted a minimum of 300mm from any Anodes.
- Do not mount lights directly underneath Anodes.
- Do not bond directly to Anodes.
- Only bond to the vessels DC bonding system & ensure all connections are in perfect condition & are regularly checked.
- When mounting on any type of conductive surface or hull material full electrical isolation between the light & mounting surface must be provided & maintained at all times throughout the lights life.
- Failure to adhere to any of these requirements will invalidate warranty.
- As Galvanic currents & corrosion are external factors any type of damage caused by galvanic affects are not covered by BluefinLEDs warranty policy.

**Tools required for installation:**

- 2.5mm(3/32") drill bit
- 30mm(1.1/4") drill bit Drill

- Posi head hand screwdriver
- Marine sealant 3M 5200/4000UV, Sika flex 291i or equivalent (**do not use 3M 4200**)

### **Installation:**

For optimum affect effect the light should be positioned between 8-12" (200-300mm) below the water line and at a 90 deg angle. Recommended spacing from 3-3"(1mtr) to 5-11" (1.8mtrs) between the lights.

Drill a 30mm (1.1/4") hole for the cable access through the hull, ensuring that there are no obstructions internally in the hull.

Drill 2.5mm(3/32") pilot holes to match the mounting holes on the light.

Key the area to where the light is to be mounted with abrasive sand paper to ensure there is a clean area for the marine sealant to bond too.

Apply marine sealant to the rear of the light on the circumference of the light and around the base of the cable gland to ensure a complete continuous bead of sealant is applied in both areas. (See fig 2)

Feed the cable through the hole and mount the light to the hull using the **screws provided**.

Wipe off any excess sealant and ensure the light is seated correctly without any gaps in the sealant. (It is good practice to have excess marine sealant to clean off as this can ensure that there is a water tight seal to the hull)

### **Electrical connection:**

**It is advised that if installing H20 and H48CC Models no more than 6 lights should be installed on your low voltage system and Mains Power Units should be installed (contact BluefinLED for advice).**

**Ensure you use the IP68 GEL CONNECTOR supplied to connect to the boats wiring or you Warranty will be void (fig 4/5).**

**You will notice an inline HYDRO LOCK attached to your cable (Fig 1). If this guard is removed you warranty will be void**

Pic 1



Care should be taken when planning your electrical feeds/cables to the lights so as to ensure voltage drop between the batteries or power supply is minimised, on 12V systems this is especially important as the lower system voltage means a high current requirement which in turn means the potential for more voltage drop in the cable runs & connections.

If the cable gauge & connections are not sufficient for the lighting load attached you may experience incorrect operation of the lights & intermittent illumination as the supply dips below specification.

**Please see the wire gauge guide attached to the instruction manual.**

For help with calculations always consult with a qualified professional or contact BluefinLED directly. Attach the light cable to the VDC power on the boat ensuring that you use the in line fuse supplied connected to the positive(red) wire, ensure that you use the heatshrink provided to create a water tight fit into the fuse holder. (See fig 3)

Ensure that an earth bond cable is attached to the earth tab on the cable gland using the nuts and bolts supplied and is attached to the earth bonding system on the boat before installation. Please also bend the earth bond tab into the horizontal position as per fig 1

Fig 2

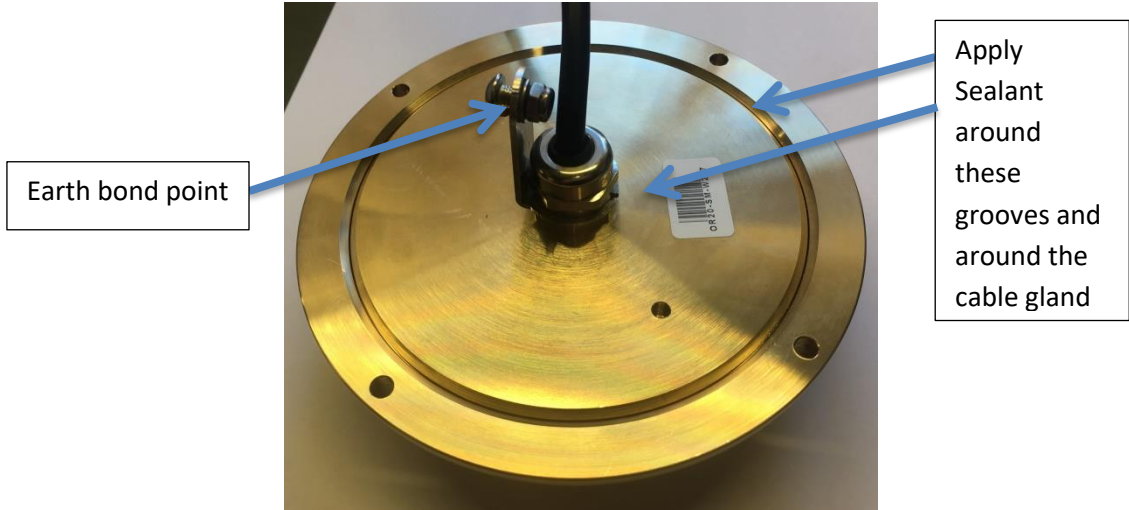
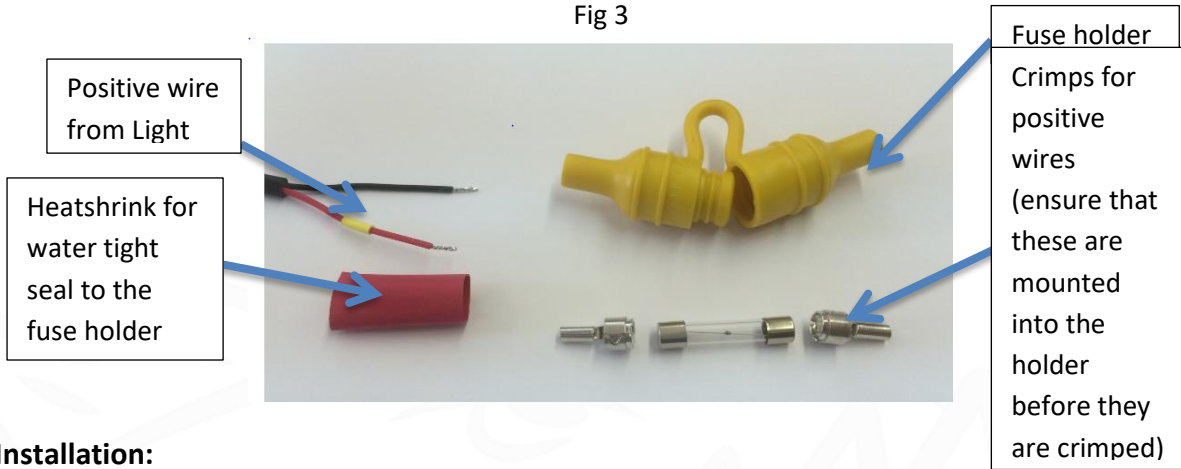


Fig 3



**Installation:**

**Fig 4 showing how the Gel connector is wired up.**

**Fig 5 showing how the finished Gel connector should look when finished.**

**Ensure that the black outer sheath is inside the gel connector.**

**The IP68 GEL CONNECTOR MUST BE INSTALLED CORRECTLY OR YOU WARRANTY WILL BE VOID.**

Fig 4

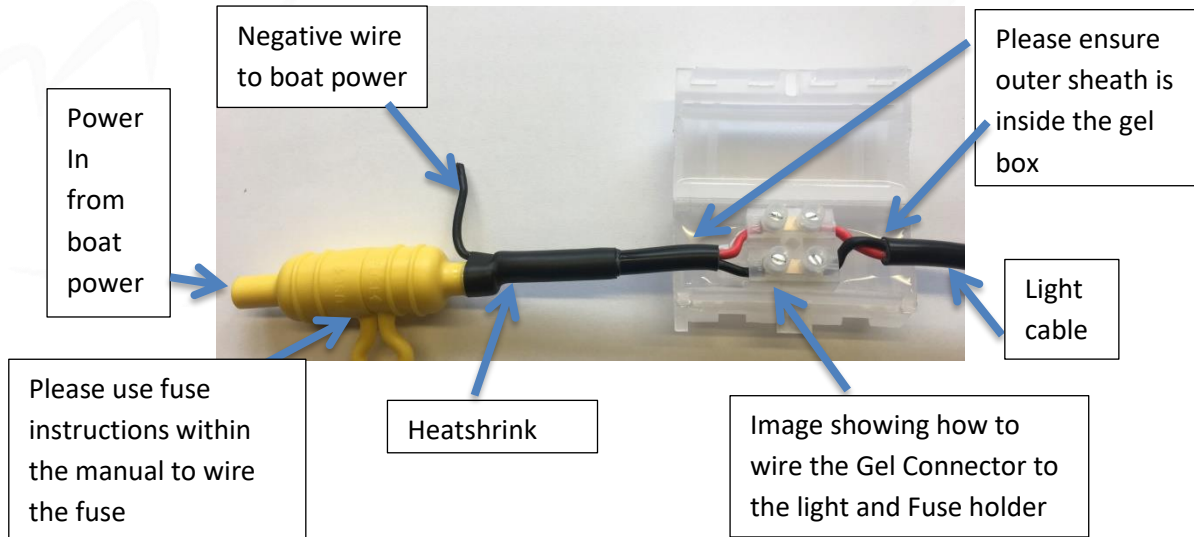


Fig 5



## **Bluefin Led Underwater lights.**

### **LM48CC Driver Installation manual.**

Thank you for choosing Bluefin LED underwater lights, our products have been designed and tested rigorously to ensure the optimum performance and longevity.

Please ensure that your product is installed as per our instructions below, failure to do so may invalidate your warranty.

### **Specs: electrical/fuse ratings**

	Voltage	Current	Fuse rating
LM48CC Drivers	24V only	24V-6.5	8amp

### **Warnings:**

- Do not attempt to install the lights whilst the boat is in the water.
- Ensure that the correct voltage is used for the light and Driver.
- Ensure that the in line fuse is installed with the correct fuse rating per the Driver installed.
- Ensure that the supplied gel connector is used to make a watertight connection or your **warranty will be Void.**
- If you wish to connect your Colour change lights and drivers to your own DMX Controller please contact BluefinLED beforehand for further advise.

### **Installation:**

#### **Electrical connection:**

- Ensure that the supplied gel connector is used to make a watertight connection or your **warranty will be Void (see fig 6/7)**
- Attach the Driver power cable to the VDC power on the boat ensuring that you use the in line fuse supplied connected to the positive(red) wire, ensure that you use the heatshrink provided to create a water tight fit into the fuse holder. (see fig 2)
- Plug the Light cable connector to driver as per Fig 1 aligning the white lines on the connectors to ensure the connector pushes home correctly.
- Plug the DMX controller cable (if supplied fig 3) into the first driver DMX IN connector as per Fig 1.
- Plug the DMX Interlink cable (Fig 4) into the DMX OUT connector on the first driver Fig 1.
- You can now daisy chain the drivers using the DMX Interlink cables going from the OUT DMX to the IN DMX on the next driver.
- When completing a circuit you must plug the DMX Terminator plug (Fig 5) into the last drivers DMX OUT to complete the circuit.

**Fig 1 (Driver)**



Fig 2 (Fuse connection)

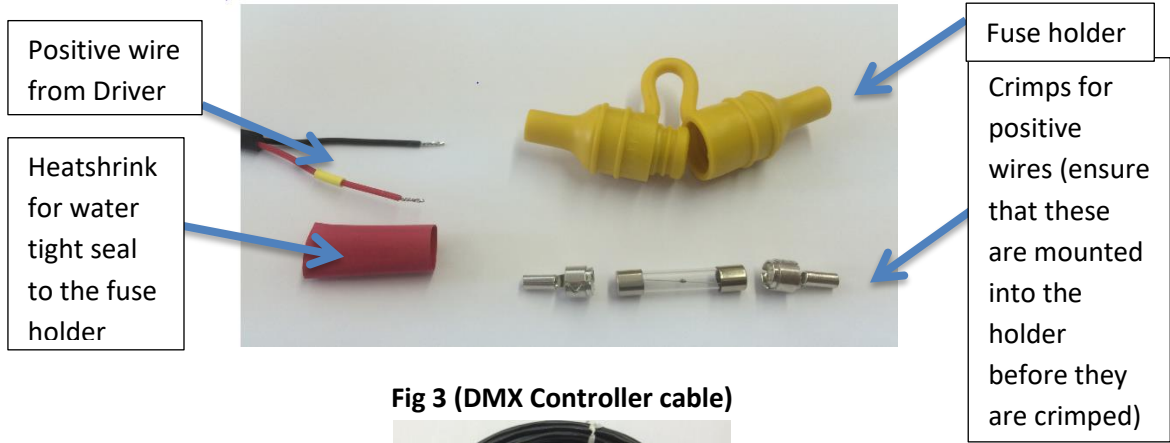


Fig 3 (DMX Controller cable)



Fig 4 (DMX Interlink cable)



Fig 5 (DMX Terminator)



Fig 6 showing how the Gel connector is wired up.

Fig 7 showing how the finished Gel connector should look when finished.

Ensure that the black outer sheath is inside the gel connector.

**The IP68 GEL CONNECTOR MUST BE INSTALLED CORRECTLY OR YOU WARRANTY WILL BE VOID.**

Fig 1

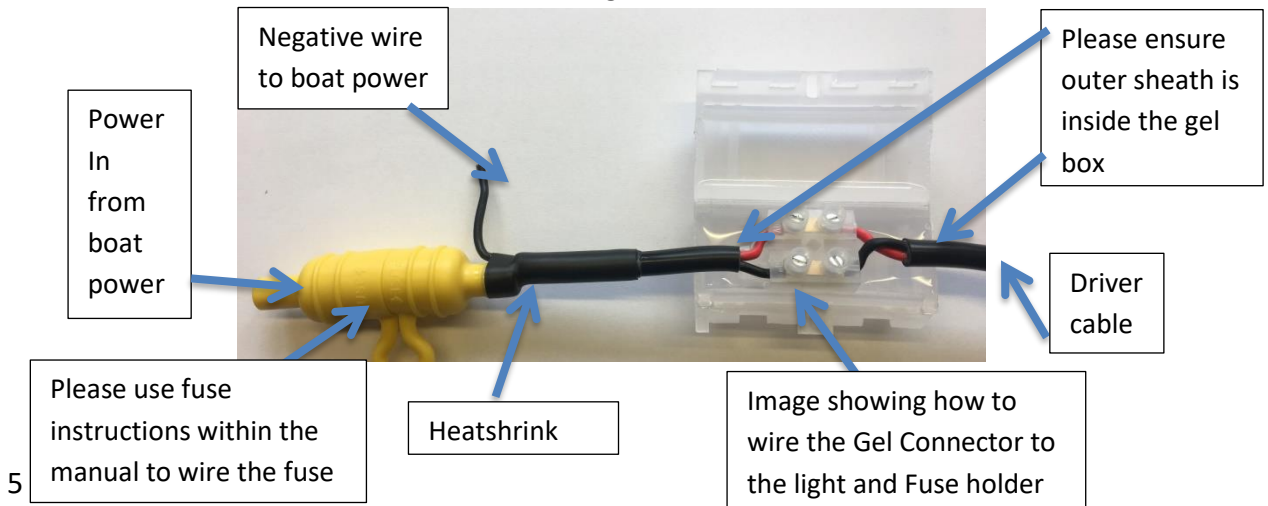
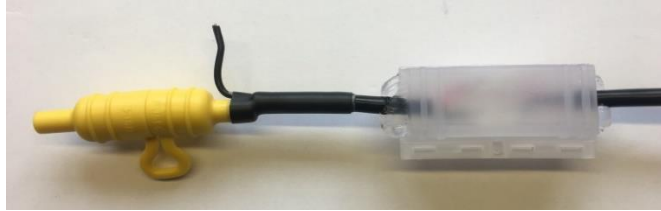


Fig 2



**Testing:**

Test the light before installation ensuring that you use the correct voltage and the light is illuminated correctly.

After installation ensure again that the light is illuminated correctly before the boat goes back into the water and the lens label is removed.

After your boat goes back into the water check internally for water tightness around where the light is installed.

The light has internal indicator Led's for fault finding, these are as follows:

- Over voltage will flash red.(check the voltage to the light)
- Under voltage will show a constant red. (check the voltage to the light)
- Over temperature will show amber.(allow the light to cool down and check if submerged)

**Maintenance:**

Regularly check the installation for water tightness.

Only clean the light with a soft bristle brush.

**Warranty:**

For any warranty issues please contact your point of sale retailer or go to [www.bluefinled.com](http://www.bluefinled.com) for further advice.

Bluefin LED LTD warrants the lights/hardware it manufactures and produces to be free from defects in workmanship and materials for a period of two years, starting from the date of original purchase, as recorded on the sales receipt.

The warranty is non-transferable and limited to the original purchaser of the product. During the two year warranty period Bluefin LED will repair or replace the defective item (at its option) at no additional charge on a "like for like" basis. Products either repaired or replaced under this warranty shall only be warranted for the unexpired portion of the warranty applying to the original product(s).

Bluefin LED is not responsible for labour charges to remove or replace lights or for haul-out fees. No refunds will be given.

This limited warranty does not extend to any products which have been damaged as a result of misuse, abuse, improper installation/modification, galvanic corrosion, failure to follow and adhere to installation instructions provided by Bluefin LED, improper shipping, neglect, damage caused by disasters such as fire, flood, lightning "acts of god", installation by unqualified personnel.

**Installer please ensure that the SERIAL NUMBERS of the lights are written below and the manual is handed over to the end user.**

**Please make a note of the serial numbers of the lights here.**

**SERIAL NUMBERS**

--	--	--	--	--	--

**Bluefin LED**

Cottage Farm, Cottage Lane,  
Norton Juxta Twycross, Atherstone. CV9 3QH

**Sales - Tel: 07950 909048**

**Service - Tel: 01827 880450**

**Email: [info@bluefinled.com](mailto:info@bluefinled.com)**

**Administration - Tel: 01827 880450**

**Registered Address:** Square Rig Limited, t/a Bluefin Led, Cottage Farm, Cottage Lane, Norton Juxta Twycross, Atherstone, CV9 3QH  
**Company Registration Number:** 08871451 **VAT Number:** 179 2690 64



Wire Gauge selection guide using information from ABYC E-11 & US Coast Guard guidelines for marine electrical installations

Circuit Type		Current flow in Amps																																			
10% V Drop Low-Power Non Critical (P series Single colour)	3% V Drop High-Power/Critical (H, S & GW Plus colour change Series)	5A	10A	15A	20A	25A	30A	40A	50A	60A																											
20ft	6m	6ft	2m	16 AWG	1.5mm CSA	16AWG	2.5mm CSA	14AWG	4mm CSA	14AWG	4mm CSA	12AWG	4mm CSA	10AWG	6mm CSA	8AWG	10mm CSA	6AWG	16mm CSA	6AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG							
30ft	9m	10ft	3m	14AWG	1.5mm CSA	14AWG	2.5mm CSA	12AWG	4mm CSA	12AWG	4mm CSA	10AWG	6mm CSA	8AWG	10mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG									
50ft	15m	15ft	5m	12AWG	2.5mm CSA	10AWG	4mm CSA	10AWG	6mm CSA	8AWG	10mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG													
65ft	20m	20ft	6m	14AWG	2.5mm CSA	10AWG	4mm CSA	8AWG	10mm CSA	8AWG	10mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG													
80ft	24m	25ft	8m	12AWG	2.5mm CSA	10AWG	4mm CSA	8AWG	10mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG															
100ft	30m	30ft	9m	10AWG	2.5mm CSA	8AWG	4mm CSA	6AWG	16mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG															
130ft	40m	40ft	12m	8AWG	4mm CSA	6AWG	16mm CSA	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG																	
165ft	50m	50ft	15m	6AWG	16mm CSA	4AWG	25mm CSA	4AWG	40mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG																					
200ft	61m	60ft	18m	4AWG	25mm CSA	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG																									
		70ft	21m	2AWG	40mm CSA	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG																											
		80ft	24m	1AWG	70mm CSA	0AWG	70mm CSA	2 0AWG																													
		90ft	27m	0AWG	70mm CSA	2 0AWG																															
		100ft	30m	0AWG	70mm CSA	2 0AWG																															
		110ft	34m	0AWG	70mm CSA	2 0AWG																															
		120ft	37m	0AWG	70mm CSA	2 0AWG																															
		130ft	40m	0AWG	70mm CSA	2 0AWG																															

To use for BluefinLED underwater lights select the appropriate current Column for you lights, power & quantity from the top row.  
then the cable distance run in one direction i.e. from panel or batteries to the light placement or group.  
Then at the point the Column & row crosses read the cable suggestion in US or EU gauges for your installation.  
**Failure to install the correct power feeds may invalidate your warranty, if in doubt please consult with BluefinLED or a qualified professional.**