

imtra General Lighting Instructions

Thank you for selecting this quality marine lighting product from Imtra Corporation. Our products are made specifically for marine and/or automotive use and designed to give years of trouble-free performance. This is a reference sheet offering explanations for various symbols used along with general installation tips and information on how to contact us if you have questions about your product.

Specifications

Wattage Rating - This specifies the maximum number of Watts a fixture is rated for. Please be sure that the bulb used in your fixture does not exceed the fixture's wattage rating.

Voltage Rating

This specifies the voltage range the fixture or bulb is designed for. It is important that the applied voltage is within this range in order to avoid overheating, over-current, or premature failure. Damage to the fixture and its surroundings can occur if improper voltage is applied.

IP A fixture's International Protection Rating specifies its ability to resist the ingress of solids (first digit) and liquids (second digit). Please refer to the table below for specific levels of protection.

IP	First Digit	Second Digit
2	Protected against solids objects over 12mm (e.g. fingers)	Protected against direct sprays up to 15° from the vertical
3	Protected against solids objects over 2.5mm (e.g. tools and wires)	Protected against direct sprays up to 60° from the vertical
4	Protected against solid objects over 1mm (e.g. tools and small wires)	Protected against sprays from all directions - limited ingress permitted
5	Protected against dust - limited ingress (no harmful deposit)	Protected against low pressure jets of water from all directions - limited ingress permitted
6	Totally protected against dust	Protected against strong jets of water e.g. for use on shipdecks - limited ingress permitted
7	N/A	Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes
8	N/A	Protected against long periods of immersion under pressure

CE This marking symbolizes the conformity of the product with the applicable community requirements imposed on the manufacturer (Directive 89/336 and 93/68).



Restrictions on Hazardous Substances – restriction on the use of certain hazardous substances in electrical or electronic equipment sold or used in the European Union after July 1st, 2006. These substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers. (EU Directive 2002/95/EC)



Indicates that the fixture is fitted with live, neutral, and ground connections.



Indicates that the fixture is supplied with additional precautions such as double insulation and does not require grounding connections.



Indicates that the fixture is supplied only by safe extra-low voltage (SELV) and does not require grounding connection.

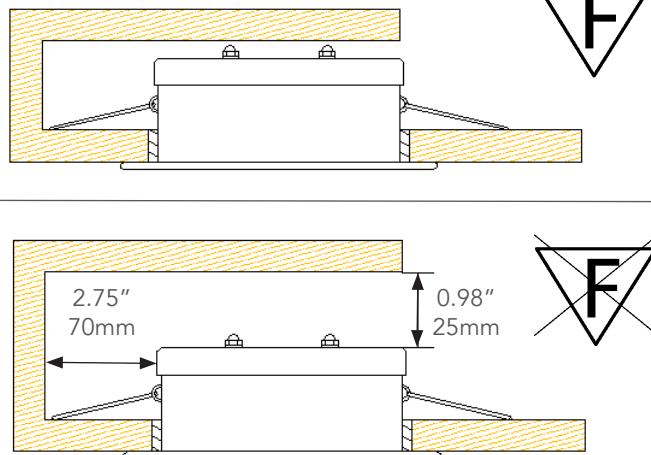


Indicates that the fixture is suitable for installation on flammable surfaces. Please refer to **Figure 1**.



Indicates that the fixture is suitable for installation on non-flammable surfaces only. Please refer to **Figure 1**.

Figure 1



Installation Tips



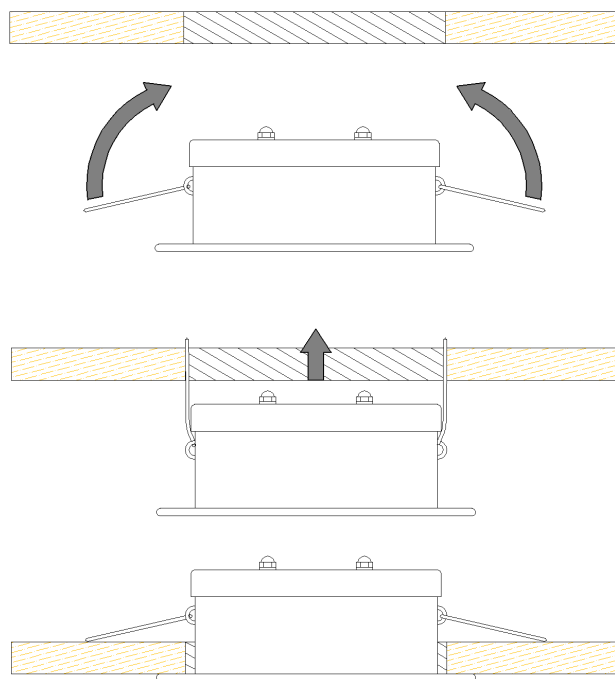
Screw mount fixtures are provided with screw holes already machined into their housings. Be certain to use appropriate fasteners for the material that the fixture will be mounted in.



Spring mounted fixtures are equipped with self adjusting springs. Simply bend the springs back and insert the fixture into the cutout. The springs will flex back down and come to rest on the inside of the mounting surface holding the fixture securely in place.

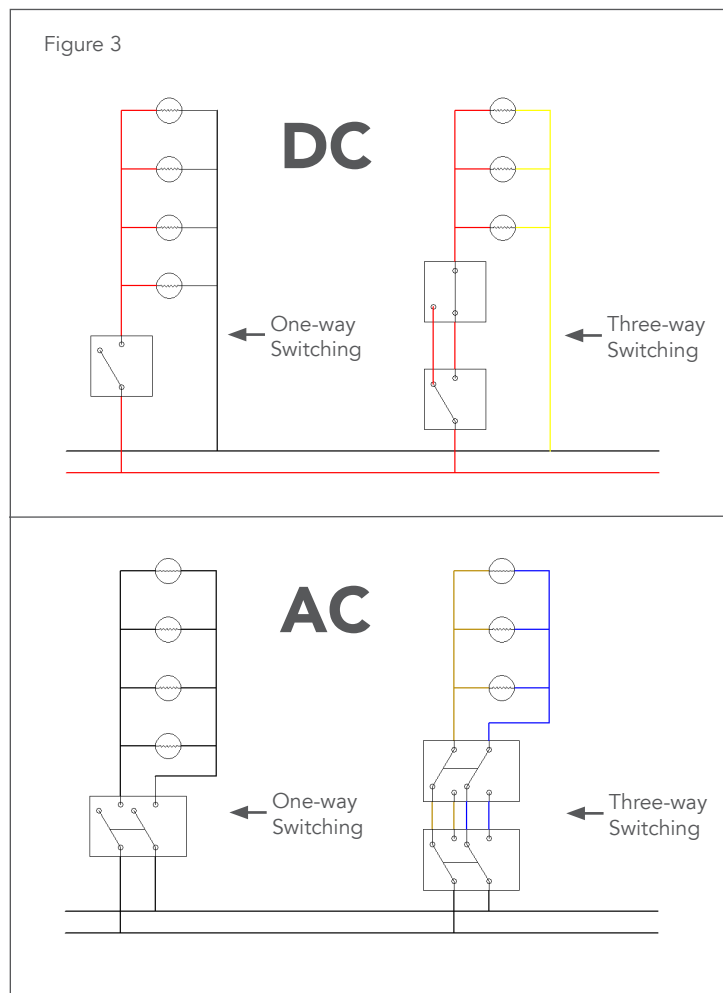
Please refer to **Figure 2** when installing spring mounted fixtures.

Figure 2



Wiring

Before beginning work on any electrical circuit, it is recommended that electrical power to that circuit is turned off. Please refer to **Figure 3** when wiring your lighting fixture for one-way and three-way switching. If the circuit is to be dimmed, please refer to the installation and owners' manual provided with the dimming product. Please note for AC circuits onboard vessels that produce their own electrical power, it is recommended that double pole switches are used in order to switch both legs of AC voltage.



Many DC fixtures are polarity sensitive. These fixtures are typically provided with color coded wires. Please refer to **Table 1** to identify wiring based on its color. If the fixture is supplied with two white wires, it is not polarity sensitive.

Table 1 - Wire Color Codes			
DC Circuits		AC Circuits	
Red	Positive	Black/Brown	Live
Black/Yellow	Negative	White/Blue	Neutral
		Green	Ground

When installing and wiring new lighting fixtures in DC circuits, it is imperative that the correct gauge wire be selected according to American Boat and Yacht Council standards. Please refer to **Table 2** and **Table 3** as an example of ABYC voltage drop charts. It is recommended that all lighting products are wired for a 10% voltage drop according to these charts produced by ABYC.

Table 2 - Wire Gauge for 10% Voltage Drop at 12 Volts														
	Current (Amps)													
Length		5	10	15	20	25	30	40	50	60	70	80	90	100
	10'	18	18	18	16	16	14	14	12	10	8	8	6	6
	15'	18	18	16	16	14	14	12	12	10	8	8	6	6
	20'	18	16	16	14	12	12	10	10	8	8	8	6	6
	25'	18	16	14	12	12	10	10	8	8	8	6	6	6
	30'	18	16	14	12	10	10	8	8	8	6	6	6	4
	40'	16	14	12	10	10	8	8	6	6	6	4	4	4
	50'	16	12	10	10	8	8	6	6	4	4	4	4	2
	60'	16	12	10	8	8	8	6	4	4	4	2	2	2

Table 3 - Wire Gauge for 10% Voltage Drop at 24 Volts														
	Current (Amps)													
Length		5	10	15	20	25	30	40	50	60	70	80	90	100
	10'	18	18	18	16	16	14	14	12	12	10	10	10	10
	15'	18	18	16	14	14	12	12	10	10	8	8	8	8
	20'	18	16	14	14	12	12	10	10	8	8	8	6	6
	25'	18	16	14	12	12	10	10	8	8	6	6	6	6
	30'	18	14	12	12	10	10	8	8	6	6	6	6	4
	40'	16	14	12	10	10	8	8	6	6	6	4	4	4
	50'	16	12	10	10	8	8	6	6	4	4	4	2	2
	60'	14	12	10	8	8	6	6	4	4	2	2	2	2

Finishes

Imtra offers its lighting products in various finishes. Generally, finishes that are approved for exterior use include polished stainless steel, anodized aluminum, and powder-coated stainless steel. All other finishes must be used for interior use only.

Keeping the finished surfaces of your product clean is crucial to a long lasting finish. Oily dirt, dust, and salt will degrade the finish if allowed to remain for long periods of time. It is important to periodically wipe clean your fixtures with a soft cloth. The cloth may be dampened with water or an alcohol-based cleaner such as window cleaner. The use of cleaners containing harsh chemicals or any type of abrasive will permanently harm plated finishes such as nickel and gold and must be avoided.

Warranty & Contact Information

Imtra lighting products are guaranteed to perform as advertised and carry a minimum one year warranty (unless otherwise specified). Bulbs are excluded. For more details on warranty for any specific product, please contact Imtra or visit our website at www.imtra.com.

No products will be accepted for return without prior approval and issuance of an RMA (Return Merchandise Authorization). To obtain a RMA for your product, please contact Imtra Corporation at 508-995-7000.



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