

Tips for Installing Navigation Lights

Are your lights correctly fitted?

These guidelines have been developed for power boats less than 20 metres in length and can help you –

- select the right lights for your boat
- avoid common problems when locating lights
- wire lights up correctly

Legal requirements

By law, navigation lights and their installation on recreational boats are required to comply with the positioning and technical requirements of an international agreement, commonly known as the COLREGS.

Marine Safety Authorities enforce the requirements of the COLREGS and can provide a summary of those requirements as they apply in your local area.

Which boats need to have lights fitted?

All boats must show lights if operating at night or in restricted visibility. Even a boat that does not travel between dusk and dawn may still need to show lights, for example during a heavy rain shower; or when at anchor.

Boats operating by sail or rowing are required to show different lights to those motoring. However, a yacht must comply with the power boat lighting requirements when under motor.

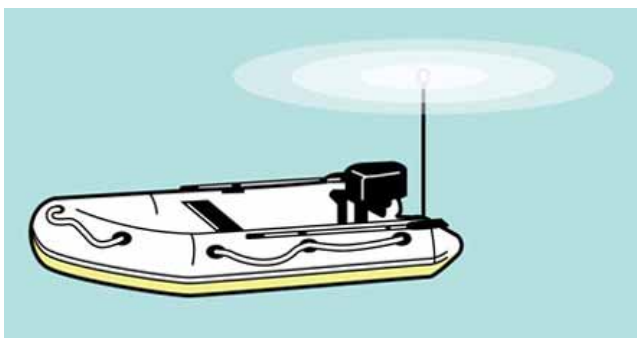
General advice on installation

Avoiding damage

Navigation lights must be installed in accordance with the manufacturers' instructions. Navigation lights should be mounted so as to minimize damage by contact with other objects under normal operating conditions, for example, lights mounted on the topsides of smaller craft can be damaged when coming alongside a wharf or pontoon, and lights mounted at the bow near anchor fittings could also be vulnerable and need to be protected.

Lights affecting the operator's vision

Navigation lights must be installed to prevent the lights from shining into the operator's eyes. For open boats, this can be achieved by using a shielded light on a mast or pole. This could also be achieved by placing the light support behind the operator and above head height, rather than in the bow or amidships. Some LED lights are less prone to affecting night vision than conventional incandescent lights.



Wiring

Navigation light wiring must be installed in accordance with a recognised wiring code. A white cable is normally used from the switch to the light and black is used for the return or negative conductor. The circuit should be fitted with a fuse or circuit breaker and no other equipment, apart from navigation lights, should be on that circuit. Conductors used for wiring must be sized to ensure no more than a 3% voltage drop.

The lights should be wired so that one position of the switch turns on all the required running lights and a different position turns on just the anchor light. Alternatively, two switches that achieve this same result could be used.

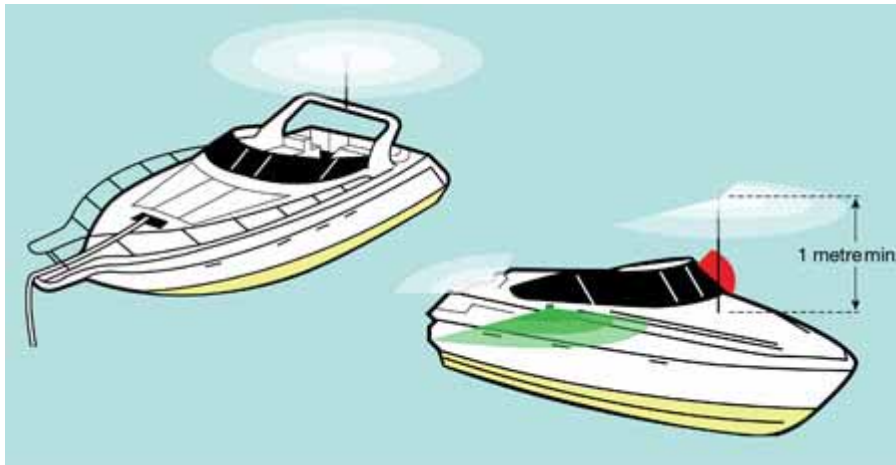
Which light fittings to use

The National Marine Safety Committee maintains a register of compliant safety equipment that includes navigation lights. You can access the register at www.nmsc.gov.au. If you choose to fit a light that isn't on the register, make sure that it meets the performance requirements of the COLREGS. Pay particular attention to the shielding arrangements to ensure the light only shines in the correct direction and there is no overlap on combination lights.

Points to note with specific types of lights

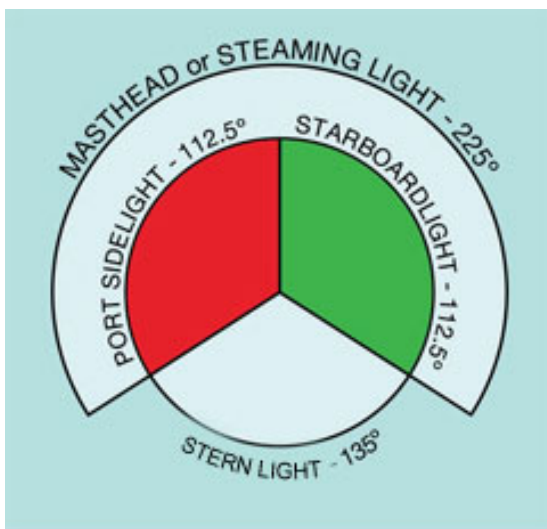
All round white light

An all-round white light shows over a nominal arc of the horizon of 360°. The light fitting must be located at least one metre above the sidelights; and should as far as practicable, be on the centreline of the boat. As a general rule, an all round white light should not be obscured by masts or other structures by more than 6° of arc. If that's not possible, or the light would shine into the operator's eyes, a masthead light in combination with a stern light is an alternative to an all round white light.



Masthead light

Boats over 12 metres in length are required to have a white masthead light, mounted at least 2.5 metres above the gunwale that shines forward over an arc of the horizon of 225°, so that it can be seen from ahead of the boat to just aft of the beam. In addition, regardless of the vessel's length, the masthead light must be located at least one metre above the sidelights; and should as far as practicable, be on the centreline of the boat.



Stern light

A stern light is located near the stern to show a white light over an arc of the horizon of 135° behind the boat. On an outboard craft, it may be necessary to mount the stern light on a mast, or to one side of the boat, to avoid the motor obscuring the light.



Side lights

Most boats need to have a port (red) and a starboard (green) side light each showing an unbroken light over an arc of the horizon of 112.5°. If the design of the boat allows, a combination port and starboard light unit can be mounted on the centreline of the boat, in place of two individual side lights.

Individual side lights come in two styles, those intended to be mounted on a horizontal surface such as a deck and those intended to be mounted on a vertical surface such as the topsides or the side of the cabin. Be careful not to mount lights on a horizontal surface if they are designed to be mounted on a vertical surface, and vice-versa, because they will shine in the wrong direction.

Horizontally mounted side lights generally come with a reference line marked on them which must be kept parallel to the centreline of the boat when fitting the light.

Vertically mounted side lights must be fitted with the back of the light parallel to the centre line of the vessel so that the light will be visible in the correct sector and the lights don't cross over. This means when lights are mounted on a vertical or near vertical surface that is not parallel to the centre line or not vertical, a wedge or similar must be provided to achieve the correct alignment in both planes.

