Boating Guide
Navigation Lights
Marine Safety

Department of Transport

YOU'RE THE SKIPPER
YOU'RE RESPONSIBLE

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Navigation Lights

Legal requirements

Navigation lights and their installation on recreational vessels must comply with the positioning and technical requirements of the International Regulations for the Prevention of Collisions at Sea, or COLREGS. Vessels must show lights if operating at night or in restricted visibility. Even a vessel that does not travel between dusk and dawn may still need to show lights, for example, a heavy rain shower; or when at anchor.

Sail and rowing boats are required to show different lights to those of power driven vessels. 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. They should be mounted to minimise damage by contact with other objects under normal operating conditions, for example, lights positioned 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.

Wiring

Navigation light wiring must be installed in accordance with a recognised wiring code.

The circuit should be fitted with a fuse or circuit breaker and no other equipment, apart from navigation lights, should be on that circuit.

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 could be used.

Which light fittings to use

The National Marine Safety Committee maintains a register of compliant safety equipment 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 1 metre above the sidelights; and should as far as practicable, be on the centerline of the vessel. 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

Vessels 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 vessel to just aft of the beam. In addition, regardless of the vessel's length, the masthead light must be located at least 1 metre above the sidelights; and should as far as practicable, be on the centreline of the vessel.

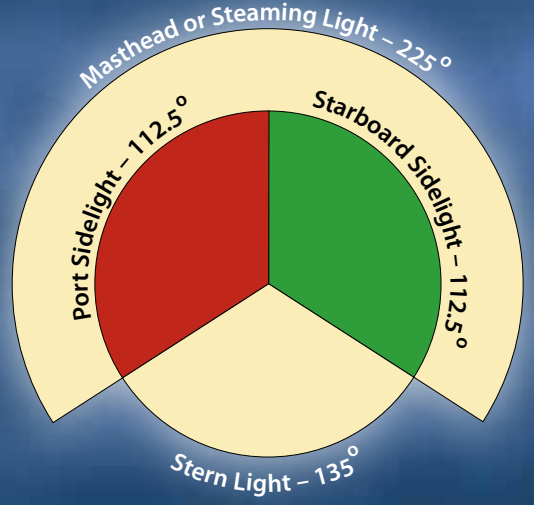
Stern light

A stern light is located near the stern to show a white light over an arc of the horizon of 135° behind the vessel. The light should be positioned where it is unobstructed by the vessel's structure or equipment.

Sidelights

Most vessels need to have a port (red) and a starboard (green) sidelight 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 vessels, in place of two individual sidelights.

Individual sidelights 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 sidelights generally come with a reference line marked on them which must be kept parallel to the centreline of the vessel when fitting the light. Vertically mounted sidelights must be fitted with the back of the light parallel to the centerline 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 centerline or not vertical, a wedge or similar must be provided to achieve the correct alignment in both planes.

Night navigation

Vessels that operate from official sunset to sunrise, whether at anchor or underway, must carry and exhibit the correct lights.

Navigating at night requires extra care and attention because there are many unlit navigation aids and other potential hazards, so slow down and keep a good lookout.

Check your navigation lights

It is important that all navigation lights be checked in the required configurations prior to embarking on journeys where navigation lights may be required.

Night vision

Rhodopsin (the molecule found in the rods in our eyes that allows for night vision) is extremely sensitive to light. Rhodopsin will immediately bleach when exposed to a bright white light and night vision will be lost. It takes time for night vision to recover, about 10 minutes for 10 per cent, 30-45 minutes for 80 per cent - the rest may take hours.

Many people use red light to help preserve night vision. Placing red filters over cabin lights will allow you to operate at greater light intensity level than under a dimmed white light without disrupting your night vision.

Spotlights

Respect other people's night vision by only using spotlights where it is vital to pick up an unlit object (mooring buoys for instance) and by not shining it into the eyes of other skippers.

Further information

For further information about navigation lights contact your nearest Transport office:

Regional

Broome	9192 0200
Karratha	9159 6900
Exmouth	9949 2079
Carnarvon	9941 1830
Geraldton	9956 0111
Bunbury	9792 6666
Albany	9892 7333
Kalgoorlie	9022 5999
Esperance	9071 6891

Metropolitan

Fremantle	9216 8999

Email: *marine.safety@transport.wa.gov.au*

Website: *www.transport.wa.gov.au/imarine*

Navigation Lights

Lights required for power vessels underway

Vessels under 7 metres with a maximum speed of less than 7 knots

Power vessels of less than 7 metres in length whose maximum speed cannot exceed 7 knots shall exhibit a clearly visible, all round (360^0) white light and, if possible, separate or combined sidelights.

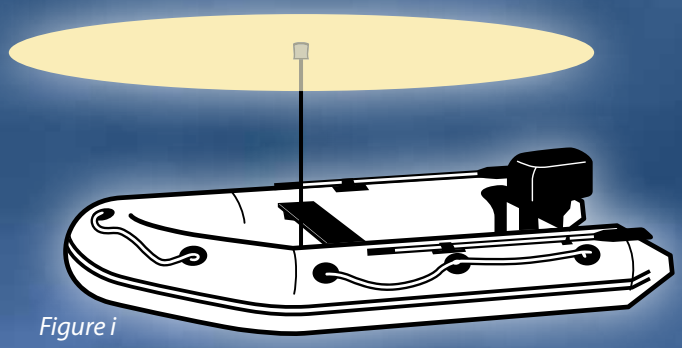


Figure i

Vessels under 12 metres

Power vessels of less than 12 metres in length shall exhibit:

i) separate or combined sidelights and an all round white light; or

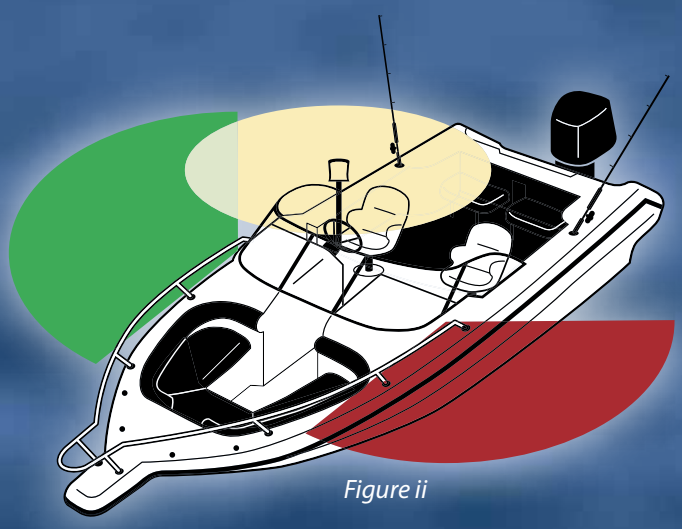


Figure ii

ii) separate or combined sidelights, a masthead light and a stern light *(see figure iii).*

Masthead or white all round light shall be positioned at least 1 metre above the sidelights.

Vessels 12 metres to 20 metres

Power vessels of more than 12 metres in length but less than 20 metres in length shall exhibit:

i) a masthead light, separate sidelights and stern light; or

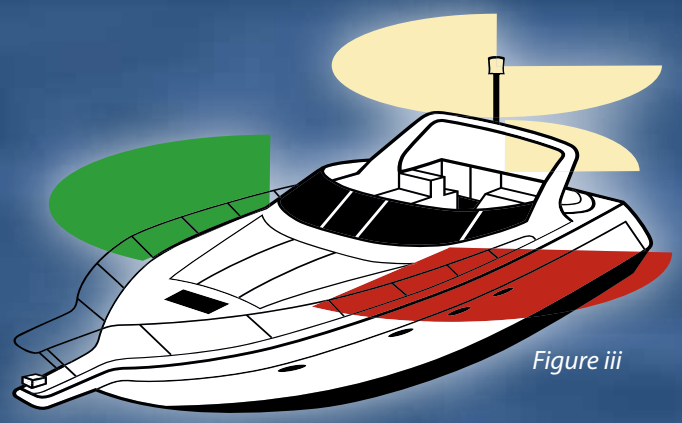


Figure iii

ii) a masthead light, combined sidelights and stern light.

The masthead light shall be positioned at least 2.5 metres above the gunwale. Combined sidelights shall be positioned at least 1 metre below the masthead light.

Lights required for sailing vessels underway

Sailing vessels while underway (being motor driven) shall exhibit navigation lights applicable to power driven vessels.

Sailing vessels under 7 metres

Sailing vessels of less than 7 metres in length, or vessels being rowed shall exhibit the lights required for sailing vessels over 7 metres in length (see figure v, vi). If not, they shall have ready for use an electric torch or lit lantern showing a white light which shall be exhibited in sufficient time to prevent a collision.

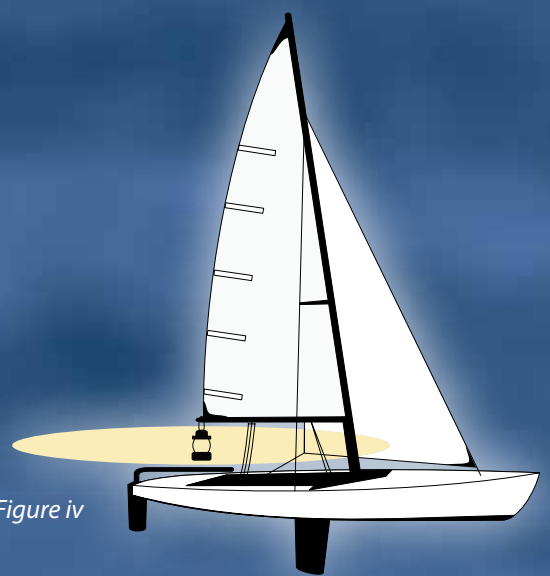


Figure iv

Sailing vessels 7 metres to 20 metres

Sailing vessels of more than seven metres in length and less than 20 metres in length shall exhibit:

i) Combined lantern, that is at or near the top of the mast and incorporates sidelights and stern light; or

ii) Separate sidelights and stern light *(see figure vi).*

Figure v

Sailing vessels over 20 metres

Sailing vessels more than 20 metres in length shall exhibit sidelights and stern light and may carry the optional red and green all round lights.

However, these vessels may not carry a combined lantern.

Figure vi

Sailing vessels over 20 metres - optional lights

A sailing vessel of any length, which is fitted with sidelights and a stern light (but not a combined lantern) may, in addition, carry two all round lights in a vertical line at or near the top of the mast. The upper light shall be red and the lower green.

Figure vi

Power/sailing vessels at anchor

Vessels under 50 metres

Vessels less than 50 metres in length at anchor, shall exhibit an all round white light placed where it may best be seen. Anchor lights must always be shown from sunset to sunrise.

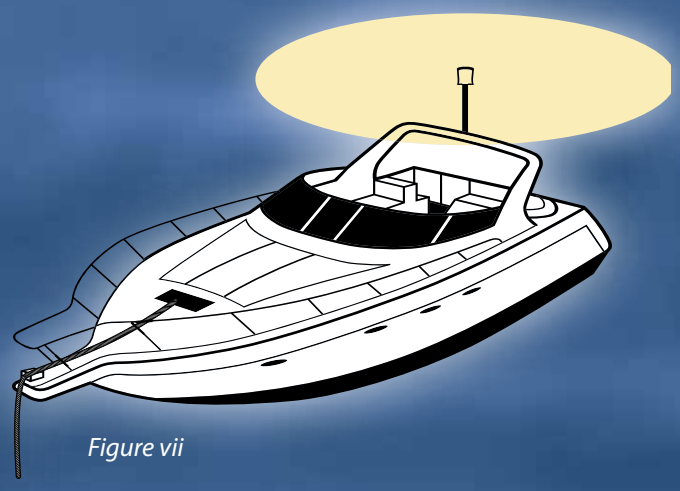


Figure vii

Special lights

There are many other combinations of lights used on vessels. The lights shown relate to the activity the vessel is engaged in – activities such as fishing, dredging, not under command.

A simple rule of thumb for a small power boat is to stay clear of any vessels exhibiting additional lights.

LED lights

Light Emitting Diode (LED) lights are becoming popular as they draw less power and are less susceptible to vibration damage. However, they are unserviceable if blown. It is recommended to carry an emergency battery lighting pack to use should the primary navigation light fail.

Lights must not be obscured

Check that there is nothing obscuring your vessel's navigation lights. The masthead light on many trailer boats is on an extending pole at the stern, and it does not lift high enough to be visible over the cabin top or windscreen. This is dangerous and unacceptable.