MSM ACADEMY

THEORY

OSCILLATING SECTOR LIGHTS
Special solutions for leading lights

IALA

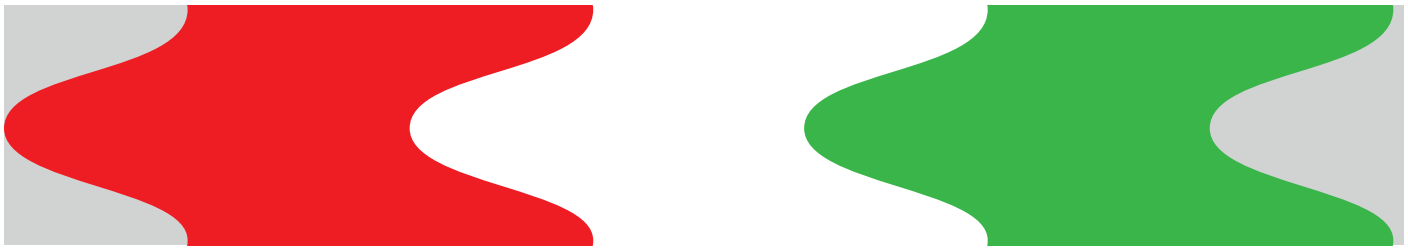
The **oscillating sector lights** are a **special solution used in leading lights** that **provides additional position information to the navigator** when approaching a channel safely thanks not only to the different sector colors and flashing rhythm, but also to the **oscillating boundaries between the sectors**, as they **help to know more precisely the navigator's position** to guide the vessel into the safe area of the channel.

Main Uses

- **Straight and narrow navigable channels**
- **Provide more accurate position information**
- **Signal danger zones to be avoided**

MEL500L

Color coding of sector lights



The **red light sector** indicates the **danger zone** on the **port side (Region A*)** of the channel

The **white light sector** in the **center** of the channel indicates the **safe zone** for navigation.

The **green light sector** indicates the **risk zone** located on the **starboard side (Region A*)** of the channel.

MSM

* The color of the sector lights shown in the images in this article corresponds to the International Buoyage Region A. It should be noted that for Region B these colors are reversed, so that in Region B green is used to signal port side and red is used to signal starboard side.

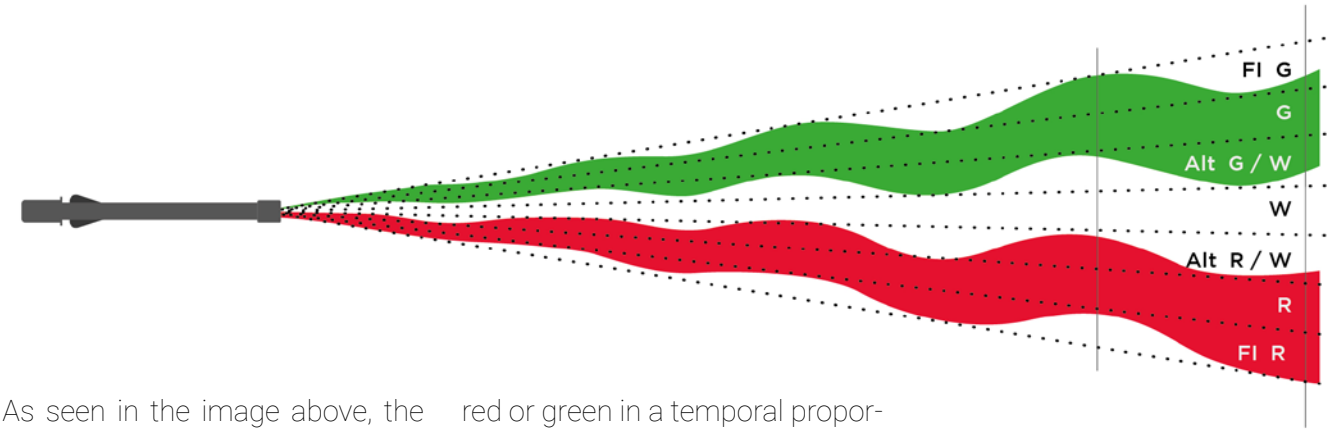
MSM ACADEMY

THEORY

OSCILLATING SECTOR LIGHTS
Special solutions for leading lights

How does an Oscillating Sectors light work?

If the channel is very narrow, **it can be helpful to get more information about the navigator's position** relative to the center of the channel so that **the vessel is able to correct its course in time**. For these cases there is the option of installing an oscillating sector light, which works as follows:



As seen in the image above, the lighting equipment emits 3 different colored light beams. These beams move laterally in a cyclical way, so that **the limits between the sectors become oscillating, causing an alternation of flashes between one color and another**. In the center of the channel we have fixed white light and, when we exceed the white sector, we have white light alternating with red or green in a temporal proportion equal to the distance to the center of the channel. In this way, if we are correctly positioned in the center of the channel we will always see a white light, but as soon as we start to deviate from the center we will find red or green flashes of increasing duration until the white light disappears completely.

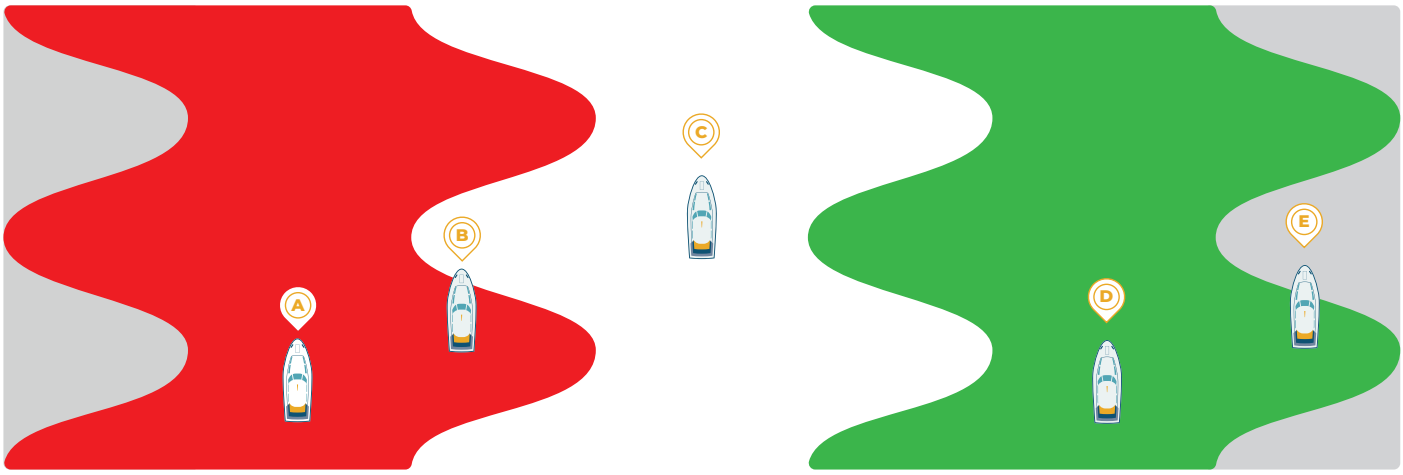
MSM

MSM ACADEMY

THEORY

OSCILLATING SECTOR LIGHTS
Special solutions for leading lights

Operation of oscillating sector lights: Example



FIR	R	Alt R/W	W	Alt G/W	G	FIG
Destellos aislados	Luz fija	Destellos alternos	Luz fija	Destellos alternos	Luz fija	Destellos aislados
ROJO	ROJO	ROJO/BLANCO	BLANCO	VERDE/BLANCO	VERDE	VERDE
SINGLE FLASH RED	FIXED LIGHT RED	ALTERNATING FLASHES RED/WHITE	FIXED LIGHT WHITE	ALTERNATING FLASHES GREEN/WHITE	FIXED LIGHT GREEN	SINGLE FLASH GREEN
ÉCLATS ISOLÉS ROUGE	FEU FIXE ROUGE	ÉCLATS ALTERNÉS ROUGE/BLANC	FEU FIXE BLANC	ÉCLATS ALTERNÉS VERT/BLANC	FEU FIXE VERT	ÉCLATS ISOLÉS VERT

In the image above we can see a **practical example for Region A** on the operation of an oscillating sector light:

A **Vessel A** is navigating in the **port side danger zone** of the channel and will see a **fixed red light**, warning to correct its course.

B **Vessel B** is navigating in the **port side risk zone** of the channel, but in a position much closer to the central safe zone of the channel, observing **alternating red and white flashes**.

! **Thanks to the oscillating sectors, as it approaches the safe zone, the white flashes will increase in duration and the red flashes will decrease in duration, informing the vessel that the safe zone is very close and guiding it to a safe course.**

C **Vessel C** will observe a **fixe white light**, as it is navigating **safely** through the **central part** of the channel.

D **Vessel D** is navigating in the **starboard side** of the channel **at risk**, so it will see a **green steady light**, signaling that a course correction is required.

E **Vessel E** is in a **highly hazardous area**, on the **extreme starboard side of the channel**, so it will see only **isolated green flashes**, indicating that it should correct its course immediately. As it corrects its course, it will see green flashes of longer duration.

MSM