The MBL 160 is a LED marine flashing lantern of short and medium range, with a great optical efficiency and low consumption, fitted with LED diodes of high intensity, reaching a maximum range of 16 nautical miles.

Ideal for on- and off-shore solar beaconing applications requiring a low consumption, such as channels, harbour entrances, jetties, piers, buoys, structures, fish farms, etc.

Its luminous source consists of an innovating lens system especially designed to take the maximum profit of LED diodes, thus obtaining an output of up to 180 Cd/W. Manufactured with high-quality and resistant materials, the MBL 160 provides a long service life under harsh marine conditions.

Designed according to IALA Recommendations.

**FEATURES**

- High-efficiency luminous system.
  Up to 11 nm (T=0.74), 16 nm (T=0.85).
- Vertical divergence up to 30º.
- 360º horizontal output.
- Average operation lifetime over 10 years.
- Internal photocell adjustable in lux.
- IP 68 watertightness degree (immersion resistant).
- Linear adjustment of luminous intensity.
- Double RS-232 serial port for setting adjustments by PC and remote monitoring system.
- Programming, configuration and operating status via PC, IR programmer or Bluetooth.
- Ready to integrate remote monitoring via GSM, VHF or satellite, synchronization via GPS or AIS AtoN module.
- Short-circuit, reverse-polarity and transient over-voltage protections.
- PATENTED OPTICAL SYSTEM.
LED MARINE LANTERN
MBL 160

Specifications subject to change without previous notice.

Options
Infrared (IR) programmer.
PC programming kit.
RS-485 MODBUS serial port.
Marine aluminium base.
Other specifications available under request.
MBL 160-HD (up to 30º divergence).
MBL 160-SYNC (GPS synchronisation).
MBL 160-TG (GSM remote monitoring).
MBL 160-TR (Radio remote monitoring).
MBL 160-TS (Satellite remote monitoring).
MBL 160-AIS (AIS AtoN).

Optical System
Light source: 3 to 12 nos. ultra-bright LED diodes, with high-precision acrylic lens.
Luminous range: Up to 11 nm (T=0.74) 16 nm (T=0.85).
Colours available: White, green, red, amber and blue.
Vertical divergence: From 5º to 30º (50% Io).
LED average life: More than 100,000 hours.
Power supply: From 9 to 36V.
Lantern consumption: From 3 to 24W.
Idle current: 2 mA.

Electronic control
Flash rhythms: 256 (6 nos. user selectable).
Day/night threshold: Adjustable between 10 and 400 lux.
Solar charge regulation function: Regulation in 3 phases.
Settings: PC / IR programmer / Bluetooth.
Luminous intensity adjustment: Linear, between 10 and 100%.
Light intensity reduction due to low battery: Configurable by the user.

Materials and environment
Base: Glass-fibre reinforced polyamide PA66-GF30.
Lens cover: Acrylic, UV stabilised.
Watertightness degree: IP 68.
Fixings: 3 - 4 bolts in a 200mm diameter.
Humidity resistance: 100%. Pressure-compensation valve to avoid condensation.
Temperature range: From -30º to 70ºC.

MBL 160

<table>
<thead>
<tr>
<th>PEAK INTENSITIES (Cd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERTICAL DIVERGENCE 5º</td>
</tr>
<tr>
<td>COLOUR</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Green</td>
</tr>
<tr>
<td>Red</td>
</tr>
<tr>
<td>Amber</td>
</tr>
</tbody>
</table>

Other divergences available.