MSM has a considerable experience in designing major optical and lighting equipment for major lighthouse stations.

Our MFR is a modern Reflector Light for classical lighthouses, which uses LED lamps of the latest technology, able to reach up to 42 nautical miles.

It is made up of optical panels with LED reflector elements arrayed in one or two columns per panel depending on the configuration, with a redundant safety system as emergency light.

The LED Reflector Light is completed with our MRM 160 double electronic, gearless and brushed revolving pedestals.

The MFR light strictly complies with all related IALA Recommendations.

Features:

• LED light source with 100,000 hours average life time.
• High-efficiency luminous system.  
  Up to 26 nm (T=0.74), 42 nm (T=0.85).
• Up to 10 nos. reflectors per panel. Configurations according to customer’s requirements.
• Redundant safety system as emergency lantern, active or passive configuration.
• Speed setting accuracy: 1.3%.
• Electronic, gearless and brushless double motor.
• One only slow-moving assembly.
• Automatic switch-over to standby motor in case of main drive failure.
• Operation status and alarm control for both motors.
• Photocell-control or 24h-rotation selection.
• Status and alarms ready for remote monitoring and control, by opto-isolated signals and RS-232 serial port.
LED Reflector Light

MFR

**Optical system**
- **Light source:** High-intensity LED light source, high-efficiency acrylic reflectors, with dioptic and catadioptric elements.
- **Luminous range:** Up to 26 nm (T=0.74) 42 nm (T=0.85).
- **Power:** 30W per optical panel.
- **LED average life:** 100,000 hours.
- **Configuration:** Redundant safety system as emergency lantern, active or passive.

**MRM 160 double rotating motor**
- **Type:** Double, electronic, gearless and brushless motor.
- **Regulation:** Precise balance, minimum friction.
- **Rotating speed:** Field adjustable, from 1 to 6 rpm.
- **Speed setting accuracy:** 1.3%.
- **Motor control:** Double electronic circuit.
- **Accessibility:** 4 nos. lateral accesses.

**MMC 160 external control unit**
- **Functions:**
  - Rotation control (automatic switch-over to standby motor in case of main drive failure).
  - Luminous system control.
  - Photocell control.
  - Remote monitoring signals.
- **Operating modes:**
  - Automatic (by photocell), Manual (for maintenance) or Remote (for remote monitoring).
- **Voltage supply:** 12 or 24V d.c.
- **Remote monitoring:** Status and alarms ready for remote monitoring and control, by opto-coupled signals.
- **Watertightness degree:** IP 65.

**Effective intensity (Cd)**

<table>
<thead>
<tr>
<th>No. of Reflectors</th>
<th>Stationary intensity (Cd)</th>
<th>Rotating speed (rpm)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>400,000</td>
<td>307,692</td>
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<tr>
<td>4</td>
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<td>10</td>
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</tbody>
</table>

(*) Other configurations available under request.