

MFR

LED reflector light for classical lighthouses

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 28 nautical miles.

Redundant safety system

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 standby light.

Double electronic, gearless and brushless rotating motor

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

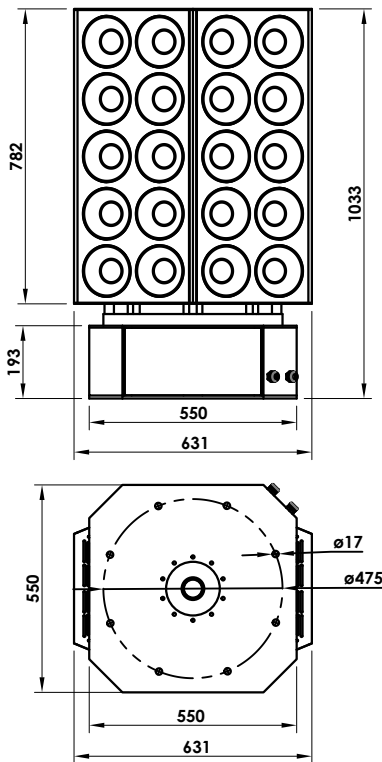
The MFR light strictly complies with all related IALA Recommendations.



FEATURES

- LED light source with 100,000 hours average life time.
- Highest efficiency luminous system.
Up to 28 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 standby lantern, active or passive configuration.
- Speed setting accuracy: 1.3%.
- Electronic, gearless and brushless double motor.
- 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.

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Example of MFR with 10 nos. Reflectors per panel.

Optical system

Light source and Lens:	High-intensity LED light source. High-efficiency acrylic reflectors, with dioptric and catadioptric elements.
Luminous range:	Up to 28 nm (T=0.74), 42 nm (T=0.85).
Power consumption:	Up to 30 W per optical panel (3 W / LED).
LED average life:	More than 100,000 hours.
Configuration:	Redundant safety system as standby lantern, active or passive. Hexagonal or octagonal configuration.

MRM 160 double rotating motor

Type:	Double, electronic, gearless and brushless.
Regulation:	Precise balance with minimum friction.
Rotating speed:	Adjustable in situ, 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:	<ul style="list-style-type: none"> · Rotation control (automatic switch-over to standby motor in case of main drive failure). · LED light source control. · Photocell control. · Monitoring and remote control signals.
Operating modes:	Automatic (by photocell), Manual (for maintenance) or Remote (for remote monitoring).
Voltage supply:	12 or 24 V d.c.
Remote monitoring:	<ul style="list-style-type: none"> · Status and alarms ready for remote control and monitoring, by opto-isolated signals. · RS-232 or RS-485 serial port.
Watertightness degree:	IP 65.

! Specifications subject to change without previous notice.

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No. of Reflectors	Stationary Intensity I ₀ (Cd)	Effective Intensity I _e (Cd)								
		Rotating speed (rpm)								
		0.5	1	1.5	2	2.5	3	4	5	6
2	515,088	410,362	344,162	301,610	269,760	230,760	225,074	194,264	171,310	153,440
4	1,030,176	820,724	688,757	603,220	539,712	461,520	450,148	388,528	342,620	306,880
6	1,545,264	1,231,086	1,032,486	904,830	809,568	692,280	675,222	582,792	513,930	460,320
8	2,060,352	1,641,448	1,376,648	1,206,440	1,079,424	923,040	900,296	777,056	685,240	613,760
10	2,575,440	2,051,810	1,720,810	1,508,050	1,349,280	1,153,800	1,125,370	971,320	856,550	767,200

(*) Glazing losses included-

(**) Other configurations available under request.