LEM

High quality materials

One of the most outstanding Mediterraneo's specialities is the design of lanternhouses for historic lighthouse applications. LEM lanternhouses are manufactured with the best materials in the market, in order to withstand marine weather inclemencies for years.

Prevent back reflections

With a solid experience in the sector, we calculate all the parameters required for the design of ventilation systems that avoid the condensation inside. In addition, we use special glasses that prevent back reflections.

Cylindrical lanternhouse

Our standard LEM lanternhouses are cylindrical and with semi-spherical dome. Its cylindrical structure provides two key advantages over other manufacturers' lanterns: helicoidal uprights to avoid dark areas and give sturdiness, and curved-glass panes to minimise refraction losses and reduce back reflections.

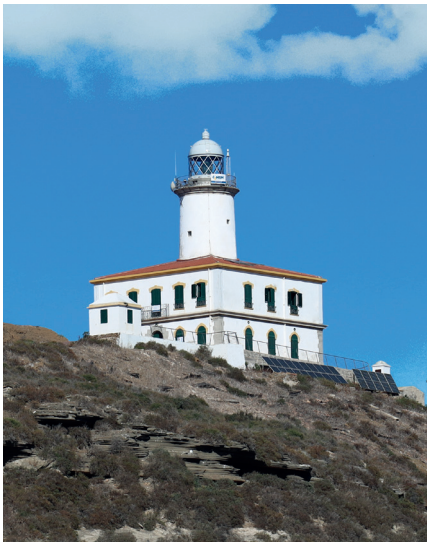
FEATURES

- *Maximum quality in materials to achieve the longest service life.*
- *Made up of: base, cylindrical structure, top ring, dome and ventilation cap.*
- *Base built to measure, according to requested height and specifications. Fixing by special anchor bolts to the concrete, stone or brick wall.*
- *In the case of LEM lanternhouses, the cylindrical structure with helicoidal uprights provides higher sturdiness.*
- *High-homogeneity curved-glass panes, heat-tempered, to minimise refraction losses and reduce back reflections.*
- *Sealed with special UV-resistant putty and sealant.*
- *Top ring contains the gutter to collect rain water and protect glass panes.*
- *Semi-spherical metallic dome, with brackets to fit access ladder to the lantern top.*
- *Semi-spherical ventilation cap, with special filters. Maximum aeration.*

LEM

Medes Islands Lighthouse (Catalonia)

Llebeig Lighthouse (Sa Dragonera - Balearic Islands)



Columbretes Lighthouse
(Illes Columbretes - Castellón)

Materials

Hot-dip galvanised steel.

Glass type FLOAT.

Polyurethane elastic putty and sealant, UV-resistant.

Marine-quality paint, RAL IALA-AISM.

Options

Metallic parts made from AISI 304 or AISI 316 stainless steel, or marine aluminium.
LAM version with vertical uprights.

Standard specifications

	LEM200	LEM250	LEM300	LEM350
INSIDE DIAMETER (*)	2.00 m	2.50 m	3.00 m	3.50 m
GLAZING HEIGHT	1.30 m	1.50 m	1.60 m	1.80 m
TRANSPORT	Assembled 20' container	Disassembled 20' container	Disassembled 20' container	Disassembled 20' container
INSTALLATION	Mobile crane or helicopter	Mobile crane or helicopter	Mechanical device not needed	Mechanical device not needed

(*) Other dimensions available under request.

Specifications subject to change without previous notice.

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LIGHTHOUSE EQUIPMENT

MLL1000

LED LAMP FOR
MAJOR LIGHTHOUSES

MLL1000

High LED technology

The MLL1000 lamp, developed and patented by MSM, is a luminous equipment with the highest LED technology.

Ideal to be installed on classic glass optics

While others LED lamps of the market, those are characterised by their use of a virtual light source. The light emission is made through prisms to a hyperbole, in such a way that the light source is virtualised in the exact in focus point lens, as a filament or metallic halogen lamp.Thus, the focal distance of the lens is maintained and it can replace any traditional lamp of the market. Ideal to be installed on classic glass optics, both rotating or flashing lighthouses.

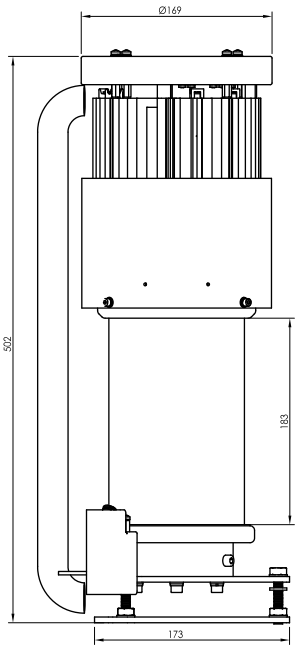
Energy saving up to 60%

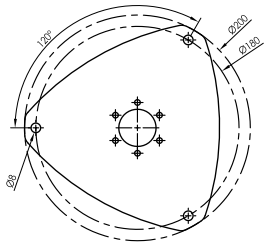
Its main advantages are: its significant energy saving (and consequently the environment preservation), its service life (up to 100,000 hours) and its easy installation, as diesel generator, current inverter system and less capacity batteries are not necessary.

FEATURES

- *Virtual light focus adapted to Fresnel glass or other material lenses.*
- *Three version of the MLL: 300 W, 150 W and 75 W.*
- *Up to 100,000 hours average life time.*
- *Energy saving up to 60% during the service life of the lamp.*
- *Luminous range reached over 26 nautical miles (T= 0,74).*
- *Null impact by a magnifying-glass effect.*
- *Voltage source for on both alternating current (110 V / 230 V) and direct current (24 V), allowing installation in lighthouses supplied by solar or wind energy.*
- *Conventional thermal management for the 75 W model, and by active refrigeration system for 150 and 300 W models; with average life up to 200,000 hours (without moving parts).*
- *High-performance LED power driver, with current regulation and power adjustable by PWM*
- *Null maintenance.*

MLL1000





Optical features

Matrix high-power LED diode (service life up to 100,000 hours).

NBK7 condenser lens.

Hyperbolic mirror of unalterable stainless-steel.

4000 K colour temperature.

Mechanical features

Triple point anodized aluminium radiator.

Electronic cooling system of 200,000 service-life hours (MLL 150, 300 W version).

Anti-condensation valve.

Anodized marine aluminium protecting housing.

Adjustable alignment support system.

Focussing accessory.

LED Power Driver features

Current type	Alternating current	Direct current
Supply voltage:	100 - 240 V a.c.	20 - 36 V d.c.
Frequency:	50 - 60 Hz	-
LED power driver efficiency:	94%	96%
Protections:	Short-circuit, over-voltage and over-temperature.	

Options

Different colour temperatures.

Power supply panel with protections, a.c version or d.c version available.

Automatic Control Unit with alarm outputs, configurable by customer.

MLL1000 Intensities charts

ROTATING LENS | FOCAL DISTANCE 250 mm | I_o = 256,667 Cd						
RPM	0.5	1	2	3	4	5
I_e	210,000	177,693	135,883	110,000	92,400	79,655
Td	0.900	0.450	0.225	0.150	0.113	0.090
RANGE	22	21	21	20	20	19

ROTATING LENS | FOCAL DISTANCE 300 mm | I_o = 373,333 Cd						
RPM	0.5	1	2	3	4	5
I_e	292,174	240,000	176,842	140,000	115,862	98,823
Td	0.720	0.360	0.180	0.120	0.090	0.072
RANGE	22	22	21	21	20	20

ROTATING LENS | FOCAL DISTANCE 500 mm | I_o = 1,015,030 Cd						
RPM	0.5	1	2	3	4	5
I_e	696,172	529,757	358,407	270,812	217,625	181,900
Td	0.437	0.218	0.109	0.073	0.055	0.044
RANGE	25	24	23	22	22	21

ROTATING LENS | FOCAL DISTANCE 700 mm | I_o = 1,986,923 Cd						
RPM	0.5	1	2	3	4	5
I_e	1,212,797	872,761	559,194	411,389	325,385	269,122
Td	0.313	0.157	0.078	0.052	0.039	0.031
RANGE	26	25	24	23	23	22

HORIZON OPTICS | Power 150 W				
FOCAL	250 mm	500 mm	700 mm	900 mm
I_o max (Cd)	13,200	27,000	37,500	48,000
RANGE	15	17	17	18

NOTE: Glazing losses included in the calculations.

Specifications subject to change without previous notice.

MSM

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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

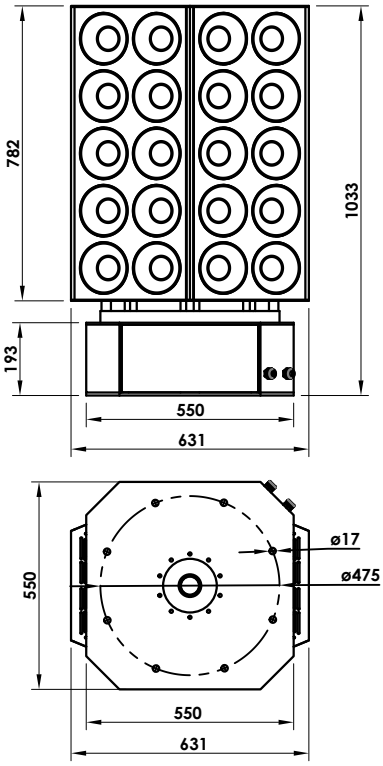
The LED Reflector Light is completed with our MRM 160 double electronic, gearless and brushless revolving pedestals.

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.*

MFR



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:	· 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:	· 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.

MFR

No. of Reflectors	Stationary Intensity I_o (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.

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MLL18

Designed to replace halogen lamps

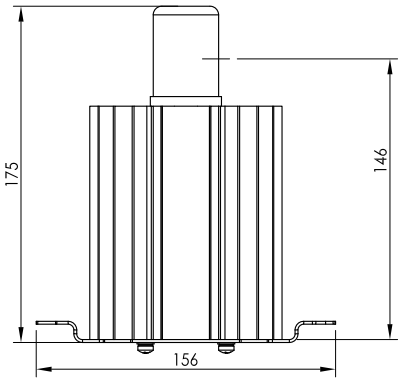
The MLL18 LED lamp has been designed to replace halogen lamps and lampchangers in old flashing lenses of 155-, 250- and 300-millimetre-diameter.

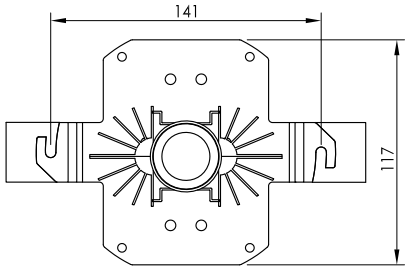
Average life of 100,000 hours

With up to 18 W power, it allows to equal and even surpass the intensity obtained by conventional lamps, with the additional advantage of an average life of 100,000 hours, what means a free-maintenance use over 25 years. Its luminous source is fitted with 6 nos. LED diodes of high intensity.

Optimization of the power supply system

Its dimensions and power system allow an immediate replacement without need of any beacon modification. Exceptional thermal management and LED drivers guarantee an optimum efficiency all its life time. MLL18 lamp low power allows an optimization of the power supply system, with the consequent economical savings.





FEATURES

- *Luminous range according to the lens used.*
- *Accurate lamp positioning.*
- *Average lifetime of 100,000 hours.*
- *Anodized aluminium diffuser.*
- *LED driver circuit incorporated.*
- *Terminal bolts in stainless steel.*
- *Corrosion resistant.*
- *Standard colours according to IALA Recommendations.*
- *Standard or customized fixing bridge.*
- *Compatible with a wide range of flashing lanterns.*
- *Optimum operation with our MF12 special flasher for LEDs.*
- *Monitoring and remote control.*

MLL50

Lamp for long-range optical systems in lighthouses

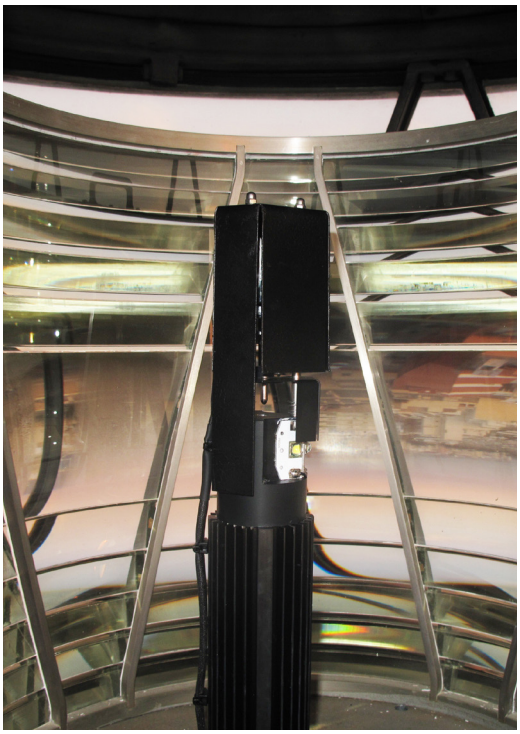
The MLL50 LED lamp is especially developed for long-range optical systems in lighthouses, both rotating and flashing ones.

Saving in both energy and infrastructure

Consisting of a high-power LED light source, its design is custom-made in each case, in order to optimise its efficiency and obtain the maximum luminous intensity. With 60 W power, it can replace lamps of up to 1,000 W power, with an important saving in both energy and infrastructure, by keeping the original luminous range of the lighthouse.

Service life of 100,000 hours

Its exceptional thermal management and its current regulation system ensure a lamp service life of 100,000 hours, so that maintenance intervals significantly decrease.



FEATURES

- *With a 60 W power it can achieve ranges of up to 26 nautical miles (1,150,000 Cd).*
- *Power supply system with current regulation and PWM adjustable power.*
- *Solar screen to avoid sun effect.*
- *Focus accuracy.*
- *Corrosion resistant.*
- *Specific design for each case, according to the type of lens and its array.*
- *60 W power in white colour (other powers available).*
- *Exceptional thermal management for higher LED efficiency.*
- *Lamp average life time of 100,000 hours.*
- *Red or green colour available, as option.*

MLC02

Engineered for all type of lamps and sockets

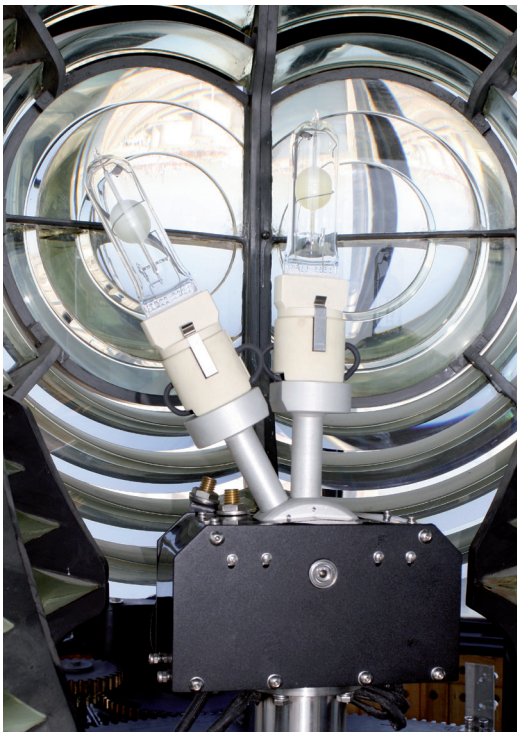
The MLC02 automatic 2-position lampchangers are suitable for rotating beacons and major lighthouses. Especially engineered for all type of lamps and sockets, including big-size lamps.

Designed to work under harsh marine conditions

Designed to work under harsh marine conditions with high-corrosion level, ensuring a correct and nonstop operation of marine aids to navigation.

It fits in both rotating and flashing lighthouses

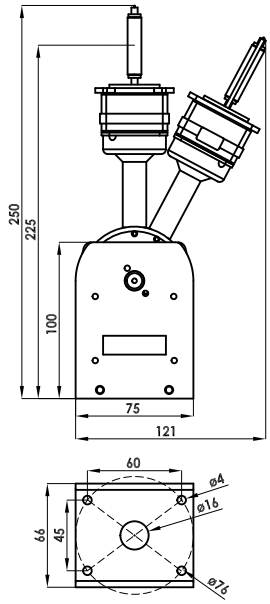
With capacity for 2 lamps, either halogen or metal halide, it fits perfectly in both rotating and flashing lighthouses, with 3,000 W maximum lamp power.



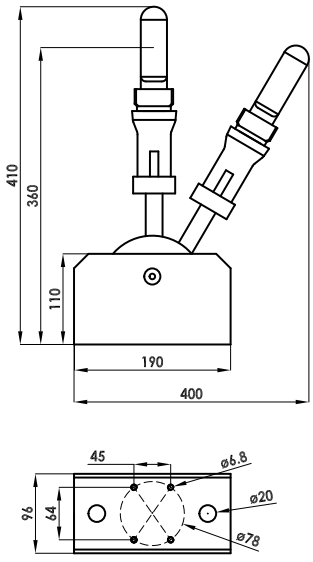
FEATURES

- *Adaptable to rotating and horizon lighthouses, with 3,000W lamp power.*
- *Accurate lamp focusing, reversible motor drive.*
- *Contact-free and brushless operation.*
- *Wide range of lamps sockets and lampholders (Gx9.5, G12, G21, G22, E40, etc.).*
- *Thermal protection of wires from damages due to sun light.*
- *Anodized marine aluminium turret and arms.*
- *Stainless-steel base.*
- *Stainless-steel hardware.*
- *Two versions available, depending on the power required.*
- *High resistance to marine corrosion.*
- *Lamp-status detecting photocell.*

MLC02



MLC02-A



MLC02-B

Specifications subject to change without previous notice.

MLC 02-A Lampchanger

2-place automatic lampchanger for lighthouses and beacons.

For lamps of up to 1,000 W a.c. or d.c.

Suitable for lamps and lampholders Gx9.5, G12, G22.

High mechanic and environmental resistance.

MLC 02-B Lampchanger

2-place automatic lampchanger for major lighthouses.

Special for big lighthouse lamps of up to 3,000 W.

Suitable for all type of lamps and lampholders.

High mechanic and environmental resistance.

	MLC02-A	MLC02-B
Lamp capacity	2 nos.	2 nos.
Lamp type	· Halogen a.c., d.c. up to 1,000 W. · Metal halide CDM-T up to 250 W. · Xenon.	· Halogen a.c., d.c. up to 2,000 W. · Metal halide and MSD up to 3,000 W. · High-power Xenon.
Lampholder type	Gx9,5, G12, G22.	Gx9,5, G12, G21, G22, E40.
Max. lamp current	10 A.	16 A.
Motor system voltage	12 V or 24 V.	12 V or 24 V.
Lamp voltage	24 V / 220 V.	24 V / 220 V.
Max. lamp power	1,000 W.	3,000 W.
Max. lamp size	150 mm.	500 mm.
Lamp detecting circuit	LDR M12 photoresistance.	LDR M12 photoresistance.
Accuracy in focusing	± 0.8 mm.	± 1 mm.
Temperature range	From -30º to 85ºC.	From -30º to 85ºC.
Weight	1.4 kg.	3.5 kg.

MLC 160 external control unit

Control circuit:	Controlled by micro-processor.
Configuration:	User friendly.
Functions:	· LED lamp control (automatic change from main lamp to stand-by lamp). · Photocell control. · Remote monitoring signals.
Operating modes:	Automatic (by photocell), Manual (for maintenance) or Remote (for remote monitoring).
Voltage supply::	a.c. or d.c.
Remote monitoring:	· Status and alarms ready for remote control and monitoring, by opto-coupled signals. · RS-232 or RS-485 serial port.

MSM

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LIGHTHOUSE EQUIPMENT

MRM

REVOLVING PEDESTALS

MRM 160 & MRM 1200

Double, electronic, gearless and brushless motors

Mediterráneo Señales Marítimas has a long experience in designing lighting, rotating and monitoring equipment for major lighthouses. The ideal support for a major lighthouse optic is one of our MRM revolving pedestals. These motors are double, electronic, gearless and brushless.

Ideal to automate historic lighthouses

The MRM motors are engineered to automate historic lighthouses, able to replace old drive machines and keep the valuable glass lens. MRM 160 or MRM 1200 can be chosen depending on the lens weight.

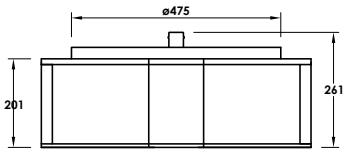
Tailor-made support

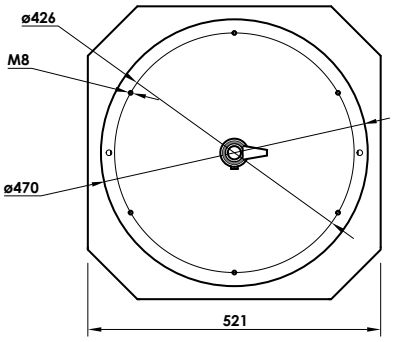
The MRM support is tailor-made according to the lens height and the height from the lanternhouse inner base to the focal centre.

FEATURES

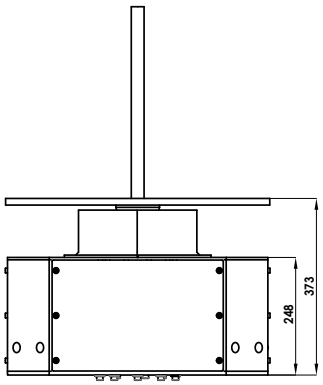
- *High reliability and availability.*
- *Electronic, gearless and brushless double motors.*
- *One only slow-moving assembly (shaft, rotor and rotating plate).*
- *Automatic switch-over to standby motor in case of main drive failure.*
- *Precise balanced array, minimum friction.*
- *Good accessibility for maintenance and easy part replacement.*
- *Field-adjustable rotating speed, from 1 to 6 rpm.*
- *Speed setting accuracy: 1.3%.*
- *MRM 160 suits to optics of up to 160 Kg.*
- *MRM 1200 suits to optics of up to 1,200 Kg.*
- *MMC 160 provides fully automatic operation.*
- *Microprocessor based circuit.*

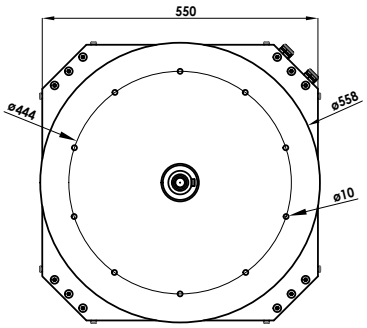
MRM





Revolving pedestal MRM 160





Revolving pedestal MRM 1200

MRM double rotating motor

Type:	Double, electronic, gearless and brushless.
Regulation:	Precise balance with minimum friction.
Rotating speed:	Field-adjustable, from 1 to 6 rpm.
Speed setting accuracy:	1.3%.
Motor control:	SB 03 double electronic circuit.
Accessibility:	4 nos. lateral accesses.

MMC 160 external control unit

Functions:	· Rotation control (automatic switchover to standby motor in case of main drive failure). · MSM lighting 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 optocoupled signals. · RS-232 or RS-485 serial port.
Watertightness degree:	IP 65.

Options

MRM 160 for optics up to 160 Kg.

MRM 1200 for optics up to 1,200 Kg.

Voltage supply of 12 or 24V d.c.

AC operation by using a.c.-d.c. converter.

Specifications subject to change without previous notice.

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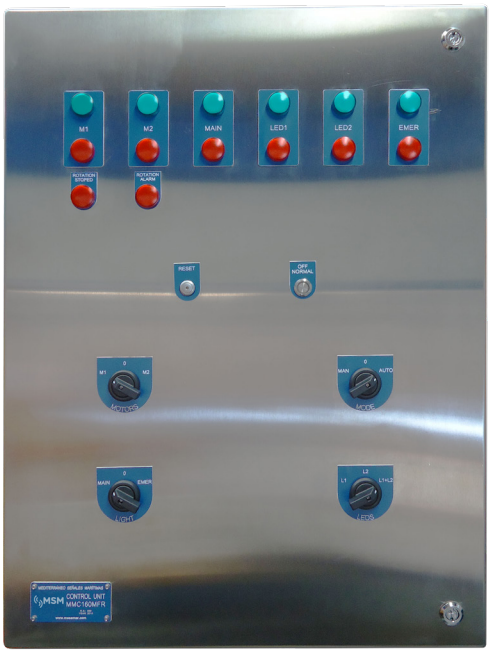
MTF

Designed to manage lighting and rotating lighthouse systems

The MTF control unit has been especially designed to manage lighting and rotating lighthouse systems. Based on a programmable logic controller, fitted with all necessary elements for a complete operation. Its universal construction provides an easy adaptation to any type of existing lighthouse system.



Manufactured according to customer needs

This cabinet is manufactured specifically according to customer needs, without the need to use a programmable logic controller.

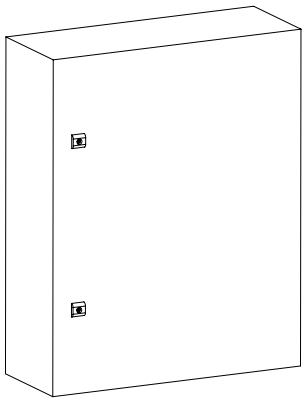
Connexion to a Remote Monitoring System

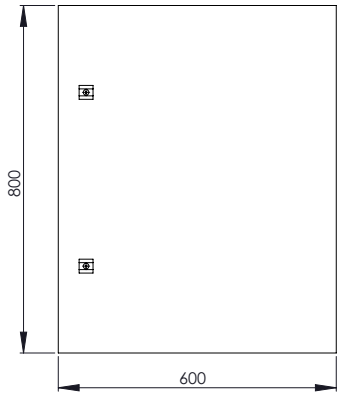
Inputs and outputs allow their connexion to a Remote Monitoring System. Optionally, a modem can be incorporated to transmit data to a Control Centre.

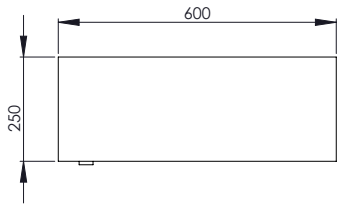
FEATURES

- *Compatible with rotating and flashing lighthouses and beacons, with lamps and LEDs.*
- *Control and management of lampchangers and rotating motors, both a.c. and d.c.*
- *Automatic activation by external photocell. Main lamp to standby lamp switch-over in case of failure, making the same function from main motor to standby one when necessary.*
- *Emergency beacon activation in case of main system failure.*
- *Manual operation selectors.*
- *Rotation alarm detection for lighthouses by magnetic rotation sensor.*
- *Motor and lamp thermal protection against short-circuits.*
- *Protections against reverse polarity and atmospheric oversurges.*
- *Tailor-made cabinet according to customer requirements.*

MTF







Technical specifications

Power supply range:	From 12 to 24 V d.c. From 120 to 240 V a.c.
Daily average consumption:	40 mA.
Max. lamp power:	3,000 W.
Max. motor power:	2,500 W.
Internal back-up battery:	12/24 V - 12 Ah.
Connexions to Remote Monitoring System:	RS-232 serial port and potential-free contact terminals.
Temperature range:	From -30º to 65ºC.
Watertightness degree:	IP 65.
Material:	Stainless steel.
Dimensions:	800 x 600 x 250 mm.

Automatic basic functions

Day/night control (light-sensitive photocell).

Main lamp control.

Standby lamp control.

Lampchanger control.

Main rotating motor control.

Standby rotating motor control.

Emergency beacon control.

Control of the mains voltage for switching to emergency beacon, in case of main system failure.

Note: The unit has manual selectors for each one of the above functions, both for maintenance and emergency works in case of PLC failure

Manual control

Main lamp activation:	Standby rotating motor activation.
Standby lamp activation:	Emergency beacon activation.
Main rotating motor activation:	General system reset.

Standby power supply system activation.

Operating status and alarms

Operating lamps: main or standby beacon.

Operating motor: main or standby motor.

Main beacon supply voltage.

Standby beacon battery voltage.

Standby beacon battery charging current.

Main beacon switch off.

Power supplies switch off: main and standby.

Standby beacon and standby power supply system activation.

Options

Diesel generator control.

Fire sensor control.

Tamper sensor control.

Surveillance camera control.

Connexion modem to Remote Monitoring System.

Expansion module with additional inputs and outputs.

Specifications subject to change without previous notice.

MSM

Mediterráneo Señales Marítimas, S.L. / +34 96 276 10 22 / msm@mesemar.com / www.mesemar.com

LIGHTHOUSE EQUIPMENT

MTF3000

UNIVERSAL LIGHTHOUSE CONTROL

MTF3000

Designed to manage lighting and rotating lighthouse systems

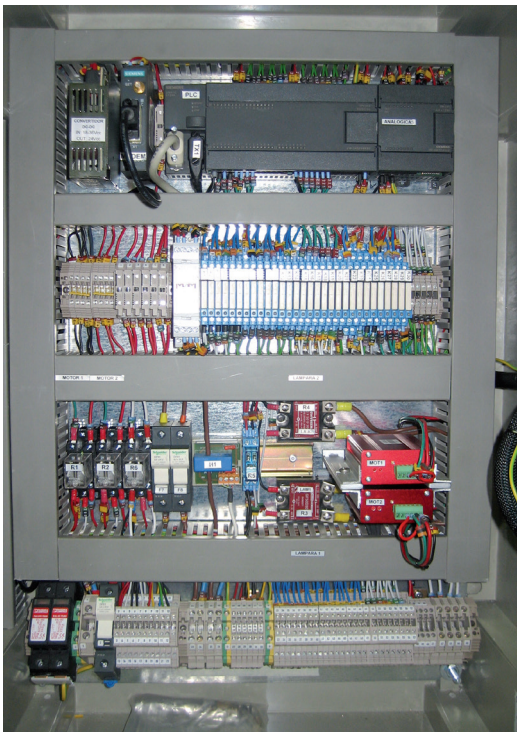
The MTF3000 control unit has been especially designed to manage lighting and rotating lighthouse systems. Based on a programmable logic controller, fitted with all necessary elements for a complete operation. Its universal construction provides an easy adaptation to any type of existing lighthouse system.

Digital screen

Its digital screen informs about the operation status and possible alarms, with manual operation selectors.

Connexion to a Remote Monitoring System

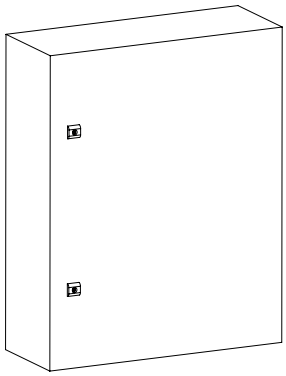
Inputs and outputs allow their connexion to a Remote Monitoring System. Optionally, a modem can be incorporated to transmit data to a Control Centre.

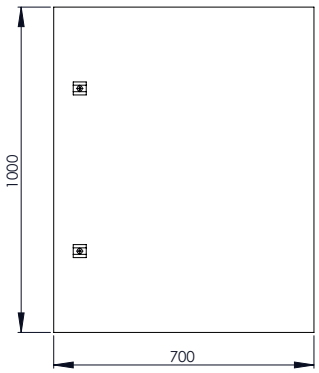


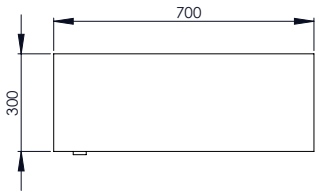
FEATURES

- *Compatible with rotating and flashing lighthouses and beacons, with lamps and LEDs.*
- *Control and management of lampchangers and rotating motors, both a.c. and d.c.*
- *Automatic activation by external photocell. Main lamp to standby lamp switch-over in case of failure, making the same function from main motor to standby one when necessary.*
- *Emergency beacon activation in case of main system failure.*
- *Manual operation selectors.*
- *Digital touch screen that provides information on status, alarms and analogical values of voltages and currents.*
- *Rotation alarm detection for lighthouses by magnetic rotation sensor.*
- *Motor and lamp thermal protection against short-circuits.*
- *Protections against reverse polarity and atmospheric oversurges.*

MTF3000







Technical specifications

Power supply range:	From 12 to 24 V d.c. From 120 to 240 V a.c.
Daily average consumption:	40 mA.
Max. lamp power:	3,000 W.
Max. motor power:	2,500 W.
Internal back-up battery:	12/24 V - 12 Ah.
Connexions to Remote Monitoring System:	RS-232 serial port and potential-free contact terminals.
Temperature range:	From -30º to 65ºC.
Watertightness degree:	IP 65.
Dimensions:	1000 x 700 x 300 mm.

Automatic basic functions

Day/night control (light-sensitive photocell).

Main lamp control.

Standby lamp control.

Lampchanger control.

Main rotating motor control.

Standby rotating motor control.

Emergency beacon control.

Control of the mains voltage for switching to emergency beacon, in case of main system failure.

Note: The unit has manual selectors for each one of the above functions, both for maintenance and emergency works in case of PLC failure

Manual control

Main lamp activation:	Standby rotating motor activation.
Standby lamp activation:	Emergency beacon activation.
Main rotating motor activation:	General system reset.

Digital screen information

Day/night operation status:	Main motor alarm.
ON/OFF main lamp:	Standby motor alarm.
ON/OFF standby lamp:	Mains failure.
ON/OFF main motor:	Mains voltage analogical value.
ON/OFF standby motor:	Battery voltage analogical value.
ON/OFF emergency beacon:	Emergency beacon battery voltage analogical value.
Main lamp alarm:	Main and standby lamp consumption current analogical value.
Standby lamp alarm:	Main and standby motor consumption current analogical value.

Specifications subject to change without previous notice.

Options

Diesel generator control.

Fire sensor control.

Tamper sensor control.

Surveillance camera control.

Connexion modem to Remote Monitoring System.

Expansion module with additional inputs and outputs.

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