USER MANUAL

SOLAR COMPACT LED LANTERN

MCL200

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USER MANUAL

REF: MCL200

Rv. 7

Rv.	DATE	REVISION
07	01/03/2020	Revision 2020

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SOLAR COMPACT LED LANTERN **MCL200**

1. Introduction

The MCL200 is a compact LED marine lantern, solar self-contained, with great optical efficiency and low consumption, fitted with LED diodes of high intensity, reaching a maximum range of 9 nautical miles and offering a big autonomy.

As a difference from the MCL 200, this lantern is ready to integrate a remote monitoring and synchronization system.

The battery is replaceable, thus the complete lantern disposal is not necessary at the end of battery's life. Standard fixings allow for a quick beacon replacement.

Remote supervision via GSM, VHF or satellite, synchronization module via GPS.

Designed according to IALA Recommendations.

MCL200

2. Safety

2.1. GENERAL SAFETY

Installation and maintenance equipment involves applying health and safety standards at Workplace. These requirements vary between countries, so that the local specified regulations will be applied. The health and safety of personnel is a priority, thus any tasks with the equipment shall be executed by qualified and trained personnel to realize them in a safe way.

This user manual is intended for personnel with basic mechanical skills and under the direction of an operator responsible for piece assembling. The following instructions are very important for a correct use of the Equipment. Please ensure to:

- Comply with worker security provisions and professional regulation.
- Equip all personnel with personal protective measures (PPE) such as gloves or safety shoes or other equipment needed when manipulating components.
- Realize the tasks in the presence of a health and security manager that can provide assistance in case of accident.
- Follow the assembly sequence indicated in this manual.
- Have the adequate tools for the assembly of the components.
- Keep a copy of these instructions near the installation site.

2.2. HANDLING SAFETY

Before and during assembly tasks, the following indications should be considered:

- Have fasteners and fixing elements, for working with the product. Improper treatment can damage to beacon plastic components.
- Do not apply paint or adhesive on the surface of the modules.
- Work only in dry conditions, unless provided with appropriate additional protections.
- Use electrical insulation protection for working with direct current and battery components. The handling of batteries should be carried out only by qualified personnel.
- Disconnect the power supply of the beacon, prior to disassembly / assembly of any component.

2.3. INSTALLATION SAFETY

During the installation, the following indications should be followed:

- Check the correct condition of the elements during the assembly and ensure their fixing.
- Do not start a new step in the assembly tasks until having completed the previous one.
- Cover the solar module with an opaque material during the installation to prevent electricity generation.
- Check the stability of the entire equipment mounted prior to its use.

3. Technical features

Optical System

Light source:	Ultra-bright LED diodes, with high-precision acrylic lenses.	
Luminous range:	Up to 9 nm (T=0.74) 12 nm (T=0.85).	
Colours available:	White, green, red and amber.	
	Divergence 5 º	Divergence 12 º
Vertical divergence:	5º (50% Io).	12º (50% Io).
Leds / level	3 leds	6 leds
Levels:	2	1
LED average life:	More than 100,000 hours.	
Solar module:	4 nos. of 2,5 W each one.	
Battery:	16,9 Ah Lead Crystal® maintenance-free.	
Autonomy without solar charging:	Up to 450 hours.	

Electronic control

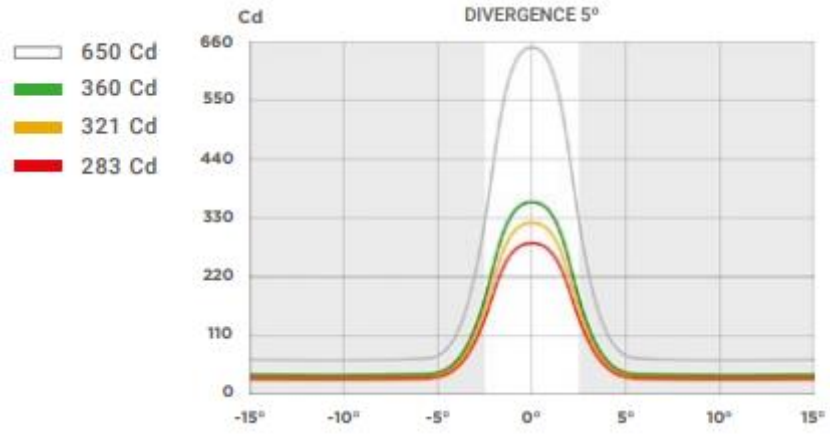
Flash rhythms:	256 (6 nos. User selectable).
Day/night threshold:	Adjustable in lux.
Solar charge regulation function:	Regulation in 3 phases.
Settings:	Mini DIPS, PC, Programmer IR, Bluetooth.
Synchronisation modes:	Wire and GPS optional.
Energy management:	Dynamic, according to latitude.
Light intensity reduction due to low battery:	Configurable by the user.

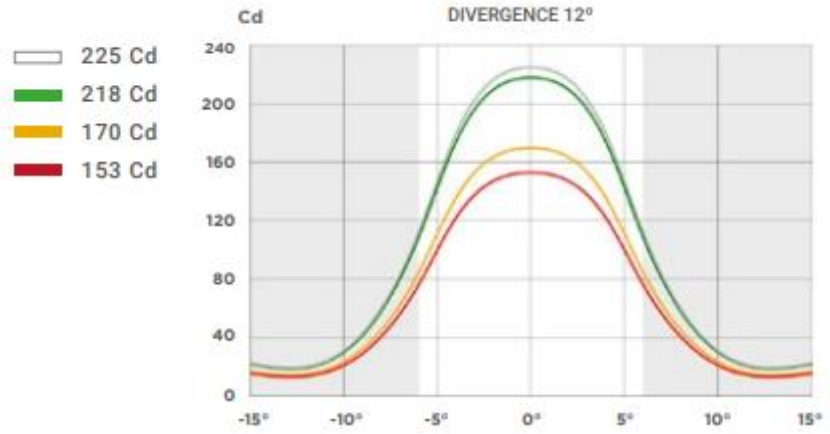
Materials and environment

Base:	Glass-fibre reinforced polyamide PA66-GF30.
Lens cover:	Acrylic, UV stabilised.
Inside hardware:	Stainless Steel.
Vibration resistance:	MIL-STD-202G, Method 204D (5G).
Shock resistance:	MIL-STD-202G, Method 213B.
Watertightness degree:	IP 68.
Fixings:	4 bolts in a 200mm diameter.
Humidity resistance:	100%. Pressure-compensation valve to avoid condensation.
Weight:	9.1 Kg
Temperature range:	From -20º to 70ºC.
Packaging:	32x32x50 cms 9.3 Kg.

3.1. LIGHT SPECIFICATIONS

COLOUR	PEAK INTENSITIES (Cd)	
	D.V. 5º	D.V. 12º
WHITE	650	225
GREEN	360	218
RED	283	153
AMBER	321	170





3.2. OPTIONS

- Infrared (IR) programmer.
- PC programming kit.
- Fixing kit for 3 bolts in a 200mm diameter.
- Other specifications available under request.
- MCL 200-SYNC (GPS synchronization).
- MCL 200-TG (GSM remote monitoring).
- MCL 200-TR (Radio remote monitoring).
- MCL 200-TS (Satellite remote monitoring).

4. Options and communications

GSM

GSM alarm communicator module*:*

The MFGSM alarm communicator allows communication with the flashlight for alarm transmission and remote operation. Communication is done by transmitting SMS to mobile phones or to the WEB NETCOM remote control system.
http://netcom.msm-data.com

UHF

MFUHF UHF Radio alarm communicator module

Radio transmission of alarms and free band status 868 MHz.
MESH communication network with IP routers for automatic management of the radio network.

SAT

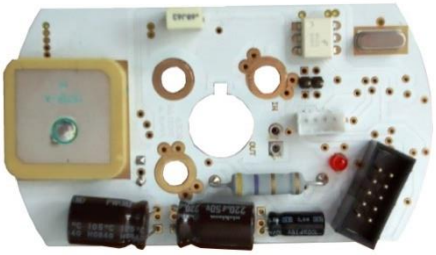
MFSAT Remote control module IRIDIUM

Iridium satellite transmission.
SBD data service for low cost.
Integrated antenna in the lanterne.

GPS

MFGPS Synchronization communicator module

The MFGPS lanterne synchronizer allows you to synchronize different flashlights and buoy locations together with the MFGSM, MFSAT and MFUHF modules.



IR

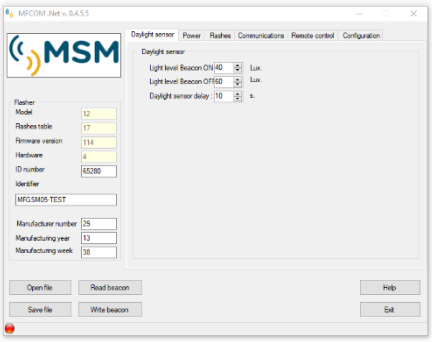
PROG-IR infrared programmer

External programmer for the MBL / MCL series without opening the flashlights.
Included as standard on the MCL200.

PC

MFCOM.net software to PC

The flasher can be programmed through the serial port using the MFCOM.net software. PC software, Windows 10 compatible.



BT

MFCOM.blue APP to Android

The MFBLUE communications module allows the flasher to be programmed from any mobile device at a maximum distance of 40 meters.
Included as standard on the MCL200

IMPORTANT

Optional devices for the MCL200 flashlight include an additional user manual for detailed information about its installation and use.

IMPORTANT

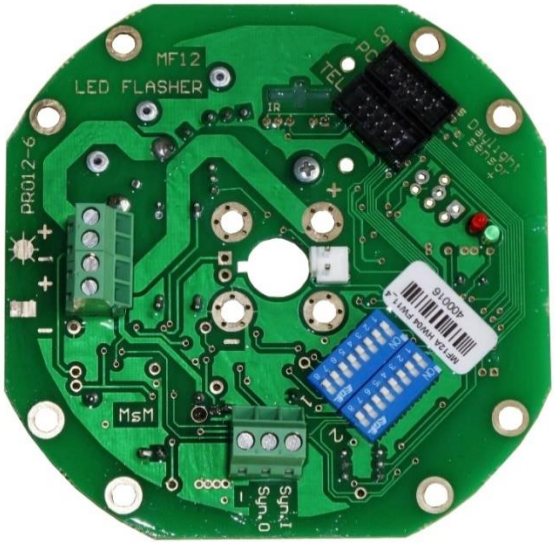
Our *Remote Monitoring Modules (MFGSM, MFSAT, MFUHF) are compatible with our WEB NETCOM remote control system.*
http://netcom.msm-data.com

5. Main components description

5.1. ELECTRONIC FLASHER MF12C-H4

The MF12 flasher is the main lantern controller including the next functions and features:

- Day/Night control with adjustable parameters.
- 256 Flash character control including user programmable flashes.
- Charge regulator for the solar system,
- Status and alarms available for remote monitoring by 2 nos. RS 232 serial ports.
- Short circuit protection.
- Reverse polarity protection.
- Lantern temperature control for over−temperature protection.
- Transient overvoltage protection.
- Microprocessor based circuit.
- Easily programmable by microswitches or PC software.



MF12C-H4

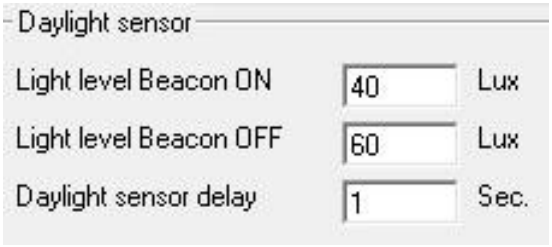
5.2. DAYLIGHT PHOTOCELL AND IR RECEIVER

The Daylight photocell is the sensor used to detect the luminous ambient flux and switch ON/OFF the beacon.

The optical sensor used is a photoIC with similar spectral response to the human eye and is connected and operated by the MF12 flasher.

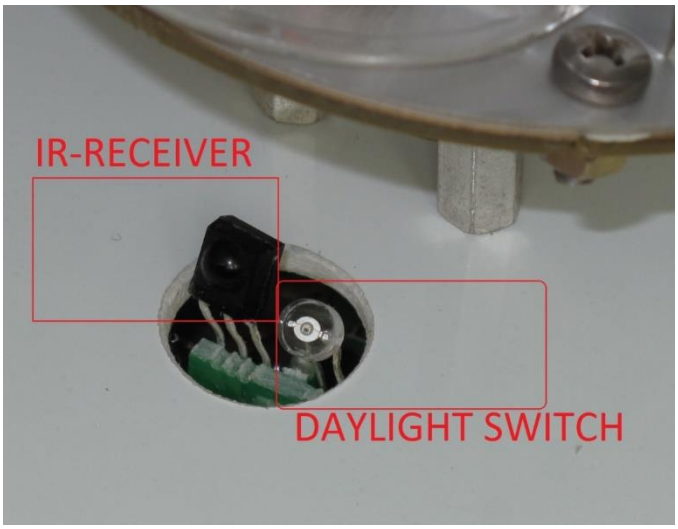
- The beacon is switched ON when the photocell detects 40 lux in the lantern.
- The beacon is switched OFF when the photocell detects 60 lux in the lantern.

The day and night thresholds are configurable by software and also include an adjustable delay in seconds.



The IR sensor is the infrared receiver for the remote control by IR external programming.

The Photocell and IR receiver are located in the flasher as shown in the picture:



Photocell / IR receiver

5.3. LEDS-LESES OPTICAL SYSTEM

The MCL200 optical system uses the latest optical technology with patented, dioptric and catadioptric OCL12 lens system, to obtain the highest optical efficiency.

The MBL160 LED level is composed by 3 LED + 3 lenses in a circular array using a modular construction by optical groups.

The optical group is composed by these components:

- LED current regulator circuit LS04SR.
- 3 Led circuits.
- 3 OCL12 lenses.

5.4. LED REGULATOR LS04-SR

The LEDs are powered by independent current regulators for higher safety.

The led current regulator supplies the leds a stabilised current with the required power.

The figure at the left shows the LS04sr circuit.

The LED power is adjustable in the MF12 Flasher in %, from 10 to 100%, according to the required luminous range.

The LED regulators are high-efficiency, Buck type regulators, and use a control by PWM to adjust the power applied to the LEDS.

IMPORTANT

The PWM LED power control produces a 500 Hz soft sound effect during the operation. This sound must be considered as <u>normal</u> as it is due to the control by PWM with fast LED ON/OFF control 500 times by second.

6. Initial connection

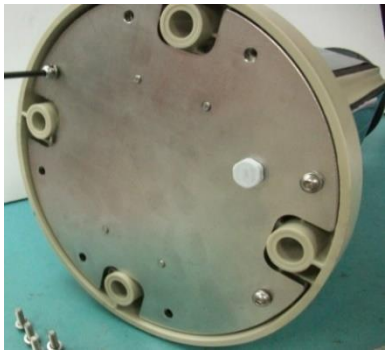
6.1. LANTERN START-UP

One form of initial connection:

Lantern with the battery disconnected: The beacon is supplied with the battery disconnected, following safety regulations according to transport specifications. In that case the beacon must be open to **connect the battery connector to the lantern flasher** as attached **indications**:

Removing threaded screws:

Using an allen wrench to arrange for removal of the 8 screws securing the back of the beacon.



Removal the top cover:

Once the screws are removed manually withdraw the top of the beacon is attached to the battery.

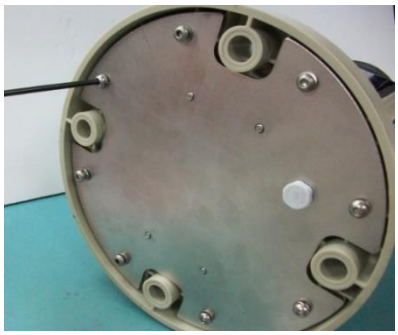
Connecting the battery to the flasher: Quickly, easily and manually without the need for a specific tool, the cables that connect the battery to the flasher are connected, according to the attached image.

6.2. CLOSING THE LANTERNE

The lantern has a closing position to ensure watertightness, keep out water entry and protect the internal components from external agents follow signs for closing it:

Screw the fixing screws:

Using an allen proceed to screw 8 screws that secure the back cover of the beacon.. The bolts must be tightened in cross so that equal pressure is exerted over the entire surface.



IMPORTANT

To ensure a correct closure of the lantern, verify that the circuitry by the cable is protected inside the beacon. Besides, ensure not to catch the cable with the gasket.

7. Lantern installation and configuration

7.1. PROGRAMMING MODES

The MCL200 compact lantern can be programmed through various systems:

- By means of micro-switches selection.
- By means of the MFCOM software or IR programmer.
- By means IR programmer
- By means of Bluetooth and APP in mobile device

The MF12 flasher can be configured with:

- 256 SELECTABLE FLASH RHYTHMS.

Features:

- SYNCHRONIZATION OF MASTER SLAVE FLASHER
- BATTERY DISCONNECT (LVD)
- BATTERY CONFIGURATION
- LED OUTPUT CONFIGURATION
- REMOTE CONTROL AND MONITORING

The desired programming method must be selected, since in case of not having IR programmer, APP or PC+MFCOM software, programming through micro-switch must be selected.

7.2. FLASH RHYTHMS CONFIGURATION

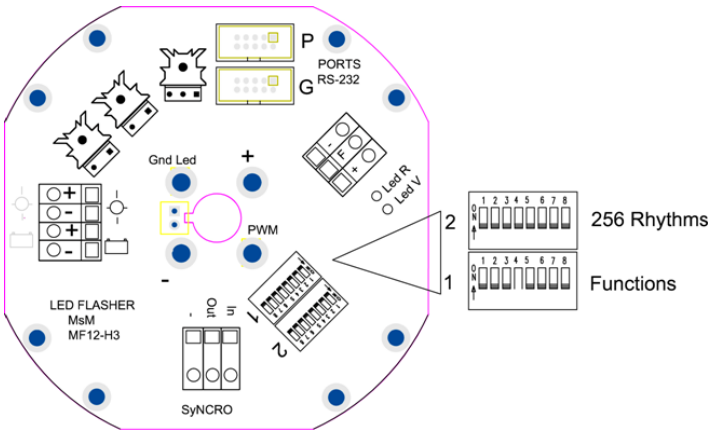
7.2.1. Access to the flashing minidips

The lantern will open as explained in point 6.1 to access the flasher.

7.2.2. Setting the rhythms of flashes by miniDIPs.

The MF12C-H4 flasher can be programmed with 256 selectable flash rates from the attached table. Configuration is done using the 8 microswitches located on the outside of the circuit. The ON position is equal to 1, while the OFF position corresponds to 0.

The first 6 rhythms can be programmed by the user with any flash character combination with a maximum of 15 light-dark cycles.



Configuration MiniDIPS

For example, to configure a flash character of FL4s (0.3 ON + 3.7 OFF) we need to find in the table the corresponding line with this flash rhythm. In the example is the flash rhythm nº 22 and the DIPS must be selected to 1010100

	MINIDIPS 0=OFF 1=ON											1		2	
Nº	1	2	3	4	5	6	7	8	CHARACTER	T=	DUTY%	FL	OSC	FL	OSC
22	1	0	1	0	1	0	0	0	FL4S	4	8%	0,30	3,70	-	-

7.2.3. Synchronising flasher master-slave

When synchronisation is used, the function of each flasher has to be determined: Master (Use the photocell and mark the rhythm), Slave (Do not use the photocell and follow the rhythm marked by a Master). Up to 15 flashers can be synchronised by using at least one as master.

TYPE	DIP 1
MASTER	OFF
SLAVE	ON

It is also possible to configure the flashers with master-master function in which the first flasher marks when starting to operate and synchronizes the other, having each of them its own photocell. Have special care that all beacons must be programmed at the same rhythm, so that the synchronization is perfect.

7.2.4. Battery disconnection (LVD)

In case of battery low voltage, the lantern generates an alarm for remote monitoring and register. After this incidence, the flasher can actuate in 4 modes:

- Continue on operating at 100% consumption (LVD OFF)
- Switch off the light in order not to discharge further the battery (LVD ON)
- Reduce at 30% consumption (LVD 30%)
- Reduce at 60% consumption (LVD 60%)

LVD MODE	DIP 2	DIP 3
LVD OFF	OFF	OFF
LVD ON	ON	OFF
LVD 30%*	OFF	ON
LVD 60%*	ON	ON

IMPORTANT

(*)*Reduction of consumption implies reduction of the luminous intensity in the same proportion. Check the lantern is still providing an adequate luminous range. When the situation of battery low voltage finishes, LVD mode also finishes and the normal operation of lantern is recovered again.*

At the end of the low battery alarm situation, the LVD mode ends and the normal operation of the flashlight is restored.

7.2.5. Battery configuration

The battery nominal voltage must be configured, to adjust the battery charging function.

Batteries used can be of 12V or 24V, by modifying the DIPs 4 and 5, according to the table.

BATTERY	DIP 4	DIP 5
AUTODETECCION	OFF	OFF
6V	ON	OFF
12V	OFF	ON
24V	ON	ON

7.2.6. LEDs configuration

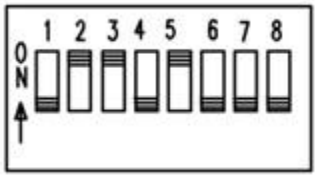
The flasher can be configured to work with several different beacons and LED diode light sources:

LINTERN	DIP 8
MCL200	OFF

7.2.7. Factory configuration

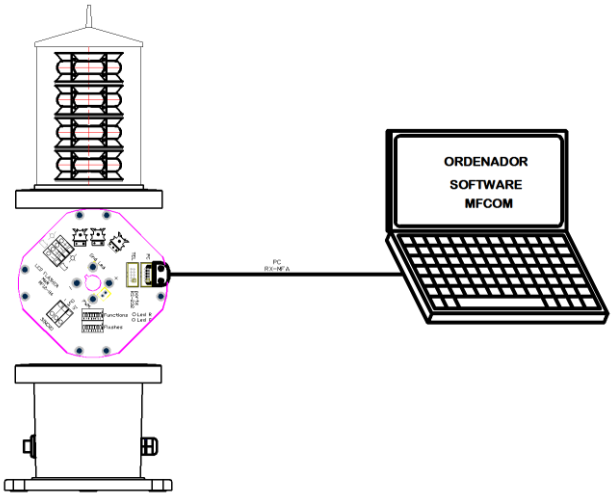
The MCL200 lanterns are factory adjusted with the standards settings:

- Master Mode.
- LVD ON 30%
- 12V Battery
- MCL200 Type



7.3. CONFIGURATION THROUGH MFCOM SOFTWARE

Access the flasher as indicated in point 5.2 and connect the RX-MFA cable between the PC-FLASHER.

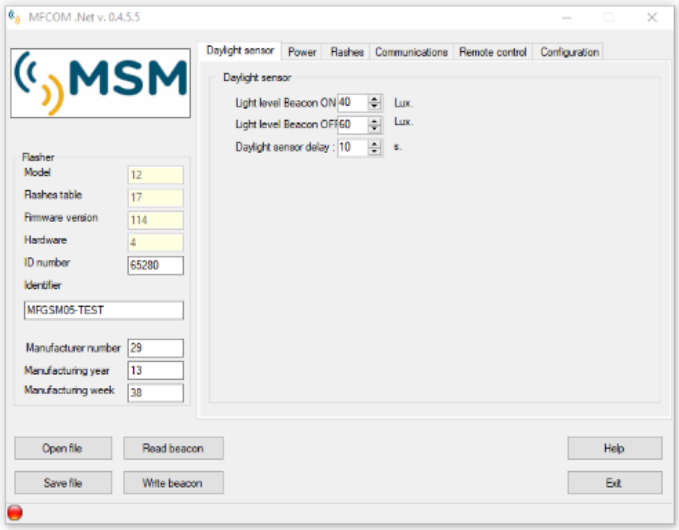


Connection scheme

The MF12 flasher can be programmed externally via MFCOM Software for PC, supported on Windows XP or WIN7.

The following parameters can be programmed:

- Rhythm of flashes selected from the character table.
- User rhythm set by a technician when the character is not in the standard table.
- Offset day-night in seconds.
- Level settings ON and OFF in Lux.
- Setting low battery voltage alarm levels.
- Setting low LVD voltage disconnect mode.
- Remote control and synchronization configuration.



Software MFCOM

The MFCOMnet program consists of 6 tabs:

Day Light sensor*:* Photocell levels and delays in switching-on and -off.
Power*:* Solar regulation parameter settings.
Flashes*:* Flash character settings, LVD mode, and edition of flash characters by user. Low battery voltage alarm settings.
Communications*:* IR command and remote control for testing settings.
Remote control: Screen to see the current status of the lantern.
Setup*:* Selection of serial port RS232.

IMPORTANT
For configuration using MFCOMnet software, IR programming remote control or Bluetooth, consult the specific manuals for each of them.

7.4. CONFIGURATION THROUGH MFCOM SOFTWARE

PROG-IR Infrared programmer allows settings for MCL beacons series without the need to open the lanterns.

Infrared programmer IR

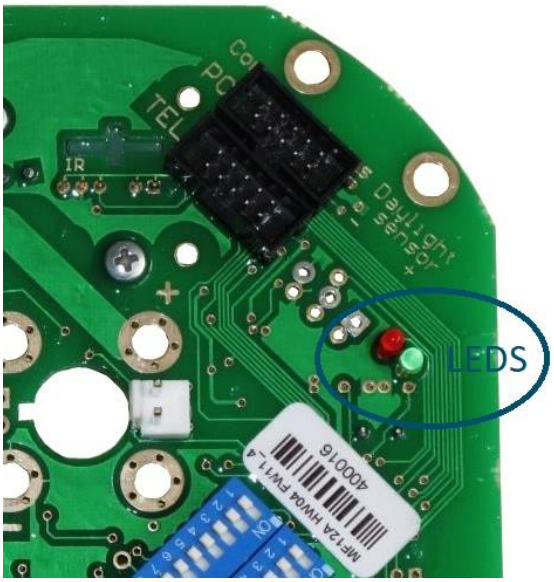
IMPORTANT
For configuration using MFCOMnet software or IR programming remote control, consult the specific manuals for each of them.

8. LEDs status and alarms

The MF 12 Flasher has a LED available for status and alarm sensing, which starts flashing by a preset code, showing the determined status or alarm according to the number of flashes. The preset code is the following

RED LED FLASHES	ALARMS
1	Excess of charge in solar modules
2	Excess of consumption in Leds.
3	Low consumption of Led current.
4	Excess of temperature (> 85º C)
5	Full-up register memory.
6	Alarm battery LVD ON
7	Alarm battery LVD OFF
8	LED failure

The green LED switches on after a valid communication by the RS232 Serial Port, and on the starting simultaneously with the red LED with 5 flashes.



Leds status and alarms

9. Lantern mounting

IMPORTANT

Previous to the installation and assembly of the elements, it is necessary to ensure the psycho-physical training of the personnel responsible of the tasks and comply with all the safety regulations. All staff should be able to read and understand these instructions.

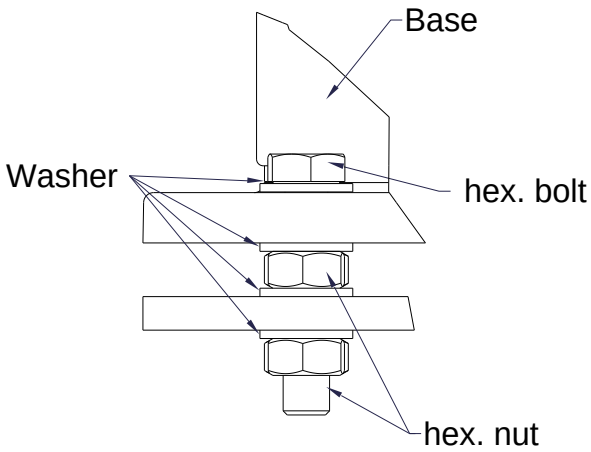
The base of the lantern must be separated from the support plate by at least 5 mm with a spacer nut to avoid internal humidity and condensation due to damage to the ventilation valve.

9.1. MOUNTING ON A LEVELLED SURFACE

The use of an adjustable wrench is required. A Phillips screwdriver is required to open the lantern and a small flathead screwdriver for wiring.

The MCL200 can be mounted on a flat surface which can resist 15 Kg minimum. Follow the next steps for the lantern mounting.

1. Locate the hardware needed, i.e. 4 bolts, 4 safety nuts and 8 washers.
2. Make 4 holes of 12mm diameter spaced 90º on a 200mm diameter. Hole template is shown in Dimensions and Fixing Drawing.
3. Place the hardware as shown in figure. It is necessary to install the intermediate nut so that the beacon is ventilated at its base.



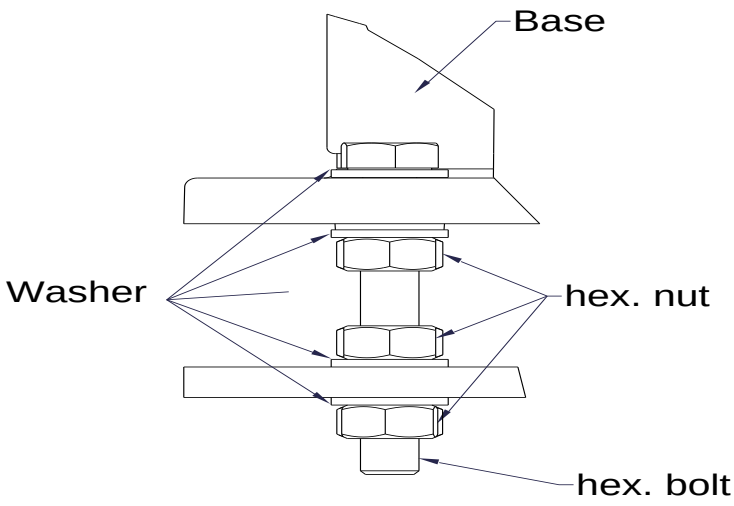
Mounting on a levelled surface

9.2. MOUNTING ON A NON-LEVELLED SURFACE

The use of an adjustable wrench is required. A Phillips screwdriver is required to open the lantern and a small flathead screwdriver for wiring.

An adjustable span and a bubble level are required. The MCL200 can be mounted on an uneven surface which can resist 15 Kg minimum. Follow the next steps:

1. Locate the hardware needed: 4 bolts, 4 safety nuts and 8 washers.
2. Make 4 holes of 12mm diameter spaced 90º on a 200mm diameter. Hole template is shown in Dimensions and Fixing Drawing.
3. Mount the leveling hardware as shown in the figure below.
4. Check visually the leveling by adjusting the nuts as required.
5. Level the lantern base by using a bubble level device in X direction.
6. Check visually the leveling by adjusting the nuts as required.
7. Level the lantern base by using a bubble level device in Y direction.
8. Check visually the leveling by adjusting the nuts as required.
9. Repeat steps 5 and 7 if required.
10. Once the lantern is leveled, fix the upper nuts smoothly to fix the lantern.



Mounting on a NON-levelled surface

10. Sun radiation

The MCL200 solar system is composed by 4 nos. solar modules and one 12V AGM technology battery free of maintenance. The charge/discharge is controlled by the MF12 flasher including solar regulation function by a 3 steps charge system that helps to maximize battery lifetime.

The energy consumption in the lantern is limited by the sun radiation available in the site for the winter months.

For this reason the MCL series lanterns have a self-energy internal system (SOLED) adjusting the power applied to the LEDs according to the following factors:

- Selected flashing rhythm (% Duty).
- Sun radiation hours available in the site for winter (peak hours/day).

The SOLED function allows the lantern to work during all year whatever the rhythm selected by the user, as high duty rhythms imply a reduction in the LED power. This reduction generates also a luminous range reduction in the same proportion. MFCOM software can determine the power applied to the LEDs and thus its luminous range. Luminous data included in the manual correspond to the nominal power without reduction by the SOLED system.

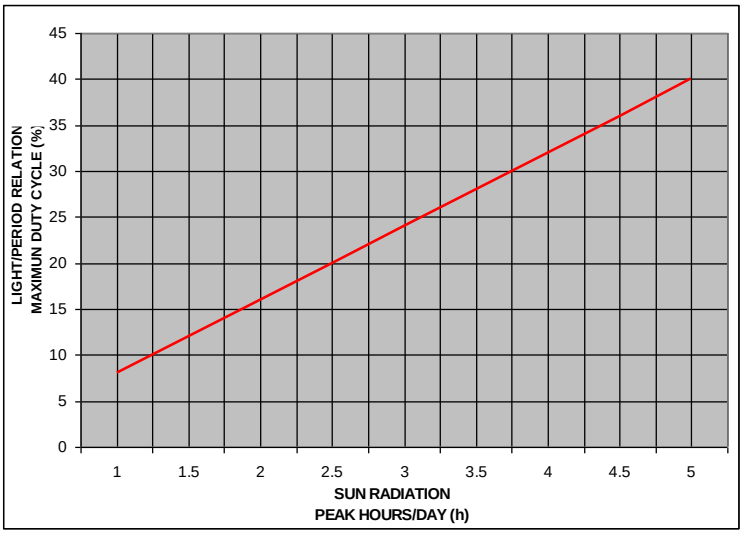
If the SOLED system is configured on OFF, the maximum light/period ratio is limited by the available sun radiation, check which is the maximum duty cycle allowed for each one of the different flashes rhythms.

IMPORTANT

Confirm in the table if the selected flash duty cycle is adequate for the sun radiation conditions and the required luminous range.

For example: For 2.5 hours of sun in winter, the maximum light/period ratio available with a led power of 100% is 20% according to the following table.

Light/period ratio=(sum of flash time)/(total period)



11. Maintenance

A plan of maintenance is necessary to ensure that the equipment and the systems of Aids to Navigation continue to operate at the required levels in order to ensure to the navigators a safe navigation on the world's waterways. A system of maintenance to ensure that Aids to Navigation equipment are operating at the desired level and to reduce the total cost of the owner must be implemented, for that reason the following maintenance guidelines have been developed following the IALA Guideline No. 1077 on Maintenance of Aids to Navigation.

The Compact self-powered LED lanterns have the considerable advantage of requiring very low maintenance during its lifetime. When using LED flashing lights, the periods between maintenance visits are set by the need to visit the signal to remove bird droppings and salt accumulation.
Besides, as compact self-powered lanterns, all the elements that form them (battery, flasher, LED ...) are perfectly grouped and protected in the same module hermetically sealed and protected from external conditions.

13.1. PERIODICITY

The life of any equipment (buoy, beacon, etc..) depends on local operating conditions, i.e.: location, sea conditions in the area, water depth, sea-bed type, presence of abrasive particles into the water, current speed, exposure to boat traffic, etc. The faster wearing will occur in offshore areas exposed to harsh sea or areas with a higher risk of impacts with boats when marking a narrow zone of passage.

A plan for revision and replacement of wearing elements to maintain a safe operation has to be implemented. Besides, historical information must be kept to forecast buoys or lanterns life in specific locations.
The recommended maintenance tasks for each type of equipment are listed below:

6 months	2 years	7 years
Panels and cover lens cleaning with fresh water and damp cloth. Never use abrasives or solvents containing alcohol or solvents.	Internal review of the flasher, connections and wiring.	The battery replacement is recommended due to the accumulated discharge cycles.
	Checking of the good condition of O-ring and moisture valve.	Replacement of O-ring and moisture valve.
	Checking of the solar module loading.	
	Grease fastening hardware.	

13.2. LANTERN MAINTENANCE

Panels and lens cover cleaning has to be done every six months with fresh water and damp cloth without any abrasive product that contains alcohol or solvent. Every two years, an internal review of the flasher, wiring connections and O-ring must be done to ensure its correct condition and lubrication of the fastening bolts.

In case of detecting any area of the electrical circuits with corrosion, it shall be sprayed with a CRC spray (CRC 2-26). These products are multifunction lubricants that prevent electrical and electronic malfunction caused by water penetration, humidity, condensation or corrosion, allowing to:

- Clean, lubricate, protect, penetrate, and loosen rusted parts.
- Prevent corrosion displacing the moisture.
- Restore strength values reducing current "leakage".
- Provide precision lubrication forming a thin oil film, high dielectric strength.
- Help electrical equipment recovery damaged by the water.

Then left to dry and apply a product for tropicalized.

ACC 15 Silicone Conformal Coating

This type of treatment is designed to protect electronic circuits in the harshest conditions, with a 100% solid and devoid of VOC solvents coating.
Every seven years the O-ring and moisture will be replaced.

13.3. SOLAR MODULES MAINTENANCE

Check that the solar panel has no broken glass and look for signs of water entry around the edges of the glass. Discoloration of the solar cells and the accumulation of encapsulating material are typical signs of water entry. Clean the solar panel with fresh water.

13.4. PHOTOCELL MAINTENANCE

Check the operation of the photocell covering it to start the flashing operation. If the lantern is not flashing, check the input power of the flasher using a digital voltmeter.

13.5. BATTERY MAINTENANCE

Check the battery voltage, under both loading and unloading. This can be done by accessing to the inside of the beacon itself or through a system of infrared remote control if supplied with the equipment, allowing remote checking and minimising the risks for safety and health of the maintenance staff.
Main batteries will be replaced before its capacity is exhausted because of accumulated duty cycles. For **replacement of the existing battery** with a new one follow the instructions set out in section 4.1 Beacon start-up to access the battery by an Allen wrench and a spanner unscrew the 4 screws that secure the battery to the back cover of stainless steel, once the battery replaced perform the Closing of the beacon according to section 4.2 of this manual.

IMPORTANT

Used or damaged batteries are a problem in terms of environmental safety because they contain toxic and corrosive components. They should not be thrown with ordinary waste and must be recycled always according to local and national regulations.
MSM provides its customers with recycling and collection service for the removal of these products at the end of its lifetime.

12. Troubleshooting

If the beacon doesn't work appropriately, we recommend the following instructions:

- Previous to any test, check if the power supply is working at the correct voltage and that the wiring is not damage.

After all the general considerations have been taken into account and were discarded, the following malfunctions will be considered and its possible causes:

1. If the beacon doesn't light:
   Possible reasons:
   a) Solar panel failure.
   b) Low power supply.
   c) Flasher failure.
   Solutions:
   a) Substitute the solar panel.
   b) Check the beacon power supply.
   c) Check wire and connectors.
   d) Check the flasher and substitute if necessary

2. If beacon lights only in fixed light, day and night:
   Possible reasons:
   a) Flasher failure.
   Solutions:
   a) Check internal wire and connections.
   b) Verify the flasher by PC.
   c) Replace flasher.

3. If the beacon lights with less intensity than normal working:
   Possible reasons:
   a) Low battery charge
   b) Wrong flasher configuration
   c) Internal wire failure
   Solutions:
   a) Verify battery power.
   b) Verify flasher configuration
   c) Verify internal wire.

4. The beacon lights but doesn't turned off since 24 hours:
   Possible reasons:
   a) Solar module dirtiness.
   b) MF12 flasher failure.
   Solutions:
   a) Solar panel cleaning.
   b) Flasher substitution.

5. If moisture or condensation appears in the beacon:
   Possible reasons:
   a) Beacon not properly closed.
   b) O-ring is damaged.
   Solutions:
   a) Retire the beacon from its site and move it to a dry site. Open and air it during a few days. Put silica gel or any secant to absorb the humidity.
   b) Check the O-ring and replace it if necessary.
   c) Close the lens cover appropriately. Screws must be tightened in cross, to exercise the same strength in the whole O-ring. Check the O-ring is in correct position.

6. If the beacon doesn't respond to the PC:
   Possible reasons:
   a) RS232 communication cable failure.
   b) PC or software failure.
   c) MF12 failure.
   Solutions:
   a) Check with other communication table.
   b) Reinstall software or try with other PC.
   c) Test MF12 flasher and substitute if necessary.

7. If a level fails.
   Possible reasons:
   a) Failure of the LS04-SR current regulator.
   b) Failure in one of the LEDs.

   Solutions:
   a) Replace the level.
   b) Detect the faulty led. To do this, the affected LEDs must be bridged one by one until they light up. The led that is bridged is the faulty one.
   c) Replace the faulty led.

8. If a led level behaves differently than the rest.
   Possible reasons:
   a) Failure in interior wiring.
   Solutions:
   a) Check the interconnection wiring between levels, both power and PWM.

13. Commissioning checklist

LANTERN LED MCL200			
Installation date:		Lantern serial number:	
Commissioning date:		Flash character:	
Site name:		Colour:	
Nominal LED power:			
Battery Voltage:	V		

TEST DESCRIPTION	VALUES	PASS	FAIL
Mechanical defects?			
Beacon levelling?			
Top cover O-Ring?			
Closure tightness?			
Flashes period?			
Day/night test?			
LEDs status?			
Shade on solar panels?			
IR remote control test			

TESTED BY	
Company	
Position:	
ASSISTED BY	
Company:	
Position:	

NOTES AND COMMENTS:

14. Terms of responsibility

MSM warrants the purchaser that the product supplied is free of defects from materials or workmanship, and agrees to replace it in case of defects from materials and / or manufacture. To ensure that the product is not damaged during transport and replacement, it is highly recommended that the product is returned in the same package with which it was delivered.

The MCL200 beacon warranty is provided in the Conditions of Sales, Warranty and Technical Support.

Warranty does not cover:

a) Failure to carry out regular maintenance tasks. This includes the tasks described in section of maintenance, such as cleaning, internal reviews or hardware lubrication.
b) Damage due to wrong handling, transport or storage and faulty/improper installations.
c) Use of abrasive products and not recommended, such as solvents, or alcohols.
d) Use of parts other than the originals. The use may damage the functions the product was designed for initially. Therefore they can only be used after conformity of MSM.

If corrosion appeared within the product warranty period, subject to the above limitations, MSM will replace all parts with such corrosion.

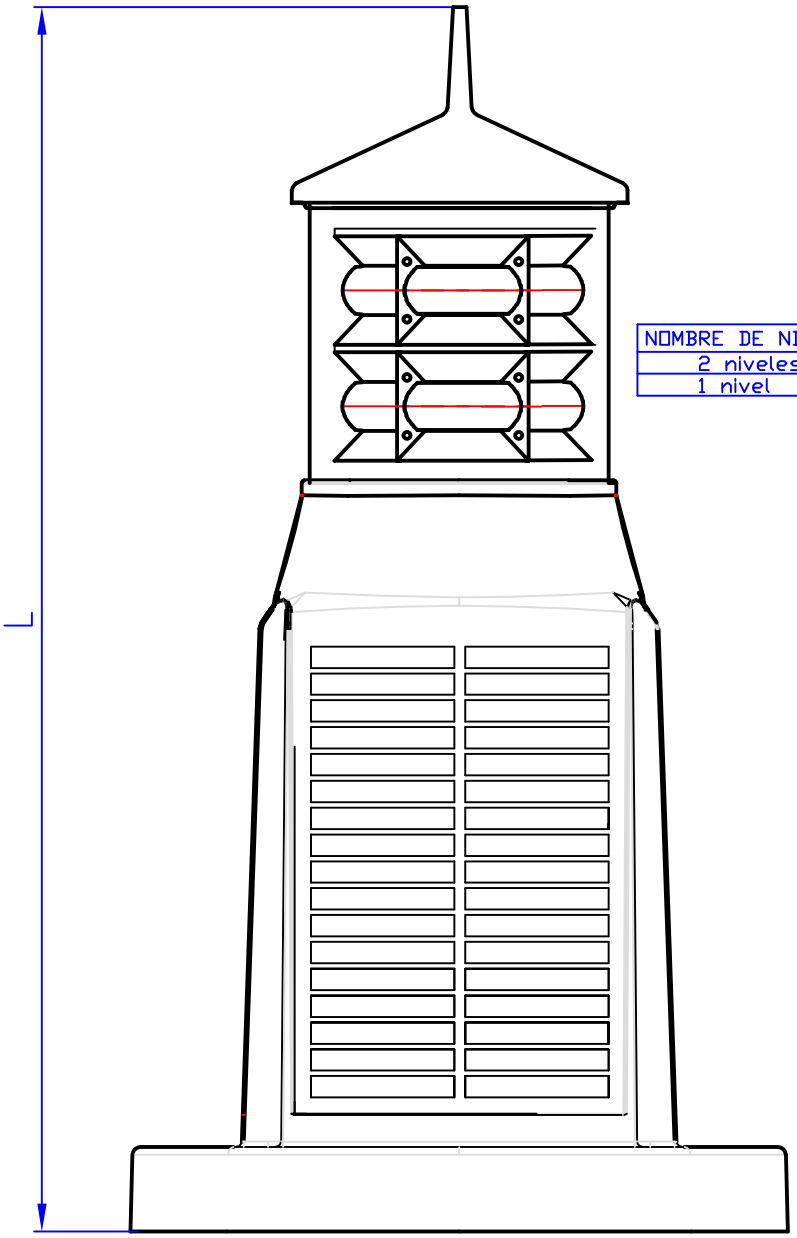
Since the use of the product and maintenance conditions are outside the control of MSM, MSM will not accept any compensation for loss, damage or costs others than the replacements in the cases cited above.

For repairs and inquiries, contact MSM, as follows:

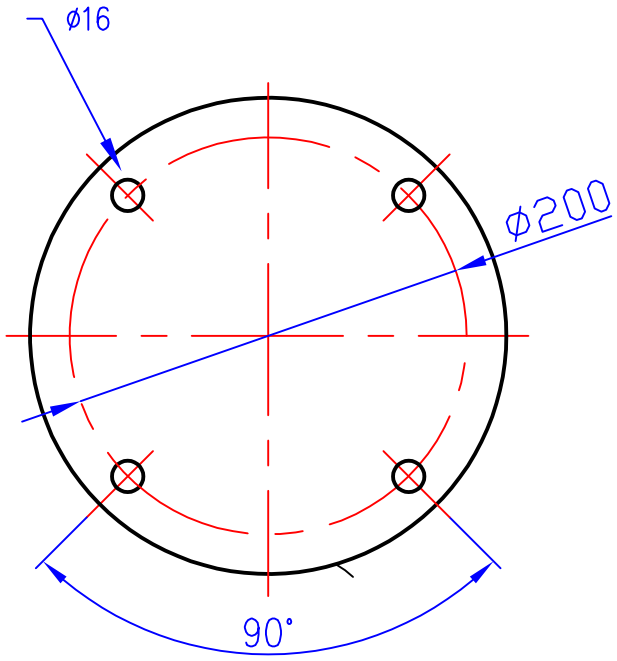
Mediterráneo Señales Marítimas

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

1. DRAWINGS



NOMBRE DE NIVEAUX	L=HAUTEUR TOTALE
2 niveles	520 mm
1 nivel	460 mm

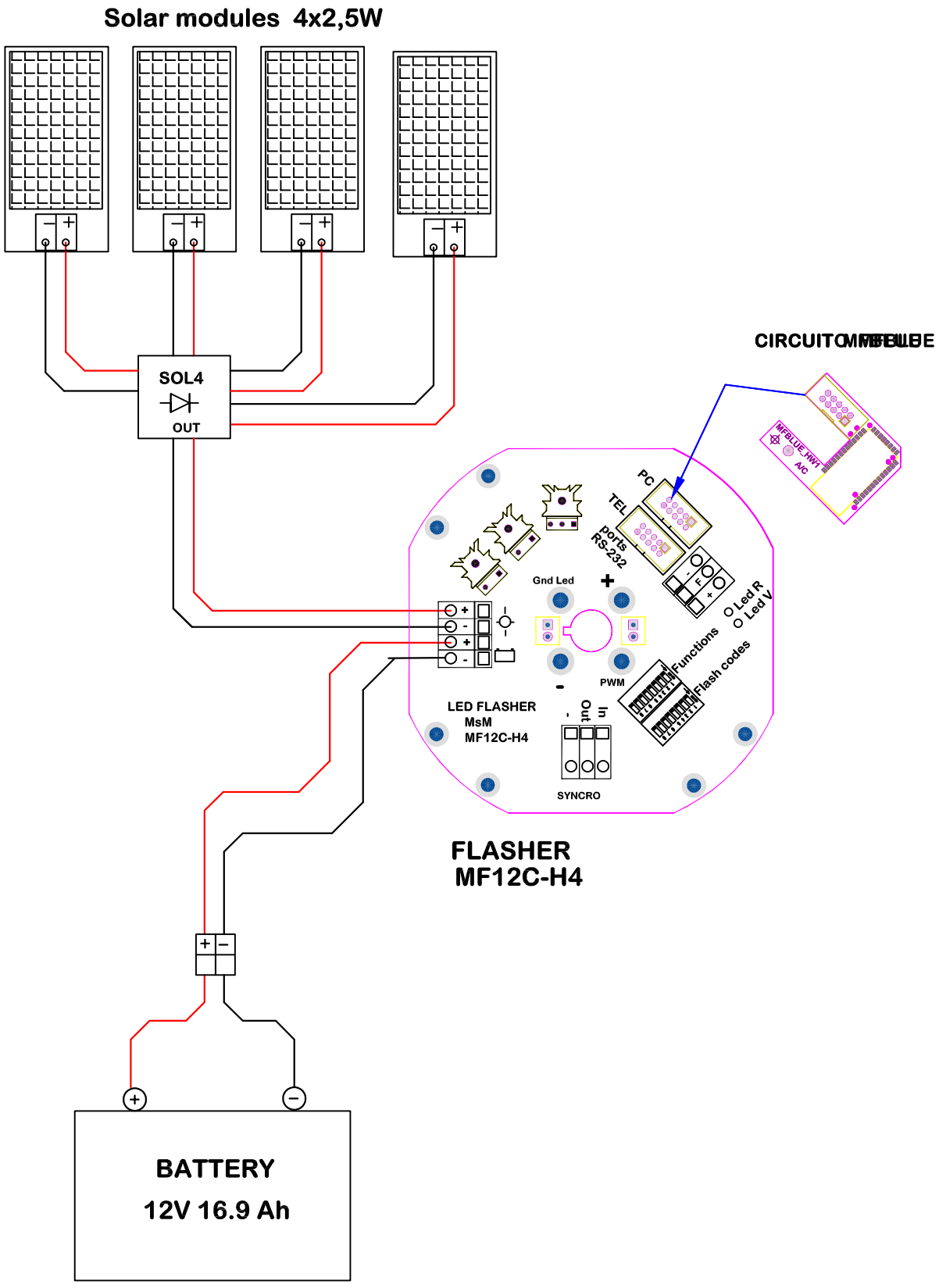


DIMENSIONS AND FIXINGS

SOLAR LANTERN MCL200

REF	MCL200-M1-ING	ESC		REV.	01

MSM
MEDITERRANEO SEÑALES MARITIMAS S.L.
VALENCIA - ESPAÑA. www.mesemar.com

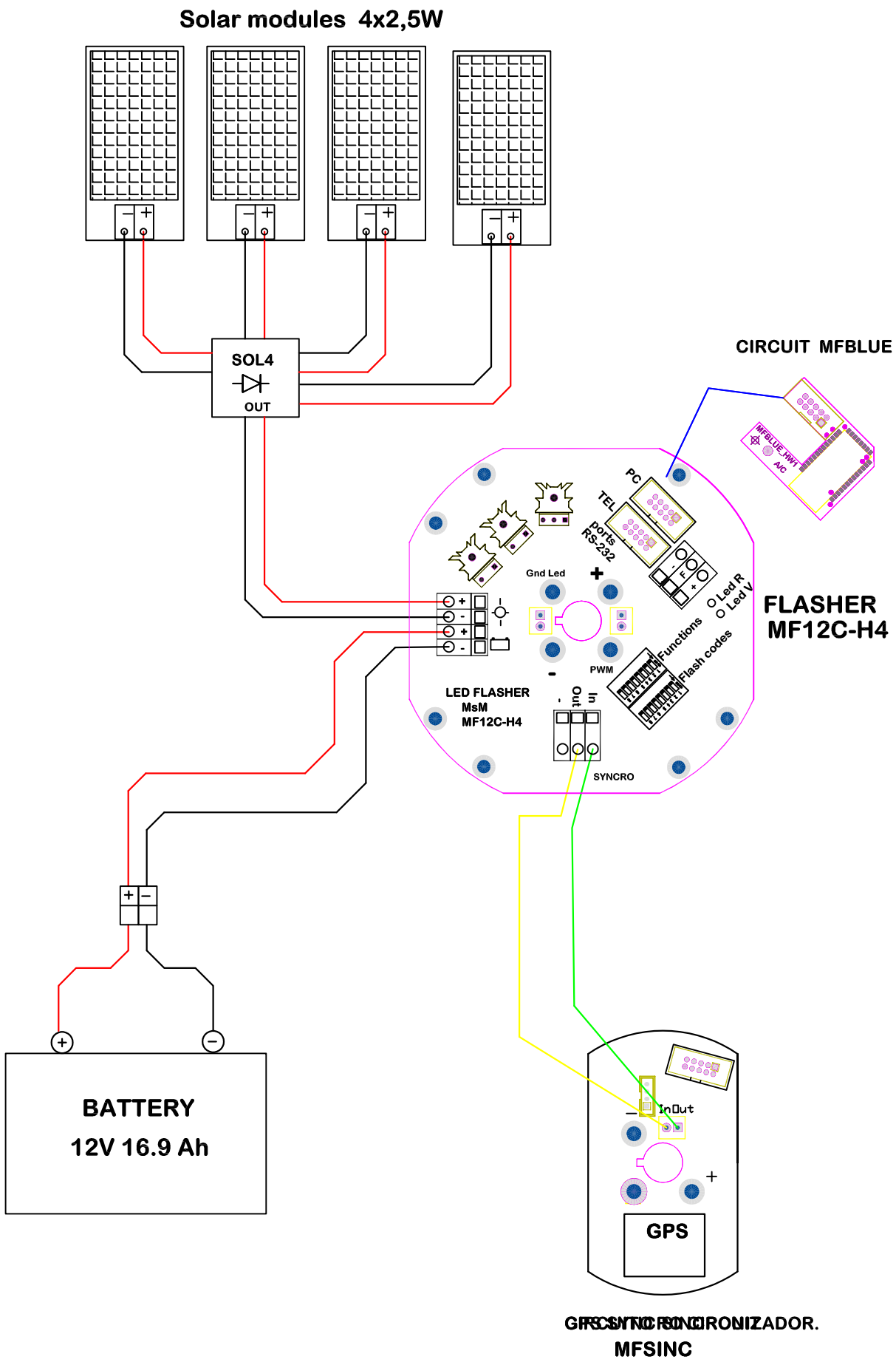


ELECTRICAL WIRING

SOLAR LANTERN MCL200

REF	MCL200-M2-ING	REV.	01

MEDITERRANEO SEÑALES MARITIMAS S.L.
VALENCIA - ESPAÑA. www.mesemar.com

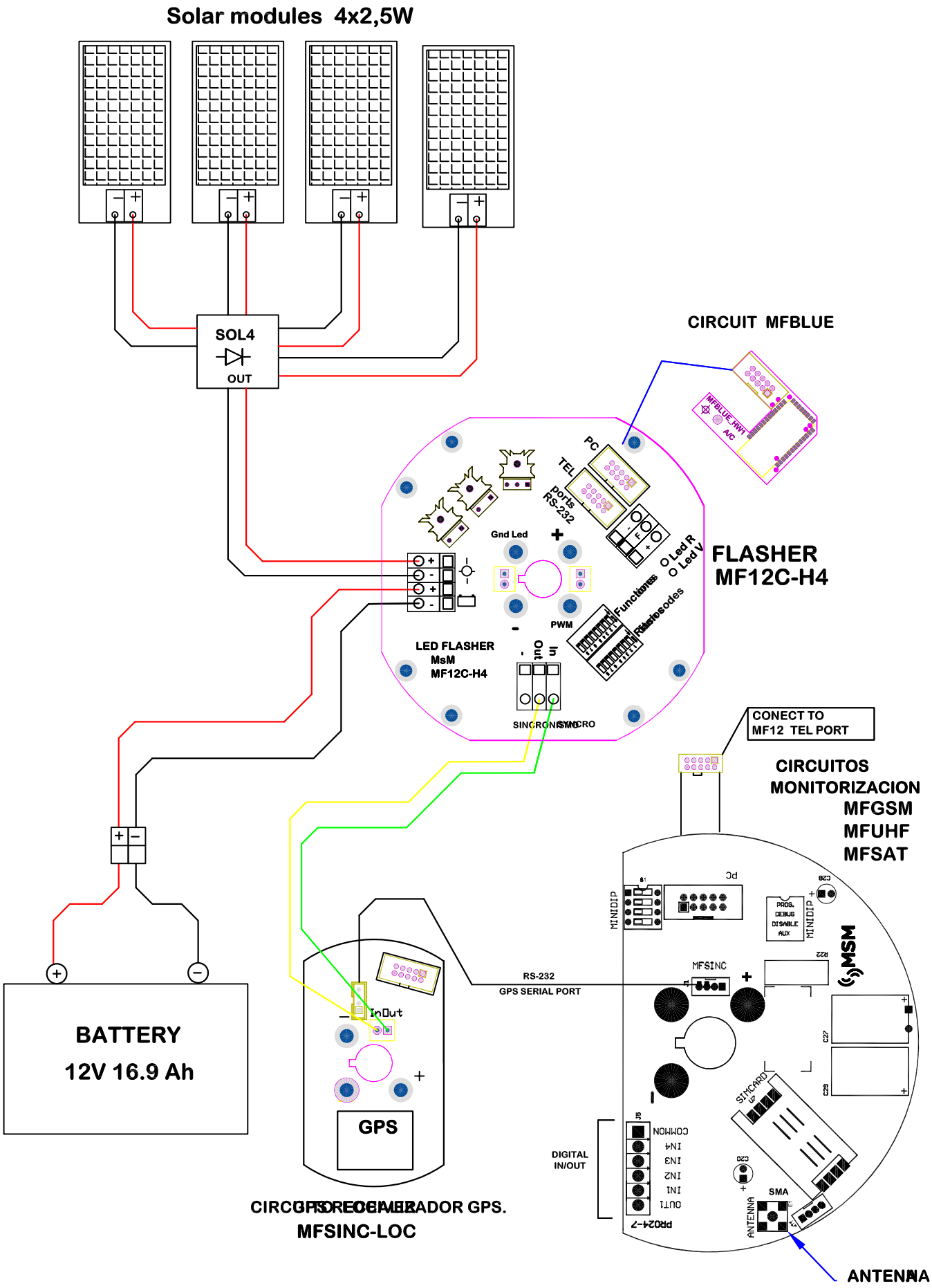


ELECTRICAL WIRING

SOLAR LANTERN MCL200+ SINCRO GPS

REF	MCL200-M3-GPS-ING	REV.	01

MEDITERRANEO SEÑALES MARITIMAS S.L.
VALENCIA - ESPAÑA. www.mesemar.com



ELECTRICAL WIRING

SOLAR LANTERN MCL200- MONITORING

REF	MCL200-M4-TEL-ING	REV.	01

MEDITERRANEO SEÑALES MARITIMAS S.L.
VALENCIA - ESPAÑA. www.mesemar.com

MSM

2. FLASH CHARACTER

FLASH CHARACTER TABLE

	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
1	0	0	0	0	0	0	0	0	USUARIO 1	0																									
2	1	0	0	0	0	0	0	0	USUARIO 2	0																									
3	0	1	0	0	0	0	0	0	USUARIO 3	0																									
4	1	1	0	0	0	0	0	0	USUARIO 4	0																									
5	0	0	1	0	0	0	0	0	USUARIO 5	0																									
6	1	0	1	0	0	0	0	0	USUARIO 6	0																									
7	0	1	1	0	0	0	0	0	FL1S	1	25%	0,25	0,75																						
8	1	1	1	0	0	0	0	0	FL1,5S	1,5	33%	0,50	1,00																						
9	0	0	0	1	0	0	0	0	FL2S	2	15%	0,30	1,70																						
10	1	0	0	1	0	0	0	0	FL2S	2	25%	0,50	1,50																						
11	0	1	0	1	0	0	0	0	FL2S	2	10%	0,20	1,80																						
12	1	1	0	1	0	0	0	0	FL2,5S	2,5	12%	0,30	2,20																						
13	0	0	1	1	0	0	0	0	FL2,5S	2,5	20%	0,50	2,00																						
14	1	0	1	1	0	0	0	0	FL3S	3	10%	0,30	2,70																						
15	0	1	1	1	0	0	0	0	FL3S	3	17%	0,50	2,50																						
16	1	1	1	1	0	0	0	0	FL3S	3	33%	1,00	2,00																						
17	0	0	0	0	1	0	0	0	FL3S	3	13%	0,40	2,60																						
18	1	0	0	0	1	0	0	0	FL3S	3	25%	0,75	2,25																						
19	0	1	0	0	1	0	0	0	FL4S	4	10%	0,40	3,60																						
20	1	1	0	0	1	0	0	0	FL4S	4	13%	0,50	3,50																						
21	0	0	1	0	1	0	0	0	FL4S	4	25%	1,00	3,00																						
22	1	0	1	0	1	0	0	0	FL4S	4	8%	0,30	3,70																						
23	0	1	1	0	1	0	0	0	FL5S	5	10%	0,50	4,50																						
24	1	1	1	0	1	0	0	0	FL5S	5	15%	0,75	4,25																						
25	0	0	0	1	1	0	0	0	FL5S	5	20%	1,00	4,00																						
26	1	0	0	1	1	0	0	0	FL6S	6	8%	0,50	5,50																						
27	0	1	0	1	1	0	0	0	FL6S	6	10%	0,60	5,40																						
28	1	1	0	1	1	0	0	0	FL6S	6	17%	1,00	5,00																						
29	0	0	1	1	1	0	0	0	FL6S	6	5%	0,30	5,70																						
30	1	0	1	1	1	0	0	0	FL8S	8	6%	0,50	7,50																						
31	0	1	1	1	1	0	0	0	FL8S	8	13%	1,00	7,00																						
32	1	1	1	1	1	0	0	0	FL8S	8	25%	2,00	6,00																						
33	0	0	0	0	0	1	1	0	FL10S	10	5%	0,50	9,50																						
34	1	0	0	0	0	1	0	0	FL10S	10	8%	0,75	9,25																						
35	0	1	0	0	0	1	0	0	FL10S	10	10%	1,00	9,00																						
36	1	1	0	0	0	1	0	0	FL10S	10	15%	1,50	8,50																						
37	0	0	1	0	0	1	0	0	FL10S	10	20%	2,00	8,00																						
38	1	0	1	0	0	1	0	0	FL12S	12	10%	1,20	10,80																						
39	0	1	1	0	0	1	0	0	FL12S	12	8%	1,00	11,00																						
40	1	1	1	0	0	1	0	0	FL15S	15	7%	1,00	14,00																						
41	0	0	0	1	0	1	0	0	FL15S	15	3%	0,50	14,50																						
42	1	0	0	1	0	1	0	0	FL15S	15	13%	2,00	13,00																						
43	0	1	0	1	0	1	0	0	FL15S	15	20%	3,00	12,00																						
44	1	1	0	1	0	1	0	0	FL(2)3S	3	33%	0,50	0,50	0,50	1,50																				
45	0	0	1	1	0	1	0	0	FL(2)4S	4	25%	0,50	0,50	0,50	2,50																				

	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
46	1	0	1	1	0	1	0	0	FL(2)4S	4	15%	0,30	0,70	0,30	2,70																				
47	0	1	1	1	0	1	0	0	FL(2)5S	5	16%	0,40	0,60	0,40	3,60																				
48	1	1	1	1	0	1	0	0	FL(2)5S	5	20%	0,50	1,00	0,50	3,00																				
49	0	0	0	0	1	1	0	0	FL(2)5S	5	12%	0,30	0,90	0,30	3,50																				
50	1	0	0	0	1	1	0	0	FL(2)5S	5	10%	0,25	1,00	0,25	3,50																				
51	0	1	0	0	1	1	0	0	FL(2)5S	5	30%	0,75	0,75	0,75	2,75																				
52	1	1	0	0	1	1	0	0	FL(2)6S	6	33%	1,00	1,00	1,00	3,00																				
53	0	0	1	0	1	1	0	0	FL(2)6S	6	17%	0,50	1,00	0,50	4,00																				
54	1	0	1	0	1	1	0	0	FL(2)6S	6	10%	0,30	0,70	0,30	4,70																				
55	0	1	1	0	1	1	0	0	FL(2)6S	6	10%	0,30	0,90	0,30	4,50																				
56	1	1	1	0	1	1	0	0	FL(2)6S	6	17%	0,50	0,50	0,50	4,50																				
57	0	0	0	1	1	1	0	0	FL(2)7S	7	14%	0,50	1,50	0,50	4,50																				
58	1	0	0	1	1	1	0	0	FL(2)8S	8	13%	0,50	1,00	0,50	6,00																				
59	0	1	0	1	1	1	0	0	FL(2)8S	8	13%	0,50	1,50	0,50	5,50																				
60	1	1	0	1	1	1	0	0	FL(2)8S	8	25%	1,00	1,50	1,00	4,50																				
61	0	0	1	1	1	1	0	0	FL(2)8S	8	25%	1,00	2,00	1,00	4,00																				
62	1	0	1	1	1	1	0	0	FL(2)9S	9	22%	1,00	2,00	1,00	5,00																				
63	0	1	1	1	1	1	0	0	FL(2)10S	10	10%	0,50	1,00	0,50	8,00																				
64	1	1	1	1	1	1	0	0	FL(2)10S	10	10%	0,50	1,50	0,50	7,50																				
65	0	0	0	0	0	0	1	0	FL(2)10S	10	20%	1,00	1,50	1,00	6,50																				
66	1	0	0	0	0	0	1	0	FL(2)10S	10	20%	1,00	1,00	1,00	7,00																				
67	0	1	0	0	0	0	1	0	FL(2)10S	10	8%	0,40	2,00	0,40	7,20																				
68	1	1	0	0	0	0	1	0	FL(2)10S	10	10%	0,50	2,00	0,50	7,00																				
69	0	0	1	0	0	0	1	0	FL(2)10S	10	20%	1,00	2,00	1,00	6,00																				
70	1	0	1	0	0	0	1	0	FL(2)10S	10	30%	1,50	1,50	1,50	5,50																				
71	0	1	1	0	0	0	1	0	FL(2)10S	10	8%	0,40	0,60	0,40	8,60																				
72	1	1	1	0	0	0	1	0	FL(2)12S	12	8%	0,50	1,00	0,50	10,00																				
73	0	0	0	1	0	0	1	0	FL(2)12S	12	17%	1,00	2,00	1,00	8,00																				
74	1	0	0	1	0	0	1	0	FL(2)15S	15	5%	0,40	1,60	0,40	12,60																				
75	0	1	0	1	0	0	1	0	FL(2)15S	15	13%	1,00	2,00	1,00	11,00																				
76	1	1	0	1	0	0	1	0	FL(2)15S	15	13%	1,00	3,00	1,00	10,00																				
77	0	0	1	1	0	0	1	0	FL(2)15S	15	33%	2,50	2,50	2,50	7,50																				
78	1	0	1	1	0	0	1	0	FL(2)20S	20	20%	2,00	2,00	2,00	14,00																				
79	0	1	1	1	0	0	1	0	FL(2+1)6S	6	15%	0,30	0,40	0,30	1,20	0,30	3,50																		
80	1	1	1	1	0	0	1	0	FL(2+1)6S	6	25%	0,50	0,50	0,50	1,50	0,50	2,50																		
81	0	0	0	0	1	0	1	0	FL(2+1)8S	8	31%	0,50	0,50	0,50	0,50	1,50	4,50																		
82	1	0	0	0	1	0	1	0	FL(2+1)10S	10	15%	0,50	0,70	0,50	2,10	0,50	5,70																		
83	0	1	0	0	1	0	1	0	FL(2+1)10S	10	15%	0,50	0,50	0,50	1,50	0,50	6,50																		
84	1	1	0	0	1	0	1	0	FL(2+1)12S	12	20%	0,80	1,20	0,80	2,40	0,80	6,00																		
85	0	0	1	0	1	0	1	0	FL(2+1)12S	12	8%	0,30	0,70	0,30	2,70	0,30	7,70																		
86	1	0	1	0	1	0	1	0	FL(2+1)12S	12	13%	0,50	0,50	0,50	2,50	0,50	7,50																		
87	0	1	1	0	1	0	1	0	FL(2+1)12S	12	25%	1,00	1,00	1,00	3,00	1,00	5,00																		
88	1	1	1	0	1	0	1	0	FL(2+1)15S	15	20%	1,00	2,00	1,00	5,00	1,00	5,00																		
89	0	0	0	1	1	0	1	0	FL(2+1)15S	15	20%	1,00	2,00	1,00	4,00	1,00	6,00																		
90	1	0	0	1	1	0	1	0	FL(2+1)15S	16	16%	0,50	0,50	0,50	0,50	1,50	12,50																		
91	0	1	0	1	1	0	1	0	FL(2+1)15S	15	20%	1,00	2,00	1,00	4,00	1,00	6,00																		
92	1	1	0	1	1	0	1	0	FL(2+1)15S	15	13%	0,40	0,50	0,40	0,50	1,20	12,00																		
93	0	0	1	1	1	0	1	0	FL(3)5S	5	15%	0,25	0,25	0,25	0,25	0,25	3,75																		

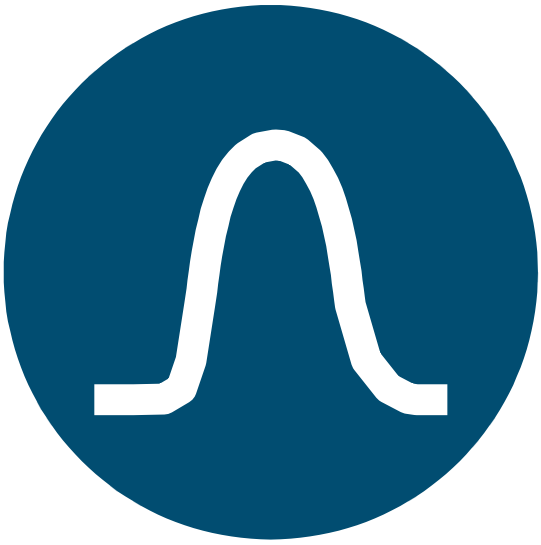
	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
94	1	0	1	1	1	0	1	0	FL(3)5S	5	12%	0,20	0,30	0,20	0,30	0,20	3,80																
95	0	1	1	1	1	0	1	0	FL(3)5S	5	18%	0,30	0,70	0,30	0,70	0,30	2,70																
96	1	1	1	1	1	0	1	0	FL(3)9S	9	17%	0,50	1,50	0,50	1,50	0,50	4,50																
97	0	0	0	0	0	1	1	0	FL(3)10S	10	15%	0,50	1,50	0,50	1,50	0,50	5,50																
98	1	0	0	0	0	1	1	0	FL(3)10S	10	30%	1,00	1,00	1,00	1,00	1,00	5,00																
99	0	1	0	0	0	1	1	0	FL(3)10S	10	15%	0,50	0,50	0,50	0,50	0,50	7,50																
100	1	1	0	0	0	1	1	0	FL(3)10S	10	9%	0,30	0,70	0,30	0,70	0,30	7,70																
101	0	0	1	0	0	1	1	0	FL(3)10S	10	12%	0,40	1,60	0,40	1,60	0,40	5,60																
102	1	0	1	0	0	1	1	0	FL(3)10S	10	23%	0,75	1,25	0,75	1,25	0,75	5,25																
103	0	1	1	0	0	1	1	0	FL(3)11S	11	18%	0,75	1,50	0,75	1,50	0,50	6,00																
104	1	1	1	0	0	1	1	0	FL(3)12S	12	20%	0,80	1,20	0,80	1,20	0,80	7,20																
105	0	0	0	1	0	1	1	0	FL(3)12S	12	13%	0,50	2,00	0,50	2,00	0,50	6,50																
106	1	0	0	1	0	1	1	0	FL(3)12S	12	8%	0,30	1,70	0,30	1,70	0,30	7,70																
107	0	1	0	1	0	1	1	0	FL(3)12S	12	13%	0,50	1,50	0,50	1,50	0,50	7,50																
108	1	1	0	1	0	1	1	0	FL(3)12S	12	25%	1,00	2,00	1,00	2,00	1,00	5,00																
109	0	0	1	1	0	1	1	0	FL(3)13S	13	23%	1,00	2,00	1,00	2,00	1,00	6,00																
110	1	0	1	1	0	1	1	0	FL(3)15S	15	10%	0,50	1,50	0,50	1,50	0,50	10,50																
111	0	1	1	1	0	1	1	0	FL(3)15S	15	20%	1,00	2,00	1,00	2,00	1,00	8,00																
112	1	1	1	1	0	1	1	0	FL(3)15S	15	10%	0,50	2,00	0,50	2,00	0,50	9,50																
113	0	0	0	0	1	1	1	0	FL(3)15S	15	30%	1,50	1,50	1,50	1,50	1,50	7,50																
114	1	0	0	0	1	1	1	0	FL(3)15S	15	15%	0,75	1,25	0,75	1,25	0,75	10,25																
115	0	1	0	0	1	1	1	0	FL(3)20S	20	8%	0,50	3,00	0,50	3,00	0,50	12,50																
116	1	1	0	0	1	1	1	0	FL(3)20S	20	30%	2,00	2,00	2,00	2,00	2,00	10,00																
117	0	0	1	0	1	1	1	0	FL(3+1)23S	23	9%	0,50	1,50	0,50	1,50	0,50	4,50	0,50	13,50														
118	1	0	1	0	1	1	1	0	FL(4)5S	5	16%	0,20	0,80	0,20	0,80	0,20	0,80	0,20	1,80														
119	0	1	1	0	1	1	1	0	FL(4)10S	10	20%	0,50	1,00	0,50	1,00	0,50	1,00	0,50	5,00														
120	1	1	1	0	1	1	1	0	FL(4)10S	10	16%	0,40	1,40	0,40	1,40	0,40	1,40	0,40	4,20														
121	0	0	0	1	1	1	1	0	FL(4)10S	10	30%	0,75	0,75	0,75	0,75	0,75	0,75	0,75	4,75														
122	1	0	0	1	1	1	1	0	FL(4)10S	10	20%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	3,50														
123	0	1	0	1	1	1	1	0	FL(4)11S	11	18%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	4,50														
124	1	1	0	1	1	1	1	0	FL(4)12S	12	27%	0,80	1,20	0,80	1,20	0,80	1,20	0,80	5,20														
125	0	0	1	1	1	1	1	0	FL(4)12S	12	10%	0,30	1,70	0,30	1,70	0,30	1,70	0,30	5,70														
126	1	0	1	1	1	1	1	0	FL(4)12S	12	17%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	5,50														
127	0	1	1	1	1	1	1	0	FL(4)15S	15	13%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	8,50														
128	1	1	1	1	1	1	1	0	FL(4)15S	15	27%	1,00	1,00	1,00	1,00	1,00	1,00	1,00	8,00														
129	0	0	0	0	0	0	0	1	FL(4)15S	15	11%	0,40	1,60	0,40	1,60	0,40	1,60	0,40	8,60														
130	1	0	0	0	0	0	0	1	FL(4)15S	15	27%	1,00	2,00	1,00	2,00	1,00	2,00	1,00	5,00														
131	0	1	0	0	0	0	0	1	FL(4)16S	16	13%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	9,50														
132	1	1	0	0	0	0	0	1	FL(4)16S	16	25%	1,00	2,00	1,00	2,00	1,00	2,00	1,00	6,00														
133	0	0	1	0	0	0	0	1	FL(4)20S	20	10%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	13,50														
134	1	0	1	0	0	0	0	1	FL(4)20S	20	20%	1,00	2,00	1,00	2,00	1,00	2,00	1,00	10,00														
135	0	1	1	0	0	0	0	1	FL(4)20S	20	30%	1,50	2,00	1,50	2,00	1,50	2,00	1,50	8,00														
136	1	1	1	0	0	0	0	1	FL(5)13S	13	19%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	1,50	0,50	4,50												
137	0	0	0	1	0	0	0	1	FL(5)20S	20	20%	0,80	1,20	0,80	1,20	0,80	1,20	0,80	1,20	0,80	11,20												
138	1	0	0	1	0	0	0	1	FL(5)20S	20	25%	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	11,00												
139	0	1	0	1	0	0	0	1	FL(5)20S	20	13%	0,50	1,50	0,50	1,50	0,50	1,50	0,50	1,50	0,50	11,50												
140	1	1	0	1	0	0	0	1	FL(6)15S	15	20%	0,50	1,00	0,50	1,00	0,50	1,00	0,50	1,00	0,50	1,00	0,50	7,00										
141	0	0	1	1	0	0	0	1	FL(9)10S	10	23%	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	5,75				

	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
142	1	0	1	1	0	0	0	1	FL(9)10S	10	18%	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	5,80						
143	0	1	1	1	0	0	0	1	FL(9)15S	15	30%	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	6,50						
144	1	1	1	1	0	0	0	1	ISO 0,5	0,5	50%	0,25	0,25																				
145	0	0	0	0	1	0	0	1	ISO1S	1	50%	0,50	0,50																				
146	1	0	0	0	1	0	0	1	ISO2S	2	50%	1,00	1,00																				
147	0	1	0	0	1	0	0	1	ISO3S	3	50%	1,50	1,50																				
148	1	1	0	0	1	0	0	1	ISO4S	4	50%	2,00	2,00																				
149	0	0	1	0	1	0	0	1	ISO5S	5	50%	2,50	2,50																				
150	1	0	1	0	1	0	0	1	ISO6S	6	50%	3,00	3,00																				
151	0	1	1	0	1	0	0	1	ISO8S	8	50%	4,00	4,00																				
152	1	1	1	0	1	0	0	1	ISO10S	10	50%	5,00	5,00																				
153	0	0	0	1	1	0	0	1	ISO12S	12	50%	6,00	6,00																				
154	1	0	0	1	1	0	0	1	LFL5S	5	40%	2,00	3,00																				
155	0	1	0	1	1	0	0	1	LFL6S	6	33%	2,00	4,00																				
156	1	1	0	1	1	0	0	1	LFL8S	8	25%	2,00	6,00																				
157	0	0	1	1	1	0	0	1	LFL8S	8	38%	3,00	5,00																				
158	1	0	1	1	1	0	0	1	LFL10S	10	20%	2,00	8,00																				
159	0	1	1	1	1	0	0	1	LFL10S	10	30%	3,00	7,00																				
160	1	1	1	1	1	0	0	1	LFL10S	10	40%	4,00	6,00																				
161	0	0	0	0	0	1	0	1	LFL12S	12	17%	2,00	10,00																				
162	1	0	0	0	0	1	0	1	LFL12S	12	25%	3,00	9,00																				
163	0	1	0	0	0	1	0	1	LFL15S	15	27%	4,00	11,00																				
164	1	1	0	0	0	1	0	1	MO(A)3S	3	67%	0,50	0,50	1,50	0,50																		
165	0	0	1	0	0	1	0	1	MO(A)5S	5	40%	0,50	0,50	1,50	2,50																		
166	1	0	1	0	0	1	0	1	MO(A)6S	6	22%	0,30	0,60	1,00	4,10																		
167	0	1	1	0	0	1	0	1	MO(A)8S	8	40%	0,80	1,20	2,40	3,60																		
168	1	1	1	0	0	1	0	1	MO(A)8S	8	30%	0,40	0,60	2,00	5,00																		
169	0	0	0	1	0	1	0	1	MO(A)8S	8	50%	1,00	1,00	3,00	3,00																		
170	1	0	0	1	0	1	0	1	MO(A)10S	10	20%	0,50	0,50	1,50	7,50																		
171	0	1	0	1	0	1	0	1	MO(A)12S	12	17%	0,50	0,50	1,50	9,50																		
172	1	1	0	1	0	1	0	1	MO(A)15S	15	17%	0,50	1,50	2,00	11,00																		
173	0	0	1	1	0	1	0	1	MO(B)6S	6	50%	1,50	0,50	0,50	0,50	0,50	0,50	0,50	1,50														
174	1	0	1	1	0	1	0	1	MO(B)15S	15	20%	1,50	0,50	0,50	0,50	0,50	0,50	0,50	10,50														
175	0	1	1	1	0	1	0	1	MO(F)6S	6	50%	0,50	0,50	0,50	0,50	1,50	0,50	0,50	1,50														
176	1	1	1	1	0	1	0	1	MO(G)6S	6	58%	1,50	0,50	1,50	0,50	0,50	1,50																
177	0	0	0	0	1	1	0	1	MO(K)6S	6	58%	1,50	0,50	0,50	0,50	1,50	1,50																
178	1	0	0	0	1	1	0	1	MO(L)6S	6	50%	0,50	0,50	1,50	0,50	0,50	0,50	0,50	1,50														
179	0	1	0	0	1	1	0	1	MO(N)5S	5	40%	1,50	0,50	0,50	2,50																		
180	1	1	0	0	1	1	0	1	MO(N)6S	6	67%	3,00	1,00	1,00	1,00																		
181	0	0	1	0	1	1	0	1	MO(N)10S	10	80%	6,00	1,00	2,00	1,00																		
182	1	0	1	0	1	1	0	1	MO(N)12S	12	17%	1,50	0,50	0,50	9,50																		
183	0	1	1	0	1	1	0	1	MO(N)12S	12	67%	6,00	2,00	2,00	2,00																		
184	1	1	1	0	1	1	0	1	MO(U)5S	5	50%	0,50	0,50	0,50	0,50	1,50	1,50																
185	0	0	0	1	1	1	0	1	MO(U)10S	10	10%	0,20	0,80	0,20	0,80	0,60	7,40																
186	1	0	0	1	1	1	0	1	MO(U)10S	10	15%	0,30	0,70	0,30	0,70	0,90	7,10																
187	0	1	0	1	1	1	0	1	MO(U)10S	10	20%	0,40	0,60	0,40	0,60	1,20	6,80																
188	1	1	0	1	1	1	0	1	MO(U)10S	10	25%	0,50	0,50	0,50	0,50	1,50	6,50																
189	0	0	1	1	1	1	0	1	MO(U)10S	10	30%	0,50	0,50	0,50	0,50	2,00	6,00																

	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
190	1	0	1	1	1	1	0	1	MO(U)15S	15	15%	0,45	0,45	0,45	0,45	1,35	11,85																
191	0	1	1	1	1	1	0	1	MO(U)15S	15	18%	0,60	0,30	0,60	0,30	1,50	11,70																
192	1	1	1	1	1	1	0	1	MO(U)15S	15	17%	0,50	0,50	0,50	0,50	1,50	11,50																
193	0	0	0	0	0	0	1	1	MO(U)15S	15	17%	0,60	0,30	0,60	0,30	1,40	11,80																
194	1	0	0	0	0	0	1	1	MO(U)15S	15	22%	0,70	0,50	0,70	0,50	1,90	10,70																
195	0	1	0	0	0	0	1	1	MO(U)15S	15	13%	0,40	0,50	0,40	0,50	1,20	12,00																
196	1	1	0	0	0	0	1	1	MO(V)6S	6	50%	0,50	0,50	0,50	0,50	0,50	0,50	1,50	1,50														
197	0	0	1	0	0	0	1	1	MO(W)6S	6	58%	0,50	0,50	1,50	0,50	1,50	1,50																
198	1	0	1	0	0	0	1	1	OC3S	3	83%	2,50	0,50																				
199	0	1	1	0	0	0	1	1	OC3S	3	67%	2,00	1,00																				
200	1	1	1	0	0	0	1	1	OC3S	3	75%	2,25	0,75																				
201	0	0	0	1	0	0	1	1	OC4S	4	75%	3,00	1,00																				
202	1	0	0	1	0	0	1	1	OC5S	5	60%	3,00	2,00																				
203	0	1	0	1	0	0	1	1	OC5S	5	80%	4,00	1,00																				
204	1	1	0	1	0	0	1	1	OC6S	6	75%	4,50	1,50																				
205	0	0	1	1	0	0	1	1	OC6S	6	83%	5,00	1,00																				
206	1	0	1	1	0	0	1	1	OC6S	6	67%	4,00	2,00																				
207	0	1	1	1	0	0	1	1	OC8S	8	75%	6,00	2,00																				
208	1	1	1	1	0	0	1	1	OC10S	10	60%	6,00	4,00																				
209	0	0	0	0	1	0	1	1	OC10S	10	75%	7,50	2,50																				
210	1	0	0	0	1	0	1	1	OC10S	10	80%	8,00	2,00																				
211	0	1	0	0	1	0	1	1	OC14S	14	79%	11,00	3,00																				
212	1	1	0	0	1	0	1	1	OC(2)9S	9	78%	5,00	1,00	2,00	1,00																		
213	0	0	1	0	1	0	1	1	OC(3)12S	12	75%	5,00	1,00	2,00	1,00	2,00	1,00																
214	1	0	1	0	1	0	1	1	OC(3)15S	15	60%	5,00	2,00	2,00	2,00	2,00	2,00																
215	0	1	1	0	1	0	1	1	Q1S	1	20%	0,20	0,80																				
216	1	1	1	0	1	0	1	1	Q1S	1	30%	0,30	0,70																				
217	0	0	0	1	1	0	1	1	Q1S	1	40%	0,40	0,60																				
218	1	0	0	1	1	0	1	1	Q1S	1	10%	0,10	0,90																				
219	0	1	0	1	1	0	1	1	Q1,2S	1,2	25%	0,30	0,90																				
220	1	1	0	1	1	0	1	1	Q(2)5S	5	12%	0,30	0,70	0,30	3,70																		
221	0	0	1	1	1	0	1	1	Q(2)6S	6	10%	0,30	0,70	0,30	4,70																		
222	1	0	1	1	1	0	1	1	Q(2)10S	10	10%	0,50	1,50	0,50	7,50																		
223	0	1	1	1	1	0	1	1	Q(3)5S	5	18%	0,30	0,70	0,30	0,70	0,30	2,70																
224	1	1	1	1	1	0	1	1	Q(3)10S	10	9%	0,30	0,70	0,30	0,70	0,30	7,70																
225	0	0	0	0	0	1	1	1	Q(3)10S	10	18%	0,60	0,60	0,60	0,60	0,60	7,00																
226	1	0	0	0	0	1	1	1	Q(3)10S	10	15%	0,50	0,50	0,50	0,50	0,50	7,50																
227	0	1	0	0	0	1	1	1	Q(4)6S	6	27%	0,40	0,60	0,40	0,60	0,40	0,60	0,40	2,60														
228	1	1	0	0	0	1	1	1	Q(4)10S	10	12%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	6,70														
229	0	0	1	0	0	1	1	1	Q(4)12S	12	10%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	8,70														
230	1	0	1	0	0	1	1	1	Q(4)12S	12	7%	0,20	0,80	0,20	0,80	0,20	0,80	0,20	8,80														
231	0	1	1	0	0	1	1	1	Q(4)15S	15	9%	0,35	0,70	0,35	0,70	0,35	0,70	0,35	11,50														
232	1	1	1	0	0	1	1	1	Q(4)20S	20	10%	0,50	0,50	0,50	0,50	0,50	0,50	0,50	16,50														
233	0	0	0	1	0	1	1	1	Q(5)7S	7	21%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	2,70												
234	1	0	0	1	0	1	1	1	Q(5)10S	10	15%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	5,70												
235	0	1	0	1	0	1	1	1	Q(6)10S	10	18%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	4,70										
236	1	1	0	1	0	1	1	1	Q(9)15S	15	18%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	6,70				
237	0	0	1	1	0	1	1	1	Q(9)15S	15	30%	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	6,50				

	MINIDIPS 0=OFF 1=ON									rv.06	MF12	1		2		3		4		5		6		7		8		9		10		11		12	
	1	2	3	4	5	6	7	8	RHYTHM	T=	DUTY%	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK	FL	DARK
238	1	0	1	1	0	1	1	1	Q(12)15S	15	16%	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	0,80	0,20	3,80
239	0	1	1	1	0	1	1	1	Q(6)+LFL15S	15	25%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	2,00	7,00										
240	1	1	1	1	0	1	1	1	Q(6)+LFL15S	15	32%	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	0,30	0,70	3,00	6,00										
241	0	0	0	0	1	1	1	1	Q(6)+LFL15S	15	33%	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	2,00	7,00										
242	1	0	0	0	1	1	1	1	Q(6)+LFL15S	15	40%	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	3,00	6,00										
243	0	1	0	0	1	1	1	1	VQ0,5S	0,5	40%	0,20	0,30																				
244	1	1	0	0	1	1	1	1	VQ0,6S	0,6	50%	0,30	0,30																				
245	0	0	1	0	1	1	1	1	VQ(3)5S	5	12%	0,20	0,30	0,20	0,30	0,20	3,80																
246	1	0	1	0	1	1	1	1	VQ(3)5S	5	18%	0,30	0,30	0,30	0,30	0,30	3,50																
247	0	1	1	0	1	1	1	1	VQ(3)5S	5	15%	0,25	0,25	0,25	0,25	0,25	3,75																
248	1	1	1	0	1	1	1	1	VQ(3)5S	5	9%	0,15	0,45	0,15	0,45	0,15	3,65																
249	0	0	0	1	1	1	1	1	VQ(9)10S	10	18%	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	5,80				
250	1	0	0	1	1	1	1	1	VQ(9)10S	10	27%	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	4,90				
251	0	1	0	1	1	1	1	1	VQ(9)10S	9,95	23%	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	5,70				
252	1	1	0	1	1	1	1	1	VQ(6)+LFL10S	10	37%	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	0,20	0,30	2,50	4,50								
253	0	0	1	1	1	1	1	1	VQ(6)+LFL10S	10	38%	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30	2,00	4,40								
254	1	0	1	1	1	1	1	1	VQ(6)+LFL10S	10	35%	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	2,00	5,00								
255	0	1	1	1	1	1	1	1	VQ(6)+LFL10S	10	29%	0,15	0,45	0,15	0,45	0,15	0,45	0,15	0,45	0,15	0,45	0,15	0,45	2,00	4,40								
256	1	1	1	1	1	1	1	1	LUZ FIJA	0	100%																						

1 TO 6 PROGRAMMABLES BY PC AND SOFTWARE MFCOM



3. RANGE

LUMINOUS INTENSITIES 5º

nº	MCL200-5º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITY Cd				2 HOURS SUN INTENSITY Cd				3 HOURS SUN INTENSITY Cd				4 HOURS SUN INTENSITY Cd			
1	USER-1	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	572	317	249	282
2	USER 2	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	572	317	249	282
3	USER 3	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
4	USER 4	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
5	USER 5	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
6	USER 6	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
7	FL1S	1	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
8	FL1,5S	1,5	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
9	FL2S	2	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
10	FL2S	2	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
11	FL2S	2	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
12	FL2,5S	2,5	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
13	FL2,5S	2,5	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
14	FL3S	3	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
15	FL3S	3	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
16	FL3S	3	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
17	FL3S	3	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
18	FL3S	3	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
19	FL4S	4	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
20	FL4S	4	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
21	FL4S	4	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
22	FL4S	4	7,5%	429	238	187	212	572	317	249	282	650	360	283	321	650	360	283	321
23	FL5S	5	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
24	FL5S	5	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
25	FL5S	5	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
26	FL6S	6	8,3%	386	214	168	191	515	285	224	254	650	360	283	321	650	360	283	321
27	FL6S	6	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
28	FL6S	6	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
29	FL6S	6	5,0%	644	356	280	318	650	360	283	321	650	360	283	321	650	360	283	321
30	FL8S	8	6,3%	515	285	224	254	650	360	283	321	650	360	283	321	650	360	283	321
31	FL8S	8	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
32	FL8S	8	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
33	FL10S	10	5,0%	644	356	280	318	650	360	283	321	650	360	283	321	650	360	283	321
34	FL10S	10	7,5%	429	238	187	212	572	317	249	282	650	360	283	321	650	360	283	321
35	FL10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
36	FL10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
37	FL10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
38	FL12S	12	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
39	FL12S	12	8,3%	386	214	168	191	515	285	224	254	650	360	283	321	650	360	283	321
40	FL15S	15	6,7%	483	267	210	238	644	356	280	318	650	360	283	321	650	360	283	321
41	FL15S	15	3,3%	650	360	283	321	650	360	283	321	650	360	283	321	650	360	283	321
42	FL15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
43	FL15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
44	FL(2)3S	3	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
45	FL(2)4S	4	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
46	FL(2)4S	4	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
47	FL(2)5S	5	16,0%	201	111	88	99	268	149	117	132	402	223	175	199	650	360	283	321
48	FL(2)5S	5	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
49	FL(2)5S	5	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
50	FL(2)5S	5	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
51	FL(2)5S	5	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
52	FL(2)6S	6	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
53	FL(2)6S	6	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
54	FL(2)6S	6	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
55	FL(2)6S	6	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
56	FL(2)6S	6	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
57	FL(2)7S	7	14,3%	225	125	98	111	300	166	131	148	450	249	196	222	650	360	283	321
58	FL(2)8S	8	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
59	FL(2)8S	8	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
60	FL(2)8S	8	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
61	FL(2)8S	8	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
62	FL(2)9S	9	22,2%	145	80	63	72	193	107	84	95	290	160	126	143	644	356	280	318
63	FL(2)10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
64	FL(2)10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
65	FL(2)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321

nº	MCL200-5º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITY Cd				2 HOURS SUN INTENSITY Cd				3 HOURS SUN INTENSITY Cd				4 HOURS SUN INTENSITY Cd			
66	FL(2)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
67	FL(2)10S	10	8,0%	402	223	175	199	536	297	233	265	650	360	283	321	650	360	283	321
68	FL(2)10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
69	FL(2)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
70	FL(2)10S	10	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
71	FL(2)10S	10	8,0%	402	223	175	199	536	297	233	265	650	360	283	321	650	360	283	321
72	FL(2)12S	12	8,3%	386	214	168	191	515	285	224	254	650	360	283	321	650	360	283	321
73	FL(2)12S	12	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
74	FL(2)15S	15	5,3%	603	334	263	298	650	360	283	321	650	360	283	321	650	360	283	321
75	FL(2)15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
76	FL(2)15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
77	FL(2)15S	15	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
78	FL(2)20S	20	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
79	FL(2+1)6S	6	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
80	FL(2+1)6S	6	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
81	FL(2+1)8S	8	31,3%	103	57	45	51	137	76	60	68	206	114	90	102	458	253	199	226
82	FL(2+1)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
83	FL(2+1)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
84	FL(2+1)12S	12	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
85	FL(2+1)12S	12	7,5%	429	238	187	212	572	317	249	282	650	360	283	321	650	360	283	321
86	FL(2+1)12S	12	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
87	FL(2+1)12S	12	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
88	FL(2+1)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
89	FL(2+1)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
90	FL(2+1)15S	16	15,6%	206	114	90	102	275	152	120	136	412	228	179	203	650	360	283	321
91	FL(2+1)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
92	FL(2+1)15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
93	FL(3)5S	5	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
94	FL(3)5S	5	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
95	FL(3)5S	5	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
96	FL(3)9S	9	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
97	FL(3)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
98	FL(3)10S	10	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
99	FL(3)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
100	FL(3)10S	10	9,0%	358	198	156	177	477	264	208	235	650	360	283	321	650	360	283	321
101	FL(3)10S	10	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
102	FL(3)10S	10	22,5%	143	79	62	71	191	106	83	94	286	158	125	141	636	352	277	314
103	FL(3)11S	11	18,2%	177	98	77	87	236	131	103	117	354	196	154	175	650	360	283	321
104	FL(3)12S	12	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
105	FL(3)12S	12	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
106	FL(3)12S	12	7,5%	429	238	187	212	572	317	249	282	650	360	283	321	650	360	283	321
107	FL(3)12S	12	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
108	FL(3)12S	12	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
109	FL(3)13S	13	23,1%	139	77	61	69	186	103	81	92	279	154	121	138	620	343	270	306
110	FL(3)15S	15	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
111	FL(3)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
112	FL(3)15S	15	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
113	FL(3)15S	15	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
114	FL(3)15S	15	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
115	FL(3)20S	20	7,5%	429	238	187	212	572	317	249	282	650	360	283	321	650	360	283	321
116	FL(3)20S	20	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
117	FL(3+1)23S	23	8,7%	370	205	161	183	493	273	215	244	650	360	283	321	650	360	283	321
118	FL(4)5S	5	16,0%	201	111	88	99	268	149	117	132	402	223	175	199	650	360	283	321
119	FL(4)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
120	FL(4)10S	10	16,0%	201	111	88	99	268	149	117	132	402	223	175	199	650	360	283	321
121	FL(4)10S	10	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
122	FL(4)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
123	FL(4)11S	11	18,2%	177	98	77	87	236	131	103	117	354	196	154	175	650	360	283	321
124	FL(4)12S	12	26,7%	121	67	53	60	161	89	70	79	241	134	105	119	536	297	233	265
125	FL(4)12S	12	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
126	FL(4)12S	12	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
127	FL(4)15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
128	FL(4)15S	15	26,7%	121	67	53	60	161	89	70	79	241	134	105	119	536	297	233	265
129	FL(4)15S	15	10,7%	302	167	131	149	402	223	175	199	603	334	263	298	650	360	283	321
130	FL(4)15S	15	26,7%	121	67	53	60	161	89	70	79	241	134	105	119	536	297	233	265
131	FL(4)16S	16	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
132	FL(4)16S	16	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
133	FL(4)20S	20	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
134	FL(4)20S	20	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321

	MCL200-5º	RV 06	MF12	1,5 HOURS SUN				2 HOURS SUN				3 HOURS SUN				4 HOURS SUN			
nº	RHYTHM	T=	DUTY%	INTENSITY Cd				INTENSITY Cd				INTENSITY Cd				INTENSITY Cd			
135	FL(4)20S	20	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
136	FL(5)13S	13	19,2%	167	93	73	83	223	124	97	110	335	185	146	165	650	360	283	321
137	FL(5)20S	20	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
138	FL(5)20S	20	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
139	FL(5)20S	20	12,5%	257	143	112	127	343	190	149	169	515	285	224	254	650	360	283	321
140	FL(6)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
141	FL(9)10S	10	22,5%	143	79	62	71	191	106	83	94	286	158	125	141	636	352	277	314
142	FL(9)10S	10	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
143	FL(9)15S	15	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
144	ISO 0,5	0,5	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
145	ISO1S	1	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
146	ISO2S	2	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
147	ISO3S	3	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
148	ISO4S	4	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
149	ISO5S	5	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
150	ISO6S	6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
151	ISO8S	8	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
152	ISO10S	10	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
153	ISO12S	12	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
154	LFL5S	5	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
155	LFL6S	6	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
156	LFL8S	8	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
157	LFL8S	8	37,5%	86	48	37	42	114	63	50	56	172	95	75	85	381	211	166	188
158	LFL10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
159	LFL10S	10	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
160	LFL10S	10	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
161	LFL12S	12	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
162	LFL12S	12	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
163	LFL15S	15	26,7%	121	67	53	60	161	89	70	79	241	134	105	119	536	297	233	265
164	MO(A)3S	3	66,7%	48	27	21	24	64	36	28	32	97	53	42	48	215	119	93	106
165	MO(A)5S	5	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
166	MO(A)6S	6	21,7%	149	82	65	73	198	110	86	98	297	164	129	147	650	360	283	321
167	MO(A)8S	8	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
168	MO(A)8S	8	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
169	MO(A)8S	8	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
170	MO(A)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
171	MO(A)12S	12	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
172	MO(A)15S	15	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
173	MO(B)6S	6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
174	MO(B)15S	15	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
175	MO(F)6S	6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
176	MO(G)6S	6	58,3%	55	31	24	27	74	41	32	36	110	61	48	54	245	136	107	121
177	MO(K)6S	6	58,3%	55	31	24	27	74	41	32	36	110	61	48	54	245	136	107	121
178	MO(L)6S	6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
179	MO(N)5S	5	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
180	MO(N)6S	6	66,7%	48	27	21	24	64	36	28	32	97	53	42	48	215	119	93	106
181	MO(N)10S	10	80,0%	40	22	18	20	54	30	23	26	80	45	35	40	179	99	78	88
182	MO(N)12S	12	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
183	MO(N)12S	12	66,7%	48	27	21	24	64	36	28	32	97	53	42	48	215	119	93	106
184	MO(U)5S	5	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
185	MO(U)10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
186	MO(U)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
187	MO(U)10S	10	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
188	MO(U)10S	10	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
189	MO(U)10S	10	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
190	MO(U)15S	15	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
191	MO(U)15S	15	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
192	MO(U)15S	15	16,7%	193	107	84	95	257	143	112	127	386	214	168	191	650	360	283	321
193	MO(U)15S	15	17,3%	186	103	81	92	248	137	108	122	371	206	162	183	650	360	283	321
194	MO(U)15S	15	22,0%	146	81	64	72	195	108	85	96	293	162	127	144	650	360	283	321
195	MO(U)15S	15	13,3%	241	134	105	119	322	178	140	159	483	267	210	238	650	360	283	321
196	MO(V)6S	6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
197	MO(W)6S	6	58,3%	55	31	24	27	74	41	32	36	110	61	48	54	245	136	107	121
198	OC3S	3	83,3%	39	21	17	19	51	29	22	25	77	43	34	38	172	95	75	85
199	OC3S	3	66,7%	48	27	21	24	64	36	28	32	97	53	42	48	215	119	93	106
200	OC3S	3	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
201	OC4S	4	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
202	OC5S	5	60,0%	54	30	23	26	72	40	31	35	107	59	47	53	238	132	104	118
203	OC5S	5	80,0%	40	22	18	20	54	30	23	26	80	45	35	40	179	99	78	88

nº	MCL200-5º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITY Cd				2 HOURS SUN INTENSITY Cd				3 HOURS SUN INTENSITY Cd				4 HOURS SUN INTENSITY Cd			
204	OC6S	6	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
205	OC6S	6	83,3%	39	21	17	19	51	29	22	25	77	43	34	38	172	95	75	85
206	OC6S	6	66,7%	48	27	21	24	64	36	28	32	97	53	42	48	215	119	93	106
207	OC8S	8	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
208	OC10S	10	60,0%	54	30	23	26	72	40	31	35	107	59	47	53	238	132	104	118
209	OC10S	10	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
210	OC10S	10	80,0%	40	22	18	20	54	30	23	26	80	45	35	40	179	99	78	88
211	OC14S	14	78,6%	41	23	18	20	55	30	24	27	82	45	36	40	182	101	79	90
212	OC(2)9S	9	77,8%	41	23	18	20	55	31	24	27	83	46	36	41	184	102	80	91
213	OC(3)12S	12	75,0%	43	24	19	21	57	32	25	28	86	48	37	42	191	106	83	94
214	OC(3)15S	15	60,0%	54	30	23	26	72	40	31	35	107	59	47	53	238	132	104	118
215	Q1S	1	20,0%	161	89	70	79	215	119	93	106	322	178	140	159	650	360	283	321
216	Q1S	1	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
217	Q1S	1	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
218	Q1S	1	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
219	Q1,2S	1,2	25,0%	129	71	56	64	172	95	75	85	257	143	112	127	572	317	249	282
220	Q(2)5S	5	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
221	Q(2)6S	6	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
222	Q(2)10S	10	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
223	Q(3)5S	5	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
224	Q(3)10S	10	9,0%	358	198	156	177	477	264	208	235	650	360	283	321	650	360	283	321
225	Q(3)10S	10	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
226	Q(3)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
227	Q(4)6S	6	26,7%	121	67	53	60	161	89	70	79	241	134	105	119	536	297	233	265
228	Q(4)10S	10	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
229	Q(4)12S	12	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
230	Q(4)12S	12	6,7%	483	267	210	238	644	356	280	318	650	360	283	321	650	360	283	321
231	Q(4)15S	15	9,3%	345	191	150	170	460	255	200	227	650	360	283	321	650	360	283	321
232	Q(4)20S	20	10,0%	322	178	140	159	429	238	187	212	644	356	280	318	650	360	283	321
233	Q(5)7S	7	21,4%	150	83	65	74	200	111	87	99	300	166	131	148	650	360	283	321
234	Q(5)10S	10	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
235	Q(6)10S	10	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
236	Q(9)15S	15	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
237	Q(9)15S	15	30,0%	107	59	47	53	143	79	62	71	215	119	93	106	477	264	208	235
238	Q(12)15S	15	16,0%	201	111	88	99	268	149	117	132	402	223	175	199	650	360	283	321
239	Q(6)+LFL15S	15	25,3%	127	70	55	63	169	94	74	84	254	141	111	125	564	313	246	279
240	Q(6)+LFL15S	15	32,0%	101	56	44	50	134	74	58	66	201	111	88	99	447	248	195	221
241	Q(6)+LFL15S	15	33,3%	97	53	42	48	129	71	56	64	193	107	84	95	429	238	187	212
242	Q(6)+LFL15S	15	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
243	VQ0,5S	0,5	40,0%	80	45	35	40	107	59	47	53	161	89	70	79	358	198	156	177
244	VQ0,6S	0,6	50,0%	64	36	28	32	86	48	37	42	129	71	56	64	286	158	125	141
245	VQ(3)5S	5	12,0%	268	149	117	132	358	198	156	177	536	297	233	265	650	360	283	321
246	VQ(3)5S	5	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
247	VQ(3)5S	5	15,0%	215	119	93	106	286	158	125	141	429	238	187	212	650	360	283	321
248	VQ(3)5S	5	9,0%	358	198	156	177	477	264	208	235	650	360	283	321	650	360	283	321
249	VQ(9)10S	10	18,0%	179	99	78	88	238	132	104	118	358	198	156	177	650	360	283	321
250	VQ(9)10S	10	27,0%	119	66	52	59	159	88	69	78	238	132	104	118	530	293	231	262
251	VQ(9)10S	9,95	22,6%	142	79	62	70	190	105	83	94	285	158	124	141	632	350	275	312
252	VQ(6)+LFL10S	10	37,0%	87	48	38	43	116	64	50	57	174	96	76	86	386	214	168	191
253	VQ(6)+LFL10S	10	38,0%	85	47	37	42	113	63	49	56	169	94	74	84	376	208	164	186
254	VQ(6)+LFL10S	10	35,0%	92	51	40	45	123	68	53	61	184	102	80	91	409	226	178	202
255	VQ(6)+LFL10S	10	29,0%	111	61	48	55	148	82	64	73	222	123	97	110	493	273	215	244
256	FIX LIGHT	0	100,0%	32	18	14	16	43	24	19	21	64	36	28	32	143	79	62	71

RHYTHMS 1 TO 6 PROGRAMMABLES BY PC AND SOFWARE MFCOM

LUMINOUS INTENSITIES 12º

nº	MCL200-12º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITI Cd				2 HOURS SUN INTENSITI Cd				3 HOURS SUN INTENSITI Cd				4 HOURS SUN INTENSITI Cd			
1	USER-1	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
2	USER 2	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
3	USER 3	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
4	USER 4	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
5	USER 5	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
6	USER 6	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
7	FL1S	1	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
8	FL1,5S	1,5	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
9	FL2S	2	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
10	FL2S	2	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
11	FL2S	2	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
12	FL2,5S	2,5	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
13	FL2,5S	2,5	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
14	FL3S	3	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
15	FL3S	3	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
16	FL3S	3	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
17	FL3S	3	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
18	FL3S	3	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
19	FL4S	4	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
20	FL4S	4	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
21	FL4S	4	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
22	FL4S	4	7,5%	149	144	101	112	198	192	135	150	225	218	153	170	225	218	153	170
23	FL5S	5	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
24	FL5S	5	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
25	FL5S	5	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
26	FL6S	6	8,3%	134	129	91	101	178	173	121	135	225	218	153	170	225	218	153	170
27	FL6S	6	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
28	FL6S	6	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
29	FL6S	6	5,0%	223	216	151	168	225	218	153	170	225	218	153	170	225	218	153	170
30	FL8S	8	6,3%	178	173	121	135	225	218	153	170	225	218	153	170	225	218	153	170
31	FL8S	8	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
32	FL8S	8	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
33	FL10S	10	5,0%	223	216	151	168	225	218	153	170	225	218	153	170	225	218	153	170
34	FL10S	10	7,5%	149	144	101	112	198	192	135	150	225	218	153	170	225	218	153	170
35	FL10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
36	FL10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
37	FL10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
38	FL12S	12	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
39	FL12S	12	8,3%	134	129	91	101	178	173	121	135	225	218	153	170	225	218	153	170
40	FL15S	15	6,7%	167	162	114	126	223	216	151	168	225	218	153	170	225	218	153	170
41	FL15S	15	3,3%	225	218	153	170	225	218	153	170	225	218	153	170	225	218	153	170
42	FL15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
43	FL15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
44	FL(2)3S	3	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
45	FL(2)4S	4	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
46	FL(2)4S	4	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
47	FL(2)5S	5	16,0%	70	67	47	53	93	90	63	70	139	135	95	105	186	180	126	140
48	FL(2)5S	5	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
49	FL(2)5S	5	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
50	FL(2)5S	5	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
51	FL(2)5S	5	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
52	FL(2)6S	6	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
53	FL(2)6S	6	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
54	FL(2)6S	6	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
55	FL(2)6S	6	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
56	FL(2)6S	6	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
57	FL(2)7S	7	14,3%	78	76	53	59	104	101	71	79	156	151	106	118	208	201	141	157
58	FL(2)8S	8	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
59	FL(2)8S	8	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
60	FL(2)8S	8	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
61	FL(2)8S	8	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
62	FL(2)9S	9	22,2%	50	49	34	38	67	65	45	50	100	97	68	76	134	129	91	101
63	FL(2)10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
64	FL(2)10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170

	MCL200-12º	RV 06	MF12	1,5 HOURS SUN				2 HOURS SUN				3 HOURS SUN				4 HOURS SUN			
nº	RHYTHM	T=	DUTY%	INTENSITI Cd				INTENSITI Cd				INTENSITI Cd				INTENSITI Cd			
65	FL(2)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
66	FL(2)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
67	FL(2)10S	10	8,0%	139	135	95	105	186	180	126	140	225	218	153	170	225	218	153	170
68	FL(2)10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
69	FL(2)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
70	FL(2)10S	10	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
71	FL(2)10S	10	8,0%	139	135	95	105	186	180	126	140	225	218	153	170	225	218	153	170
72	FL(2)12S	12	8,3%	134	129	91	101	178	173	121	135	225	218	153	170	225	218	153	170
73	FL(2)12S	12	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
74	FL(2)15S	15	5,3%	209	202	142	158	225	218	153	170	225	218	153	170	225	218	153	170
75	FL(2)15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
76	FL(2)15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
77	FL(2)15S	15	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
78	FL(2)20S	20	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
79	FL(2+1)6S	6	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
80	FL(2+1)6S	6	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
81	FL(2+1)8S	8	31,3%	36	35	24	27	48	46	32	36	71	69	48	54	95	92	65	72
82	FL(2+1)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
83	FL(2+1)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
84	FL(2+1)12S	12	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
85	FL(2+1)12S	12	7,5%	149	144	101	112	198	192	135	150	225	218	153	170	225	218	153	170
86	FL(2+1)12S	12	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
87	FL(2+1)12S	12	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
88	FL(2+1)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
89	FL(2+1)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
90	FL(2+1)15S	16	15,6%	71	69	48	54	95	92	65	72	143	138	97	108	190	184	129	144
91	FL(2+1)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
92	FL(2+1)15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
93	FL(3)5S	5	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
94	FL(3)5S	5	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
95	FL(3)5S	5	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
96	FL(3)9S	9	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
97	FL(3)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
98	FL(3)10S	10	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
99	FL(3)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
100	FL(3)10S	10	9,0%	124	120	84	94	165	160	112	125	225	218	153	170	225	218	153	170
101	FL(3)10S	10	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
102	FL(3)10S	10	22,5%	50	48	34	37	66	64	45	50	99	96	67	75	132	128	90	100
103	FL(3)11S	11	18,2%	61	59	42	46	82	79	56	62	123	119	83	93	163	158	111	123
104	FL(3)12S	12	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
105	FL(3)12S	12	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
106	FL(3)12S	12	7,5%	149	144	101	112	198	192	135	150	225	218	153	170	225	218	153	170
107	FL(3)12S	12	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
108	FL(3)12S	12	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
109	FL(3)13S	13	23,1%	48	47	33	36	64	62	44	49	97	94	66	73	129	125	88	97
110	FL(3)15S	15	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
111	FL(3)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
112	FL(3)15S	15	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
113	FL(3)15S	15	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
114	FL(3)15S	15	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
115	FL(3)20S	20	7,5%	149	144	101	112	198	192	135	150	225	218	153	170	225	218	153	170
116	FL(3)20S	20	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
117	FL(3+1)23S	23	8,7%	128	124	87	97	171	165	116	129	225	218	153	170	225	218	153	170
118	FL(4)5S	5	16,0%	70	67	47	53	93	90	63	70	139	135	95	105	186	180	126	140
119	FL(4)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
120	FL(4)10S	10	16,0%	70	67	47	53	93	90	63	70	139	135	95	105	186	180	126	140
121	FL(4)10S	10	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
122	FL(4)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
123	FL(4)11S	11	18,2%	61	59	42	46	82	79	56	62	123	119	83	93	163	158	111	123
124	FL(4)12S	12	26,7%	42	40	28	32	56	54	38	42	84	81	57	63	111	108	76	84
125	FL(4)12S	12	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
126	FL(4)12S	12	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
127	FL(4)15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
128	FL(4)15S	15	26,7%	42	40	28	32	56	54	38	42	84	81	57	63	111	108	76	84
129	FL(4)15S	15	10,7%	104	101	71	79	139	135	95	105	209	202	142	158	225	218	153	170
130	FL(4)15S	15	26,7%	42	40	28	32	56	54	38	42	84	81	57	63	111	108	76	84
131	FL(4)16S	16	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
132	FL(4)16S	16	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
133	FL(4)20S	20	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170

nº	MCL200-12º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITI Cd				2 HOURS SUN INTENSITI Cd				3 HOURS SUN INTENSITI Cd				4 HOURS SUN INTENSITI Cd			
134	FL(4)20S	20	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
135	FL(4)20S	20	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
136	FL(5)13S	13	19,2%	58	56	39	44	77	75	53	58	116	112	79	88	154	150	105	117
137	FL(5)20S	20	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
138	FL(5)20S	20	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
139	FL(5)20S	20	12,5%	89	86	61	67	119	115	81	90	178	173	121	135	225	218	153	170
140	FL(6)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
141	FL(9)10S	10	22,5%	50	48	34	37	66	64	45	50	99	96	67	75	132	128	90	100
142	FL(9)10S	10	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
143	FL(9)15S	15	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
144	ISO 0,5	0,5	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
145	ISO1S	1	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
146	ISO2S	2	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
147	ISO3S	3	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
148	ISO4S	4	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
149	ISO5S	5	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
150	ISO6S	6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
151	ISO8S	8	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
152	ISO10S	10	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
153	ISO12S	12	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
154	LFL5S	5	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
155	LFL6S	6	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
156	LFL8S	8	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
157	LFL8S	8	37,5%	30	29	20	22	40	38	27	30	59	58	40	45	79	77	54	60
158	LFL10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
159	LFL10S	10	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
160	LFL10S	10	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
161	LFL12S	12	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
162	LFL12S	12	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
163	LFL15S	15	26,7%	42	40	28	32	56	54	38	42	84	81	57	63	111	108	76	84
164	MO(A)3S	3	66,7%	17	16	11	13	22	22	15	17	33	32	23	25	45	43	30	34
165	MO(A)5S	5	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
166	MO(A)6S	6	21,7%	51	50	35	39	69	66	47	52	103	100	70	78	137	133	93	104
167	MO(A)8S	8	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
168	MO(A)8S	8	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
169	MO(A)8S	8	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
170	MO(A)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
171	MO(A)12S	12	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
172	MO(A)15S	15	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
173	MO(B)6S	6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
174	MO(B)15S	15	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
175	MO(F)6S	6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
176	MO(G)6S	6	58,3%	19	18	13	14	25	25	17	19	38	37	26	29	51	49	35	38
177	MO(K)6S	6	58,3%	19	18	13	14	25	25	17	19	38	37	26	29	51	49	35	38
178	MO(L)6S	6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
179	MO(N)5S	5	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
180	MO(N)6S	6	66,7%	17	16	11	13	22	22	15	17	33	32	23	25	45	43	30	34
181	MO(N)10S	10	80,0%	14	13	9	11	19	18	13	14	28	27	19	21	37	36	25	28
182	MO(N)12S	12	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
183	MO(N)12S	12	66,7%	17	16	11	13	22	22	15	17	33	32	23	25	45	43	30	34
184	MO(U)5S	5	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
185	MO(U)10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
186	MO(U)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
187	MO(U)10S	10	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
188	MO(U)10S	10	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
189	MO(U)10S	10	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
190	MO(U)15S	15	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
191	MO(U)15S	15	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
192	MO(U)15S	15	16,7%	67	65	45	50	89	86	61	67	134	129	91	101	178	173	121	135
193	MO(U)15S	15	17,3%	64	62	44	49	86	83	58	65	129	125	87	97	171	166	117	129
194	MO(U)15S	15	22,0%	51	49	34	38	68	65	46	51	101	98	69	77	135	131	92	102
195	MO(U)15S	15	13,3%	84	81	57	63	111	108	76	84	167	162	114	126	223	216	151	168
196	MO(V)6S	6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
197	MO(W)6S	6	58,3%	19	18	13	14	25	25	17	19	38	37	26	29	51	49	35	38
198	OC3S	3	83,3%	13	13	9	10	18	17	12	13	27	26	18	20	36	35	24	27
199	OC3S	3	66,7%	17	16	11	13	22	22	15	17	33	32	23	25	45	43	30	34
200	OC3S	3	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
201	OC4S	4	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
202	OC5S	5	60,0%	19	18	13	14	25	24	17	19	37	36	25	28	50	48	34	37

nº	MCL200-12º RHYTHM	RV 06 T=	MF12 DUTY%	1,5 HOURS SUN INTENSITI Cd				2 HOURS SUN INTENSITI Cd				3 HOURS SUN INTENSITI Cd				4 HOURS SUN INTENSITI Cd			
203	OC5S	5	80,0%	14	13	9	11	19	18	13	14	28	27	19	21	37	36	25	28
204	OC6S	6	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
205	OC6S	6	83,3%	13	13	9	10	18	17	12	13	27	26	18	20	36	35	24	27
206	OC6S	6	66,7%	17	16	11	13	22	22	15	17	33	32	23	25	45	43	30	34
207	OC8S	8	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
208	OC10S	10	60,0%	19	18	13	14	25	24	17	19	37	36	25	28	50	48	34	37
209	OC10S	10	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
210	OC10S	10	80,0%	14	13	9	11	19	18	13	14	28	27	19	21	37	36	25	28
211	OC14S	14	78,6%	14	14	10	11	19	18	13	14	28	27	19	21	38	37	26	29
212	OC(2)9S	9	77,8%	14	14	10	11	19	18	13	14	29	28	19	22	38	37	26	29
213	OC(3)12S	12	75,0%	15	14	10	11	20	19	13	15	30	29	20	22	40	38	27	30
214	OC(3)15S	15	60,0%	19	18	13	14	25	24	17	19	37	36	25	28	50	48	34	37
215	Q1S	1	20,0%	56	54	38	42	74	72	50	56	111	108	76	84	149	144	101	112
216	Q1S	1	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
217	Q1S	1	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
218	Q1S	1	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
219	Q1,2S	1,2	25,0%	45	43	30	34	59	58	40	45	89	86	61	67	119	115	81	90
220	Q(2)5S	5	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
221	Q(2)6S	6	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
222	Q(2)10S	10	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
223	Q(3)5S	5	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
224	Q(3)10S	10	9,0%	124	120	84	94	165	160	112	125	225	218	153	170	225	218	153	170
225	Q(3)10S	10	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
226	Q(3)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
227	Q(4)6S	6	26,7%	42	40	28	32	56	54	38	42	84	81	57	63	111	108	76	84
228	Q(4)10S	10	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
229	Q(4)12S	12	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
230	Q(4)12S	12	6,7%	167	162	114	126	223	216	151	168	225	218	153	170	225	218	153	170
231	Q(4)15S	15	9,3%	119	116	81	90	159	154	108	120	225	218	153	170	225	218	153	170
232	Q(4)20S	20	10,0%	111	108	76	84	149	144	101	112	223	216	151	168	225	218	153	170
233	Q(5)7S	7	21,4%	52	50	35	39	69	67	47	52	104	101	71	79	139	134	94	105
234	Q(5)10S	10	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
235	Q(6)10S	10	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
236	Q(9)15S	15	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
237	Q(9)15S	15	30,0%	37	36	25	28	50	48	34	37	74	72	50	56	99	96	67	75
238	Q(12)15S	15	16,0%	70	67	47	53	93	90	63	70	139	135	95	105	186	180	126	140
239	Q(6)+LFL15S	15	25,3%	44	43	30	33	59	57	40	44	88	85	60	66	117	114	80	89
240	Q(6)+LFL15S	15	32,0%	35	34	24	26	46	45	32	35	70	67	47	53	93	90	63	70
241	Q(6)+LFL15S	15	33,3%	33	32	23	25	45	43	30	34	67	65	45	50	89	86	61	67
242	Q(6)+LFL15S	15	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
243	VQ0,5S	0,5	40,0%	28	27	19	21	37	36	25	28	56	54	38	42	74	72	50	56
244	VQ0,6S	0,6	50,0%	22	22	15	17	30	29	20	22	45	43	30	34	59	58	40	45
245	VQ(3)5S	5	12,0%	93	90	63	70	124	120	84	94	186	180	126	140	225	218	153	170
246	VQ(3)5S	5	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
247	VQ(3)5S	5	15,0%	74	72	50	56	99	96	67	75	149	144	101	112	198	192	135	150
248	VQ(3)5S	5	9,0%	124	120	84	94	165	160	112	125	225	218	153	170	225	218	153	170
249	VQ(9)10S	10	18,0%	62	60	42	47	83	80	56	62	124	120	84	94	165	160	112	125
250	VQ(9)10S	10	27,0%	41	40	28	31	55	53	37	42	83	80	56	62	110	107	75	83
251	VQ(9)10S	9,95	22,6%	49	48	33	37	66	64	45	50	99	95	67	74	131	127	89	99
252	VQ(6)+LFL10S	10	37,0%	30	29	20	23	40	39	27	30	60	58	41	45	80	78	55	61
253	VQ(6)+LFL10S	10	38,0%	29	28	20	22	39	38	27	30	59	57	40	44	78	76	53	59
254	VQ(6)+LFL10S	10	35,0%	32	31	22	24	42	41	29	32	64	62	43	48	85	82	58	64
255	VQ(6)+LFL10S	10	29,0%	38	37	26	29	51	50	35	39	77	74	52	58	102	99	70	77
256	FIX LIGHT	0	100,0%	11	11	8	8	15	14	10	11	22	22	15	17	30	29	20	22

RHYTHMS 1 TO 6 PROGRAMMABLES BY PC AND SOFWARE MFCOM

4. DECLARATION CE

DECLARACION DE CONFORMIDAD
DECLARATION OF CONFORMITY

COMPAÑÍA: **MEDITERRANEO SEÑALES MARITIMAS S.L**
COMPANY

DIRECCCION: **POLIGONO INDUSTRIAL MAS DE TOUS**
ADDRESS **C/ OSLO, 12**
46185 LA POBLA DE VALLBONA
VALENCIA- ESPAÑA

Declaro bajo mi propia responsabilidad que el producto:
Declare under our sole responsibility that the product:

APARATO: BALIZA LUMINOSA DESTELLADORA MARINA LED.
Appliance: LED MARINE FLASHING LANTERN.

MARCA: MEDITERRANEO SEÑALES MARITIMAS.
BRAND

MODELO COMERCIAL: MCL200.
Commercial Name:

Al que se refiere esta declaración está en conformidad con las siguientes normas:
To which this declaration relates is in conformity with the following standards:

EN61000-6-4(2007) EMISIÓN ELECTROMAGNÉTICA / *EM Emission.*
-EN 55022 (2006): Radiada / *Radiated* (Clase A/*Class A*).

EN61000-6-2(2005) INMUNIDAD ELECTROMAGNÉTICA / *EM Immunity.*
-EN 61000-4-2 (1995) / A1 (1998) / A2 (2001): Descarga electrostática / *ESD;*
-EN 61000-4-3 (2006): Campo radiado EM de RF / EM *radiated field of RF;*
-EN 61000-4-8 (1996) / A1 (2001); Inmunidad radiada / *Radiated immunity;*

Siguiendo las prescripciones de las directivas:
Following the provision of Directives:

Directiva de compatibilidad Electromagnética (2004/108/CE)
Electromagnetic Compatibility Directive (2004/108/CE)

Firmado:
Signed

Fernando Romero Noreña
Director Calidad/*Quality Manager.*

Valencia a 24 de Enero de 2020/ *24th January 2020.*

Mediterráneo
Señales
Marítimas

IALA

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