LEADING & RANGE LIGHTS

MEL500L

HIGH-RESOLUTION LED SECTOR LIGHT

GPS | UHF | GSM | SAT

OPTIONAL

MEL500L

High-resolution LED sector light

The MEL500L Port Entry Light (PEL) is a sector leading light of maximum resolution between its colour sectors, made up of a LED light source, able to provide a day range of up to 5 nm and a nominal night range of 23 nm.

Minimum consumption

The main advantage of this beacon is its accuracy between its colour sector boundaries (<0.05°). Light emission generates an unidirectional beam in three colours, with a horizontal divergence between 1° and 10°. Colour sector configuration is expressly done for every case. The use of high-intensity LED diodes ensures minimum consumption, maintenance free.

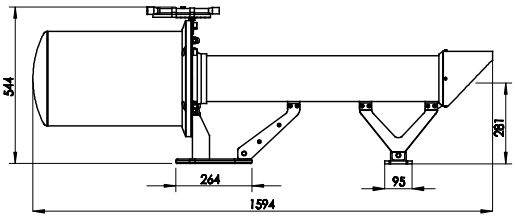
Optional oscillating boundaries

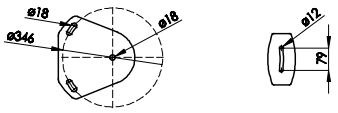
The MEL500L light is designed according to IALA Recommendations and Guidelines, providing a great aid to the navigator to know its position in the channel. As an option, it can be delivered with oscillating boundaries, thus offering accurate information on their lateral distance from the leading axis.

FEATURES

- *State-of-the-art LED technology.*
- *Custom-made configurable colour sectors, maximum definition between their boundaries (<0.05°).*
- *High-efficiency luminous system of minimum consumption (70 W), stabilised against vibrations.*
- *Day range up to 5 nm.*
- *Nominal night range up to 23 nm (T=0.74).*
- *Beam width: from 1° to 10°.*
- *Average operation lifetime over 25 years.*
- *Stainless-steel and marine-aluminium housing, with polyurethane finish.*
- *Double RS-232 serial port for setting adjustments by PC and remote monitoring system.*
- *Anti-humidity device to avoid condensation.*
- *Oscillating boundaries as an option.*
- *Easy alignment by gunsight.*

MEL500L





MBL500L 7º

Optical system

Light source:	3 nos. high-intensity LED diodes.
Lens:	Glass aspheric condenser.
Day range:	Up to 5 nm.
Nominal night range:	Up to 23 nm (T=0,74).
Power supply:	Up to 70 W.
Sector accuracy:	< 0.05º.
Beam width:	From 1º to 10º. Other divergences available.
Colour sectors:	Custom-made.
LED average life:	More than 100,000 hours.

Electronic control

Circuit:	Microprocessor controlled.
Settings:	By microswitches or PC.
Input voltage:	From 9 to 36 V c.c.
Day/night threshold:	Adjustable between 10 and 400 lux.
Power supply:	Individual for each LED.

Automatic & programmable luminous intensity reduction at night.

Reverse-polarity, short-circuit, over-temperature and transient over-voltage protections.

Options

A.C. operation.

Infrared (IR) programmer.

Synchronization by cable or GPS receiver.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

MEL500L-Osc (with Oscillating Boundaries).

Physical data

	3º	7º	10º
Length (mm)	2,622	1,594	946
Width (mm)	404	404	404
Height (mm)	544	544	544

Materials and environment

Stainless-steel and marine-aluminium housing.

Outer painting with polyurethane finishing.

Inner painting resistant to high temperatures.

Easy alignment gunsight.

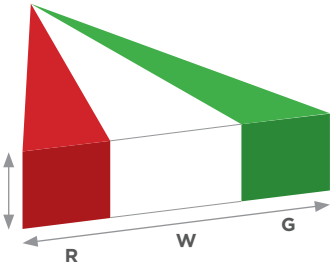
Eyeshade to avoid reflections.

Stainless-steel fixing and levelling kit.

Watertightness degree: IP 66.

Temperature range: from -30° to 70°C.

Fixed sectors



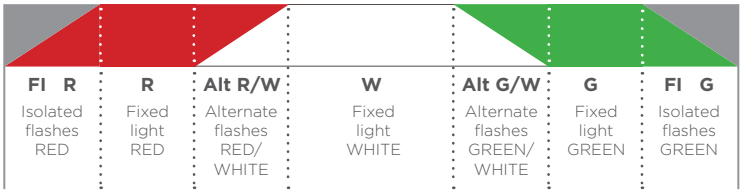
Peak intensities (Cd)

	Horizontal divergence (*) 70 W LED source			Horizontal divergence (*) 5% night reduction		
Colour	**3º**	**7º**	**10º**	**3º**	**7º**	**10º**
	320,000	200,000	82,000	19,500	10,000	4,100
	195,000	112,000	50,000	9,750	5,600	2,500
	114,500	90,000	38,500	5,720	4,500	1,925

**Other divergences available.*

Specifications subject to change without previous notice.

Oscillating boundaries



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LEADING & RANGE LIGHTS

MEL250L

HIGH-RESOLUTION LED SECTOR LIGHT

GPS | UHF | GSM | SAT

OPTIONAL

MEL250L

High-resolution LED sector light

The MEL250L Port Entry Light (PEL) is a sector leading light of high resolution between its colour sectors, made up of a LED light source, providing a day range of up to 2 nm and a nominal night range of 17 nm.

Minimum consumption

The main advantage of this beacon is its accuracy between its colour sector boundaries (<0.07°). Light emission generates an unidirectional beam in three colours, with a horizontal divergence of up to 15°. Colour sector configuration is expressly done for every case. The use of high intensity LED diodes ensures minimum consumption, maintenance free.

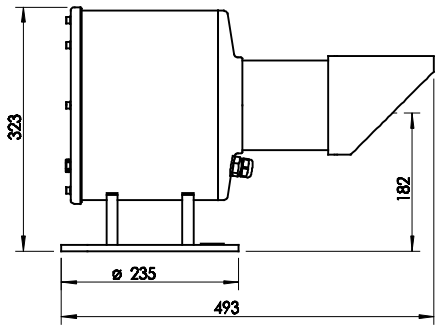
Designed according to IALA Recommendations

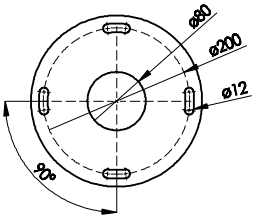
The MEL250L light is designed according to IALA Recommendations and Guidelines, providing complete information to the navigator on their positioning in the leading channel.

FEATURES

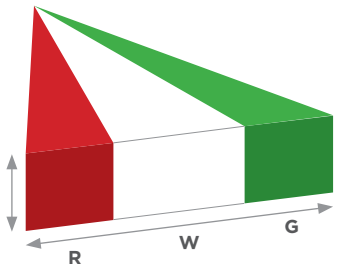
- *State-of-the-art LED technology.*
- *High-efficiency luminous system and minimum consumption, stabilised against vibrations.*
- *Day range up to 2 nm.*
- *Nominal night range up to 17 nm (T=0.74).*
- *Maximum beam width up to 15°.*
- *Average operation lifetime over 25 years.*
- *Stainless-steel and marine-aluminium housing, with polyurethane finish.*
- *Double RS-232 serial port for setting adjustments by PC and remote monitoring system.*
- *Programming, configuration and operating status via PC.*
- *Anti-humidity device to avoid condensation.*
- *High shock resistance.*

MEL250L





Fixed sectors



Optical system

Light source:	3 nos. high-intensity LED diodes.
Lens:	Glass aspheric condenser.
Day range:	Up to 2 nm.
Nominal night range:	Up to 17 nm (T=0.74).
Power supply:	From 9 to 30 W.
Sector accuracy:	< 0.07º.
Beam width:	Up to 15º (5º each color).
Colour sectors:	Custom-made.
LED average life:	More than 100,000 hours.

Electronic control

Circuit:	Microprocessor controlled.
Settings:	By microswitches or PC.
Input voltage:	From 9 to 36 V c.c.
Day/night threshold:	Adjustable between 10 and 400 lux.
Power supply:	Individual for each LED.

Automatic & programmable luminous intensity reduction at night.

Reverse-polarity, short-circuit, over-temperature and transient over-voltage protections.

Options

Gunsight for easy alignment.

A.C. operation.

Synchronization by cable or GPS module.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

MEL250L-HI (High-Intensity version).

Materials and environment

Stainless-steel and marine-aluminium housing.

Outer painting with polyurethane finish.

Inner painting resistant to high temperatures.

Eyeshade to avoid reflections.

Stainless-steel fixing and levelling kit.

Watertightness degree: IP 66.

Temperature range: from -30° to 70°C.

Peak intensities (Cd)

	MEL250L Total horizontal divergence 15°(*)	MEL250L-HI Total horizontal divergence 15°(*)		
Colour	Power 9 W	P: 9 W	P: 18 W	P: 30 W
	3,600	9,900	17,800	27,000
	2,130	8,900	16,000	22,800
	1,850	4,600	8,400	12,000

**Other divergences available.*

Specifications subject to change without previous notice.

MSM

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MRL

LED RANGE LIGHT

GPS | UHF | GSM | SAT

OPTIONAL

MRL

Long-range LED range light

The MRL are long-range LED Range Lights, especially designed to mark port approaching and entrance channels, rivers and straight lanes in bays. They are commonly used in traditional leading stations of two lights, in both day and night modes.

Conspicuous light in locations with strong background lighting

The navigator can move forward by the centre of a narrow channel when the two lights are aligned, separating them when the vessel strays from one side; this provides information on his position outside the leading line. When these lights are synchronized, they are much more conspicuous to distinguish them in locations with strong background lighting.

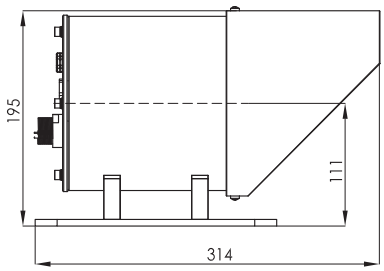
Maintenance-free

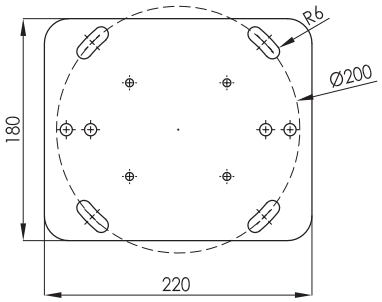
The MRL light produces an unidirectional beam with a horizontal divergence from 2.0° to 4.3°. Its luminous source, consisting of high-power LEDs of 100,000 hours average life, makes it a maintenance-free beacon.
Designed according to IALA Recommendations.

FEATURES

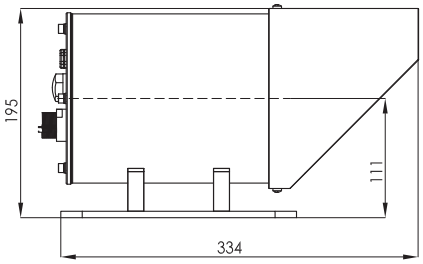
- *State-of-the-art LED technology.*
- *Day range up to 4 nm.*
- *Nominal night range up to 22 nm (T=0.74).*
- *Maximum total LED power: 15 W.*
- *Horizontal divergence up to 4.3° (50% I_o).*
- *High-accuracy optical system, stabilised against vibrations.*
- *Enclosure made from marine aluminium with outer polyurethane finishing.*
- *Circular, high-resistance glass lens cover.*
- *Average operation lifetime over 25 years.*
- *100% humidity resistant.*
- *Double RS-232 serial port for setting adjustments by PC and remote monitoring system.*
- *Maintenance free.*

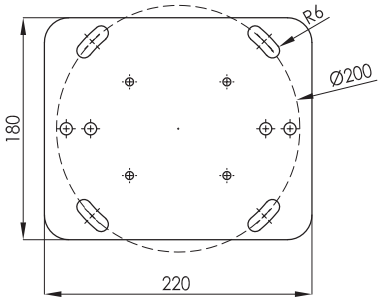
MRL





MRL without flasher





MRL with flasher

External unit of electronic control (optional).

Specifications subject to change without previous notice.

Optical system

Light source:	High-intensity LED diodes.
Lens:	Collimator, a lens for each LED.
Day range:	Up to 4 nm.
Nominal night range:	Up to 22 nm (T=0.74).
Horizontal divergence:	Up to 4.3º (50% I_o).
Vertical divergence:	Up to 4.3º (50% I_o).
Power supply:	Up to 15 W.
LED average life:	Más de 100,000 horas.

External electronic control unit

Flash rhythms:	256 (6 nos. user selectable).
Circuit:	Microprocessor controlled.
Settings:	By microswitches or PC.
Input voltage:	From 9 to 36 V c.c.
Day/night threshold:	Adjustable between 10 and 400 lux.
Power supply:	Individual for each LED.

Automatic & programmable luminous intensity reduction at night.

Reverse-polarity, short-circuit, over-temperature and transient overvoltage protections.

Materials and environment

Enclosure:	Marine aluminium, with polyurethane finish.
Lens cover:	Circular, high-resistance glass.
Watertightness degree:	IP 67.
Humidity resistance:	100%. Pressure-compensation valve to avoid condensation.
Temperature range:	From -30º to 70ºC.
Fixings:	3 - 4 nos. M10 bolts in a 200 mm diameter.

All internal components are assembled on a base plate.

Easy adjustment and levelling.

Options

Programmable by IR programmer.

Synchronization by cable or GPS receiver.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

Other divergences available under request.

Peak intensities (Cd)

Model	Power	Divergence			
MRL30	3 W	2.0º	257,000	147,000	50,000
	15 W	4.3º	130,000	91,300	82,000

MSM

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MDL

LED LEADING LIGHT

GPS | UHF | GSM | SAT

OPTIONAL

MDL

Long-range LED leading lights

The MDL are long-range LED leading lights, especially designed to mark port approaching and entrance channels. They are normally used in traditional leading stations of two lights, in both day and night modes.

State-of-the-art design lens

The MDL light produces an unidirectional beam with a horizontal divergence of 10°. Its luminous source, consisting of high-power LEDs of 100,000 hours average life, makes it a maintenance-free beacon.

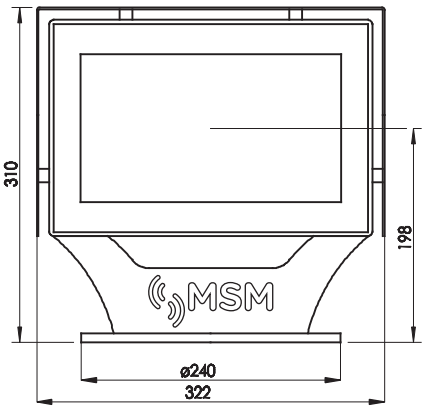
Long service life

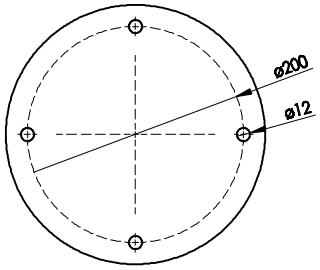
Manufactured with high quality and resistant materials, the MDL provides a long service life under severe marine conditions.
This lantern strictly complies with IALA Recommendations.

FEATURES

- *State-of-the-art LED technology.*
- *Day range up to 4 nm.*
- *Nominal night range up to 21 nm (T=0.74).*
- *Maximum total LED power: 27 W.*
- *Horizontal divergence of 10° (50% I_o), other divergences available under request.*
- *Vertical divergence up to 2° (50% I_o).*
- *High-accuracy optical system, stabilised against vibrations.*
- *Average operation lifetime over 25 years.*
- *Stainless-steel housing with outer polyurethane finish.*
- *Rectangular, high-resistance glass lens cover.*
- *100% humidity resistant.*
- *Double RS-232 serial port for setting adjustments by PC and remote monitoring system.*
- *Maintenance free.*

MDL





Optical system

Light source:	Up to 9 nos. high-intensity LED diodes.
Lens:	Collimator, a lens for each LED.
Day range:	Up to 4 nm.
Nominal night range:	Up to 21 nm (T=0.74).
Horizontal divergence:	Up to 10º (50% I_0).
Vertical divergence:	Up to 2º (50% I_0).
Power supply:	Up to 27 W.
LED average life:	More than 100,000 hours.

External electronic control unit

Flash rhythms:	256 (6 nos. user selectable).
Circuit:	Microprocessor controlled.
Settings:	By microswitches or PC.
Input voltage:	From 9 to 36 V c.c.
Day/night threshold:	Adjustable between 10 and 400 lux.
Power supply:	Individual for each LED.

Automatic & programmable luminous intensity reduction at night.

Reverse-polarity, short-circuit, over-temperature and transient overvoltage protections.

Materials and environment

Housing:	Stainless-steel, with polyurethane finish.
Lens cover	Rectangular, high-resistance glass.
Watertightness degree:	IP 67.
Humidity resistance:	100%. Pressure-compensation valve to avoid condensation.
Temperature range:	From -30º to 70ºC.
Fixings:	4 nos. M10 bolts in a 200 mm diameter.

All internal components are assembled on a base plate.

Easy adjustment and levelling

Options

Synchronization by cable or GPS receiver.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

Higher horizontal divergences available under request.

Peak intensities (Cd)

Model	Power			
MDL9	27 W	189,000	133,200	94,500

Specifications subject to change without previous notice.

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LEADING & RANGE LIGHTS

MLP2000

LITE PIPE

GPS | UHF | GSM | SAT

OPTIONAL

MLP2000

Extensive luminous system

The MLP2000 Lite Pipe is an extensive luminous system, consisting of optical elements with high-intensity LED diodes arranged vertically, which reinforces the identification of an aid to navigation.

Increase the conspicuity of port entrance lights

This system is designed to increase the conspicuity of port entrance lights, thus avoiding to be confused with other lights in locations with strong background lighting. It can also be used in places where two-light leading stations are needed, or as an emergency beacon in big lighthouses.

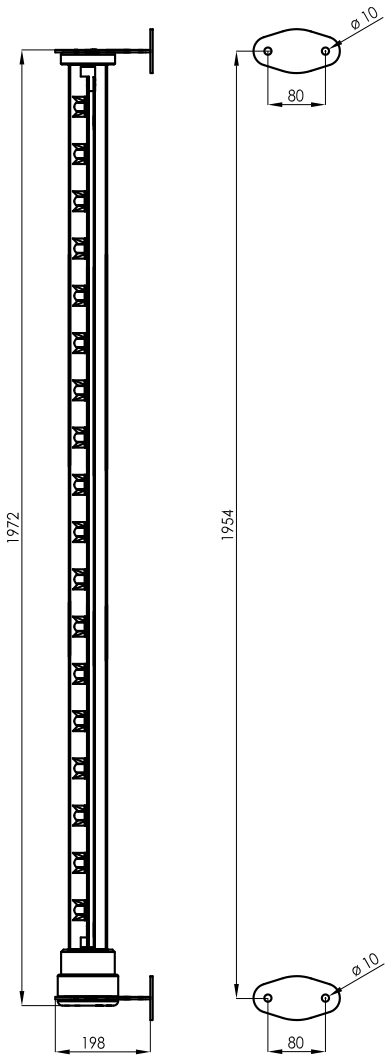
Modular design

With just 36 W of power it can be identified at 22 nautical miles. Its modular construction allows multiple configurations and different heights. Designed according to IALA Recommendations.

FEATURES

- *State-of-the-art LED technology.*
- *Modular and flexible conception.*
- *High-efficiency luminous system and minimum consumption. Up to 15 nm (T=0.74), 22 nm (T=0.85).*
- *Vertical divergence up to 5° (50% I_o).*
- *Horizontal divergence up to 120° (50% I_o).*
- *Average operation lifetime over 10 years.*
- *IP 67 watertightness degree (immersion resistant).*
- *Anti-humidity device to avoid condensation.*
- *Double RS-232 serial port for setting adjustments by PC an remote monitoring system.*
- *Anodised marine-aluminium housing and acrylic lens cover.*
- *Minimum-maintenance.*
- *PATENTED OPTICAL SYSTEM.*

MLP2000



Optical system (2m height)

Light source:	18 nos. ultra-bright LED diodes, with high-precision acrylic lens.
Luminous range:	Up to 15 nm (T=0.74) 22 nm (T=0.85).
Power supply:	Up to 36 W, adjustable.
Vertical divergence:	Up to 5º (50% I_0).
Horizontal divergence:	Up to 120º (50% I_0).

External electronic control unit

Flash rhythms:	256 (6 nos. user selectable).
Day/night threshold:	Adjustable between 10 and 400 lux.
Settings:	- PC. - Bluetooth.

Reverse-polarity, short-circuit and transient overvoltage protections.

Materials and environment

Housing:	Anodised marine aluminium.
Lens:	Acrylic, UV stabilised.
Lens cover	Acrylic.
Watertightness degree:	IP 67.
Humidity resistance:	100%. Pressure-compensation valve to avoid condensation.
Temperature range:	From -30º to 70ºC.
Fixings:	Wall-mounted, 4 nos. M10 bolts.

Options

Other heights and powers available.

Custom-made sectorising.

Modular manufacturing allowing heights in 2 m increments up to 6 m.

Synchronization by cable or GPS module.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

Pole mounting.

Peak intensities (Cd)

Model	Power				
MLP1000	18 W	6,840	4,550	2,714	2,050
MLP2000	18 W	6,840	4,550	2,714	2,050
	36 W	11,502	7,900	4,122	3,100
MLP4000	36 W	12,960	9,100	5,428	4,100
	72 W	23,000	15,800	8,244	6,200
MLP6000	54 W	20,520	13,650	8,142	6,150
	108 W	34,506	23,700	12,366	9,300

Specifications subject to change without previous notice.

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LEADING & RANGE LIGHTS

MLP2000-3

PORT TRAFFIC LIGHT

GPS | UHF | GSM | SAT

OPTIONAL

MLP2000-3

LED technology

The MLP2000-3 Port Traffic Light is a signalling system consisting of optical elements with high-intensity LED diodes arranged in different vertical sections, so that it is possible to obtain the colour combinations corresponding to port traffic signals.

Compact design

Thanks to its compact design, all elements of a port traffic light can be housed in a single equipment. Its great horizontal divergence allows a perfect light conspicuity from any location. Manufactured with high-quality and resistant materials, the MLP2000-3 provides a long service life under severe marine conditions.

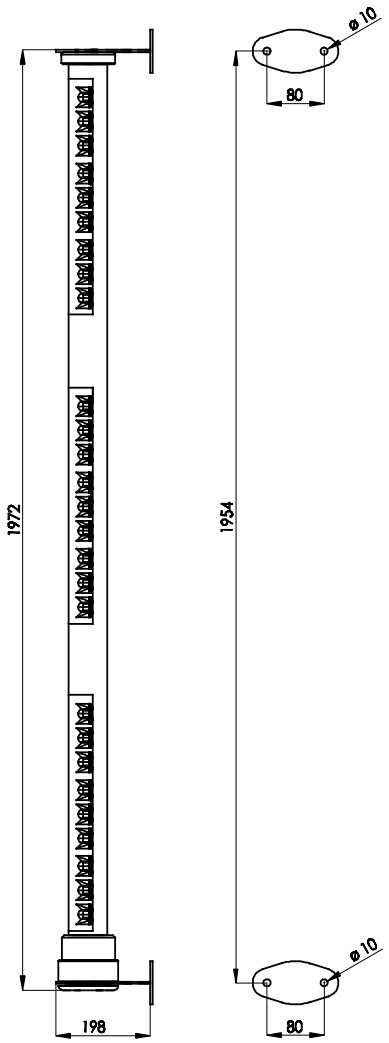
Configured according to customer specifications

This system complies with IALA Recommendations and is configured according to customer specifications, depending on the needs related to its location.

FEATURES

- *State-of-the-art LED technology.*
- *Highly visible on bridges and harbour structures.*
- *Multiple combinations available.*
- *High-efficiency luminous system and minimum consumption. Up to 12 nm (T=0.74), 17 nm (T=0.85).*
- *Vertical divergence up to 5° (50%I_o).*
- *Horizontal divergence up to 120° (50%I_o).*
- *Average operation lifetime over 10 years.*
- *IP 67 watertightness degree (immersion resistant).*
- *Anti-humidity device to avoid condensation.*
- *Double RS-232 serial port for setting adjustments by PC and remote monitoring system.*
- *Anodised marine-aluminium housing and acrylic lens cover.*
- *PATENTED OPTICAL SYSTEM.*

MLP2000-3



Optical system (2m height)

Light source:	Ultra-bright LED diodes, with high precision acrylic lens.
Luminous range:	Up to 12 nm (T=0.74) 17 nm (T=0.85).
Power supply:	Up to 27 W, adjustable.
Vertical divergence:	Up to 5º (50% I_0).
Horizontal divergence:	Up to 120º (50% I_0).

External electronic control unit

Operation:	Manual or remote.
Luminous attenuation:	Adjustable between 10 and 400 lux.

Reverse-polarity, short-circuit and transient over-voltage protections.

Materials and environment

Housing:	Anodised marine aluminium.
Lens:	Acrylic, UV stabilised.
Lens cover	Acrylic.
Watertightness degree:	IP 67.
Humidity resistance:	100%. Pressure-compensation valve to avoid condensation.
Temperature range:	From -30º to 70ºC.
Fixings:	Wall-mounted, 4 nos. M10 bolts.

Options

Other heights and powers available.

Custom-made sectorising.

Synchronization by cable or GPS module.

Remote monitoring module via GSM, radio or satellite.

RS-485 MODBUS serial port.

Pole mounting.

Peak intensities (Cd)

Colour	27 W
	3,270
	2,950
	2,200

Specifications subject to change without previous notice.

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