

# MARINE LANTERNS



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## MARINE LANTERNS SELF-CONTAINED



### SELF-CONTAINED LANTERN M650H

Self-contained LED lantern for buoys and minor beacons, 2 to 4+ NM range



### SELF-CONTAINED LANTERN SC 155I

Self-powered LED lantern for buoys and minor beacons with 4 NM range



### SELF-CONTAINED LANTERN SC 160I

Self-powered LED lantern for buoys and minor beacons with up to 8 NM range



### SELF-CONTAINED LANTERN SC LS-100

Self-contained LED Light with 10 NM range



### HYBRID LANTERN HBL 110

Unique Hybrid LED, lantern HBL 110 is a robust lantern to be used integrated into buoy applications

Standard range: 4 NM at  $T_c = 0.74$   
(5 NM at  $T_c = 0.85$ )



### SELF-CONTAINED LANTERN M850

Solar Powered LED Marine Lantern up to 7.5 NM range



### SELF-CONTAINED LANTERN SC 110

Marine self-contained LED light for buoys, beacons, marinas and aquaculture farms



### SELF-CONTAINED LANTERN SC 155II

Self-contained LED Lantern for buoys and minor beacons



### SELF-CONTAINED LANTERN SC 160II

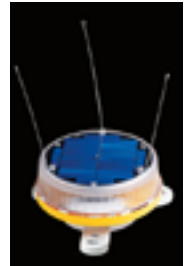
SC 160II is a self-contained LED lantern with best in class optical performance for fixed and floating structures with longer range

Range up to 10 NM ( $T_c=0.74$ ), 14 NM ( $T_c=0.85$ ) depending on geographical location



### SELF-CONTAINED LANTERN M550

Solar Powered LED Marine Lantern up to 3 NM range



### SELF-CONTAINED LANTERN M660

Self-contained LED lantern for buoys and minor beacons, up to 4 NM range



### SELF-CONTAINED LANTERN M860

Solar Powered LED Marine Lantern up to 7.8 NM range

## MARINE LANTERNS

### LED SIGNALS FOR ALL APPLICATIONS



#### MARINE LANTERN LED 110

Marine LED light for buoys and small beacons with up to 4 NM range



#### MARINE LANTERN LED 160

Full Range Lantern for fixed and floating installations with three different lantern options available covering a range from 3 NM up to 12NM



#### ICE BUOY LANTERN MPV LED

Heavy Duty Ice Buoy LED light with Visual range from 2 to 6 NM



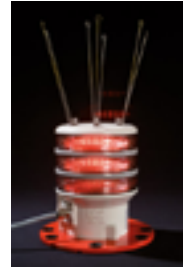
#### MARINE LANTERN LED 350 H

High Power LED light for fixed installations

A LED beacon capable of visual ranges up to 18 NM. LED 350H is designed to substitute rotating beacons with a considerably smaller power consumption

#### MARINE LANTERN LED 155

A general purpose LED lantern commonly used on both fixed and floating structures



#### ICE BUOY LANTERN VP LED

LED lantern designed to be used in moderate ice conditions



#### MARINE LANTERN LED 350

High intensity LED light for fixed installations. A high performance omni-directional LED precision beacon with range of 15 nautical miles



#### SECTOR LIGHT ODSL 200

Omni-directional LED sector light. The range of the light, depending on color and flash character, is between 6 and 10 NM



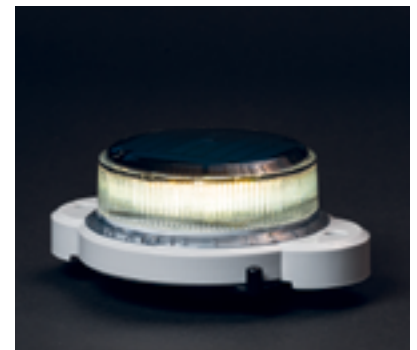
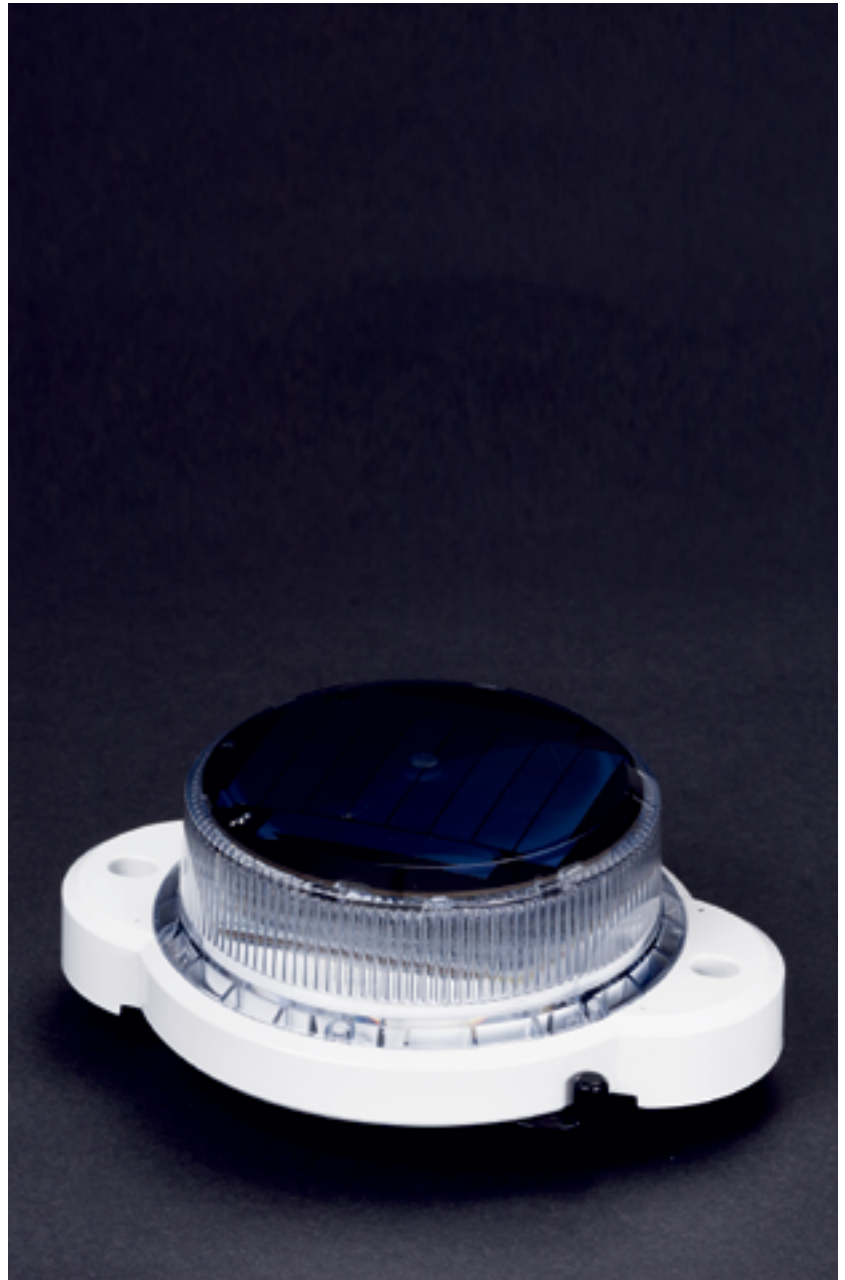
## M550

### SOLAR POWERED LED MARINE LANTERN, 1 TO 3 NM RANGE

Leveraging custom optics, high-efficiency solar panels, and premium materials, this miniature solar LED marine lantern offers up to three times the range at half the size of its M502 predecessor. Now with replaceable, recyclable batteries this lantern provides excellent value and reliable operation over the long term. Battery life expectancy is five years with product life up to 15 years and a three-year warranty. Ideal for marine aids-to-navigation, marina lighting, dock lighting, and port lighting.

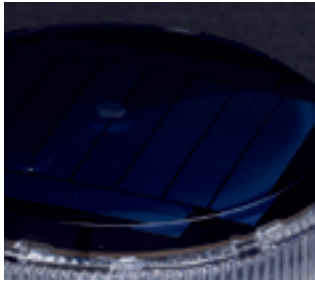
To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

- 40 user-adjustable flash patterns and programmable intensities
- Replaceable, recyclable, high-temperature-rated NiMH AA batteries
- Automatic Light Control (ALC) 2.0; achieve optimal intensities throughout the year
- Premium grade, UV resistant polycarbonate body and lens material
- IP 68 rated
- Ventilated battery compartment



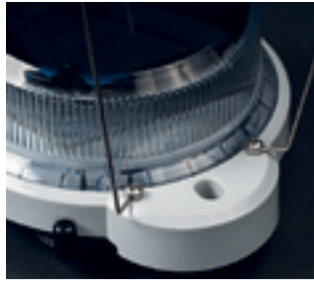
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# MARINE LANTERNS



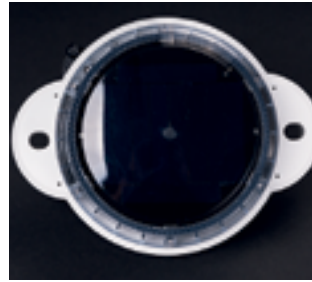
## SOLAR MODULES

High-efficiency cells embedded in shatterproof polyurethane.



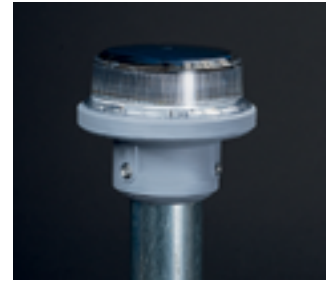
## BIRD DETERRENT

Stainless steel bird deterrent available as accessory. Fits up to four per lantern.



## INSTALLATION

Simple installation using 2 x M6 bolts on a 127 mm diameter. No additional mounting hardware required.



## POLE MOUNT

Easily adjusts to 2 3/8 inch, 60mm or 1 7/8 inch, 48 mm pole dimensions.



## BATTERIES

Replaceable and recyclable NiMH batteries with extreme temperature range and 5-year life expectancy.



## IR CONTROLLER

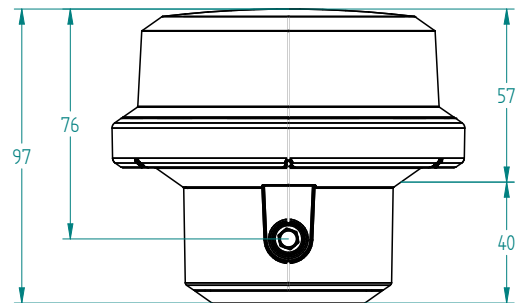
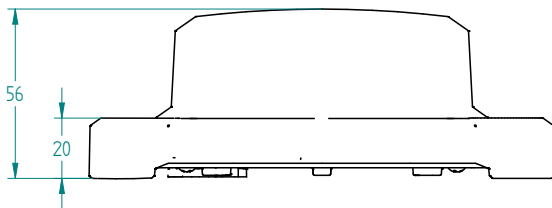
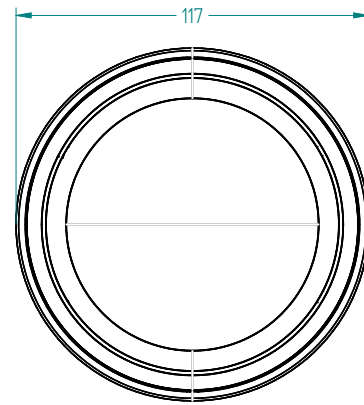
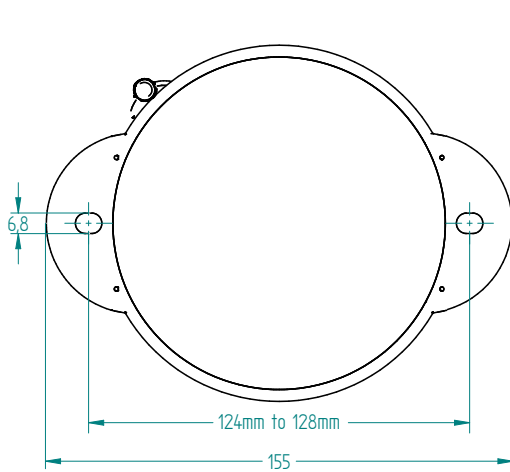
Check battery status, change flash code, adjust light intensity and turn lantern off with optional mini IR (Infrared) programmer.



## EXTERNAL SWITCH

Optional external ON/OFF switch.

## TECHNICAL SPECIFICATION M550



OPTICAL PERFORMANCE				
Maximum fixed intensity				
18 cd	23 cd	29 cd	25 cd	8 cd

Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).



## MAIN TECHNICAL SPECIFICATION

<b>Construction</b>	Premium grade, UV resistant polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base.
<b>Lens visual/Mechanical diameter</b>	102 mm
<b>Lens material</b>	UV stabilized polycarbonate
<b>Light source</b>	High Flux Surface Mount LED
<b>Solar module</b>	High efficiency cells
<b>Battery</b>	NiMH AA batteries
<b>Degree of ingress protection</b>	IP 68
<b>Weight</b>	Flange Mount: 0.37 kg (0.8 lbs) Pole Mount: 0.40 kg (0.9 lbs)
<b>Overall height</b>	56 mm (flange mount), 96 mm (pole mount)
<b>Overall width</b>	155 mm dia.
<b>Installation</b>	2 x M6 on 128 mm dia.

## ORDER OVERVIEW M550

### OPTION MATRIX

<b>M550 Flange Mount - Switched</b>	2-bolt mount with ON/OFF switch
<b>M550 Flange Mount - Unswitched</b>	2-bolt mount. No ON/OFF switch
<b>M550 Pole Mount</b>	Pole mount. No ON/OFF switch

### ACCESSORIES

<b>69935</b>	Pole Mount Replacement/Conversion Kit
<b>70943</b>	Flange Mount Replacement/Conversion Kit
<b>70937</b>	Switched Kit (compatible with Flange Mount only)
<b>70955</b>	Replacement NiMH batteries
<b>69934</b>	Bird Deterrent (single)

### PRODUCT CODES

Colour	M550 Flange unswitched	M550 Flange switched	M550 Pole
red	M550RF	M550RF-S	M550RP
green	M550GF	M550GF-S	M550GP
white	M550WF	M550WF-S	M550WP
yellow	M550YF	M550YF-S	M550YP
blue	M550BF	M550BF-S	M550BP

## M650H

### SELF-CONTAINED LED LANTERN FOR BUOYS AND MINOR BEACONS, 2 TO 4+ NM RANGE

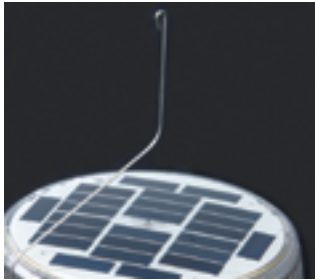
The M650H is a cost effective, self-contained, high-performance, low-maintenance and easy-to-install solar LED marine lantern. The M650H features a replaceable battery pack that extends the service life beyond five years, reducing the total cost of ownership. Applications include: marine aids-to-navigation marking, marina lighting, dock lighting, and port lighting. To view performance in your installation location, visit [carmanahmarine.com/selector](http://carmanahmarine.com/selector).

- Standard IALA colours Red, Green, White, Yellow, Blue
- High-efficiency solar cells with bypass and blocking diode function. Maximum power point tracking (MPPT) for optimal energy collection
- Premium grade UV resistant, polycarbonate/polysiloxane co-polymer body and lens material
- Colour-specific temperature corrected LED drivers provide consistent intensity under all operating conditions IP 68 rated. Double O-ring sealing with waterproof vent
- SLA battery
- Ventilated battery compartment
- Adjustable intensity and range
- Vertical divergence > 8° (FWHM)
- Programmable with On-Board User Interface, USB port, or optional wireless IR-Programmer
- Integrated event-log
- Optional ON/OFF switch
- Optional external charger
- Optionally integrated GPS synchronization



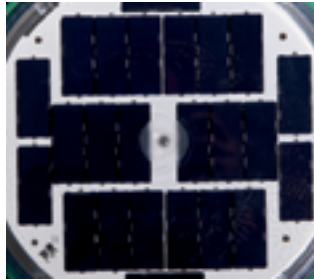
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## BIRD DETERRENT

Stainless steel as standard. Tool-less installation and replacement.



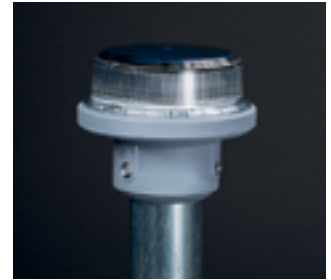
## SOLAR MODULES

High-efficiency cells with bypass and blocking diode function. Maximum power point tracking (MPPT) for optimal energy collection.



## SLA BATTERY

Tool-less replaceable and recyclable best-in-class battery pack with extreme temperature range and 5-year life expectancy. On-board battery status feedback of Good, Charge, Low or Replace. True battery voltage shown.



## COLOUR INDICATOR

Protective bumper indicates LED colour.



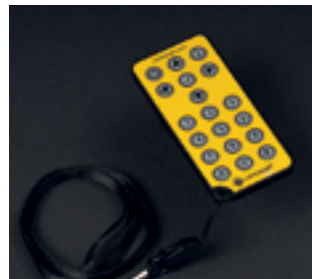
## ON-BOARD USER INTERFACE

Replaceable and recyclable NiMH batteries with extreme temperature range and 5-year life expectancy.



## 650 DEVICE MANAGER SOFTWARE

Check battery status, change flash code, adjust light intensity and turn lantern off with optional mini IR (Infrared) programmer.



## IR CONTROLLER

Optional external ON/OFF switch.



## INSTALLATION

Easily adjusts to 2 3/8 inch, 60mm or 1 7/8 inch, 48 mm pole dimensions.



## BOTTOM COVER REMOVAL TOOL

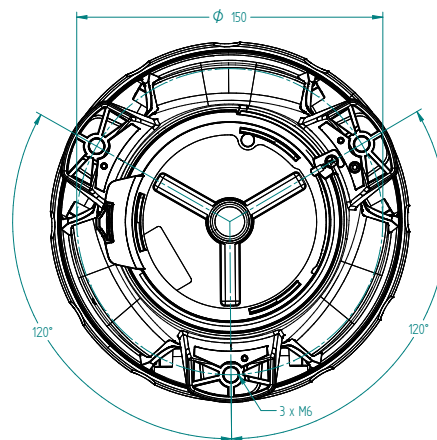
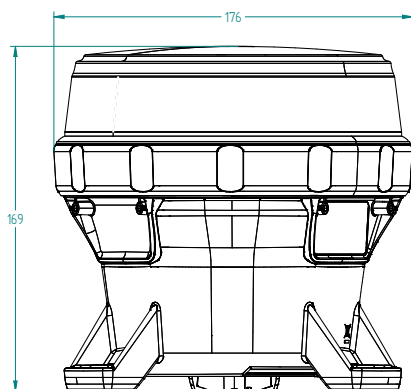
Available as accessory.



## BARGE APPLICATION

For barge application, sector plates with open sectors of 112,5°, 135° and 225°.

## TECHNICAL SPECIFICATION M650H



OPTICAL PERFORMANCE				
Maximum fixed intensity				
31 cd	45 cd	60 cd	52 cd	15 cd

Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

MAIN TECHNICAL SPECIFICATION	
Lens visual/Mechanical diameter	165 mm
Lens material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diode (LED)
Vertical divergence	>8° (FWHM)
Solar module	High efficiency cells; bypass and blocking diodes; MPPT
Battery	Sealed Lead Acid
Degree of ingress protection	IP 68
Weight	1.58 kg
Overall height	169 mm
Overall width	176 mm dia.
Installation	3 x M6 on 150 mm dia.

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## ORDER OVERVIEW M650H

OPTION MATRIX	
M650H Switched	ON/OFF switch
M650H Unswitched	No ON/OFF switch
M650H Switched GPS	Includes GPS synchronization & ON/OFF switch
M650H Unswitched GPS	Includes GPS synchronization (no ON/OFF switch)

ACCESSORIES	
57003	650 Bird Deterrent - Additional (1 ships with each lantern)
57392	650 Bottom Cover Replacement Pack Switched
57393	650 Bottom Cover Replacement Pack Unswitched
59198	650 Bottom Cover Removal Tool
72835	650 Battery Replacement Pack
59188	650 International Wall Charger Assembly
57394	650 USB Cable
69899	IR (Infrared) Programmer
38334	650 Standard Bolt Kit
64407	650 Security Mounting Bolt Kit (Includes drivers)
56578	650 Security Bolt and Nut Set (Drivers not included)
53284	500/650 Security Key
53285	500/650 Security Socket

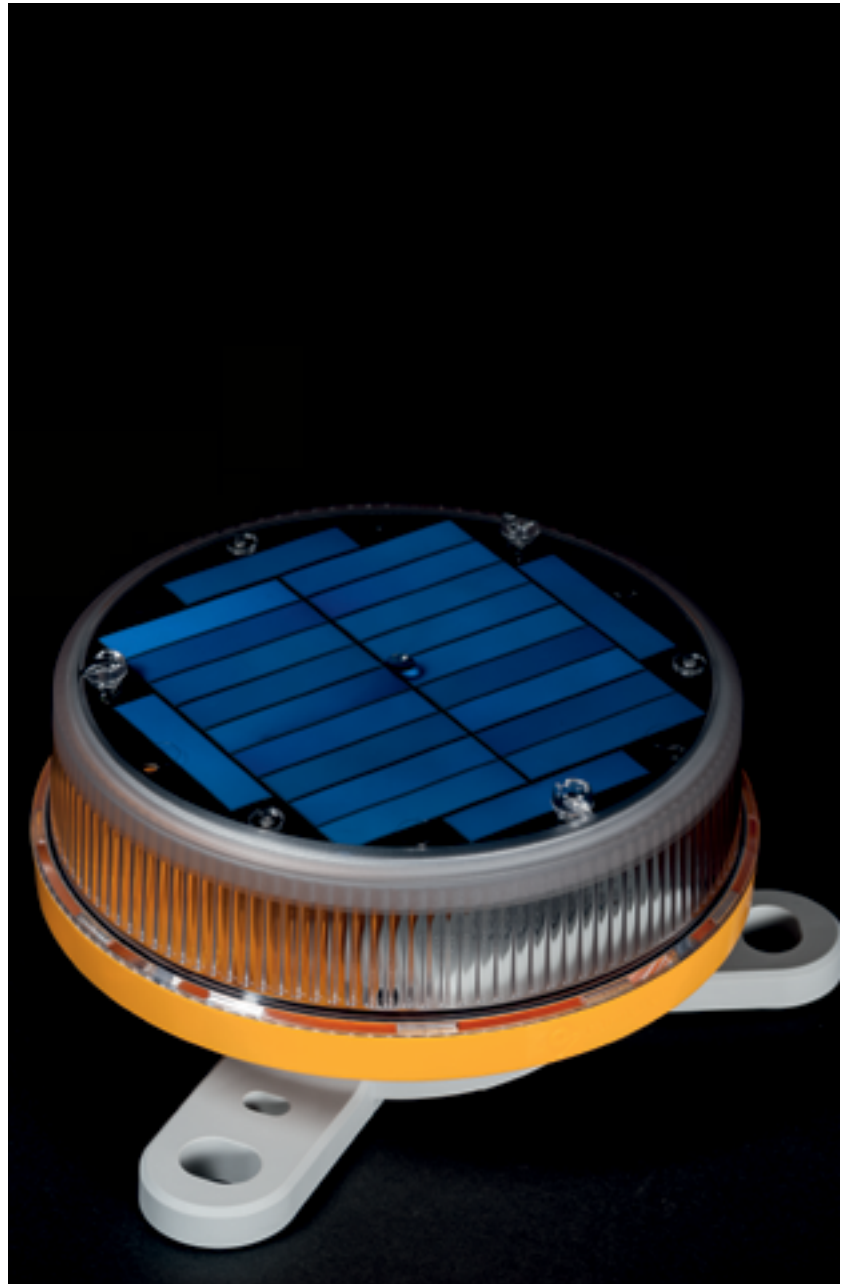
PRODUCT CODES				
Colour	M650H unswitched	M650H switched	M650H unswitched GPS	M650H switched GPS
red	M650R	M650R-S	M650R-GPS	M650R-SGPS
green	M650G	M650G-S	M650G-GPS	M650G-SGPS
white	M650W	M650W-S	M650W-GPS	M650W-SGPS
yellow	M650Y	M650Y-S	M650Y-GPS	M650Y-SGPS
blue	M650B	M650B-S	M650B-GPS	M650B-SGPS

## M660

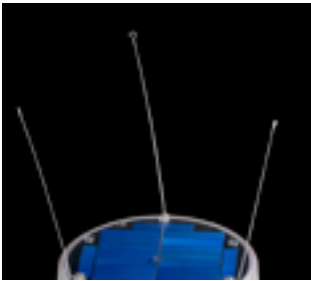
### SELF-CONTAINED LED LANTERN FOR BUOYS AND MINOR BEACONS, UP TO 4 NM RANGE

The M660 is a high-performance, long life, easy-to-use and cost effective self-contained solar LED marine lantern. The M660 features a Li-ion battery pack that extends the service life of the lantern up to eight years. M660 has four different mounting options and can be programmed and controlled with Bluetooth® Control. To view performance in your installation location, visit Marine Selector Tool at [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

- Standard IALA colours Red, Green, White, Yellow, Blue
- Ventilated battery compartment
- Adjustable intensity and range
- Vertical divergence > 8° (FWHM)
- High-efficiency solar cells. Maximum Power Point Tracking (MPPT) for optimal energy collection
- Premium grade UV resistant, polycarbonate/polysiloxane co-polymer body and lens material
- IP 68 rated. O-ring sealing with waterproof vent. Battery case is also IP68 (duration under test)
- Li-ion battery, optional dual pack
- Programmable with Bluetooth® Control and IR-Programmer
- Optional ON/OFF switch, external charger and charging port

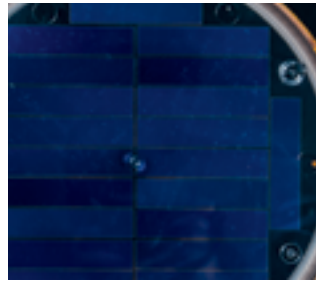


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## BIRD DETERRENTS

Stainless steel as standard.



## SOLAR MODULES

High-efficiency cells.  
Maximum Power Point  
Tracking (MPPT) for optimal  
energy collection.



## LI-ION

Replaceable Li-ion battery  
pack with extreme  
temperature range and up to  
8-year life expectancy.



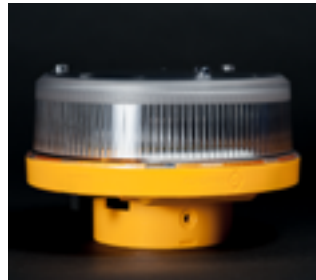
## COLOUR INDICATOR

Protective bumper  
indicates  
LED colour.



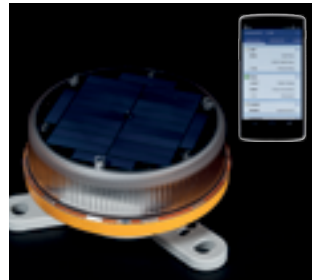
## INSTALLATION

Four different mounting  
options Dual bolt circles  
standard (150 and 200 mm,  
3 holes). Two pole mounting  
options.



## POLE MOUNT

Pole mount by removing  
adapter. 2.5" or 6 cm diameter  
and smaller and 4" or 10 cm  
diameter (nominal, sched. 40)



## BLUETOOTH® CONTROL

Lantern can be programmed  
and battery status checked  
up to 50 meters distance  
with an app for Android and  
iOS.



## IR CONTROLLER

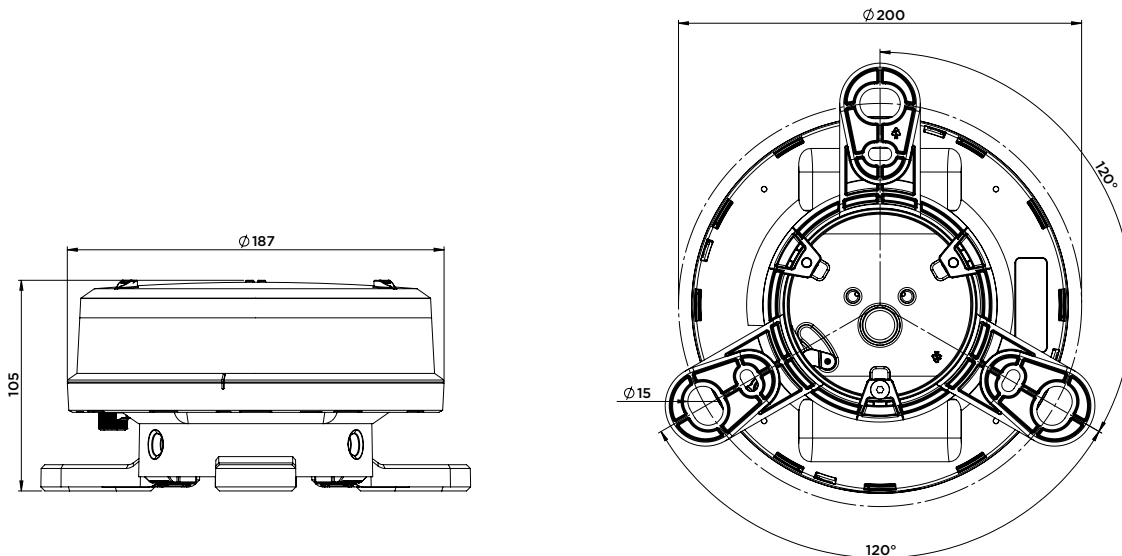
Set intensity, change flash  
code, check battery status,  
set ship mode and turn  
lantern off with optional IR  
(Infrared) controller.



## EXTERNAL SWITCH

An optional external switch  
can be installed.

## TECHNICAL SPECIFICATION M660



OPTICAL PERFORMANCE				
Maximum fixed intensity				
40 cd	42 cd	71 cd	52 cd	18 cd

Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

MAIN TECHNICAL SPECIFICATION	
Lens visual/Mechanical diameter	177 mm
Lens material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diode (LED)
Vertical divergence	>8° (FWHM)
Solar module	High efficiency cells; MPPT
Battery	Li-ion (IEC 61233)
Degree of ingress protection	IP 68
Weight	0.8 kg
Overall height (excl. bird deterrents)	105 mm
Installation (adapter)	3 x M6 on 150mm and 3 x M12 on 200mm
Installation (pole mount)	3 x #10-14 60mm or 73mm diameter



## ORDER OVERVIEW M660

OPTION MATRIX	
M660 Switched	ON/OFF switch
M660 Unswitched	No ON/OFF switch
M660 Dual Battery	Dual Battery Pack
M660 Charge Port	With Charge Port

ACCESSORIES	
69934	660 Bird Deterrent – Single
79848	Spare adapter (incl. screws)
79273	Optional switch
79399	660 Battery Replacement Pack
69885	660 International Wall Charger Assembly
69899	IR (Infrared) Programmer
38334	660 Standard Bolt Kit
79400	660 Dual Battery Replacement Pack

PRODUCT CODES				
Colour	M660 unswitched	M660 switched	M660 dual battery	M660 charge port
red	M660R	M660R-S	M660R-2B	M660R-C
green	M660G	M660G-S	M660G-2B	M660G-C
white	M660W	M660W-S	M660W-2B	M660W-C
yellow	M660Y	M660Y-S	M660Y-2B	M660Y-C
blue	M660B	M660B-S	M660B-2B	M660B-C

**Product code example: M660RSC2B**

- **M660R** is Sabik/Carmanah code for M660 in red with a selection of switched with charge port and dual battery

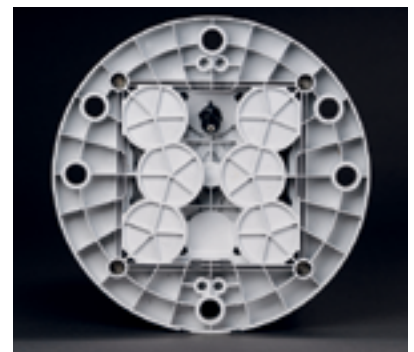
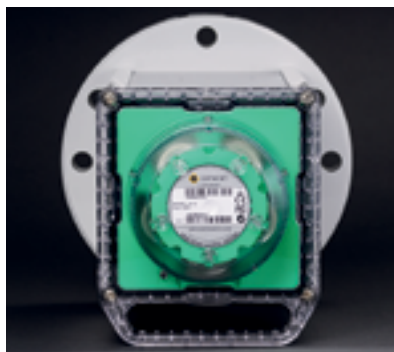
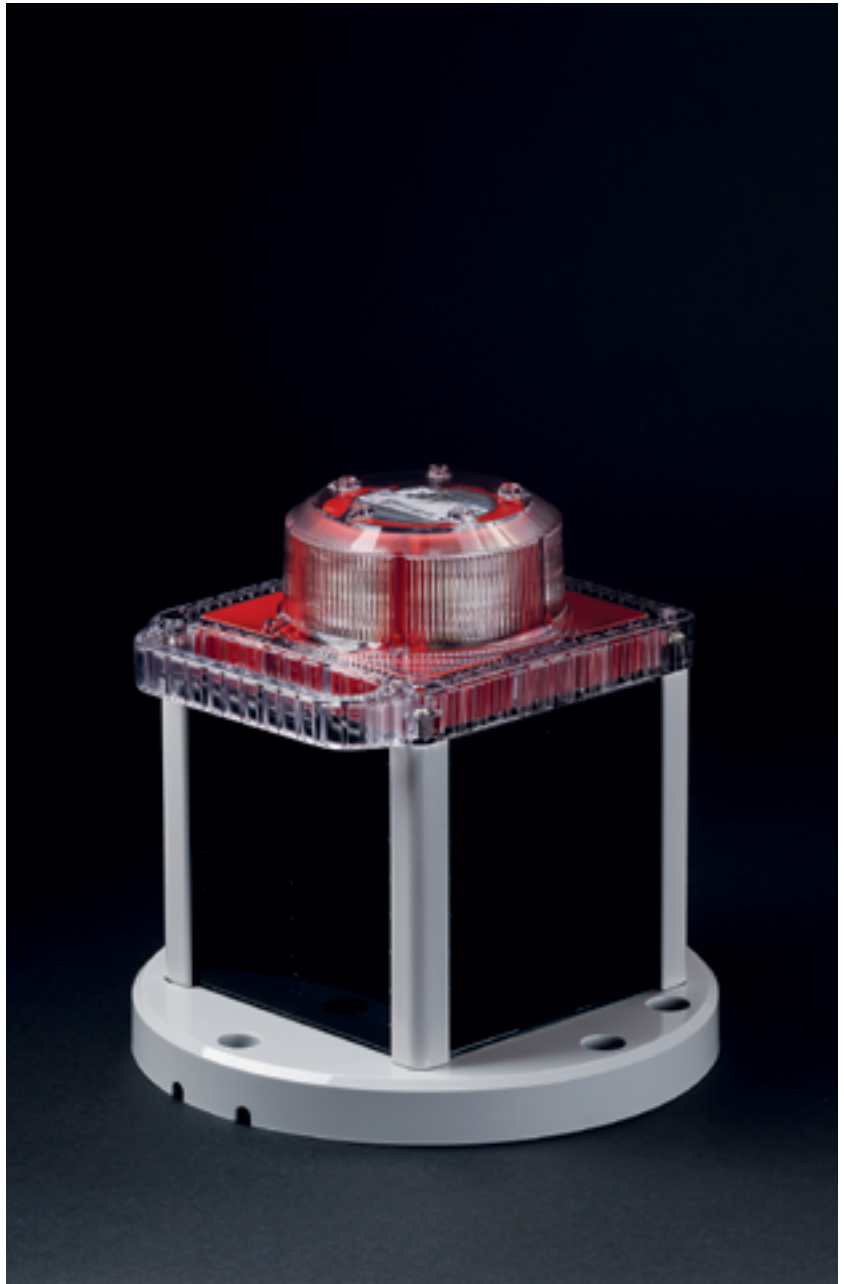
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## M850

### SOLAR POWERED LED MARINE LANTERN, 3 TO 6+ NM RANGE

The M850 combines a compact, high-efficiency solar engine with premium components and a rugged design for best-in-class performance at an optimal price. This lantern is suitable for use in most solar locations. To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

- Option for standard or wide divergences (for fixed or floating applications)
- Multiple cost-effective battery pack options suitable for a wide variety of installation locations
- Built-in calendar function for automatic de-activation during off-season months
- Top-mounted 4-character LED display with simple »tap to activate« functionality
- Premium grade, UV resistant polycarbonate lens material
- Environmentally friendly, super durable powder-coated aluminium chassis
- Adjustable intensity and range
- IP 68 rated
- GPS synchronized flash option



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# MARINE LANTERNS



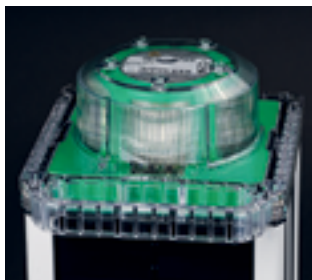
## TOP-MOUNTED DISPLAY

Easily check light settings with a »tap-to-activate« digital display.



## INFRARED PROGRAMMER

Check battery state of charge, program flash codes, set intensities and more.



## OPTICAL ASSEMBLY

Durable, UV resistant optical lens with options for standard (8°) or wide (10°) divergence.



## SCALABLE BATTERY PACK

Multiple replaceable, recyclable battery pack options for reliable, cost-effective performance in a variety of installation locations.



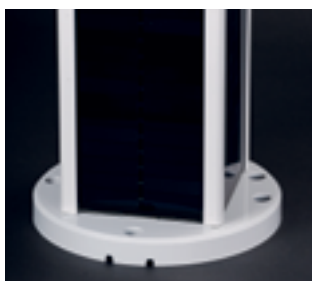
## VISIBLE COLOUR INDICATOR

LED colour is clearly indicated by the colour of the lantern head.



## EXTERNAL CHARGE PORT

Optional charge port in the lantern base allows for easy overnight charging via wall plug.



## INSTALLATION

Supports installation on structure using 3 x M12 bolts, 4 X M12 bolts, or 5 x M12 bolts on a 200 mm diameter. Standard and security bolt kits are available.



## BIRD DETERRENT

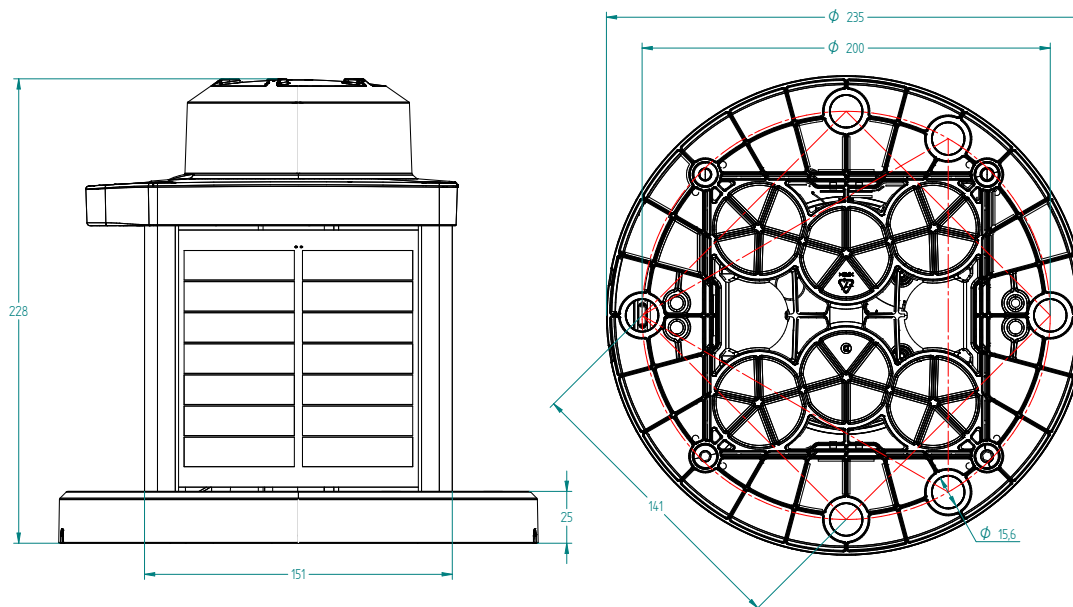
Stainless steel bird deterrent. Five deterrents supplied with option for up to ten per lantern.



## SOLAR MODULES

High efficiency cells protected by rugged powder-coated aluminium extrusion.

## TECHNICAL SPECIFICATION M850



OPTICAL PERFORMANCE				
Maximum fixed intensity				
M850	239 cd	290 cd	445 cd	320 cd

Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector).

MAIN TECHNICAL SPECIFICATION	
Lens visual/Mechanical diameter	111 mm
Construction	Premium grade, UV resistant polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base
Light source	High Flux Surface Mount LEDs with colour-specific temperature-corrected LED driver
Solar modules	High-efficiency cells; MPPT
Battery	Multiple replaceable, recyclable battery options (refer to options matrix)
Degree of ingress protection	IP 68 immersion
Weight	4.5 kg M850 60X 5.3 kg M850 96E
Overall height	226 mm
Overall width	235 mm dia.
Installation	3, 4, or 5 x M12 on 200 mm dia.

## ORDER OVERVIEW M850

OPTION MATRIX					
Model	Colour Options	Battery	Lens	Control	Charge Port
M850	Red	60X	Standard (8°)	GPS Sync	With External Chargeport
	White				
	Green	96E	Wide (10°)	Non-GPS Sync	Without External Chargeport
	Yellow				

ACCESSORIES	
71757	M800 Series Standard Bolt Kit
71884	M800 Series Security Bolt Kit (drivers not included)
53288	M800 Series Security Key
53289	M800 Series Security Socket
69885	M800 Series AC/DC 12V-2.5A Charger, International Plug Adapters
69934	Bird Deterrent (single)
69954	M800 Series Battery Replacement Kit - 60 Wh
69955	M800 Series Battery Replacement Kit - 96 Wh
HEAD KIT	M800 Series Head Replacement Kit (please specify colour at time of order)
HEAD KIT GPS	M800 Series GPS Head Replacement Kit (please specify colour at time of order)
69899	Remote Control

PRODUCT CODES				
Colour	M850 60X (with 60Wh battery)	M850 96E (with 96Wh battery)	M850 60X GPS (with 60Wh battery)	M850 96E GPS (with 96Wh battery)
red	M850R-60X	M850R-96E	M850R-60XGPS	M850R-96EGPS
green	M850G-60X	M850G-96E	M850G-60XGPS	M850G-96EGPS
white	M850W-60X	M850W-96E	M850W-60XGPS	M850W-96EGPS
yellow	M850Y-60X	M850Y-96E	M850Y-60XGPS	M850Y-96EGPS