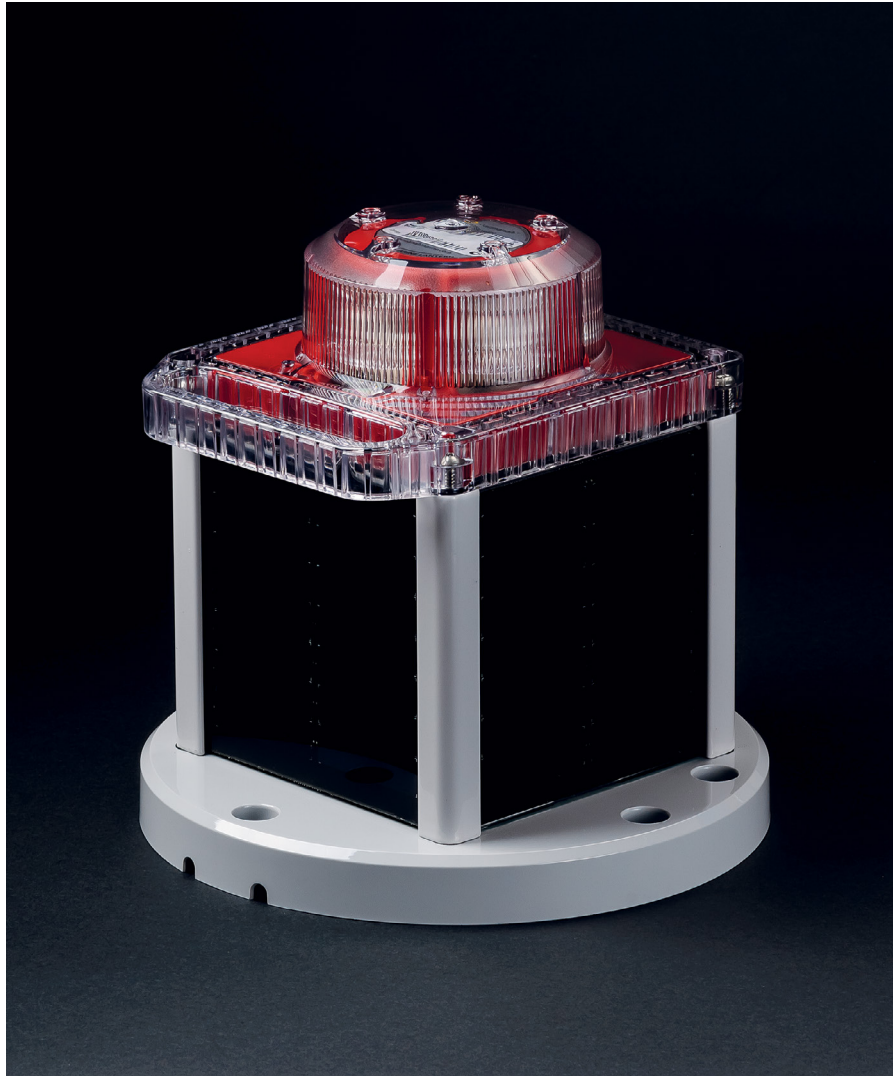


MARINE LANTERNS



SABIK 

MARINE LANTERNS

SELF-CONTAINED



SELF-CONTAINED LANTERN M650H
Self-contained LED lantern for buoys and minor beacons, 2 to 4+ NM range



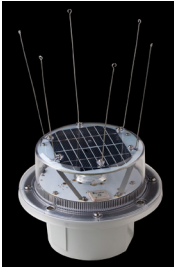
SELF-CONTAINED LANTERN SC 155I
Self-powered LED lantern for buoys and minor beacons with 4 NM range



SELF-CONTAINED LANTERN SC 160I
Self-powered LED lantern for buoys and minor beacons with up to 8 NM range



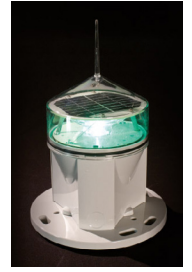
SELF-CONTAINED LANTERN SC LS-100
Self-contained LED Light with 10 NM range



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



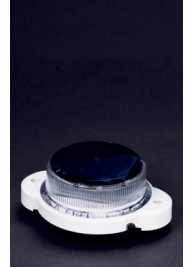
SELF-CONTAINED LANTERN SC 110
Marine self-contained LED light for buoys, beacons, marinas and aquaculture farms



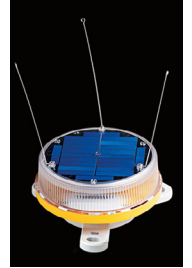
SELF-CONTAINED LANTERN SC 155II
Self-contained LED Lantern for buoys and minor beacons



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

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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



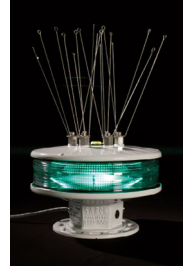
MARINE LANTERN LED 350 H
High Power LED light for fixed installations. A LED beacon capable of visual ranges up to 18 NM. LED 350H is designed to substitute rotating beacons with a considerably smaller power consumption



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 arange of 15 nautical miles



SECTOR LIGHT OD SL 200
Omni-directional LED sector light. The range of the light, depending on color and flash character, is between 6 and 10 NM

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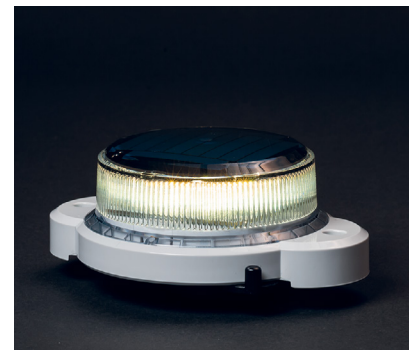
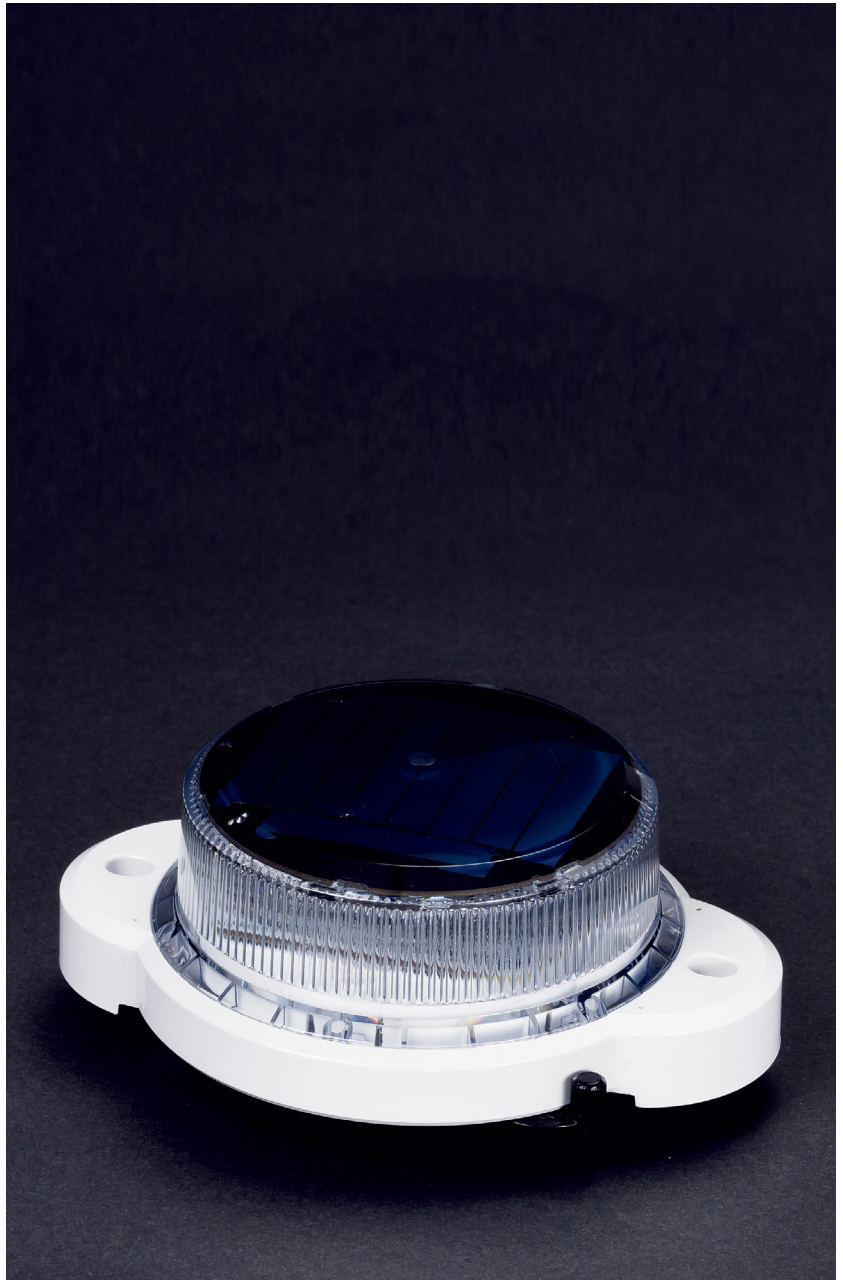
M550

SOLAR POWERED LED MARINE LANTERN, 1 TO 3 NM RANGE

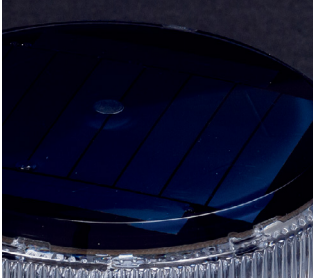
Leveraging custom optics, high-efficiency solar panels, and premium materials, this miniature solar LED marine lantern offers up to three times the range at half the size of its M502 predecessor. Now with replaceable, recyclable batteries this lantern provides excellent value and reliable operation over 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.

- 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

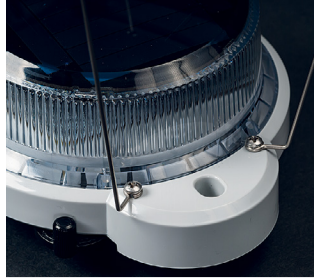


SABIK 



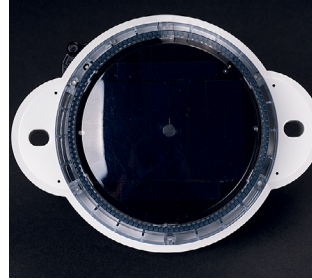
SOLAR MODULES

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.



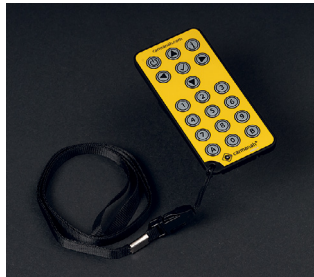
POLE MOUNT

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.

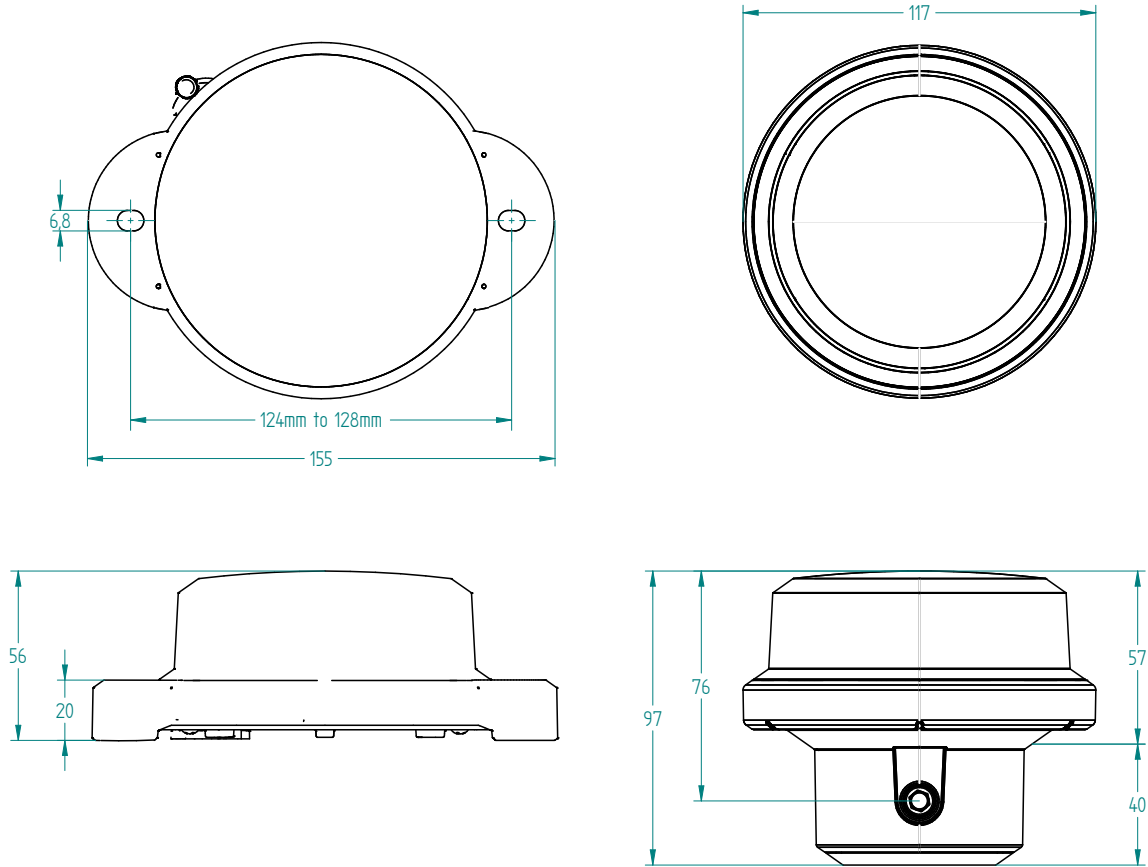


EXTERNAL SWITCH

Optional external ON/OFF switch.

SABIK 

TECHNICAL SPECIFICATION M550



OPTICAL PERFORMANCE

Maximum fixed intensity

18 cd	23 cd	29 cd	25 cd	8 cd
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Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit www.carmanahmarine.com/selector.

SABIK 

MAIN TECHNICAL SPECIFICATION

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

ORDER OVERVIEW M550

OPTION MATRIX

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

ACCESSORIES

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

PRODUCT CODES

Colour	M550 Flange unswitched	M550 Flange switched	M550 Pole
red	M55ORF	M55ORF-S	M55ORP
green	M55OGF	M55OGF-S	M55OGP
white	M55OWF	M55OWF-S	M55OWP
yellow	M55OYF	M55OYF-S	M55OYP
blue	M55OBF	M55OBF-S	M55OBP

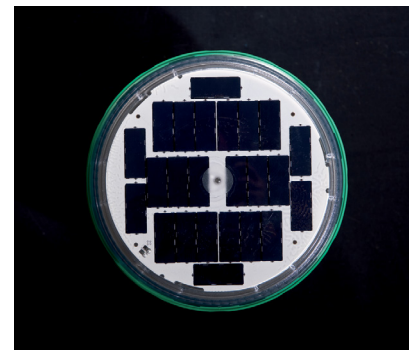
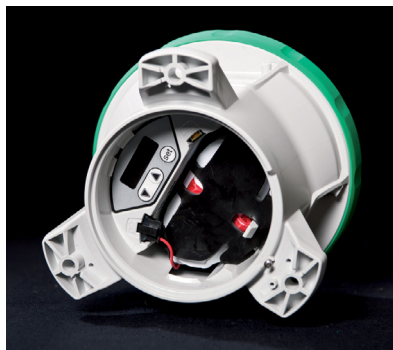
SABIK 

M650H

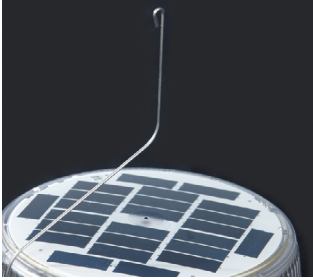
SELF-CONTAINED LED LANTERN FOR BUOYS AND MINOR BEACONS, 2 TO 4+ NM RANGE

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.

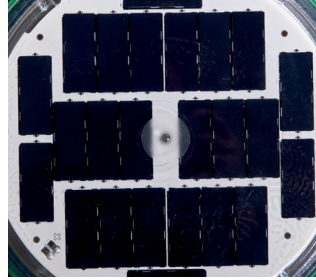
- Standard IALA colours Red, Green, White, Yellow, Blue
- High-efficiency solar cells with bypass and blocking diode function. Maximum power point tracking (MPPT) for optimal energy collection
- Premium grade UV resistant, polycarbonate/polysiloxane co-polymer body and lens material
- Colour-specific 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



SABIK 



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.



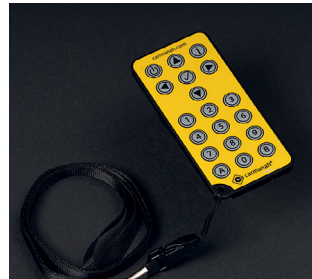
COLOUR INDICATOR
Protective bumper indicates LED colour.



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.

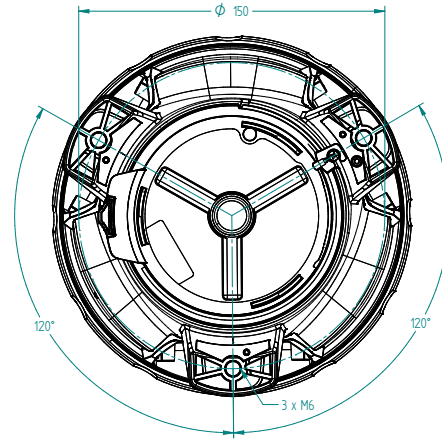
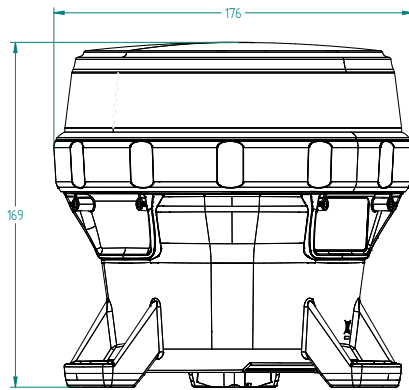


BOTTOM COVER REMOVAL TOOL
Available as accessory.



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.

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

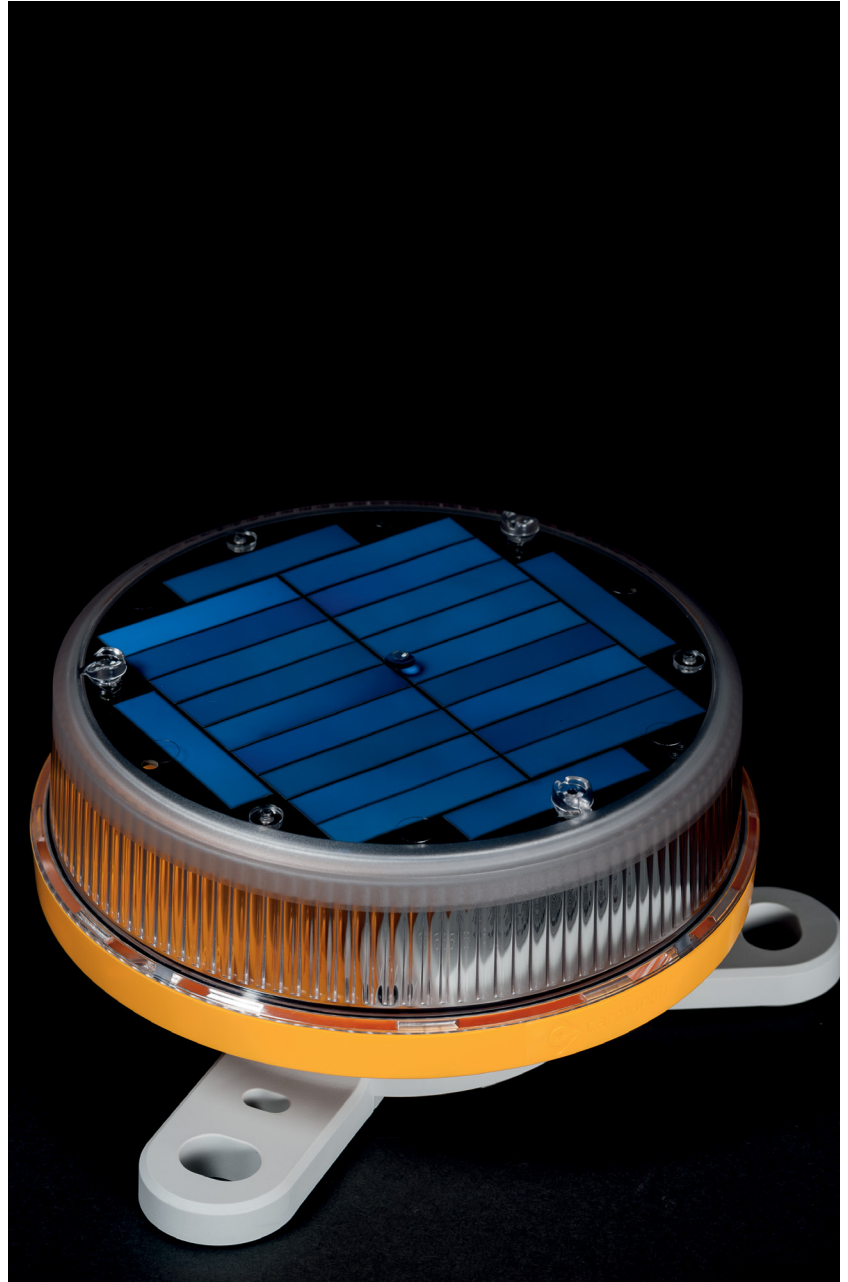
SABIK 

M660

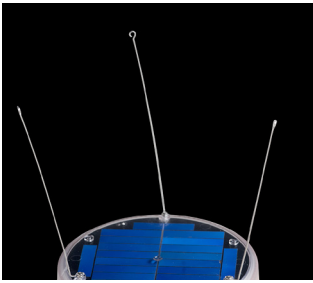
SELF-CONTAINED LED LANTERN FOR BUOYS AND MINOR BEACONS, UP TO 4 NM RANGE

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.

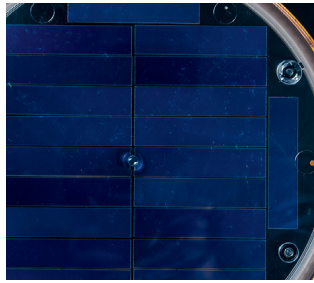
- Standard IALA colours Red, Green, White, Yellow, Blue
- Ventilated battery compartment
- Adjustable intensity and range
- Vertical divergence > 8° (FWHM)
- High-efficiency solar cells. Maximum Power Point Tracking (MPPT) for optimal energy collection
- Premium grade UV resistant, polycarbonate/polysiloxane 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



SABIK 



BIRD DETERRENTS
Stainless steel as standard.



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



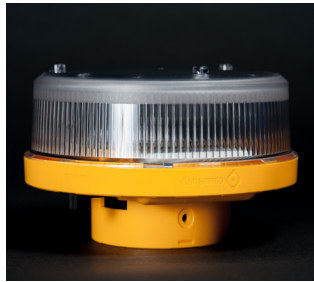
LI-ION
Replaceable Li-ion battery
pack with extreme
temperature range and
up to 8-year life expectancy.



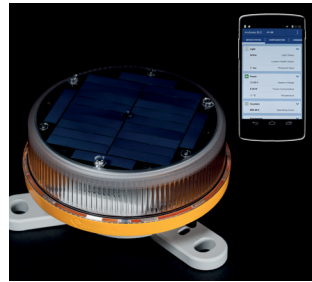
COLOUR INDICATOR
Protective bumper
indicates
LED colour.



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.

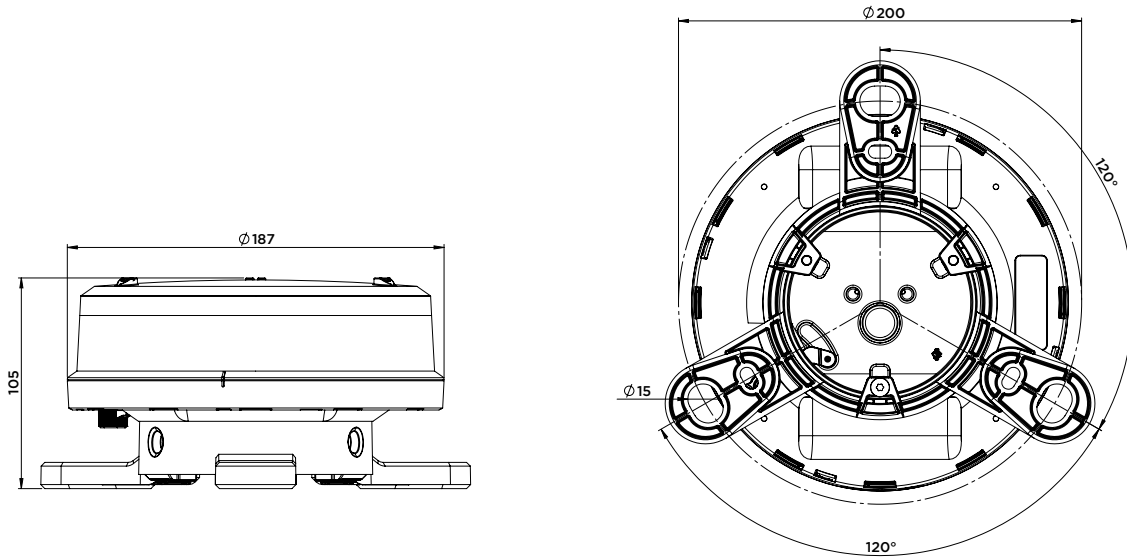


IR CONTROLLER
Set intensity, change flash
code, check battery status,
set ship mode and turn
lantern off with optional IR
(Infrared) controller.



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.

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

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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

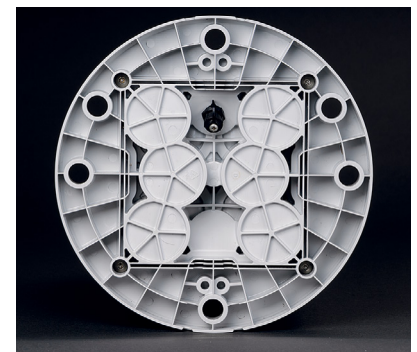
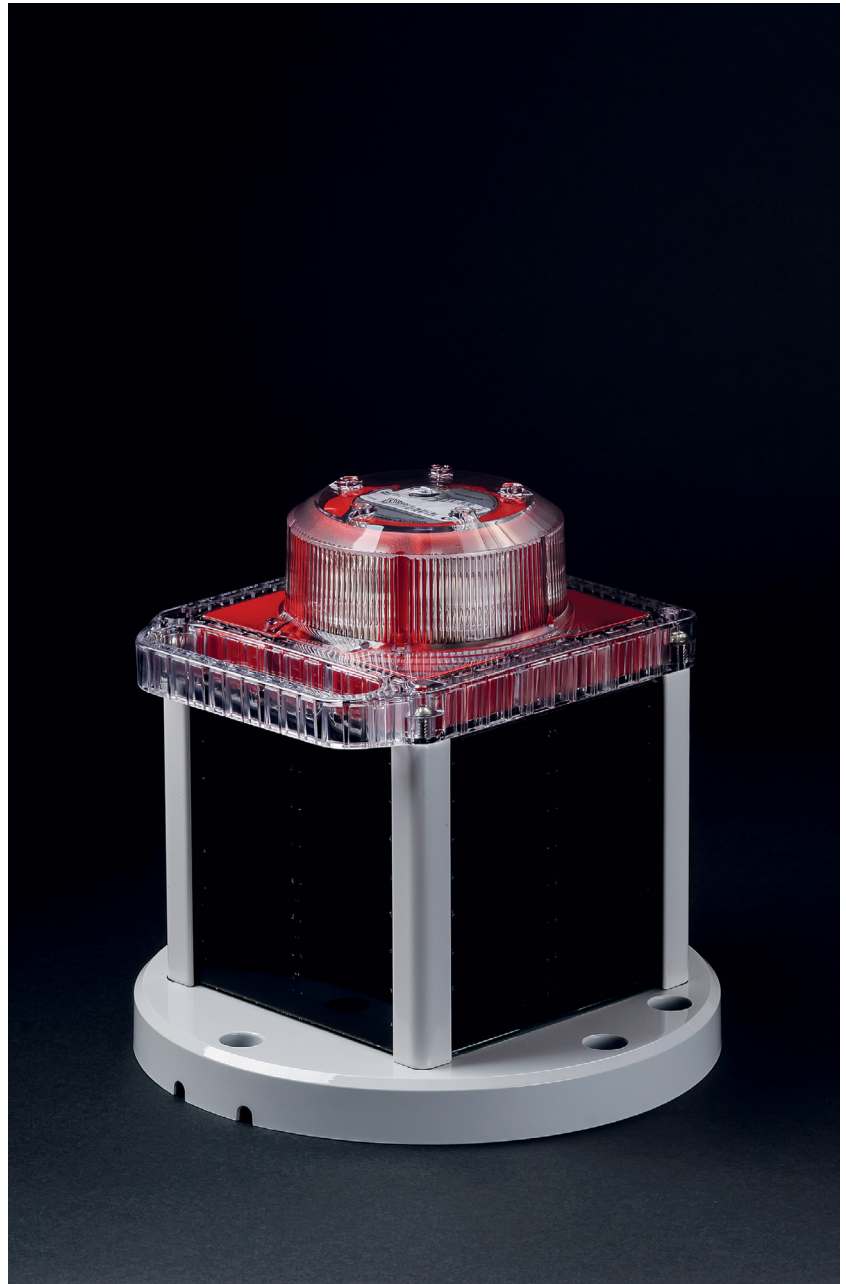
SABIK 

M850

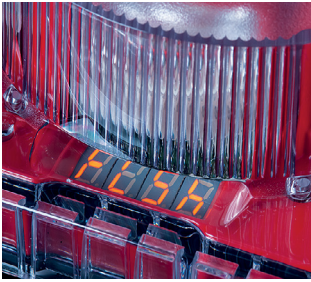
SOLAR POWERED LED MARINE LANTERN, 3 TO 6+ NM RANGE

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.

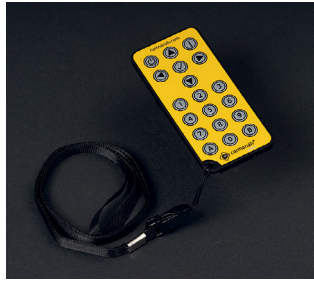
- Option for standard or wide divergences (for fixed or floating applications)
- Multiple cost-effective battery pack options suitable for a wide variety of installation locations
- Built-in calendar function for automatic de-activation during off-season months
- Top-mounted 4-character LED display with 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



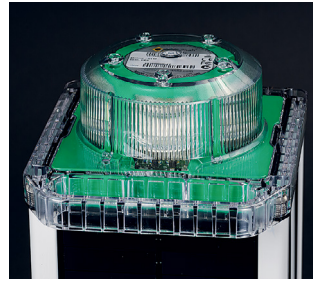
SABIK 



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.



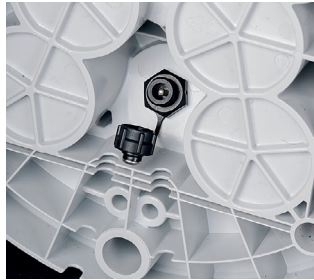
OPTICAL ASSEMBLY
Durable, UV resistant optical lens with options for standard (8°) or wide (10°) divergence.



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



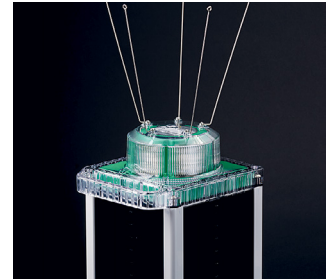
VISIBLE COLOUR INDICATOR
LED colour is clearly indicated by the colour of the lantern head.



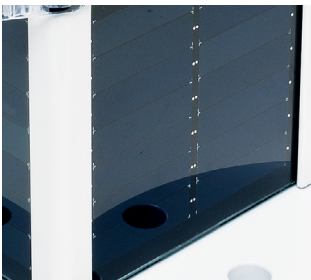
EXTERNAL CHARGE PORT
Optional charge port in the lantern base allows for easy overnight charging via wall plug.



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.



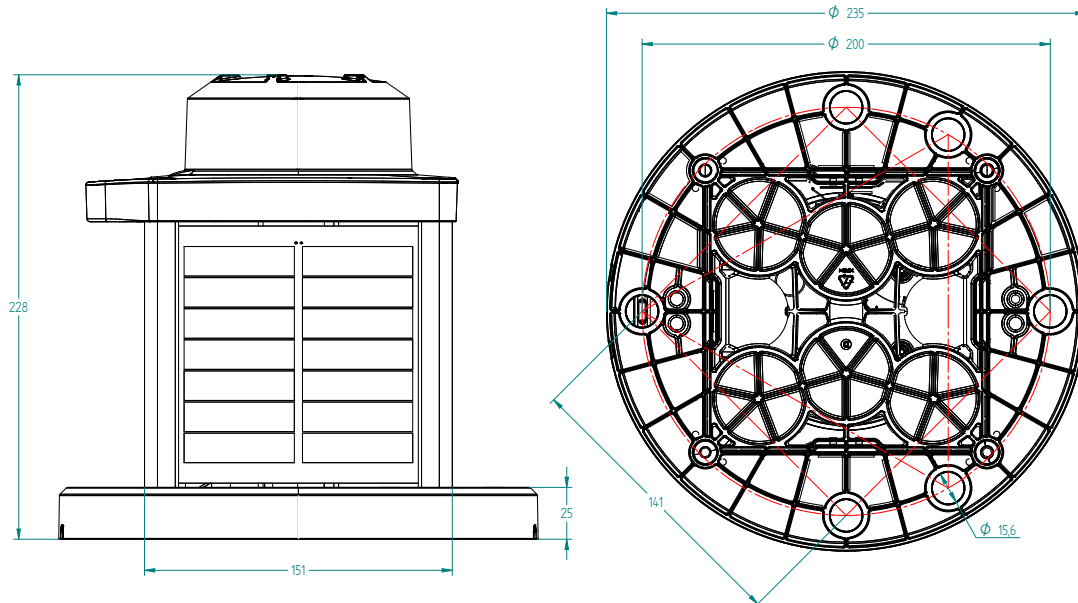
BIRD DETERRENT
Stainless steel bird deterrent. Five deterrents supplied with option for up to ten per lantern.



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

SABIK 

TECHNICAL SPECIFICATION M850



OPTICAL PERFORMANCE

Maximum fixed intensity

M850	239 cd	290 cd	445 cd	320 cd
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Note: Peak IALA intensity dependent on location. To view performance in your installation location, visit 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.

SABIK 

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

SABIK