



MODEL

M850

SOLAR LED MARINE LANTERN

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.

### Intuitive Setup & Programming

Top-mounted 4-character LED display and simple “tap to activate” functionality allows users to easily check light settings without the need for an external controller. Built-in calendar function allows for automatic de-activation during off-season months. Programmable with optional IR remote.

### Scalable, Cost Effective Design

Customizable for best value-for-performance at each installation location. Choose from standard or wide divergences (for fixed or floating applications), and multiple battery pack options.

### Intelligent Energy Management

Combines best-in-class, high-efficiency solar panels and MPPT (Maximum Power Point Tracking) with Carmanah's patented Energy Management System (EMS) for maximum battery life and light performance in even the harshest of environments.

### Durable, Low Maintenance

Integrated solar panels, battery, electronics, and LED light source are combined in a compact, stand-alone, maintenance-free unit. Easily replaceable battery extends service life well beyond five years.

With thousands of installations worldwide, Carmanah/Sabik solar LED lights operate year-round and are trusted by:

- Australian Maritime Systems
- Brazilian Naval Commission
- Canadian Coast Guard
- CETMEF, France
- Port of Kandla, India
- Maritime and Port Authority of Singapore
- SERBA, Uruguay
- Petrobras, Brazil
- PDVSA, Venezuela
- NOAA – National Data Buoy Centre
- Panama Canal
- Suez Canal, Egypt
- Trinity House Light House Service, UK
- United States Coast Guard
- Vancouver Port Authority

A HIGH EFFICIENCY, COST-OPTIMIZED LANTERN SUITABLE FOR USE IN MOST SOLAR LOCATIONS.

- UP TO 445 CD (IALA PEAK)
- 3-6 NM RANGE IN ALL COLOURS
- OPTIONS FOR STANDARD OR WIDE VERTICAL DIVERGENCE
- GPS SYNCHRONIZED FLASH OPTION

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

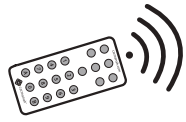


Carmanah/Sabik is backed by a worldwide network of distributors. To find yours visit [carmanahmarine.com](http://carmanahmarine.com) or call +1.250.380.0052 (toll-free US & Canada 1.877.722.8877)

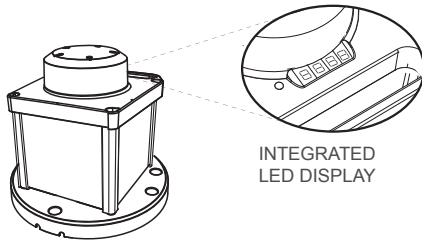
REPRESENTED BY:

[carmanahmarine.com](http://carmanahmarine.com)





OPTIONAL INFRARED PROGRAMMER



INTEGRATED LED DISPLAY

MODEL

M850

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SPECIFICATIONS

Optical	445 cd peak intensity (as per IALA rating); see table
	High Flux Surface Mount LEDs with colour-specific temperature-corrected LED driver provides consistent intensity under all operating conditions
	IALA compliant chromaticities; Red, Green, White, and Yellow
	Custom optical design
	250+ flash patterns (including steady-on)
Energy Collection	Vertical Divergence 8° or 10° (FWHM)
	Best-in-class high-efficiency solar cells
Battery	Optional external charge port and charger
	Multiple battery pack options available (refer to weight table) including best-in-class pack with extreme temperature range
	Battery status and voltage clearly indicated on integrated LED display
Energy Management System (EMS)	Designed for 5 year battery life; Replaceable and recyclable
	Intelligent, microprocessor EMS
Automatic Light Control (ALC)	On-board diagnostics
	When enabled, ALC adjusts output intensity in response to unusually low amounts of sunlight to ensure continued operation
Programming	Programmable with optional infrared programmer
	Integrated 4-character LED display
GPS Synchronization	Optional GPS enables two or more lanterns to flash in unison
Construction	Premium grade UV resistant, polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base
	Environmentally-friendly, super durable powdercoated aluminum chassis (applied by trivalent chromate process)
	Thermoplastic gaskets
	Waterproof, vented battery compartment
	Top colour indicator matches LED colour
Temperature	Integrated handle
	-22 to 122 °F (-30 to 50 °C) operating
Weight	-40 to 176 °F (-40 to 80 °C) storage
Mounting	Refer to weight table
Wind Loading	3 or 4 bolt 7.87" (200 mm) mounting pattern
Ice Loading	140 knots (72 m/s)
Shock & Vibration	0.03 psi (22 kg/m <sup>2</sup> )
Ingress	MIL-STD-202G (for Shock and Vibration)
	IP 68 immersion
	MIL-STD-202G immersion & damp heat cycling
Compliance	MIL-STD-810G rain & salt fog
	USCG PATON 33CFR66. 33CFR67 Class B & C
	RoHS; WEEE

PEAK INTENSITY (IALA)

COLOUR	INTENSITY
Red	239 cd
Green	290 cd
White	445 cd
Yellow	320 cd

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

WEIGHT

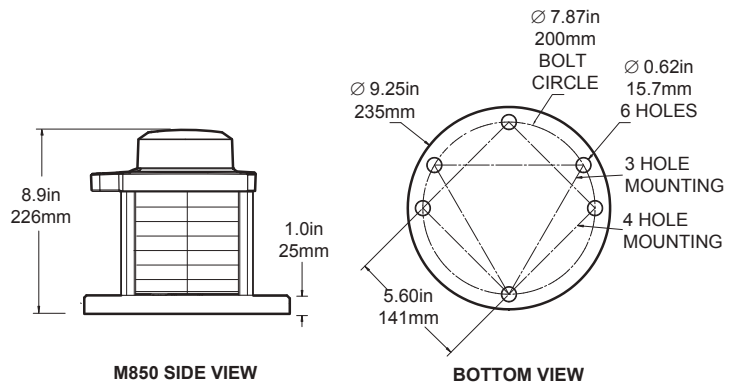
MODEL	BATTERY PACK		kg	lb
M850	60X	X-cells (60 Wh)	4.5	9.9
	96E	E-cells (96 Wh)	5.3	11.6

For assistance with model selection and battery sizing for your installation location, refer to the Carmanah Marine Product Selector and solar simulator at [www.carmanahmarine.com/selector](http://www.carmanahmarine.com/selector)

Originally designed and built under contract with the U.S. Coast Guard, Carmanah Marine lanterns were the first solar-powered lanterns using light emitting diodes (LEDs) to enter the U.S. Navigational Aid System.

Today, thousands of Carmanah Marine lanterns are in use by Coast Guards, Navies, and Ports Authorities around the world.

DIMENSIONS



CONFIGURATION

MODEL	OUTPUT ▼	BATTERY ▼	LENS ▼	CONTROL ▼	OTHER ▼
M850	RED GREEN WHITE YELLOW	60X 96E	Standard Wide	GPS NON-GPS	CHARGE PORT

Specifications subject to local environmental conditions.  
 Specifications may be subject to change.  
 Document: MARI\_Spec\_Sheet\_M850\_RevF  
 US Patent Number 6573659. International patents apply.



The management system governing the manufacture of this product is ISO 9001:2008 certified.

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