



carmanah®

carmanah
SABIK

MODEL

M860

SOLAR LED MARINE LANTERN

With a durable, large-format solar engine, and wide-coverage remote monitoring capabilities, the M860 is engineered for consistent, reliable performance at remote installations and in challenging insolation locations.

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

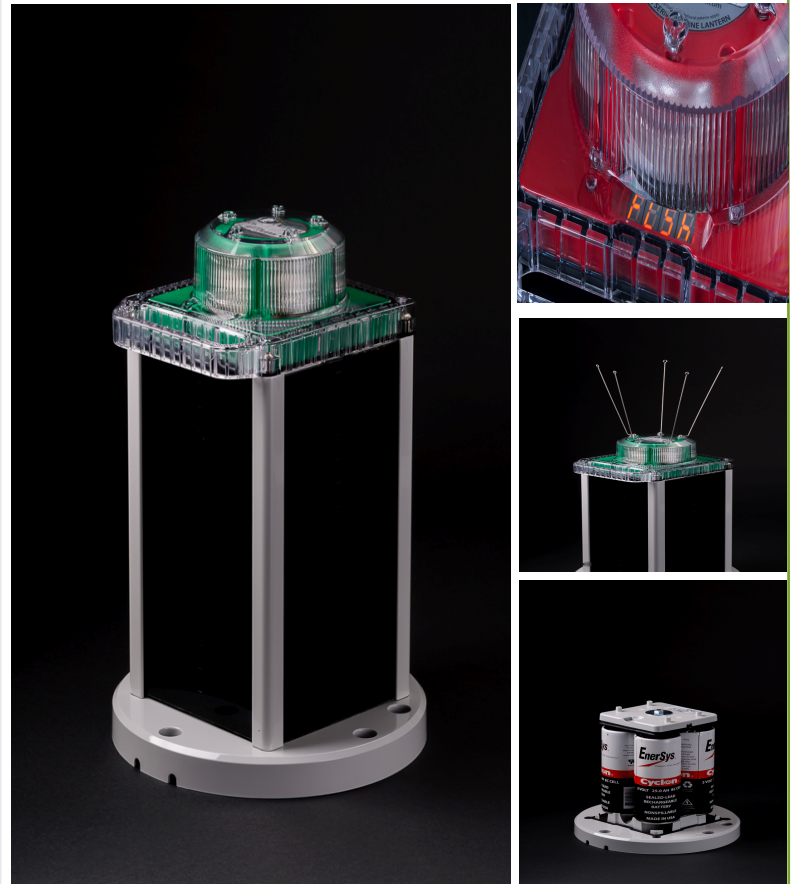
A standalone, maintenance-free unit with integrated solar panels, battery, electronics, and LED light source. Easily replaceable battery extends service life well beyond 5 years.

Carmanah/Sabik solar LED lights 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 PREMIUM AND FULL-FEATURED LANTERN SUITABLE FOR ACHIEVING LONGER RANGES IN CHALLENGING INSOLATION LOCATIONS. ADVANCED MONITORING OPTIONS AVAILABLE.

- UP TO 475 CD (IALA PEAK)
- 3-6 NM RANGE IN ALL COLOURS
- OPTIONS FOR STANDARD OR WIDE VERTICAL DIVERGENCE
- UP TO 7.8 NM RANGE AT T=0.74 (8° FWHM)
- UP TO 10.8 NM RANGE AT T=0.85 (8° FWHM)
- GPS SYNCHRONIZED FLASH OPTION



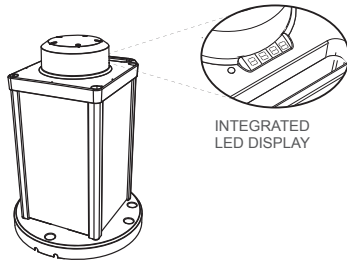
Carmanah/Sabik is backed by a worldwide network of distributors.

REPRESENTED BY:

Sensor Systems (NZ) Ltd



Ph: (09) 275-4578 Fax: (09) 275-9565 Email: info@sensorsystems.co.nz www.sensorsystems.co.nz



MODEL

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SOLAR LED MARINE LANTERN

SPECIFICATIONS

Optical	475 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 and custom code)
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 and datalogger
	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 ²)
Ingress	MIL-STD-202G (for Explosive Atmosphere)
	MIL-STD-202G (for Shock and Vibration)
	IP 68 immersion
Compliance	MIL-STD-202G immersion & damp heat cycling
	MIL-STD-810G rain & salt fog
Monitoring	USCG PATON 33CFR66. 33CFR67 Class B & C Pending
	RoHS; WEEE
	Optional satellite monitoring and reporting. Internal antenna.

PEAK INTENSITY (IALA)

COLOUR	INTENSITY
Red	271 cd
Green	316 cd
White	475 cd
Yellow	387 cd

Note: Peak IALA intensity dependent on location. Table based on equatorial location of 12-hour night duration and 12.5% duty cycle flash code. Standard lens.

WEIGHT

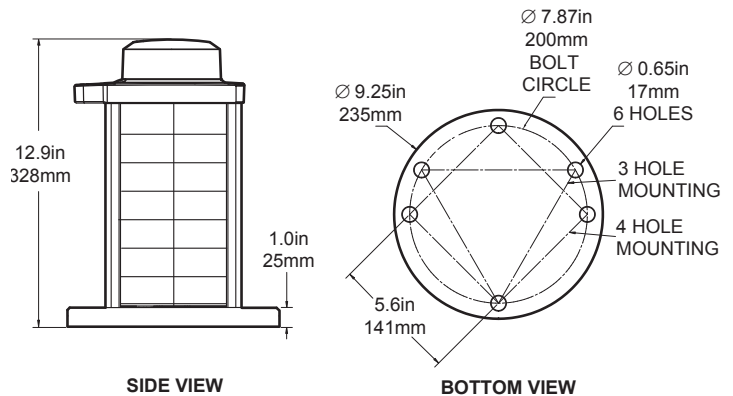
MODEL	BATTERY PACK	kg	lb	
M860	96E	E-cells (96 Wh)	6.4	14.0
	200BC	BC-cells (200 Wh)	10.2	22.4

For assistance with model selection and battery sizing for your installation location, refer to the Carmanah Marine Product Selector and solar simulator at carmanah.com/marine/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 ▼
M860	RED GREEN WHITE YELLOW	96E 200BC	Standard Wide	GPS NON-GPS	ANTENNA MONITORING

