

# The Original Solar-Powered LED Marine Lanterns One Nautical Mile<sup>1</sup>



## Designed Coast Guard Tough

The Carmanah 1NM (1.85km) solar-powered LED lanterns are the world's most advanced, solar-powered LED navigational and hazard-marking lights. They are completely self-contained, install in minutes and require no maintenance or servicing for up to five years.

## Reliable Technology

Through the innovative combination of solar power and LED technology, the Model M501 lantern charges during the day, even under cloudy conditions, and turns on automatically at night. Instead of relying on short-lived incandescent bulbs, the Model M501 uses durable, ultra-bright light emitting diodes (LEDs), which have an operating lifespan of up to 100,000 hours.

## Quality Manufacturing

Designed and built in partnership with the Canadian Coast Guard, the Model M501 has a history of reliable performance in harsh weather conditions. The Model M501 can be factory programmed with one of seven of the standard IALA flash patterns. Manufactured in accordance with ISO 9001:2000 Quality Assurance Standards, the Model M501 produces light output in IALA's five international chromaticity colors: green, red, amber, white and blue.

Available in green, red, amber, white and blue with one of 7 standard IALA flash patterns such as:

- Small safety/hazard buoys
- Mooring and research buoys
- Private docks, boat houses, swim rafts and other types of marine infrastructure
- Marine floating signs
- Waterfront safety lighting
- Perimeter marking for all types of marine netting, cages and barriers
- Floating hose markers



Lefkada Island, Greece



Kuwait City, Kuwait



Cataumet, MA

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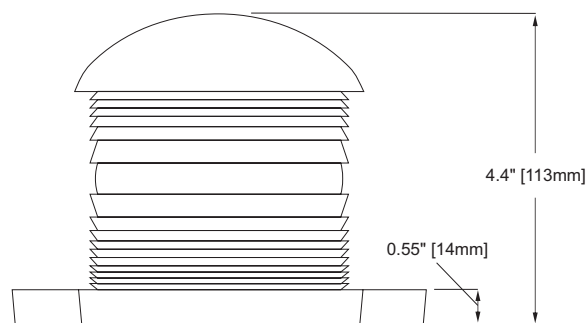
www.carmanah.com



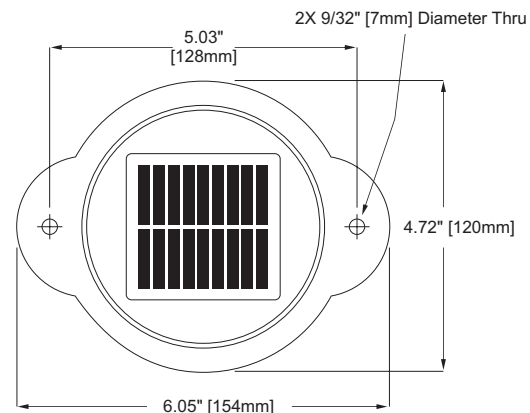
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Side View



Top View



## SPECIFICATIONS

### LIGHT OUTPUT

Effective Intensity (Transmissivity constant of 0.74)

Green, Red, Amber, White, Blue

Nominal Night Range (Employs Schmitt-Clausen's Law)

Green, Red, Amber, White, Blue

Vertical Divergence

Horizontal Output

### FLASHING<sup>1</sup>

~ 1.2 Candela

~ 1.1 NM

7° at 50% intensity

360°

## REPRESENTED BY

### Mimi Drabit

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## OPERATION

Minimum Autonomy

300 Hours

Minimum Equivalent Peak Sun Hours to Maintain Minimum Autonomy

1.5 Hours

Illumination Technology

Ultra-bright 4 Light Emitting Diodes

Lifespan of LEDs

Up to 100,000 Hours

Chromaticity of Color Output

Meets IALA specifications

Available Standard Flash Patterns

7 including steady-on

## CONSTRUCTION

Solar Panels

Mono-Crystalline  
Potted with UV-protected polyurethane and  
domed for higher efficiency

Battery

Pure-lead thin plate with starved-electrolyte

Lens Material

Polycarbonate

Battery Venting

Vent at the bottom of the lantern

Sealing

Self-contained unit, potted with polyurethane

Weight

2.45 lbs (1.1 kg)

## ENVIRONMENTAL and ELECTRICAL

Temperature Range<sup>3</sup>

-40° to 176° F  
(-40° to +80° C)

Waterproof

As per IP67 (NEMA 6)

CE Approval

As per EN 60945:1997

## TRADEMARKS and PATENTS

Trademarks and Patents

US Patents: 5,782,552 & 6,013,985  
European Patent Application: 96925627.0  
Other Patents Pending

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Document: SPC\_MARI-500-1NM\_vB



<sup>1</sup> Actual range is dependant on flash pattern, intensity, and LED color.

<sup>2</sup> All "Flashing" light specifications are based on a 12.5% duty cycle (code 064 - 15 flashes per minute).

<sup>3</sup> Consistent ambient temperatures above +77°F (+25°C) may affect overall battery life. Temperatures above +140°F (+60°C) may affect output.

All specifications are subject to change without notice.

