



MODEL

# M704-5

## Solar-Powered LED Marine Lanterns



Carmanah's Model M704-5 is a self-contained solar LED marine lantern, trusted by the world's largest maritime authorities. The Model M704-5 features up to 5 nautical miles visibility and optional GPS capability.

### LIGHT OUTPUT AND OPERATION

Visibility <sup>1,2</sup>	4 to 5 NM (7.4 to 8.5 km)
Peak intensity (360° average, green LEDs)	93 Candela
Peak intensity (as per IALA rating)	83 Candela
Ambient storage temperature	-40 to 176 °F (-40 to 80 °C)
Ambient operating temperature	-22 to 122 °F (-30 to 50 °C)
Vertical divergence	10°
Vibration tested	As per USCG 502G CH3, Section 4.4.6, MIL-STD-202G Method 204D <sup>3</sup>
Shock tested	As per USCG 502G CH3, Section 4.4.5, MIL-STD-202G Method 213B <sup>4</sup>
ESD tested	As per USCG 502G CH3, Section 3.5.9, +/- 25 kV air discharge <sup>5</sup>
Autonomy <sup>6</sup> (flashing) at full charge	600 hours
Available LED color	Red, green, amber, or white
Flash patterns	256+
Programmable (infrared)	Yes
GPS capable	Yes (Optional)

### CONSTRUCTION

Light source	High-powered LEDs
Lens material	UV stabilized
Battery	Replaceable and recyclable
Energy Management System MICROSOURCE <sup>®</sup> code suite	Yes
Mounting options	3, 4, or 5 bolt
Weight	26 lb (11.75 kg)

### PATENTS AND APPROVALS

CE approval	As per EN 60945:1997
IP68 waterproof rating	Yes
Patents	US Patents: 6573659, 6013985 Other Patents Pending



### Clients

- Australian Maritime Systems
- Brazilian Naval Commission
- Canadian Coast Guard
- CETMEF, France
- Port of Kandla, India
- Maritime and Port Authority of Singapore
- NOAA – National Data Buoy Center
- Panama Canal
- Suez Canal, Egypt
- Trinity House Lighthouse Service, UK
- United States Coast Guard
- Vancouver Port Authority

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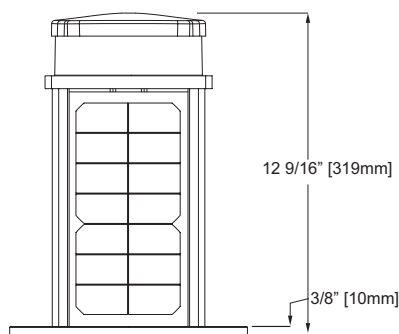
Email: [info@carmanah.com](mailto:info@carmanah.com)

we put solar to work™

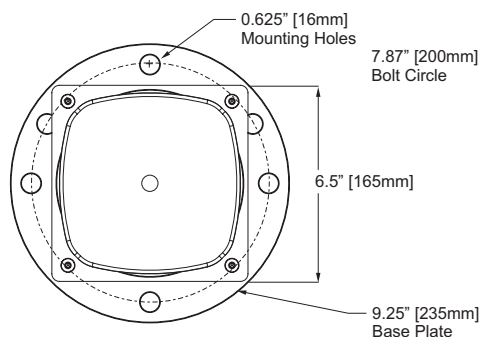
# Solar-Powered LED Marine Lanterns Model M704-5 and M704-5 GPS



## Side View



## Top View



## Accessories

Infrared Programmer



Security Bolt



Bird Deterrent



In use by coast guards, navies, and port authorities, the Model M704-5 solar marine lantern offers:

- **Maximum capacity with minimal life cycle cost** – operates up to 5 years maintenance free<sup>7</sup>
- **Field-proven durability** – over 250,000 solar installations worldwide
- **Vandal and theft resistant design** – high quality construction and mounting hardware
- **Patented technology** – innovative LED technology and Energy Management System
- **IP68 certification** – tested and designed to higher levels of water ingress protection standards
- **Synchronization module** – optional GPS capabilities enabling two or more M704-5 lanterns to flash in unison

### The Model M704-5 is also:

- Manufactured in accordance with ISO 9001:2000 Quality Assurance Standards
- Engineered to meet requirements of the USCG in 33 CFR part 66 for Private Aids to Navigation
- Manufactured with a colored base for easy identification of LED color

<sup>1</sup> Transmissivity of 0.74.

<sup>2</sup> Actual range is dependant on flash pattern, intensity, and LED color.

<sup>3</sup> Test Condition B (modified), Sinusoidal 5 g peak, 10-2000 Hz, 3 cycles per axis.

<sup>4</sup> Test Condition H (modified), Sawtooth 50 g peak, 6 ms duration, 18 shocks total.

<sup>5</sup> EN61000-6-2:2005, Table 1

IEC61000-2-2:2001-04

EN60945:2002

USCG 502G CH3, Section 3.5.9, +/- 25 kV air discharge

<sup>6</sup> Actual figures for autonomy depend on the intensity level setting.

<sup>7</sup> Dependent on location.



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