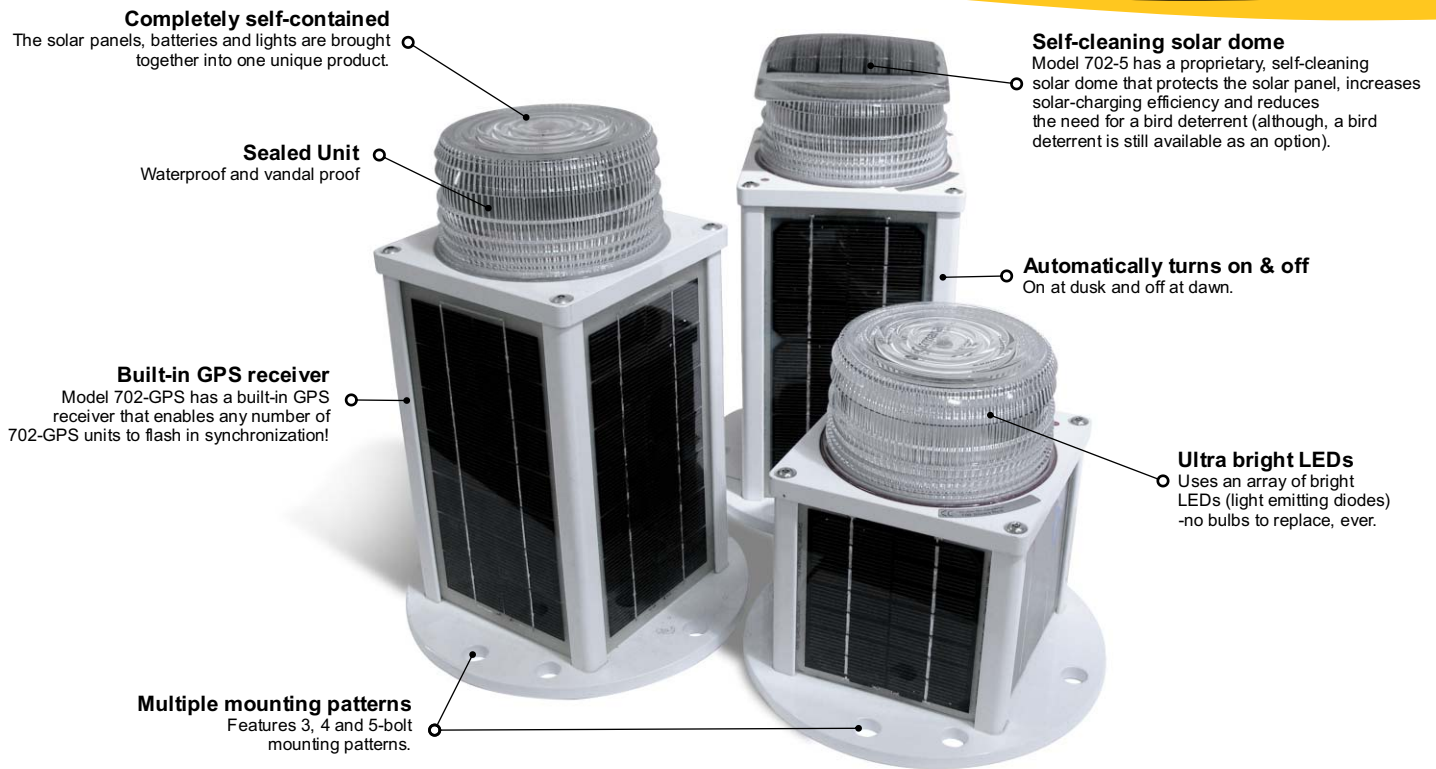


# The Original Solar-Powered LED Marine Lights Three Nautical Miles<sup>1</sup>



## Designed Coast Guard Tough

The Carmanah 3NM (5.4 Km) solar-powered LED lights 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 700 Series lights charge during the day, even under cloudy conditions, and turn on automatically at night. Instead of relying on short-lived incandescent bulbs, the 700 Series use durable, ultra bright light emitting diodes (LEDs), which have an operating lifespan of up to 100,000 hours.

## Quality Manufacturing

As a result of being designed and built under contract with the U.S. Coast Guard, the 700 Series lights had to meet the Coast Guard's standards for reliability and durability. They were the first solar-powered LED lanterns to enter the U.S. Navigational Aids System and are manufactured in accordance with ISO 9000:2001 Quality Assurance Standards.

**30 day satisfaction guarantee  
and three year warranty!**

There are a number of models of the 700 Series, offering a range of versatility depending on your location and requirements:

### Model 701:

The Model 701 is designed for locations where there is plenty of sunshine, with no long periods of poor weather or long winter nights. This is Carmanah's most cost-effective solution for a 3NM solar-powered LED light.

### Model 701-5:

The Model 701-5 is designed for locations where slightly more solar collection is required than the Model 701. The Model 701-5 has the same battery storage capacity as the Model 701, with an added top-mounted solar panel.

### Model 701-5 GPS

The Model 701-5 GPS has all the same features of the Model 701-5 plus the ability to synchronize its flash, via GPS communications, with any other GPS-equipped lights with the same flash pattern in the world.

### Model 702:

For certain locations, and applications that require more autonomy, the Model 702 has more battery storage and larger solar panels than the Model 701.

### Model 702-5:

For even more charging in winter sun, the Model 702-5 combines all the features of the Model 702 with an additional solar panel.

### Model 702-GPS

The Model 702-GPS adds the additional capability of flash synchronization between any number of lights at any location in the world.



Canadian Coast Guard, Canada



United States Coast Guard, Lake Tahoe



Milford Haven, South West Wales.

Toll-Free: 1-877-722-8877

Worldwide: +1 (250) 380-0052

www.carmanah.com

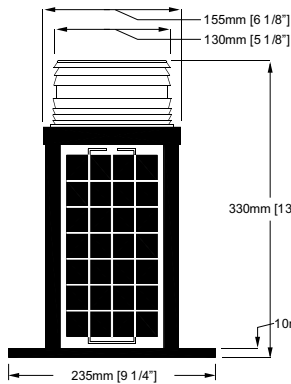


# The Original Solar-Powered LED Marine Lights Three Nautical Miles<sup>1</sup>

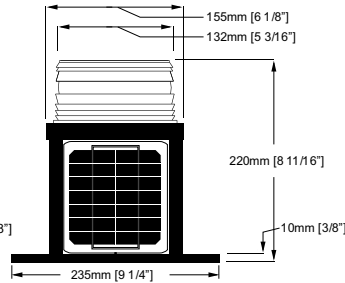


## Side View

Model 702, Model 702-GPS

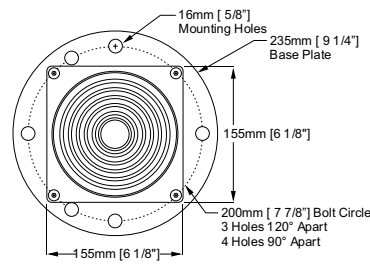


Model 701

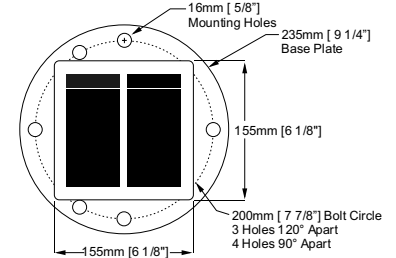


## Top View

Model 701, Model 702  
& Model 702-GPS



Model 702-5, Model 701-5  
& Model 701-5 GPS



## SPECIFICATIONS

### LIGHT OUTPUT

Effective Intensity (Transmissivity constant of 0.74)

Green	~ 30 Candela
Red	~ 12.6 Candela
Amber	~ 8.0 Candela
White	~ 19.4 Candela

Nominal Night Range<sup>1</sup> (Employs Method of Schmidt-Clausen)

Green	~ 3.6 NM
Red	~ 2.6 NM
Amber	~ 2.2 NM
White	~ 3.1 NM

Vertical Divergence

Horizontal Output

### OPERATION

Minimum Autonomy <sup>3</sup>	300 Hours
Latitude Range <sup>4</sup>	55° S to 55° N
On / Off Level	70 / 100 Lux
Illumination Technology	Ultra-Bright 24 Light Emitting Diodes
Lifespan of LEDs <sup>5</sup>	Up to 100,000 Hours
Chromacity of Color Output	Meets IALA specifications
Available Standard Flash Patterns (Custom patterns available)	256 including "steady-on" (user-adjustable)
Power Management System	MicroSource™

### CONSTRUCTION

Solar Panels	Mono-Crystalline
Battery	Potted with UV-protected polyurethane
Battery Venting	Recycled, sealed lead-acid
Sealing	Vent at the bottom of the lantern
Weight	Self-contained unit, sealed with gaskets
Lantern base	7.75 kg (17 lbs)
Mounting	Marine grade aluminum
	3, 4 & 5 bolt mounting pattern

### ENVIRONMENTAL and ELECTRICAL

Temperature Range <sup>6</sup>	-40° to +80° C (-40° to 176° F)
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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### Optional Infrared Programmer



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

<sup>2</sup> All "Flashing" light specifications are based on 100% intensity setting at 12.5% duty cycle (code 129).

<sup>3</sup> Actual figures for autonomy depend on the intensity level setting.

<sup>4</sup> Lights will function reliably at higher latitudes than 55° North or South if intensity/autonomy is properly adjusted to suit operating environment by an Authorised Carmanah Representative.

<sup>5</sup> Amber, Red, Green: ~14 years to 80% of original effective intensity when operated at night with a 12.5% duty cycle.

<sup>6</sup> Consistent ambient temperatures above +25°C (+77°F) may affect overall battery life. Temperatures above +60°C (+140°F) may affect output.

All specifications are subject to change without notice.

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