The Original
Solar-Powered LED Marine Lights
Three Nautical Miles

Completely self-contained
The solar panels, batteries and lights are brought together into one unique product.

Sealed Unit
Waterproof and vandal proof

Built-in GPS receiver
Model 702-GPS has a built-in GPS receiver that enables any number of 702-GPS units to flash in synchronization!

Self-cleaning solar dome
Model 702-5 has a proprietary, self-cleaning solar dome that protects the solar panel, increases solar-charging efficiency and reduces the need for a bird deterrent (although, a bird deterrent is still available as an option).

Automatically turns on & off
On at dusk and off at dawn.

Ultra bright LEDs
Uses an array of bright LEDs (light emitting diodes) - no bulbs to replace, ever.

Multiple mounting patterns
Features 3, 4 and 5-bolt mounting patterns.

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.

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 then 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.

30 day satisfaction guarantee and three year warranty!
### SPECIFICATIONS

#### LIGHT OUTPUT

<table>
<thead>
<tr>
<th>Color</th>
<th>Effective Intensity (Transmissivity constant of 0.74)</th>
<th>Nominal Night Range (Employs Method of Schmidt-Clausen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>~ 30 Candela</td>
<td>~ 3.6 NM</td>
</tr>
<tr>
<td>Red</td>
<td>~ 12.6 Candela</td>
<td>~ 2.6 NM</td>
</tr>
<tr>
<td>Amber</td>
<td>~ 8.0 Candela</td>
<td>~ 2.2 NM</td>
</tr>
<tr>
<td>White</td>
<td>~ 19.4 Candela</td>
<td>~ 3.1 NM</td>
</tr>
</tbody>
</table>

#### FLASING

<table>
<thead>
<tr>
<th>Light Pattern</th>
<th>Candela</th>
<th>NM</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ 12.6</td>
<td>~ 3.6</td>
<td></td>
</tr>
<tr>
<td>~ 256</td>
<td>~ 1.8</td>
<td></td>
</tr>
</tbody>
</table>

#### Vertical Divergence

- Vertical: 7°
- Horizontal: 360°

#### OPERATION

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

#### CONSTRUCTION

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

#### ENVIRONMENTAL and ELECTRICAL

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>-40° to +80° C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Proof</td>
<td>As per IP67 (NEMA 6)</td>
</tr>
<tr>
<td>CE Approval</td>
<td>As per EN 60945:1997</td>
</tr>
</tbody>
</table>

#### TRADEMARKS and PATENTS

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

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1. Actual range is dependant on flash pattern, intensity, and LED color.
2. "Flashing" light specifications are based on 100% intensity setting at 12.5% duty cycle (code 129).
3. Actual figures for autonomy depend on the intensity level setting.
4. Lifespan of LEDs may exceed 100,000 hours for ambient temperatures below 25°C (+77°F).
5. Chromacity of color output may vary with different ambient temperatures.
6. All specifications are subject to change without notice.

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Optional Infrared Programmer

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Three Nautical Miles

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Side View

Model 702, Model 702-GPS

Top View

Model 701, Model 702 & Model 702-GPS

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

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