MODEL
M650H
SOLAR LED MARINE LANTERN

Applications
• Fixed or floating visual aids to navigation
• Marina and dock lighting
• Port lighting
• Offshore oil & gas infrastructure
• Hazard marking
• Barge lighting
• Bridge lighting

Range
Depending on location, colour and flash pattern, the M650H is capable of up to 60 cd and over 4 NM range.
To view performance in your installation location visit
www.carmanahmarine.com/selector

Easy Installation
Just mount the M650H and it emits light dusk-to-dawn while maintaining its battery. High-quality construction increases vandal and theft resistance.

Low Maintenance
The M650H integrates solar panels, battery, electronics, and LED light source into a compact, stand-alone, maintenance-free unit. The replaceable battery extends service life well beyond 5 years.

Reliable
The Energy Management System (EMS) monitors all operations to provide consistent output in the harshest environments. Testing to demanding industry standards and MIL specifications ensures high performance for many years.

Trusted
With thousands of installations worldwide, Carmanah solar LED lights operate year-round and are trusted by:

• Australian Maritime Systems
• Brazilian Naval Commission
• Canadian Coast Guard
• 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

Carmanah/Sabik is backed by a worldwide network of distributors. To find yours visit carmanah-marine.com or call +1.250.380.0052 (toll-free US & Canada 1.877.722.8877)

REPRESENTED BY:

carmanahmarine.com
**SPECIFICATIONS**

**Solar Panel**
High-efficiency cells with bypass and blocking diode function. Maximum power point tracking (MPPT) for optimal energy collection.

**Battery**
Tool-less replaceable and recyclable best-in-class battery pack with extreme temperature range. Battery status feedback of Good, Charge, Low or Bad (Replace) and actual battery voltage.

**Light Source**
High-power LED. Colour-specific temperature-corrected LED drivers provide consistent intensity under all operating conditions.

**Maximum Peak Intensity**
(As per IALA rating) 60 cd (White LEDs)

**Vertical Divergence**
> 8° (FWHM)

**Flash Patterns**
256+ (including steady-on) Custom available.

**Day / Night Transition**
Selectable from 25 to 925 lux in 25 lux increments.

**Construction**
Premium grade UV resistant, polycarbonate/polyisoprene co-polymer body and lens material. Double C-ring sealing with waterproof vent.

**Colours**
Red, Green, White, Yellow and Blue. As per IALA “Optimum” Recommendation E-200-1, dated December 2008.

**Operating Temperature**
-45 to 124 °F (-43 to 51 °C) ambient temperature. The M650H will function up to 196 °F (89 °C) internal and surface temperatures.

**Storage Temperature**
-45 to 176 °F (-43 to 80 °C) Not including batteries.

**Colour Indicator**
Yes. Red, Green, White, Yellow and Blue.

**Bird Deterrent**
Yes. Stainless steel.

**Weight**
3.5 lb (1.58 kg)

**Wind Loading**
140 knots (72 m/s)

**Ice Loading**
0.03 psi (22 kgm²)

**Automatic Light Control (ALC)**
When enabled, ALC will dynamically reduce brightness in response to unusually low amounts of sunlight to ensure continued operation.

**GPS Synchronization**
Optional GPS enables two or more lanterns to flash in unison.

**Compliance**
USCG PATON 33CFR66 & CFR67 Class C
RoHS, WEEEE

**DIMENSIONS**

**SIDE VIEW**

**BOTTOM VIEW**

Also available with 7/8” (200 mm) bolt circle adapter

**PHOTOMETRIC PERFORMANCE**

**Designed and tested to the toughest industrial standards:**

** Immersion:**

** Shock and Vibration:**

** Corrosion:**

** Solar Radiation:**

** Chemical Resistance:**
Tested to MIL-STD-810G, Method 504, Procedure II.

** Hail:**
EN 61215, 25mm OD up to 23m/s.

**EMC/EMI/ESD:**

**Light Source:**
ILA E-200-1 (2008)

**CONFIGURATION**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OUTPUT</th>
<th>SWITCH</th>
<th>CONTROL</th>
<th>CHASSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M650H</td>
<td>RED GREEN WHITE YELLOW BLUE</td>
<td>SWITCHED NON-SWITCHED</td>
<td>GPS NON-GPS</td>
<td>GREY</td>
</tr>
</tbody>
</table>

Document: MARI_Spec_Sheets_M650H RevC
Specifications may be subject to change.

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