



Carmanah M650 - self contained solar lantern

The Carmanah M650 is an advanced self-contained, high-performance, low-maintenance and easy-to-install solar LED marine lantern. It updates the highly successful Carmanah 601 with enhanced range capability and replaceable battery pack.

It has been designed and tested to the toughest industrial standards.

It is the first solar product to incorporate intelligent deployment location settings that allow the M650 to be tuned to its location to optimise performance. The lantern software automatically calculates the peak intensity required using the Schmidt-Clausen formulae for a user-selected effective intensity. It can be programmed by internal push buttons and direct from a computer in which case a record of settings can be easily recorded. The microprocessor Energy Management System (EMS) monitors and adapts the brightness to exceptional environmental conditions for consistent operation and long life.

All components are incorporated within a compact, stand-alone unit. The M650 also features a replaceable battery pack that extends the service life beyond five years, reducing the total cost of ownership and resulting in significant cost savings.

Applications include aids-to-navigation, marina, port marking and hazard marking on fixed and floating structures such as navigation buoys, piles, aquaculture markers, research buoys, mooring buoys and jetty masts.



- **Replaceable and recyclable battery pack**
- **Up to 15 cd effective intensity and 3 NM visibility in the UK**
- **Flash Patterns 256+ (including steady-on)**
- **Intelligent deployment location settings protect against improper configuration**
- **3 programming options including USB**
- **Same mounting as Carmanah 601**
- **Lightweight**
- **Bird deterrent included**
- **Suitable for navigation buoys, piles, aquaculture markers, research buoys, mooring buoys and jetty masts.**



Carmanah M650 SPECIFICATIONS

OPTICAL

Flash codes available	256 user selectable characters
Nominal range in UK	Up to 3 miles, dependant on duty cycle
Horizontal Divergence	360 degrees
Vertical Divergence	>8 degree FWHM
Chromaticity of output	Meets IALA recommendation E-200-1, 12/2008

MECHANICAL

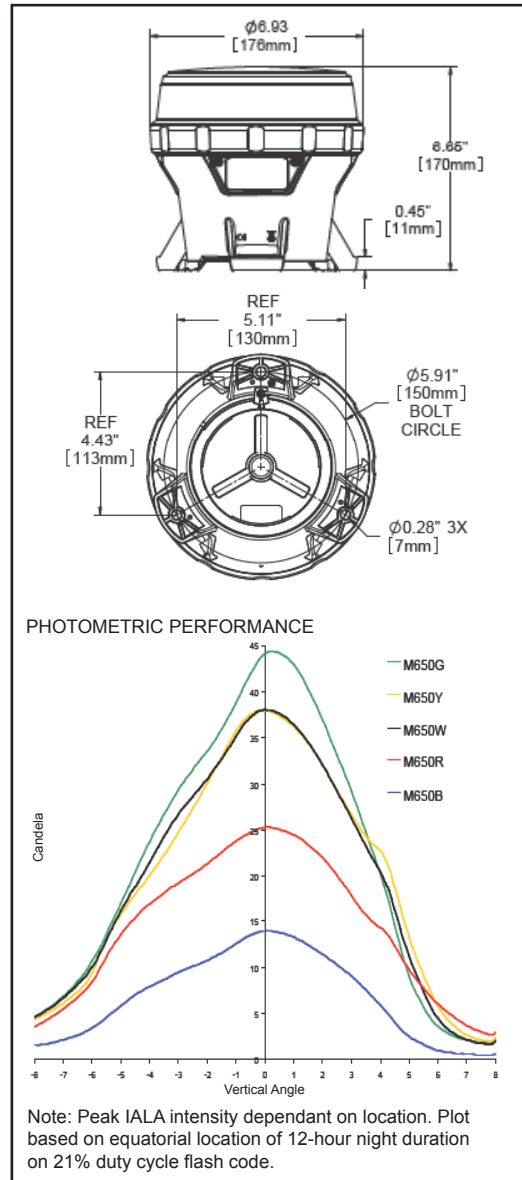
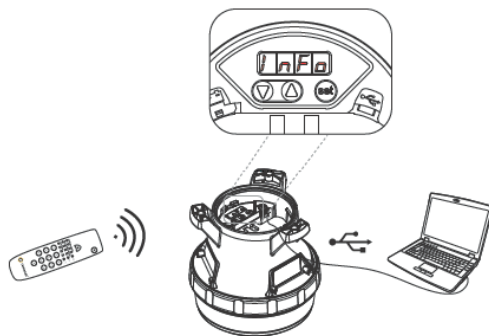
Dimensions	170mm tall with base 176mm dia.
Mass	1.58kg
Mounting Holes	3 no 7mm dia. on 150mm pcd
Waterproof	IP68
Construction	UV stabilised, polycarbonate/ co-polymer body and lens
Bird Spike	Included

ELECTRICAL

Programming	IR remote, push button or USB
Battery	Replaceable sealed dry cell

ACCESSORIES

Programmer	IR custom programmer
Software kit	Includes software, manual and tools to allow USB connection and programming. Interface provides 2-way communication with unit and full access to available intensities at given location



Hydrosphere has been a respected supplier of cost effective solutions to the marine industry for over a decade. The company offers a wide range of mooring and navigation buoys, LED navigation lights, sector lights, rotating beacons, leading lights, jetty masts, beach and zone marking products and associated moorings. Installation and maintenance services are available for all our products and systems. For more information please call us or visit our website.

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