

Series cr5000 LED Self-Contained Marine Signal Lantern

SERIES **CR5000** LED SELF-CONTAINED MARINE SIGNAL LANTERN

The **Series cr5000** LED self contained/self powered LED lantern is a very rugged low maintenance, complete bolt-on light package designed for the extreme conditions encountered by marine aids to navigation on buoys and fixed structures. It incorporates the LED light head, electronics with Daylight Control Sensor, solar panel(s) and battery. There are four power levels offering up to and exceeding 6 nautical miles visibility and 256 flash rhythms selectable by DIP switch. It is designed to meet the requirements of U.S. Coast Guard Specifications 502 and 503 for buoys and fixed structures.

The housing size is the same for all power systems. The housing is molded from the same material as buoys, kayaks and other practically indestructible products. The light color is molded into the housing for easy identification during daylight. The lantern will actually float if accidentally dropped into the water, which allows for easy retrieval.

The solar panels are polymer coated for long term protection while all other parts are either plastic, stainless steel or anodized marine grade aluminum.

The patented side emitter lens provides superior uniformity in the horizontal plane (no molding seams) as well as a wide 7.5° symmetrical vertical divergence to 50% of peak intensity (FWHM) with excellent symmetry. The state of the art flasher and driver circuits powering the LEDs provide high efficiency with its Pulse Width Modulated (PWM) constant current drive system. In addition, the patented heat sink design allows the LEDs to run more temperately thus extending their life.

Its construction design allows for many assembly variations in order to meet specific customer requirements for light intensity, rhythm duty cycle, latitude and whether for buoy or fixed structure. The system is very versatile in that the number of LED's, LED color and housing color, number of solar panels, and size of batteries can be varied to meet these customer requirements.

Mounting of the lantern is simple. The lantern base has

three equally spaced 1/2"-13 UNC threaded inserts on a 200 mm diameter bolt circle, the same as most existing lanterns so it makes for an easy replacement.



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Temperature Operating Range:

-22°F to 125°F (-30°C to +50°C)

Humidity: MIL-STD-202F Test Condition B, Method 103B

Wind Speed: 140+ Knots

Immersion: MIL-STD-202F Test Condition B, Method 104A

Shock: 75G's MIL-STD-202F Test Condition H, Method 213B

Vibration: 5G's MIL-STD-202 Test Condition B, Method 204

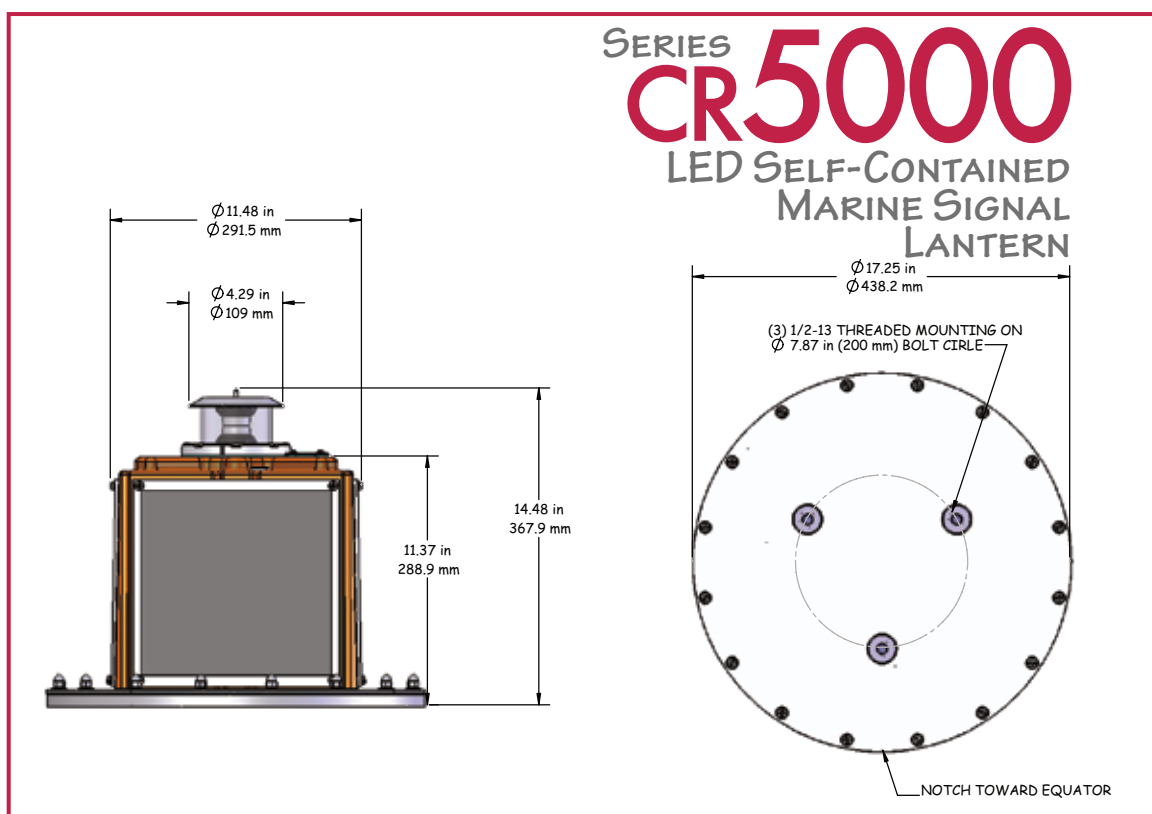
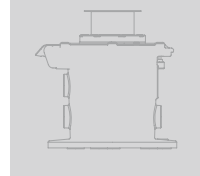
Electromagnetic Interference:

EN 61000-4-3 100MHz to 20GHz to performance criteria A at 200 V/m

Electrostatic Discharge as per IEC 61000-4-2:2008, 10.0kV Air Discharge, 6.0kV Contact Discharge

Materials:

- **Housing:** Polyethylene with UV inhibitors
- **Base:** High density polyethylene
- **Light Head:** Hard coat anodized marine grade aluminum, cast acrylic lens and protector tube. Acrylic is superior to UV protected poly-carbonate for UV exposure.
- **Solar Panels:** Polymer coated with grommets in corners for bolt on structural protection. One to four panels available. Buoys require four panels while fixed structures, being south facing, can have between one and four panels depending on power requirements.
- **Membrane Vent** allows pressure equalization between interior and exterior of lantern
- **Batteries:** 12, 16, 32 or 40 ampere hour lead acid (20 hour rate)
- **Weights:** 24 lbs (10.9Kg), 30 lbs (13.6Kg), 42 lbs(19Kg), 49 lbs(22.2Kg) Add about 7 pounds (3.2Kg) more for shipping



Specifications:

- **Mounting Hole Pattern:** Three threaded bolt holes equally spaced on a 200 mm diameter bolt circle. The threaded bolt holes accept 1/2"-13 UNC stainless steel bolts. Optional stainless steel pedestal base converts mounting to three or four hole mounting pattern on a 200mm bolt hole pattern with bolt mounting from the top.
 - **Solar Panels:** 3 Watts and 6 Watts panels available
 - **Light Intensity:** (4) switch selectable power settings.
Colors 2-LED
White ----- 228
Green ----- 164
Red ----- 115
Amber ----- 116
- Optional middle plate(s) can hold one or two additional LEDs and can be stacked to increase intensity
- **Colors Available:** Red, Green, White, Amber, Blue (by special order) - meet recommendations of International Association of Lighthouse Authorities (IALA)
 - **Rhythms:** Up to 252 switch selectable with (4) available for infinite rhythm selection
 - **Vertical Divergence:** 7.5° to 50% of peak intensity (FWHM). Symmetrical with horizontal plane.
 - **Electrostatic Discharge** as per IEC 61000-4-2:2008, 10.0kV Air Discharge, 6.0kV Contact Discharge
 - **Simple access** to power ON/OFF switch and rhythm DIP switch through cover on top of lantern. No other accessory parts required.
 - **Lens:** Patented high efficiency, acrylic, superior horizontal uniformity
- Protective Tube & Lens:**
Acrylic is more scratch resistant and is superior to polycarbonate under UV exposure.
- Connector Contacts:**
Gold plated
- **Daylight Control** switches unit on and off automatically at dusk and dawn and other low light conditions between 250 and 320 lux ±50 lux
 - **LED Manufacturer Rated Life Expectancy:** 100,000 hours on steady - much longer when flashed
 - **Separate constant current** drivers for each LED for enhanced reliability
 - Produced in ISO 9001 certified factory
- Specify part number as follows: SBC where S= # of solar panels, B= Battery amperage, and C= Color. For example: Model 5116G = 1 solar panel, 16AH battery, Green.

U.S. Patents:: 7,703,950 & 7,726,837

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