User Guide
Model 502: Solar-Powered LED Marine Lantern

carmanah®

INSTALLATION

1 — Complete and Send in Your Warranty Card

Your product warranty is activated upon receipt of your warranty registration. For your convenience, you can also register online at: http://www.carmanah.com/warranty

2 — Activate Your Model 502

Standard Model

Remove your Model 502 solar-powered LED lantern from its box and expose it to light (sunlight, incandescent, or halogen) for approximately one minute. The lantern will self-activate.

Model with Optional Rotary Switch

If your Model 502 has the optional rotary magnetic switch installed, simply turn the switch to the ON position to activate the lantern.

3 — Confirm Color Output and Flash Code

After your Model 502 is activated, cover the solar panel to simulate darkness. After a few moments, the lantern should come on automatically and produce the correct color output and flash code.

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This solar-powered LED lantern complies with the requirements of the US Coast Guard in 33 CFR part 66 for Private Aids-To-Navigation.

4 — Install Your Lantern

Evaluate the suitability of your installation location. Your Model 502 is solar-powered and, for optimal performance, the lantern should be installed in a location that is shade-free and allows for unobstructed solar charging.

Install your Model 502 using the pre-drilled holes. Drilling new holes in the base will void the warranty and may jeopardize the integrity of the lantern. For additional vandal-resistance, use security screws or bolts for mounting.

Warning: Do not glue the lantern to any surface. Gluing the lantern to a surface will void your product warranty. The glue obstructs the one-way vent valve installed on the base of your Model 502. The valve is necessary for venting during hot weather, therefore, ensure that washers are used as spacers between the lantern and the mounting surface.

STORAGE

To optimize battery life, ensure that your Model 502 is fully charged before storing it.

Standard Model: Place the lantern in a box or other opaque storage medium. The lantern automatically deactivates after 24 hours in complete darkness.

Model with Optional Rotary Switch: Move the switch to the OFF position to deactivate the lantern.

Always store your Model 502 in a cool location until ready to use again. If the lantern is stored for an extended length of time, it will require periodic recharging to maintain the health of the battery; see **Charging** on Page 2.

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CHARGING

Depending on the temperature of the storage location for your Model 502, the lantern will require periodic recharging to maintain the life of its battery. *Table 1: Recharge Intervals* provides the recommended storage periods and recharging intervals based on the ambient temperature of the storage location.

Recharging your Model 502

Remove your Model 502 from its box and place it under a light. The lantern automatically starts to charge. If your lantern has the optional rotary switch, the switch must be set to ON in order to accept a charge.

Follow one of the charging recommendations outlined in *Table 2: Charging Alternatives*. Once the lantern is fully charged, you can replace it in its box for further storage.

Warning: If you place your Model 502 closer to the light source than recommended in Table 2, you may overheat and damage the solar panel.

Table 1: Recharge Intervals (in Months)

Storage Temperature		Recharge Interval
°F	°C	
68 or lower	20 or lower	12
77	25	7.5
86	30	5
95	35	3
104	40	1.5
113	45 or more	0.5

Table 2: Charging Alternatives

Light Source	Distance from Solar Panels	Hours to Charge from 10% to 100%
500 W halogen	24 inches (60 cm)	100
60 W tungsten in reflector housing (desk lamp)	2 inches (5 cm)	
Direct sunlight	–	25

OUTPUT PERFORMANCE

Table 3: Effective Intensity provides common flash codes available for the Model 502 and the corresponding effective intensity in Candela. Effective intensity depends on the output color and flash pattern. Using either Allard's Law or Schmitt-Clausen's Law, nominal range can be calculated using the effective intensity and the transmissivity factor (T) for your region (T=0.74 in North America). Contact Carmanah for more detailed information.

Table 3: Effective intensity (Candela)

Carmanah Flash Code	IALA Designation	Effective Intensity (cd)
001	Fixed	0.25
055	Fl2 (0.5)	0.70
064	Fl4 (0.5)	0.70
066	Fl4 (1)	0.80
072	Fl6 (0.5)	0.70
129	Q1	0.50
147	Q (5) 20	0.60
209	Q1	0.70

SERVICE LIFE

Model 502 solar-powered LED lanterns are maintenance free and designed to operate flawlessly for up to 5 years (dependent on location). It is recommended that the lantern be replaced after 5 years of service. Please note that Carmanah recycles the batteries from all lanterns returned to our facilities. You are encouraged to return your old Model 502 upon its replacement.

CUSTOMER SERVICE

Do you have any comments or questions about your Model 502? You can contact your Authorized Carmanah Distributor or a Carmanah customer service representative at:

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www.carmanah.com/feedback

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