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## **Common Questions about Solar Powered Navigation Lights**

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Q. What flash patterns are available for marine lights? [Top](#)

The type of flash patterns available depends on the model of Carmanah Light. For example, the 501, 601 and 701 are currently available from the factory in the five most common flash patterns (10, 15, 30, 60 flashes/min & steady-on) for general purpose uses, including "steady on".

Q. What colors are available? [Top](#)

All models are available in red, green, amber, white and blue LED output colors. For daytime indication, red, amber, blue or green lenses are also available on request.

Q. Can the flash codes be changed? [Top](#)

For the Model 501, the flash rates is set from the factory. For the Model 601 and 701, the flash code can be changed at any time using the optional infrared programmer.

Q. What is the life expectancy of solar lights? [Top](#)

The expected life span of the encapsulated units (Models 501 and 601) is dependent

on the life of the battery system, which in turn is dependant on the area of installation and operating conditions. However, these units have been designed to last up to five years under extreme environmental conditions.

The batteries in the Models 701 are replaceable and, ideally, these units should last for decades. It is interesting to note that the LEDs used in all Carmanah Lights should last at least 100,000 hours -- or 27 years of continuous operation at 10 hours per day -- as long as the units remain intact.

Q. What is the intensity of light emitted from Carmanah marine lights? [Top](#)

See the product specifications for each model.

Q. Are the batteries replaceable? [Top](#)

At this time, the batteries are replaceable only for the 701 Series units. All other models have been designed to operate for up to five years with absolutely no maintenance or servicing required. At the end of their lifespan the entire unit is replaced. Please note, the batteries in the old units are recyclable. Contact your local lead-acid battery recycler regarding proper disposal.

Q. What sort of batteries are used? [Top](#)

All lights use special lead-tin acid batteries that perform extremely well under harsh environmental conditions. Specifically, they are sealed, rechargeable batteries

that provide a large energy capacity for their size and deliver extremely reliable power output over a long period of time.

Q. How do LEDs compare to a normal incandescent light bulb? [Top](#)

Carmanah Lights use LEDs (light emitting diodes) for their light source, which are far more efficient in their power consumption than incandescent bulbs.

Incandescent

lamps expend much of their energy in the form heat dissipation (85%), whereas LEDs

waste relatively little energy as heat.

Q. Do I ever need to change the batteries in my Carmanah Light? [Top](#)

Other than the 701 units, all Carmanah Lights are completely sealed and are designed

to be completely reliable and maintenance-free for the duration of their lifespan.

They never require bulb or battery replacement for up to five years, at which time the entire light is replaceable. The maintenance-free capabilities of Carmanah Lights

provides a distinct advantage over traditional marine lighting, particularly in countries

that must import the light bulbs and batteries, as well as the lights. It also means there is a significant cost savings in terms of the labor required for maintaining and servicing traditional navigation lighting.

Due to the size and relative cost of the 701 Lights, these models feature a replaceable

battery pack that extends their life indefinitely.

Q. Should I worry about cleaning the lens to improve visibility? [Top](#)

Carmanah Lights are designed for maintenance-free performance. The unique structure

of the Carmanah Lights typically relieves you from any cleaning duty under most circumstances. These lights are operating in a variety of climates worldwide without the need to clean the lens.

Q. I want to ensure that my Carmanah Light receives maximum sunlight. How should I care

for the solar dome?

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Carmanah Lights were designed for use in rugged, remote areas where the need for self-

cleaning products is paramount. The patented solar dome is typically self-cleaning and ensures that your light will receive maximum sunlight and therefore, enhanced product reliability throughout its lifespan.

Q. Do the LEDs burn out?

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The lifetime of an LED (light emitting diode) at least 100,000 hours, depending on the color -- or 27 years assuming the LED is in operation continuously for 10 hours a day.

Q. What is the recommended operating temperature for Carmanah Lights?

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The operating temperature range of the lead-acid batteries used in Carmanah Lights

limits the operating temperature range of the products. As the ambient temperature

increases, the expected life of the battery may decrease. Optimum battery life will be achieved by mounting the unit on the coolest available surface. Carmanah

## Lights

have been successfully used in temperatures ranging from -40°C (-40°F) to +80°C (176°F).

Heat sinking or attaching your unit to metal that extends to a water source, will moderate the ambient temperature of the unit and extend its life. As well, where possible, resist mounting the lights on high-heat surfaces such as black roofs or tarmac, as these surfaces will degrade the life of the unit over time.

Q. How do Carmanah Lights recharge?

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Once the lead-acid batteries in Carmanah Lights are discharged, they prefer to be "fast charged" to restore their capacity to full power. The proprietary MicroSource™

circuitry in our lights is designed to restore a full charge as quickly as possible.

The result of this charging regimen is that the unit will shut off at a particular level of battery charge and will not resume operation until there is a significant recharging of the battery.

Q. My Model 501 doesn't have a switch.

How do I activate it once I've received it?

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The Model 501 has a temporary magnetic "switch" in its base designed to prevent the

units battery from being discharged or damaged during storage or transport. The switch

is very simple and consists of a powerful external magnet (about the size of a typical

watch battery) that fits in depression in the base the product. To activate the Model

501 prior to mounting, simply remove the magnet by placing the unit's base against any

magnetic surface (iron, steel, etc.).

The magnet is used to protect the battery during storing and shipping only. It MUST

be removed from the bottom of the Model 501 for the unit to work! Once removed, the

magnet is only needed again if and when the light is to be stored. It is recommended

that the magnet be kept in a safe place for such an occasion. [Top](#)

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