SL-15

Solar Marine Lantern 1 - 2NM+
with Adjustable Flash Settings
Version 4.01

IALA

SPX
AIDS TO NAVIGATION

SEALITE

We Believe Technology Improves Navigation

SL-15 Solar Marine Lantern
1 - 2NM+

1.0   Manual Update Register

Version No.	Description	Date	Approved	Design
4.0	Add Bluetooth and Sealite Pro	June 2023	M. Nicholson	M.Sharp
4.01	Remove Bluetooth due to supply issues	January 2024	M. Nicholson	M.Sharp

2.0 Contents

SL-15 Solar Marine Lantern
1 - 2NM+

3.0   Introduction

Congratulations! By choosing to purchase a Sealite lantern you have become the owner of one of the most advanced LED marine lanterns in the world.

Sealite Pty Ltd has been manufacturing lanterns for over 25 years, and particular care has been taken to ensure your lantern gives years of service.

As a commitment to producing the highest quality products for our customers, Sealite has been independently certified as complying with the requirements of ISO9001:2015 quality management system.

Sealite lanterns comply with requirements of the US Coast Guard in 33 CFR part 66 for Private Aids To Navigation.

By taking a few moments to browse through this booklet, you will become familiar with the versatility of your lantern, and be able to maximise its operating function.

4.0   Operating Principle

The solar module of the lantern converts sunlight to an electrical current that is used to charge the battery. The battery provides power to operate the lantern at night.

The flasher unit has very low current requirements. A microprocessor drives an ultra bright LED through a DC/DC converter, which enables the LED's to operate within the manufacturer's specifications. The battery is protected from over-charging within the circuit to ensure maximum battery life.

On darkness, the microprocessor will initiate a program check and after approximately 1 minute begin flashing to the set code.

5.0   Technology

Sealite is the world's fastest growing manufacturer of marine aids to navigation. We employ leading mechanical, optical, hardware and software engineers to create innovative products to service the needs of our customers worldwide, and offer the widest range of solar-powered LED lanterns in the marketplace.

5.1   Electronics

Sealite employs leading in-house electronic engineers in the design and development of software and related circuitry. All individual electronic components are sourced directly by Sealite procurement staff ensuring that only the highest quality components are used in our products.

5.2   LED Technology

All marine lanterns use the latest advancements in LED (Light Emitting Diode) technology as a light source. The major advantage of LED's over traditional light sources is well established in that they typically have an operational life in excess of 100,000 hours, resulting in substantial savings to maintenance and servicing costs.

5.3   Precision Construction

Commitment to investing in the design and construction of injection-moulded parts including optic lenses, light bases and a range of other components ensures that all Sealite products are of a consistent & superior quality.

5.4   Optical Performance

Sealite manufactures a range of marine LED lenses moulded from multi-cavity dies. Complex shapes such as the SL-70, BargeSafe™ and 16-segment multi-focus lenses are a testament to the company's superior in-house lens manufacturing capabilities and outstanding optical performance.

5.5   Award-winning, Patented Technology

Several United States and Australian patent registrations are held on Sealite's range of innovative designs, with other regional patents pending in Canada, United Kingdom and Europe.
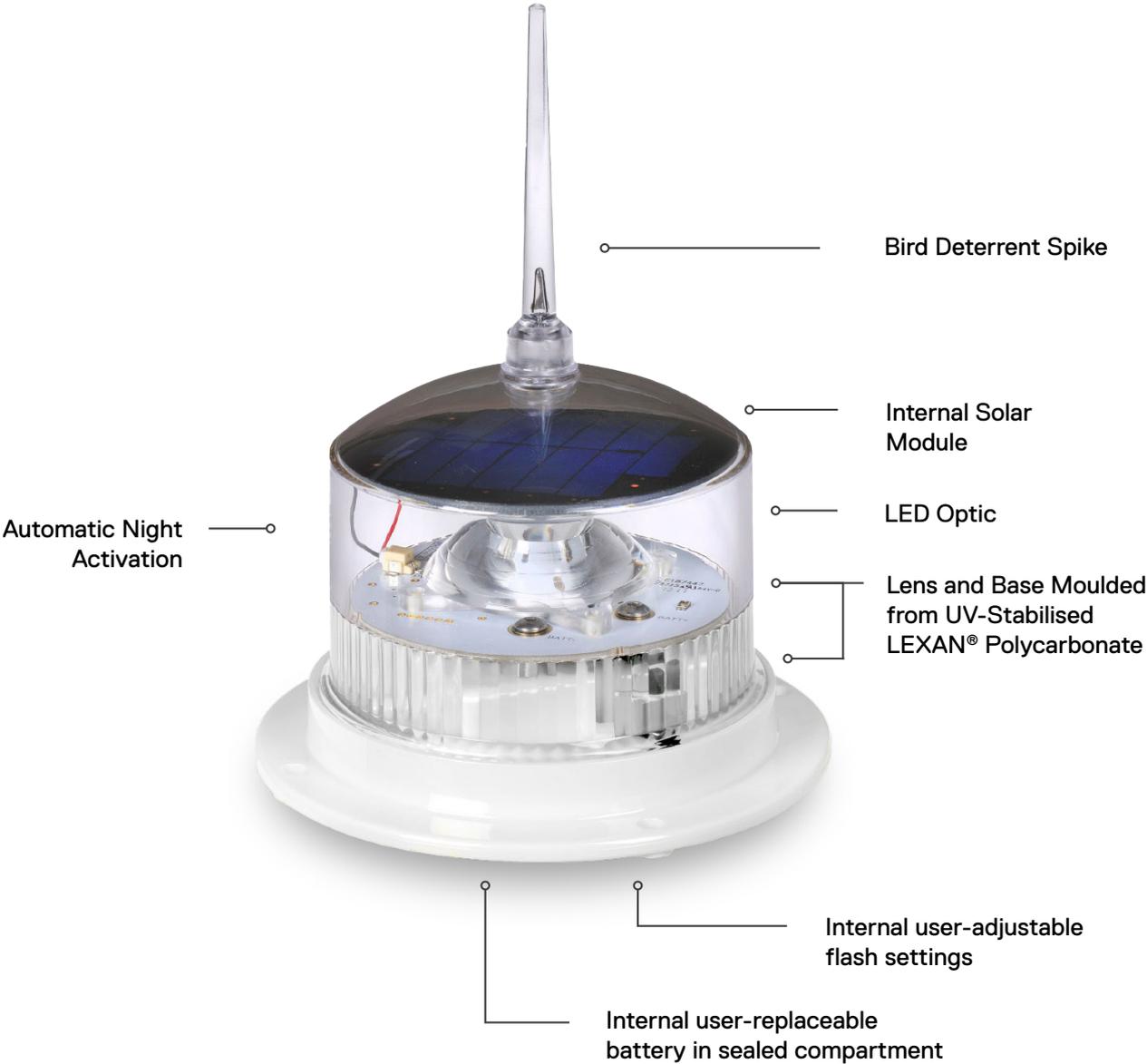
6.0 SL-15 Series

The Sealite SL-15 1–2NM+ LED compact light incorporates some of the most advanced technology available. Made from tough, durable polycarbonate and using the latest high-intensity LEDs, no expense has been spared in the design and development of this lantern.

Installation takes just minutes, and a permanent ON/OFF, accessible through the battery compartment, switch allows for easy storage. The SL-15 is designed to be maintenance-free and have a service life of over 3 years.

6.1 Key Features

- User-adjustable flash characters;
- User-replaceable battery in sealed battery compartment;
- Installs in minutes and operates maintenance-free for up to five (5) years;
- Completely sealed and self-contained using advanced UV-sealing;
- IP68 waterproof;
- NiMH battery for long service life and wide temperature range; and
- Solar Powered.

Bird Deterrent Spike

Internal Solar Module

LED Optic

Lens and Base Moulded from UV-Stabilised LEXAN® Polycarbonate

Automatic Night Activation

Internal user-adjustable flash settings

Internal user-replaceable battery in sealed compartment

SL-15 Solar Marine Lantern
1 - 2NM+

6.2   Technical Data Sheet

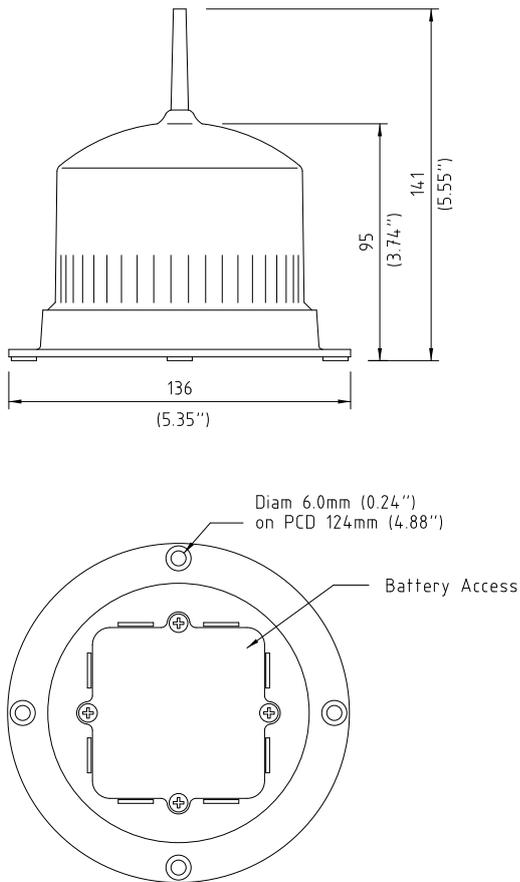| SL-15	
Light Characteristics	
Light Source	High Efficiency LED
Available Colours	Red, Green, White, Yellow, Blue
Typical Maximum Intensity (cd)†	Red - 6.2, Green - 7.6, White - 6.8, Yellow - 5.9
Visible Range (NM)	AT @ 0.74: 1 – 2+ AT @ 0.85: 1.1 – 2.3+
Horizontal Output (degrees)	360
Vertical Divergence (degrees)	7
Reflector Type	Single LED Optic
Available Flash Characteristics	16 user-adjustable IALA flash characteristics (other flash patterns available on request)
Intensity Adjustments	32 automatic step-down settings based on power demand of flash code selection
LED Life Expectancy (hours)	>100,000
Electrical Characteristics	
Current Draw (mA)	Refer to Sealite Power Calculator
Circuit Protection	Integrated
Nominal Voltage (V)	3.6
Autonomy (days)	>50 (14 hour darkness, 12.5% duty cycle)
Temperature Range	-40 to 80°C
Solar Characteristics	
Solar Module Type	Monocrystalline
Output (Watts)	0.75
Power Supply	
Battery Type	High grade NiMH
Battery Capacity (Ah)	2.4
Nominal Voltage (V)	3.6
Physical Characteristics	
Body Material	LEXAN® Polycarbonate – UV-stabilised
Lens Material	LEXAN® Polycarbonate – UV-stabilised
Lens Diameter (mm/inches)	98 / 37/8
Lens Design	Single LED Optic
Mounting	4 x 6 mm mounting holes
Height (mm/inches)	141 / 5 1/2
Width (mm/inches)	136 / 5 3/8
Mass (kg/lbs)	0.5 / 1 1/8
Product Life Expectancy	Up to 12 years^
Compliance	
CE	EN61000-6-1:2007. EN61000-6-3:2007
IALA	Signal colors compliant to IALAE-200-1
Quality Assurance	ISO 9001:2015
Ingress Protection	IP68
Intellectual Property	
Patents	US Pat. No. 6,667,582. AU Pat. No. 778,918
Trademarks	SEALITE® is a registered trademark of Sealite Pty Ltd
Warranty*	3 years
Options Available	• ON/OFF switch • Custom flash patterns • 50 mm pole mount adapter plate

CE

· Specifications subject to change or variation without notice
* Subject to standard terms and conditions
† Intensity setting subject to solar availability
^ Refer to the Sealite website under the warranty section

SEALITE

6.3   Technical Drawing

136
(5.35")

14.1
(5.55")

95
(3.74")

Diam 6.0mm (0.24")
on PCD 124mm (4.88")

Battery Access

7.0   Installation

Charging the Battery
New lanterns should be **left in the sun for 1-2 days** to ensure battery is charged before placing in service.

Please note, lantern will re-charge even when switch is turned to '**OFF**' position.

Preferred Installation Location
For best lantern performance, ensure solar modules are not covered and are in clear view of the sky with no shadows.

The SL-15 will be supplied preset to the requested flash code. The light can be directly positioned in your desired location.

- Secure it, utilising the 4 × holes in the flange.
- Ensure the light is bolted to an even, flat surface.

8.0   Flash Codes

8.1   Adjusting the Flash Code

1. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug.

2. Unscrew the adjustment plug.

3. Using a small flat bladed screwdriver adjust the Flash Code to the desired setting.

4. Cover the light, in darkness, for at least 30 seconds to activate the light sensor. Make sure the light is flashing correctly.

5. Uncover the light and wait at least 30 seconds to make sure the light turns off in daylight.

6. Insert the adjustment plug and replace the battery.

7. Replace the cover and secure using the 4 x screws. Do Not over tighten screws.

8. Position the light in your desired location and secure, utilising the 4 x holes in the flange.

   Note: Ensure the light is bolted to an even, flat surface.

8.2   Flash Code Table

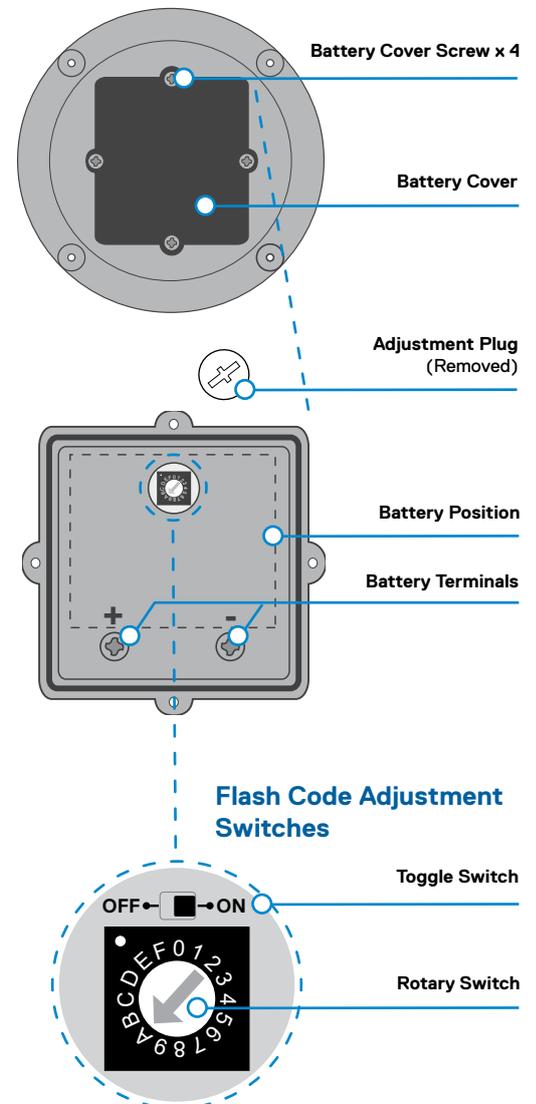| Switch Position	Flash Setting		Duty Cycle (%)
	On (sec)	Off (sec)	
0	Steady On		100
1	0.5	1.0	33
2	0.5	3.5	12.5
3	1.0	3.0	25
4	0.5	5.5	8.5
5	0.3	0.7	30
6	0.3 (On), 0.7 (Off), 0.3, 0.7, 0.3, 0.7, 0.3, 15.7		6.5
7	0.3	1.7	15
8	0.3	2.2	12
9	0.5	2.0	20
A	0.3	2.7	10
B	0.5	2.5	16.5
C	0.7	2.3	23.5
D	0.5	4.5	10
E	1.0	4.0	20
F	Custom Flash Code Position - (on request)		

8.3   Selecting an Intensity/Power Setting

Using the latest technology in software, the SL-15 automatically adjusts the Intensity Setting when Flash Code is set.

8.4   Selecting a Flash Code- Rotary Switch

All SL-15 Lights are fitted with a rotary switch. Turning the small arrow to the appropriate number or letter will set the code (see '**7.1 Flash Code Table**' below). The unit may take up to one minute to activate a new flash code.

Lantern Underside

Battery Cover Screw x 4

Battery Cover

Adjustment Plug (Removed)

Battery Position

Battery Terminals

Flash Code Adjustment Switches

Toggle Switch

Rotary Switch

OFF ← ■ → ON

9.0   Maintenance and Servicing

Designed to be maintenance free, the SL-15 requires minimal attention, though the following maintenance and servicing information is provided to help ensure the life of your Sealite product.

1. Cleaning Solar Panels - occasional cleaning of the solar panels may be required. Using a cloth and warm soapy water, wipe off any foreign matter before rinsing the panels with fresh water.

2. Battery Check - inspection of batteries should be performed every two years (minimum) to ensure that the charger, battery and ancillary electronics are functioning correctly. Using a voltage meter, check that the battery voltage is at least 3.6 volts under 50 mA load, and ensure all terminals are clear of foreign matter.

9.1   Replacing the Battery

The SL-15 lantern is the only compact marine lantern with a double sealed battery compartment. This provides the user with the ability to change the battery after years of operation.

1. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug

2. Unscrew the adjustment plug.

3. Use a small flat bladed screwdriver to turn unit OFF.

4. Unscrew positive and negative battery leads.

5. Discard old battery in a safe manner. Please remember to recycle where possible.

6. Reattach positive and negative leads to new battery and then place back into case.

7. Switch lantern 'ON' via internal switch.

8. Cover the light, in darkness, for at least 30 seconds to activate the light sensor. Make sure the light is flashing correctly.

9. Uncover the light and wait at least 30 seconds to make sure the light turns off in daylight.

10. Insert the adjustment plug and replace the battery.

11. Replace the cover and secure using the 4 x screws.

Care must be taken to observe the polarity of the battery before the leads are re-connected, and ensure the replacement battery is correctly fitted. Always discard old batteries in a safe manner.

9.2   Long Term Storage Instructions (>4 weeks)

If light is required to be stored for longer than 4 weeks, please turn the light off using the internal ON/OFF switch (and external ON/OFF switch where fitted).

1. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug

2. Unscrew the adjustment plug.

3. Using a small flat bladed screwdriver switch the ON/OFF switch to the OFF position.

4. Insert the adjustment plug and replace the battery.

5. Replace the cover and secure using the 4 x screws. Do Not over tighten screws.

6. Repeat these steps to re-activate your light when it is removed from storage.

> When fitted with the optional **External ON/OFF** switch, for correct operation of the **External** switch, the **Internal** switch must be set in the **OFF** position.
>
> If the **Internal** switch is set to the **ON** position, the operation of the **External** switch is bypassed and the lantern is **ON**.
>
> **All batteries will discharge over time and the rate of discharge is dependent on temperature. If the lantern is being stored in temperatures greater than 40°C the battery will discharge faster.**
>
> **Please check battery every 3-6 months and recharge if necessary.**

10.0 Troubleshooting

Problem	Remedy
Lantern will not activate	• Ensure internal toggle switch is set to the 'ON position. • Ensure lantern is in darkness. • Wait at least 60 seconds for the program to initialise in darkness. • Ensure switch setting is on a valid code (See '7.1 Flash Code Table' section of this manual). • Ensure battery terminals are properly connected. • Ensure battery voltage is above 3.4 Volts.
Timing codes will not change	• Turn rotary switches several times to ensure contacts are clear.
Lantern will not operate for the entire night	• Expose lantern to direct sunlight and monitor operation for several days. Sealite products typically require 1.5 hours of direct sunlight per day to retain full autonomy. From a discharged state, the lantern may require several days of operational conditions to 'cycle' up to full autonomy. • Reducing the light output intensity or duty cycle (flash code) will reduce current draw on the battery. • Ensure solar module is clean and not covered by shading during the day.
Lanterns are constantly on during the day	• Ensure the flash code is not set to FF. This flash code is for testing purposes only and will be steady on for 24 hours a day.

11.0 Optional ON / OFF Switch

11.1 ON/OFF Switch (SL-15-SW)

An optional external ON/OFF switch can be installed on request (additional charges will apply).

For correct operation of the EXTERNAL switch, the INTERNAL switch must be set in the OFF position.

If the INTERNAL switch is set to the ON position, the operation of the EXTERNAL switch is bypassed and the lantern is ON.

12.0 SL-15 Accessories

MC/02
Post mounting plate to suit
standard base SL-15
50mm ID

MC/04
Post mounting stand 50 mm OD post,
3-hole 200 mm OD base pattern

MC/05
90 degree wall mounting stand
50mm OD

MC/09
Buoy mounting plate to affix SL-15
lantern to:
SL-B600,
SL-B610; and
SL-B700 buoys

13.0 Sealite LED Light Warranty

Refer to Sealite website:

sealite.com

Contact Us!

Sealite Head Office

11 Industrial Drive, Somerville
Victoria, Australia 3912
T: +61 (0)3 5977 6128
F: +61 (0)3 5977 6124

Sealite USA

61 Business Park Drive, Tilton
New Hampshire, USA 03276
T: +1 (603) 737 1311
F: +1 (603) 737 1320

Sealite UK

11 Pinbush Road, Lowestoft,
Suffolk, NR33 7NL, UK
T: +44 (0)1502 588026

Sealite Asia

8 Wilkie Road, #03-01
Wilkie Edge, Singapore 228095
T: +65 9119 8770

email: **info@sealite.com**

sealite.com
star2m.com

SEALITE

We Believe Technology Improves Navigation