

**Sealite**<sup>®</sup>  
www.sealite.com



# **SL-07 Series**

## **Marine Lantern**

### **Installation & Service Manual**

Version 1-3

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## 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 ISO9001:2008 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.

## 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 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

## Technology

***Sealite is the world's fastest growing manufacturer of marine aids to navigation. We employ leading mechanical, optical, hardware & 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.***

### **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.

### **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.

### **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.

### **Optical Performance**

Sealite manufactures a range of marine LED lenses moulded from multi-cavity dies. The company has superior in-house lens manufacturing capabilities to support outstanding optical performance.

### **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.

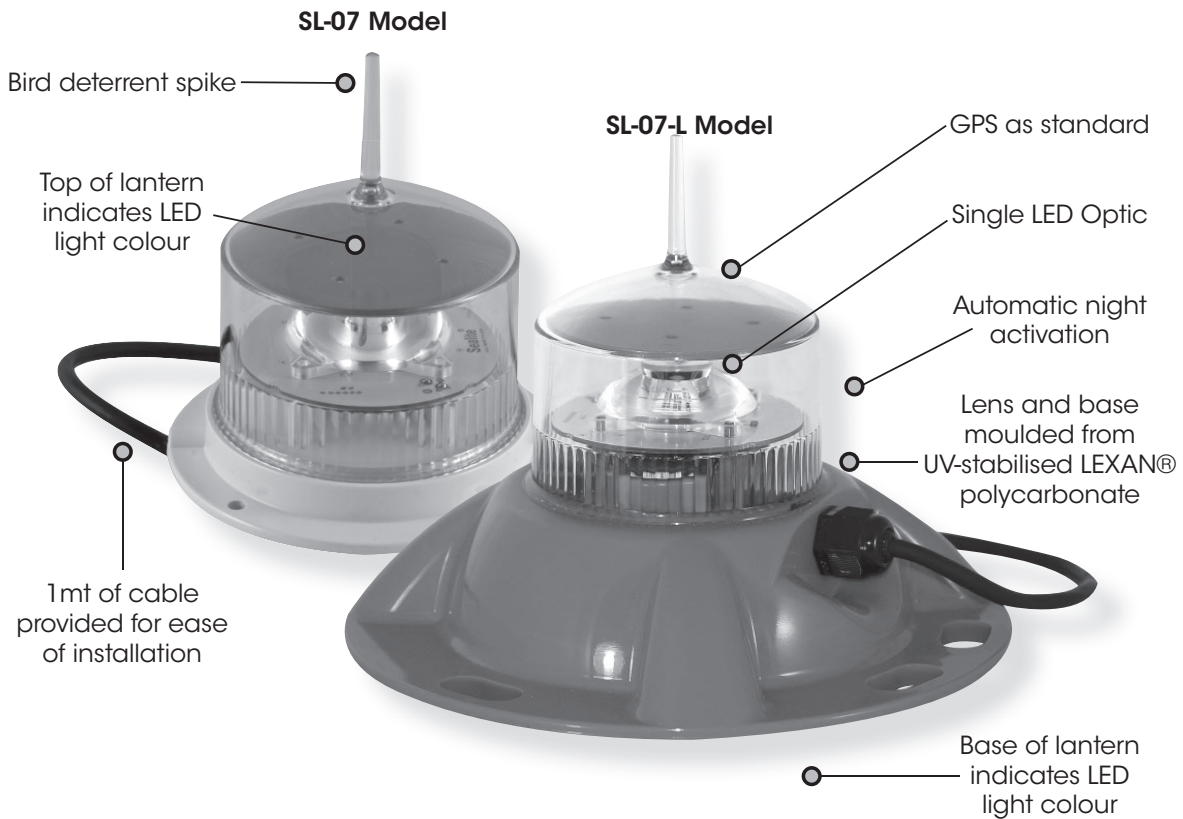
# SL-07 Series Models

## 1-4NM+ Stand Alone Marine Lanterns

*The SL-07 series are LED marine lanterns designed to offer superior visibility and operate in conjunction with existing or purpose-built power supplies.*

*With a variable range of 1 to 4NM, a maintenance-free light source and 256 user adjustable flash codes, the SL-07 series of LED lanterns is an ideal choice for operators seeking to fit a short-range marine lantern to existing or independently designed power sources.*

*The lanterns feature the Sealite Single LED Optic which boasts exceptional power to light output efficiency. The tough outer polycarbonate lens incorporates an environment-friendly spike – deterring unwelcome bird life. The lens design also ensures that vessel operators clearly see the light from above, when passing the AtoN.*

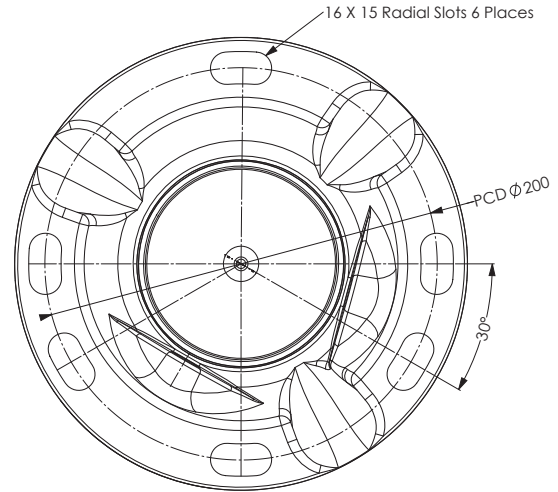
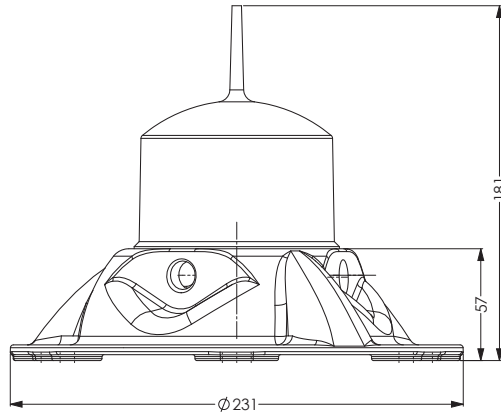


<b>SPECIFICATIONS * *</b>	<b>SL-07LB</b>	<b>SL-07</b>
<b>Light Characteristics</b>		
Light Source	High efficiency LED	High efficiency LED
Available Colours	Red, Green, White, Yellow, Blue	Red, Green, White, Yellow, Blue
Typical Intensity (cd)	Red - 63 Green - 62 White - 65 Yellow - 60	Red - 63 Green - 62 White - 65 Yellow - 60
Visible Range (NM)	AT @ 0.74: 1-4 AT @ 0.85: 1.1-4.8	AT @ 0.74: 1-4 AT @ 0.85: 1.1-4.8
Horizontal Output (degrees)	360	360
Vertical Divergence (degrees)	7	7
Available Flash Characteristics	Up to 256 IALA recommended (user adjustable)	Up to 256 IALA recommended (user adjustable)
Intensity Adjustments	Adjustable in 25% increments	Adjustable in 25% increments
LED Life Expectancy (hours)	>100,000	>100,000
<b>Electrical Characteristics</b>		
Power Consumption	Variable up to 2 watts	Variable up to 2 watts
Circuit Protection	Integrated	Integrated
Nominal Voltage (V)	12	12
Temperature Range	-40 to 80°C	-40 to 80°C
<b>Physical Characteristics</b>		
Body Material	LEXAN® Polycarbonate - UV-stabilised	LEXAN® Polycarbonate - UV-stabilised
Lens Material	LEXAN® Polycarbonate - UV-stabilised	LEXAN® Polycarbonate - UV-stabilised
Lens Diameter (mm/inches)	98 / 3 <sup>7</sup> / <sub>8</sub>	98 / 3 <sup>7</sup> / <sub>8</sub>
Lens Design	Single LED Optic	Single LED Optic
Mounting	3 & 4 hole 200mm bolt pattern	4 x 6mm mounting holes
Height (mm/inches)	181 / 7 <sup>1</sup> / <sub>8</sub>	141 / 5 <sup>1</sup> / <sub>2</sub>
Width (mm/inches)	231 / 9 <sup>1</sup> / <sub>8</sub>	136 / 5 <sup>3</sup> / <sub>8</sub>
Mass (kg/lbs)	1.1 / 2 <sup>3</sup> / <sub>8</sub>	0.4 / 7 <sup>7</sup> / <sub>8</sub>
Product Life Expectancy	Up to 12 years	Up to 12 years
<b>Certifications</b>		
CE	EN61000-6-3:1997. EN61000-6-1:1997	EN61000-6-3:1997. EN61000-6-1:1997
IALA	Signal colours compliant to IALA E-200-1	Signal colours compliant to IALA E-200-1
Quality Assurance	ISO9001:2008	ISO9001:2008
Waterproof	IP68	IP68
<b>Intellectual Property</b>		
Trademarks	SEALITE® is a registered trademark of Sealite Pty Ltd	SEALITE® is a registered trademark of Sealite Pty Ltd
<b>Warranty *</b>	3 years	3 years
<b>Options Available</b>	<ul style="list-style-type: none"> <li>• Power supplies/systems</li> <li>• 50mm pole mount adapter plate</li> <li>• Additional cable</li> <li>• Light sensor disabled</li> <li>• IR Programmer</li> </ul>	<ul style="list-style-type: none"> <li>• Power supplies/systems</li> <li>• 50mm pole mount adapter plate</li> <li>• Additional cable</li> <li>• Light sensor disabled</li> <li>• IR Programmer</li> </ul>

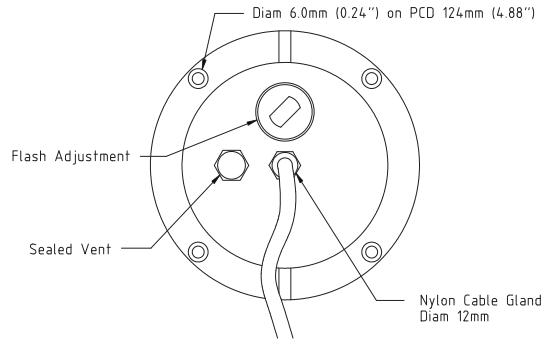
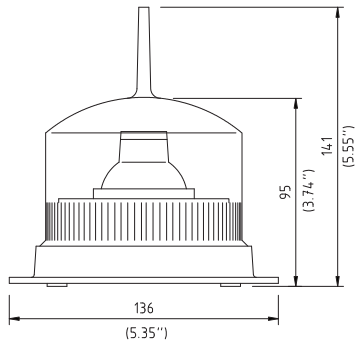


- Specifications subject to change or variation without notice
- \* Subject to standard terms and conditions
- † Intensity setting subject to solar availability

**SL-07-L Model**



**SL-07 Model**





## Installation of SL-07 Series Models

Lantern is activated by the connection of positive and negative wires to battery or mains system. Flash setting needs to be set prior to activation.

1. Remove the marked flash adjustment bung from the base of the lantern and set rotary switches to the required flash code (see 'Selecting a Flash Code' section of this manual).
2. Replace flash adjustment bung.
3. A sealed vent on the base allows air transfer without moisture intake, and should not be disturbed.
4. Battery Connection: Connect "Battery Negative (-)" wire to negative terminal of battery, and "Battery Positive (+)" wire to positive terminal of battery.  
Mains Connection: Connect negative and then positive wires to 12volt power supply (ONLY).
5. To test place dark cover (towel or jacket) on top of light to activate sensor, light will come on within one minute.
6. Ensure that the unit is bolted to an even, flat surface.

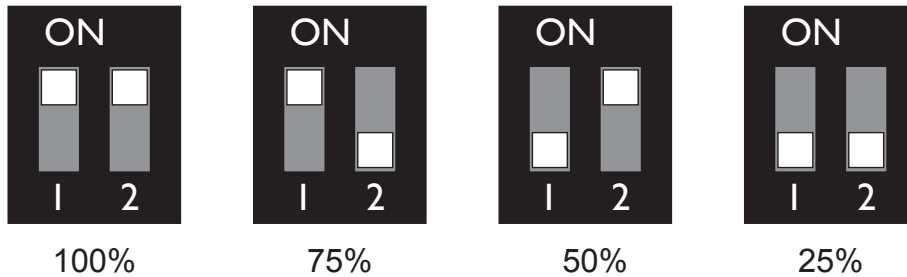
***Care must be taken to observe the polarity of each wire before they are connected.***



# Selecting an Intensity/Power Setting

Intensity/power settings on Sealite lanterns operate via DIP switches, located near the rotary switches on the flasher unit. The intensity/power settings may be used to reduce the power consumption and intensity of the lantern. Setting the lantern to 25% intensity will reduce the power consumption to 25% of the normal 100% setting and the range by 20% - 40% depending on the maximum intensity. Refer to Sealite power calculator to confirm reduced range. This setting may be used to adjust the current draw of the light to local sunlight conditions.

The following diagrams indicate intensity/power settings:-



Intensity Setting	Power	White cd	Green cd	Red cd	Yellow cd
100%	120mA	176	88	121	95
75%	94mA	132	66	90	71
50%	64mA	88	44	60	48
25%	35mA	44	22	30	24

## Automatic Intensity Reduction for Fixed-On Character

- When the flash code is configured to 00 or 'Steady On', the maximum intensity is set to 50%. If a higher intensity is previously set when the lamp is on, the intensity will automatically fall to the 50% setting when flash code 00 is configured.
- The intensity settings available for lamps with a flash code set to 00 are 25% and 50%. The lamp will flash an error condition if an intensity setting greater than 50% is selected with the IR Remote Control.
- If the flash code is changed from 00 to another value, the maximum allowable intensity reverts back to 100%.

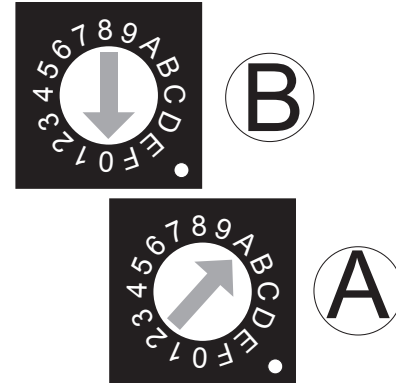
## Selecting a Flash Code - Rotary Switches A & B

All lanterns have 2 rotary switches marked A and B on the flasher unit. Turning the small arrows to the appropriate number or letter will set the code. The unit may take up to one minute to activate a new flash code. A comprehensive list of available flash codes is listed on in the 'Flash Codes' section of this manual.

Example:

SWITCH		FLASH CODE	ON	OFF
A	B			
A	0	FL 3 S	0.3	2.7

*Note – if setting the lantern to a demanding duty-cycle such as steady-on, the power setting must be reduced to ensure reliable operation*



# Flash Codes

The Sealite SL-07 Series may be set to any of 256 IALA recommended flash settings which are user-adjustable onsite without the need for external devices.

**SEALITE® code reference is listed by number of flashes**

**For the latest version of this document visit [www.sealite.com](http://www.sealite.com)  
or email [info@sealite.com](mailto:info@sealite.com)**

## Symbols

FL	Flash followed by number Eg. FL 1 S, one flash every second
F	Fixed
Q	Quick flash
VQ	Very quick flash
OC	Occulting; greater period on than off
ISO	Isophase; equal period on and off
LFL	Long flash long
MO	Morse code ( ) contains letter

For example, VQ (6) + LFL 10 S means 6 very quick flashes followed by a long flash, during a 10-second interval.

The amount of power your lantern draws through the night depends on the duty cycle, i.e. the amount of time on as a proportion to the timing cycle. For example, 0.5 seconds on and 4.5 seconds off equals a 10% duty cycle.

It is best to operate at the lowest duty cycle appropriate to the actual needs of the application.

## Recommended Rhythm for Flashing Light - IALA Regions A and B

MARK DESCRIPTION	RHYTHM
<b>Port Hand &amp; Starboard Marks:</b>	Any, other than Composite Group Flashing (2+1)
<b>Preferred Channel Starboard:</b>	Composite Group Flashing (2+1)
<b>Preferred Channel Port:</b>	Composite Group Flashing (2+1)
<b>North Cardinal Mark:</b>	Very quick or quick
<b>East Cardinal Mark:</b>	Very quick (3) every 5 seconds or quick (3) every 10 seconds
<b>South Cardinal Mark:</b>	Very quick (6) + long flash every 10 seconds or quick (6) + long flash every 15 seconds
<b>West Cardinal Mark:</b>	Very quick (9) every 10 seconds or quick (9) every 15 seconds
<b>Isolated Danger Mark:</b>	Group flashing (2)
<b>Safe Water Mark:</b>	Isophase, occulting, one long flash every 10 seconds or Morse Code "A"
<b>Special Marks:</b>	Any, other than those described for Cardinal, Isolated Danger or Safe Water Marks

SWITCH		IR		FLASH CODE	ON	OFF
A	B	Controller				
0	0	0	F (Steady light)			
D	3	211	VQ 0.5 S	0.2	0.3	
E	3	227	VQ 0.6 S	0.2	0.4	
F	3	243	VQ 0.6 S	0.3	0.3	
7	3	115	Q 1 S	0.2	0.8	
8	3	131	Q 1 S	0.3	0.7	
9	3	147	Q 1 S	0.4	0.6	
A	3	163	Q 1 S	0.5	0.5	
8	4	132	Q 1 S	0.8	0.2	
B	3	179	Q 1.2 S	0.3	0.9	
9	4	148	Q 1.2 S	0.5	0.7	
C	3	195	Q 1.2 S	0.6	0.6	
F	4	244	FL 1.5 S	0.2	1.3	
1	0	16	FL 1.5 S	0.3	1.2	
0	5	5	FL 1.5 S	0.4	1.1	
0	4	4	FL 1.5 S	0.5	1.0	
2	0	32	FL 2 S	0.2	1.8	
3	0	48	FL 2 S	0.3	1.7	
4	0	64	FL 2 S	0.4	1.6	
5	0	80	FL 2 S	0.5	1.5	
6	0	96	FL 2 S	0.7	1.3	
7	0	112	FL 2 S	0.8	1.2	
1	2	18	ISO 2 S	1.0	1.0	
8	0	128	FL 2.5 S	0.3	2.2	
9	0	144	FL 2.5 S	0.5	2.0	
D	6	214	FL 2.5 S	1.0	1.5	
1	5	21	FL 3 S	0.2	2.8	
A	0	160	FL 3 S	0.3	2.7	
2	5	37	FL 3 S	0.4	2.6	
B	0	176	FL 3 S	0.5	2.5	
3	5	53	FL 3 S	0.6	2.4	
C	0	192	FL 3 S	0.7	2.3	
D	0	208	FL 3 S	1.0	2.0	
2	2	34	ISO 3 S	1.5	1.5	
5	4	84	OC 3 S	2.0	1.0	
E	2	226	OC 3 S	2.5	0.5	
4	6	70	OC 3.5 S	2.5	1.0	
4	5	69	FL 4 S	0.2	3.8	
5	5	85	FL 4 S	0.3	3.7	
E	0	224	FL 4 S	0.4	3.6	
F	0	240	FL 4 S	0.5	3.5	
6	5	101	FL 4 S	0.6	3.4	
0	1	1	FL 4 S	0.8	3.2	
1	1	17	FL 4 S	1.0	3.0	
2	1	33	FL 4 S	1.5	2.5	
3	2	50	ISO 4 S	2.0	2.0	
3	6	54	OC 4 S	2.5	1.5	
F	2	242	OC 4 S	3.0	1.0	
3	1	49	FL 4.3 S	1.3	3.0	
8	5	133	FL 5 S	0.2	4.8	
4	1	65	FL 5 S	0.3	4.7	
5	1	81	FL 5 S	0.5	4.5	
9	5	149	FL 5 S	0.9	4.1	
6	1	97	FL 5 S	1.0	4.0	

SWITCH		IR		FLASH CODE	ON	OFF
A	B	Controller				
7	1	113	FL 5 S	1.5	3.5	
4	2	66	ISO 5 S	2.5	2.5	
8	2	130	LFL 5 S	2.0	3.0	
0	3	3	OC 5 S	3.0	2.0	
1	3	19	OC 5 S	4.0	1.0	
2	3	35	OC 5 S	4.5	0.5	
C	6	198	FL 6 S	0.2	5.8	
B	5	181	FL 6 S	0.3	5.7	
C	5	197	FL 6 S	0.4	5.6	
8	1	129	FL 6 S	0.5	5.5	
9	1	145	FL 6 S	0.6	5.4	
A	1	161	FL 6 S	1.0	5.0	
7	5	117	FL 6 S	1.2	4.8	
B	1	177	FL 6 S	1.5	4.5	
5	2	82	ISO 6 S	3.0	3.0	
9	2	146	LFL 6 S	2.0	4.0	
6	4	100	OC 6 S	4.0	2.0	
3	3	51	OC 6 S	4.5	1.5	
4	3	67	OC 6 S	5.0	1.0	
A	4	164	FL 7 S	1.0	6.0	
9	6	150	FL 7 S	2.0	5.0	
5	6	86	OC 7 S	4.5	2.5	
D	5	213	FL 7.5 S	0.5	7.0	
C	1	193	FL 7.5 S	0.8	6.7	
E	5	229	FL 8 S	0.5	7.5	
B	4	180	FL 8 S	1.0	7.0	
6	2	98	ISO 8 S	4.0	4.0	
A	2	162	LFL 8 S	2.0	6.0	
6	6	102	OC 8 S	5.0	3.0	
B	2	178	LFL 8 S	3.0	5.0	
F	5	245	FL 9 S	0.9	8.1	
C	4	196	FL 9 S	1.0	8.0	
7	6	118	OC 9 S	6.0	3.0	
0	6	6	FL 10 S	0.2	9.8	
1	6	22	FL 10 S	0.3	9.7	
D	1	209	FL 10 S	0.5	9.5	
2	6	38	FL 10 S	0.8	9.2	
E	1	225	FL 10 S	1.0	9.0	
1	4	20	FL 10 S	1.5	8.5	
C	2	194	LFL 10 S	2.0	8.0	
D	2	210	LFL 10 S	3.0	7.0	
7	2	114	ISO 10 S	5.0	5.0	
2	4	36	LFL 10 S	4.0	6.0	
8	6	134	OC 10 S	6.0	4.0	
5	3	83	OC 10 S	7.0	3.0	
6	3	99	OC 10 S	7.5	2.5	
F	1	241	FL 12 S	1.2	10.8	
D	4	212	FL 12 S	2.5	9.5	
3	4	52	LFL 12 S	2.0	10.0	
0	2	2	FL 15 S	1.0	14.0	
4	4	68	LFL 15 S	4.0	11.0	
7	4	116	OC 15 S	10	5.0	
A	6	166	LFL 20 S	2.0	18.0	
E	4	228	FL 26 S	1.0	25.0	

SWITCH		IR Controller	FLASH CODE	ON	OFF	ON	OFF
A	B						
0	A	10	FL (2) 4 S	0.5	1.0	0.5	2.0
E	B	235	VQ (2) 4 S	0.2	1.0	0.2	2.6
1	A	26	FL (2) 4.5 S	0.3	1.0	0.3	2.9
2	A	42	FL (2) 4.5 S	0.4	1.0	0.4	2.7
3	A	58	FL (2) 4.5 S	0.5	1.0	0.5	2.5
F	9	249	FL (2) 5 S	0.2	0.8	0.2	3.8
2	C	44	FL (2) 5 S	0.2	1.2	0.2	3.4
4	A	74	FL (2) 5 S	0.4	0.6	0.4	3.6
0	7	7	FL (2) 5 S	0.5	1.0	0.5	3.0
1	7	23	FL (2) 5 S	1.0	1.0	1.0	2.0
9	B	155	Q (2) 5 S	0.3	0.7	0.3	3.7
2	9	41	Q (2) 5 S	0.5	0.5	0.5	3.5
5	A	90	FL (2) 5.5 S	0.4	1.4	0.4	3.3
7	8	120	FL (2) 6 S	0.3	0.6	1.0	4.1
A	A	170	FL (2) 6 S	0.3	0.9	0.3	4.5
6	A	106	FL (2) 6 S	0.3	1.0	0.3	4.4
7	A	122	FL (2) 6 S	0.4	1.0	0.4	4.2
9	9	153	FL (2) 6 S	0.5	1.0	0.5	4.0
2	8	40	FL (2) 6 S	0.8	1.2	0.8	3.2
3	7	55	FL (2) 6 S	1.0	1.0	1.0	3.0
3	9	57	Q (2) 6 S	0.3	0.7	0.3	4.7
A	9	169	FL (2) 7 S	1.0	1.0	1.0	4.0
7	B	123	FL (2) 8 S	0.4	0.6	2.0	5.0
8	A	138	FL (2) 8 S	0.4	1.0	0.4	6.2
4	7	71	FL (2) 8 S	0.5	1.0	0.5	6.0
8	8	136	FL (2) 8 S	0.8	1.2	2.4	3.6
5	7	87	FL (2) 8 S	1.0	1.0	1.0	5.0
4	C	76	OC (2) 8 S	3.0	2.0	1.0	2.0
5	C	92	OC (2) 8 S	5.0	1.0	1.0	1.0
F	B	251	VQ (2) 8 S	0.2	1.0	0.2	6.6
9	A	154	FL (2) 10 S	0.4	1.6	0.4	7.6
6	7	103	FL (2) 10 S	0.5	1.0	0.5	8.0
7	7	119	FL (2) 10 S	0.5	1.5	0.5	7.5
6	9	105	FL (2) 10 S	0.5	2.0	0.5	7.0
8	7	135	FL (2) 10 S	0.8	1.2	0.8	7.2
B	9	185	FL (2) 10 S	1.0	1.0	1.0	7.0
9	7	151	FL (2) 10 S	1.0	1.5	1.0	6.5
4	9	73	Q (2) 10 S	0.6	0.4	0.6	8.4
B	A	186	FL (2) 12 S	0.4	1.0	0.4	10.2
C	9	201	FL (2) 12 S	0.5	1.0	0.5	10.0
D	9	217	FL (2) 12 S	1.5	2.0	1.5	7.0
A	8	168	FL (2) 15 S	0.5	1.5	2.0	11.0
A	7	167	FL (2) 15 S	1.0	2.0	1.0	11.0
8	B	139	Q (2) 15 S	0.2	0.8	0.2	13.8
C	A	202	FL (2) 20 S	1.0	3.0	1.0	15.0
D	A	218	FL (2) 25 S	1.0	1.0	1.0	22.0

SWITCH		IR Controller	FLASH CODE	ON	OFF	ON	OFF	ON	OFF
A	B								
7	9	121	Q (3) 5 S	0.5	0.5	0.5	0.5	0.5	2.5
5	9	89	VQ (3) 5 S	0.2	0.3	0.2	0.3	0.2	3.8
0	C	12	VQ (3) 5 S	0.3	0.2	0.3	0.2	0.3	3.7
E	9	233	VQ (3) 5 S	0.3	0.3	0.3	0.3	0.3	3.5
3	C	60	FL (3) 6 S	0.5	1.0	0.5	1.0	0.5	2.5
2	B	43	FL (2+1) 6 S	0.3	0.4	0.3	1.2	0.3	3.5

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF	ON	OFF
A	B	Controller								
A	B	171	Q (3) 6 S	0.3	0.7	0.3	0.7	0.3	3.7	
F	A	250	FL (3) 8 S	0.5	1.0	0.5	1.0	0.5	4.5	
0	B	11	FL (3) 9 S	0.3	1.0	0.3	1.0	0.3	6.1	
B	7	183	FL (3) 9 S	0.8	1.2	0.8	1.2	0.8	4.2	
B	8	184	FL (3) 10 S	0.3	0.7	0.3	0.7	0.9	7.1	
C	8	200	FL (3) 10 S	0.4	0.6	0.4	0.6	1.2	6.8	
C	B	203	FL (3) 10 S	0.5	0.5	0.5	0.5	0.5	7.5	
C	7	199	FL (3) 10 S	0.5	1.5	0.5	1.5	0.5	5.5	
D	B	219	FL (3) 10 S	0.6	0.6	0.6	0.6	0.6	7.0	
D	7	215	FL (3) 10 S	1.0	1.0	1.0	1.0	1.0	5.0	
3	8	56	FL (2+1) 10 S	0.5	0.7	0.5	2.1	0.5	5.7	
8	9	137	OC (3) 10 S	5.0	1.0	1.0	1.0	1.0	1.0	
B	B	187	Q (3) 10 S	0.3	0.7	0.3	0.7	0.3	7.7	
D	8	216	FL (2 + 1) 10 S	0.5	0.5	0.5	0.5	1.5	6.5	
1	B	27	FL (3) 12 S	0.5	1.5	0.5	1.5	0.5	7.5	
E	A	234	FL (3) 12 S	0.5	2.0	0.5	2.0	0.5	6.5	
E	7	231	FL (3) 12 S	0.8	1.2	0.8	1.2	0.8	7.2	
B	6	182	FL (3) 12 S	1.0	1.0	1.0	3.0	1.0	5.0	
4	8	72	FL (2+1) 12 S	0.8	1.2	0.8	2.4	0.8	6.0	
5	8	88	FL (2+1) 12 S	1.0	1.0	1.0	4.0	1.0	4.0	
1	8	24	FL (2+1) 13.5 S	1.0	1.0	1.0	4.0	1.0	5.5	
F	7	247	FL (3) 15 S	0.3	1.7	0.3	1.7	0.3	10.7	
9	D	157	FL (3) 15 S	0.4	1.0	0.4	1.0	0.4	11.8	
0	8	8	FL (3) 15 S	0.5	1.5	0.5	1.5	0.5	10.5	
F	8	248	FL (2+1) 15 S	0.6	0.3	0.6	0.3	1.4	11.8	
0	9	9	FL (2+1) 15 S	0.7	0.5	0.7	0.5	1.9	10.7	
1	9	25	FL (2+1) 15 S	0.7	0.7	0.7	0.7	2.1	10.1	
6	8	104	FL (2+1) 15 S	1.0	2.0	1.0	5.0	1.0	5.0	
1	C	28	VQ (3) 15 S	0.1	0.5	0.1	0.5	0.1	13.7	
4	B	75	FL (3) 20 S	0.5	3.0	0.5	3.0	0.5	12.5	
3	B	59	FL (3) 20 S	0.5	1.5	0.5	1.5	0.5	15.5	
5	B	91	FL (3) 20 S	0.8	1.2	0.8	1.2	0.8	15.2	
6	B	107	FL (3) 20 S	1.0	1.0	1.0	1.0	1.0	15.0	

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B	Controller										
B	F	191	VQ (4) 4 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.3	
B	D	189	Q (4) 6 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	2.7	
8	D	141	Q (4) 6 S	0.4	0.6	0.4	0.6	0.4	0.6	0.4	2.6	
1	D	29	FL (4) 10 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	5.0	
2	D	45	FL (4) 10 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	3.2	
F	E	254	Q (4) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	6.7	
B	E	190	FL (4) 12 S	0.3	1.7	0.3	1.7	0.3	1.7	0.3	5.7	
4	F	79	FL (4) 12 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	8.5	
C	E	206	FL (4) 12 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	5.5	
3	D	61	FL (4) 12 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	5.2	
A	D	173	Q (4) 12 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	8.7	
4	D	77	FL (4) 15 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	8.5	
8	E	142	FL (4) 15 S	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0	
7	D	125	FL (4) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	10.5	
D	E	222	FL (4) 16 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	9.5	
C	D	205	FL (4) 20 S	0.3	3.0	0.3	3.0	0.3	3.0	0.3	9.8	
5	D	93	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	13.5	
0	D	13	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	4.5	0.5	10.5	
3	F	63	FL (4) 20 S	1.5	1.5	1.5	1.5	1.5	1.5	1.5	9.5	
0	F	15	Q (4) 20 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	16.5	
E	E	238	Q (4) 28 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	24.5	
6	F	111	FL (4) 30 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	26.5	

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B													
D	D	221	Q (5) 7 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	2.7
E	D	237	Q (5) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	5.7
E	8	232	FL (5) 12 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	3.5
5	F	95	FL (5) 20 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	15.5
9	F	159	FL (5) 20 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	11.2
9	E	158	FL (5) 20 S	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	11.0

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B															
F	D	253	Q (6) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	4.7
A	F	175	FL (6) 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	9.7
7	F	127	FL (6) 15 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	7.0

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF		
A	B																			
6	E	110	VQ (6) + LFL 10 S	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	2.0	5.0	
7	E	126	VQ (6) + LFL 10 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	4.4
2	F	47	Q (6) + LFL 15 S	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	2.0	7.0	
2	E	46	Q (6) + LFL 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	2.0	7.0	
3	E	62	Q (6) + LFL 15 S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.0	5.8	
8	F	143	VQ (6) + LFL 15 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	9.4

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	
A	B																				
4	E	78	VQ (9) 10 S	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	5.8
5	E	94	VQ (9) 10 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.9
1	F	31	Q (9) 15 S	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	6.8
0	E	14	Q (9) 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	6.7
1	E	30	Q (9) 15 S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	4.8

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B											
MORSE CODE ( ) INDICATES LETTER												
7	8	120	MO (A) 6 S	0.3	0.6	1.0	4.1					
7	B	123	MO (A) 8 S	0.4	0.6	2.0	5.0					
8	8	136	MO (A) 8 S	0.8	1.2	2.4	3.6					
B	8	184	MO (U) 10 S	0.3	0.7	0.3	0.7	0.9	7.1			
C	8	200	MO (U) 10 S	0.4	0.6	0.4	0.6	1.2	6.8			
D	8	216	MO (U) 10 S	0.5	0.5	0.5	0.5	1.5	6.5			
9	8	152	MO (A) 10 S	0.5	0.5	1.5	7.5					
8	9	137	MO (D) 10 S	5.0	1.0	1.0	1.0	1.0	1.0			
A	8	168	MO (A) 15 S	0.5	1.5	2.0	11.0					
F	8	248	MO (U) 15 S	0.6	0.3	0.6	0.3	1.4	11.8			
0	9	9	MO (U) 15 S	0.7	0.5	0.7	0.5	1.9	10.7			
1	9	25	MO (U) 15 S	0.7	0.7	0.7	0.7	2.1	10.1			
7	D	125	MO (B) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	10.5	

The following flash characters can only be set via the IR Programmer (sold separately). Please refer to the IR section of this manual for set up instructions.

IR																				
Controller	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	
336	F1 8 S	0.4	7.6																	
337	Q (9) 15 S	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	5
338	Mo(A) 9 S	0.5	0.5	1.5	6.5															
339	Mo(A) 11 S	0.5	0.5	1.5	8.5															
340	Mo(C) 13 S	1.5	0.5	0.5	0.5	1.5	0.5	0.5	7.5											
341	Mo(C) 17 S	1.5	0.5	0.5	0.5	1.5	0.5	0.5	11.5											
342	Mo(D) 10 S	1.5	0.5	0.5	0.5	0.5	6.5													
343	Mo(D) 13 S	1.5	0.5	0.5	0.5	0.5	9.5													



# GPS Synchronisation

The SL-07 Series come with GPS fitted as standard, and provide the user with the ability to install independently operating lanterns that all flash in synchronisation.

No additional power supplies, aerials or control systems are required, and with its microprocessor-based system, the GPS option is specifically designed to provide maximum reliability and performance over a wide range of environmental conditions.

## Operating Principle

Each light operates independently and requires no operator intervention. A minimum of 4 satellites need to be in view for the built-in GPS receiver to collect time data. At dusk, the light sensor will turn the light on. If time data is available the light will come on synchronised to every other light with the same selected flash code.

Synchronisation is achieved using an internal algorithm based on the highly accurate time base and time data received from the satellites. The satellite data is provided from a number of earth stations using atomic clocks as the time base. Continuous self-checking ensures that the light will continue to run in synchronisation.

## Light Activation

At power-up the microprocessor checks that the internal GPS module is programmed correctly and is able to provide valid time base and time data.

Once outside with a clear view of the sky, valid data should become available within 20 minutes.

## Daylight Operation

During daylight hours the microprocessor is in idle mode to reduce power consumption. Time data continues to be updated once per second. The microprocessor will automatically exit the idle mode as soon as dark conditions are detected.

## Dark Operation

When dark conditions are detected the light:

- Checks for valid time data and is turned on after a delay based on the current time and the length of the selected flash code;
- If valid time data is not detected the light will turn on after approximately 10 seconds. This light will not be synchronised.
- If the light turns on unsynchronised it will continually check for valid time data. Once valid data is found the light will automatically synchronise.

**Note:** Lights will not synchronise if different flash codes are selected.



## Lantern Status

Two status LED's on the main printed circuit board provide the operator with an indication of the lantern status.

There is one red and one yellow status LED. The red status LED is used to indicate the health of the lantern's power system. The yellow status LED is used to indicate the operational status of the lantern.

These indicator LED's can be viewed at the base of the lens.

All Sealite boards are fitted with two Indicator LED's. These are positioned near the Flash Code Rotary Switches. Use the table below to help determine operational status.

Yellow LED	Lantern Status	Lantern	Comment
OFF	Normal	OFF	Lantern is in Daylight and in Dusk till Dawn mode or in Standby Mode
Flashing ON 0.15 seconds OFF 0.15 seconds	Normal	OFF	Light is activating and will turn on after detecting 30 seconds of continuous darkness.
Flashing 2 x quick flashes every 2 seconds (Heartbeat)	Normal	ON	Lantern is in Normal operating condition. It is not connected to any GPS synchronisation.
Flashing ON 1.5 seconds OFF 1.5 seconds	Normal	ON	Normal operating condition. Lantern is synchronised to GPS-enabled lanterns.
Flashing 1 x quick flash every 2 seconds	Normal	ON	Lantern is 're-syncing' with GPS. The lantern re-sync's with the GPS every 15 minutes.
Flashing 2 x quick flashes every 11 seconds	Normal	ON	Lantern is a Hard Wire Synchronisation Slave.

Red LED	Lantern Status	Lantern	Comment
OFF	Normal		Normal Battery Voltage
Flashing once every 1.6 seconds	Battery Voltage is 12 – 12.5V		Battery Voltage is between 12 – 12.5V
Flashing twice every 2 seconds	Battery Voltage is 11.5 – 12V		Battery Voltage is between 11.5 – 12V
Flashing 3 x times every 2 seconds	Battery Voltage is 10.0 – 11.5V		Battery Voltage is between 10.0 – 11.5V
Flashing 4 x times every 2.5 seconds	Battery Voltage is less than 10.0V		Battery Voltage is at less than 10.0V
Fixed-on	Flat Battery (<10V)	OFF	Flat Battery cut-off is now operational and the lantern will be off. Battery must receive charge (above 12V) and lantern must see daylight for at least 1 minute before resuming normal operation.
Flashing ON 1.5 seconds OFF 1.5 seconds	Battery Voltage is above 13.5V		Battery Voltage is above 13.5V. this may indicate a problem with the solar regulator.

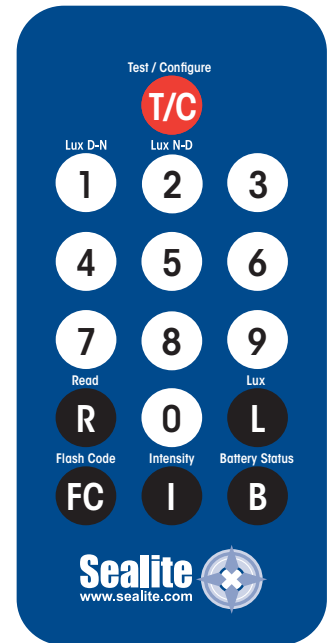
# Optional IR Remote Control

The IR remote is used to communicate with Sealite lighting products that have an IR sensor fitted. The remote control is used for the following functions:

- Flash Code: read the current flash code, configure a new flash code.
- Lamp Intensity: read the current lamp intensity, configure a new intensity level.
- Ambient Light Thresholds: read the current light thresholds, configure new ambient light thresholds.
- Perform a battery health check.

On receiving a valid key signal from the IR Remote, the light will flash once. The user should wait until the light responds to each keypress before pressing another key. If there is no response to the keypress after 3 seconds, it has not been detected by the light and the key can be pressed again.

If an invalid key is detected, the light will flash quickly 5 times. In this case, the command will have to be restarted.



## Sealite IR Controller / Universal Remote Compatibility

If you lose your Sealite IR Controller, the following Universal Remote Controller has been tested for compatibility: RCA Type RCR312WR programmed for Phillips TV Type Code 10054

Sealite Key	Universal Remote Key
T	Power
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
R	Channel+
L	Mute
FC	Volume+
I	Volume-
B	Channel-

## IR Controller Functions

### Test Mode / Configure



Pressing the T/C button for upto 5 seconds places the light in Test Mode. The light will flash once in response to the T/C button being pressed and then turn off.

### Normal Operation

The light will return to normal operation once it has not detected a valid key press for 30 seconds. The light will flash once to indicate it is returning to normal operation.

### Read

Pressing the Read followed by one of the configuration keys shall cause the light to flash the configured value.

### **Example Key Sequences:**

**R** **FC** **T/C** The light flashes the 'IR Remote' number belonging to the currently set Flash Code. Refer to the Flash Code tables to match the 'IR Remote' flash number to the Flash Code.

**R** **I** **T/C** The light flashes the current intensity setting: 1 flash for 25%, 2 for 50%, 3 for 75% and 4 for 100%.

**R** **B** **T/C** The light flashes the current battery status.

**R** **L** **T/C** The light flashes the sunset level in Lux, followed by a 2 second gap, followed by the sunrise level. Levels are in the range of 1 to 9.

### Flash Code



This key sets the flash code on the light.

### **Example Key sequence:**



This sets the flash code to value 123. The light responds by flashing the flash code value.

### Flash Code Numbers

The lamp flashes numbers as follows: Hundreds, Tens, Ones. A value of 125 will be flashed as: 1 flash, followed by a delay, 2 flashes, followed by a delay, 5 flashes.

The flash for number 0 is one long flash.

For example if the current Flash Code is set to 51 via the AB switches, the lamp will flash number 081. For a flash code set to 01, the lamp will flash 001.

### Intensity

This function sets the light intensity. Valid intensity values are 1 for 25%, 2 for 50%, 3 for 75% and 4 for 100%.



**Example Key sequence:**



This sets the light intensity to 25%.

### Battery Status



This function reads the battery status. The response from the light is High Voltage: 4 flashes, Good Voltage: 3 flashes, Low Voltage 2 flashes, Cutoff Voltage or below: 1 flash.

**Example Key sequence:**



### Operational Mode

Sets the Lanterns Operation mode:

- Dusk to Dawn,
- Always On,
- Standby

Dusk to Dawn Mode: at Dusk the light sensors will turn on the light and then synchronise to every other light with the same selected flash code.

Always On: the light sensor is disabled and the light is turned on and then synchronised to every other light with the same selected flash code.

Standby Mode: manually forces the lantern to turn off, disables the GPS but with access to daylight it will still charge the battery pack.

Read Operation Mode

Set Operation Mode to Always on

Set Operation Mode to Standby Mode

Set Operation Mode to Dusk to dawn

Lux



This key sets the ambient light threshold levels.

The format is



Where 'x' is the desired setting from the table below.

There are 5 programmable lux levels which are set together for the sunset and sunrise transitions.

Level	Sunset (Dusk)	Sunrise (Dawn)
1	64	100
<b>2*</b>	<b>100</b>	<b>150</b>
3	150	240
4	240	370
5	370	600
<b>* Default / Factory Preset</b>		

**Example key sequence:**



Assume the current Lux settings are at the factory preset values of 2.

This sets the ambient light level to be lower than the default 100 lux. The light will turn on when its surroundings are darker.

The light responds by acknowledgement with a long flash.



### **Error / Acknowledge Indication**

If the key sequence is invalid, or an out of bounds value is attempted to be set, the light flashes 5 times for 1 second. (The command then needs to be sent from the start.)

**Example key sequence:** (Set the intensity level to 5 – undefined.)



The light flashes 5 times for 1 second.

When a key sequence has been entered successfully the light will respond acknowledgement with a long 1 second flash.

### **Configuration Settings**

The intensity and flash codes can be changed using the switches on the lamp circuit board or with the IR Remote Control. The lamp intensity and flash code settings are set to the last detected change, carried out with the IR Remote Control or by changing the switch positions.

**Example #1:** If the intensity is set at 100% with the intensity switches, and is then set to 50% using the IR Remote Control, the intensity setting will change to 50%. If the intensity is then set to 75% using the switches, the new intensity value will be 75%.

In order to change intensity settings using the IR Remoter Control, the lamp must be powered.

The lamp can detect a change in switch settings if they are changed while the light is powered down.

**Example #2:** The flash code is set according to the switch settings: A=5, B = 1. The operator changes the flash code to 65 (A=4, B=1) using the IR Remote Control. The new flash code is now configured to A=4, B=1. The lamp is powered down and the operator changes the flash code switches to A=3, B=1 and powers on the light. The new flash code is now A=3, B=1. If the flash code is read from the light using the IR Remote Control, the lamp will flash 49 which is the corresponding number for switches A=3, B=1.

Use the IR Remote Control to read the current lamp intensity setting and flash code.



## Hibernation Mode (Advanced users)



For situations where the lantern is put into storage for a known period, the IR Remote control can be used to configure the lantern into Hibernation Mode for a user programmable date range.

Hibernation Mode maximises conservation of the battery power by disabling the light (will not activate at night) and shutting off the GPS receiver to rely on the internal clock for date checking. The IR sensor is still monitored in hibernation mode. Power consumption is only bettered by physically disconnecting the battery supply.

Hibernation Mode is defined by a start date and end date that are programmed into the lantern via the IR Remote Control.

### Using the IR Remote Control

The lantern must be in Test Mode prior to pressing any of the following key sequences. However, the lantern will return to Normal Operation if it has not detected a valid key press for a period of 15 seconds. When the lantern exits from Test Mode it will either enter Dusk to Dawn mode, Hibernation mode, or Storage Mode, if enabled.

### Store Hibernation Mode Date Range

The following details the key press sequence that defines the start and end dates of Hibernation Mode:



where **ddmm** is the numerical representation of the month (01=January, 08=August) of the start date, and **DDMM** is the numerical representation of the end date.

e.g 9th of December is represented by the number sequence 0912.

The lantern will respond by flashing an acknowledge long flash.

This operation only stores the start & end dates into the lantern's memory and Hibernation Mode still must be enabled to commence its operation.

### Enable Hibernation Mode

Pressing the following key sequence will enable (turn on) Hibernation Mode:



and the lantern will respond with a single flash.

The Lantern will take a new GPS reading, determine the calendar month, and then enter Hibernation Mode and depending on the current calendar month setting will either Hibernate or enter Dusk-to-Dawn mode.

By default, Hibernation mode is disabled. Note you can only use this command once a valid hibernation start & end date has been stored in the lantern.

### Disable Hibernation / Hibernation Modes

Pressing the following key sequence will disable (turn off) both Hibernation Mode and Seasonal Hibernation:



and the lantern will respond with a single long flash.

The Lantern will disable Hibernation Mode and enter Dusk-to-Dawn Mode.

### Momentarily Wake Up from Hibernation Mode

Pressing the **T/C** button will wake up the lantern.

At which point the lantern will remain awake for a further 15 seconds to process other commands from the IR Controller. If no IR commands are received for a period of 15 seconds, the lantern will return to Hibernation mode.

### Read Stored Hibernation Dates

By pressing the following key sequence the lantern will respond with the stored start and end dates for Hibernation:



### Read Hibernation Mode Status

By pressing the following key sequence the lantern will respond with status of Hibernation mode.



Where:

- A single long flash = hibernation mode is Enabled
- Two quick flashes = hibernation mode is Disabled.

### User Case Example: Configuring the lantern for Hibernation

In this example, we want the lantern to hibernate each year from Dec 10th, through to February 15th, and the lantern is located inside a storage warehouse.

The required key sequence is:

Command	IR Controller Key Press
Store the Hibernation Date Range	L I 1 0 1 2 1 5 0 2 T/C
Enable Hibernation	L I 1 T/C



### **Storage Mode (Advanced users)**

For situations where the lantern is put into storage but with access to daylight, the IR Remote control can be used to configure the lantern into Storage Mode.

This mode manually forces the lantern to turn off, but with access to daylight it will still charge battery pack. However the lantern will not keep track of the date.

In Storage Mode, the GPS is disabled however the lantern will still respond to IR commands.

The lantern will automatically enter Storage Mode, if it is hibernating and it has not detected any light for 20 hours.

### **Enter Storage Mode**

By pressing the following key sequence the lantern will enter Storage Mode:



The lantern will leave storage mode when exposed to daylight or if the power switch is turned OFF and ON again.



## Maintenance & Servicing

Designed to be maintenance free, the SL-07 Series requires minimal attention, though the following maintenance and servicing information is provided to help ensure the life of your product.

1. **Cleaning Lens-** occasional cleaning of the light lens may be required. Using a cloth and warm soapy water, wipe off any foreign matter before rinsing the lens with fresh water.
2. **Battery Check-** inspection of batteries should be performed every three 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 12 volts under 100mA load, and ensure all terminals are clear of foreign matter (Battery Connected Units Only).

## Trouble Shooting

Problem	Remedy
Lantern will not activate.	<ul style="list-style-type: none"> <li>• Ensure internal toggle switch is set to the 'ON position.</li> <li>• Ensure lantern is in darkness.</li> <li>• Wait at least 60 seconds for the program to initialise in darkness.</li> <li>• Ensure switch setting is on a valid code (not unused flash code).</li> <li>• Ensure battery terminals are properly connected.</li> <li>• Ensure battery voltage is above 12volts.</li> </ul>
Timing codes will not change.	<ul style="list-style-type: none"> <li>• Turn rotary switches several times to ensure contacts are clear.</li> </ul>
Lantern will not operate for the entire night.	<ul style="list-style-type: none"> <li>• Reducing the light output intensity or duty cycle (flash code) will reduce current draw on the battery.</li> </ul>



## Sealite LED Light Warranty

Refer to Sealite website: [sealite.com](http://sealite.com)



# Notes



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