



# **AV23 Series Installation and Service Manual**

Version 2.0

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## Introduction

Congratulations! By choosing to purchase an Avlite lantern you have become the owner of one of the most advanced solar LED airfield lights in the world.

Avlite Systems draws on more than 20 years experience in the design and manufacture of navigation aids, and particular care has been taken to ensure your light gives years of trouble free service.

As a commitment to producing the highest quality products for our customers, Avlite has been independently certified as complying with the requirements of ISO 9001:2000 quality management system.

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

Please remember to complete the Avlite warranty registration card accompanying your lantern.

## **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 array of ultra bright LED's 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.

## **Technology**

### Electronics

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

### LED Technology

All 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 our products are of a consistent and superior quality.

### Optical Performance

Avlite Systems manufactures a range of LED lenses moulded from multi-cavity dies. Complex shapes such as the AV70 lens are a testament to the company's superior in-house lens manufacturing capabilities and outstanding optical performance.

### Award-winning, Patented Technology

Several United States and Australian patent registrations are held on the range of innovative designs, with other regional patents pending in Canada, United Kingdom and Europe.



## Installation

Lantern is activated by connecting solar module and battery positive and negative wires. Intensity and flash settings need to be set prior to activation.

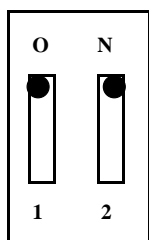
1. Unscrew the two socket cap screws located at either side of the lantern and remove lens cover.
2. Carefully remove internal flasher unit from within the lens cover.
3. The power and range settings of the lantern are adjusted by setting the DIP switches located on the top of this internal flasher unit. Your lantern is normally set to maximum range (see 'Selecting an Intensity Setting' below).
4. Set rotary switches to the required flash code (see 'Selecting a Flash Code' below), also located on the top of the internal flasher unit.
5. Replace internal flasher unit back inside lantern cover.
6. To activate the lantern, connect the "Battery Negative (-)" wire to the negative terminal, and the "Battery Positive (+)" wire to the positive terminal of the battery, and the "Solar Negative (-)" wire to internal "Solar Negative (-)" wire, and the "Solar Positive (+)" wire to the internal "Solar Positive (+)" wire.
7. Replace lens cover back onto unit, making sure that wires are not protruding, and screw the two socket cap screws up tight.
8. To test place dark cover (towel or jacket) on top of light to activate sensor, light will come on.

***Care must be taken to observe the polarity of each wire before they are connected. To ensure waterproofing of the unit, make sure that no wires are protruding and that there is an even seal when reattaching the lens cover to the unit body.***

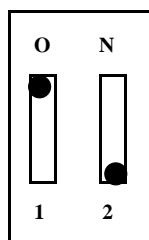
### *Selecting an Intensity Setting*

Pulse settings on Sealite lanterns operate via DIP switches, located near the rotary switches on the flasher unit. The pulse settings may be used to reduce the power consumption and intensity of the lantern. Setting the lantern to 25% pulse will reduce the power consumption to 25% of the normal 100% setting and the range by 50%. This setting may be used to adjust to local sunlight conditions.

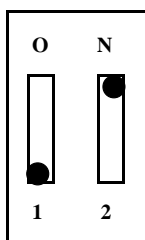
The following diagrams indicate pulse settings:-



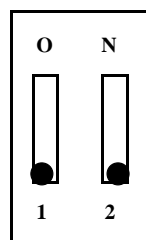
100%



75%



50%

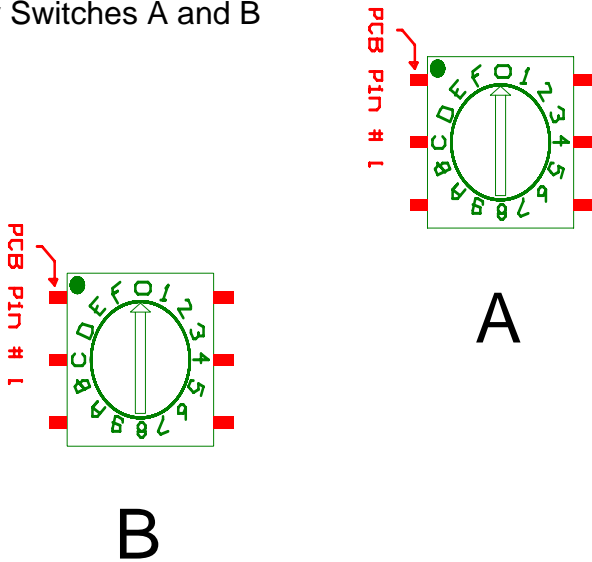


25%

*Selecting a Flash Code- Rotary Switches A and B*

All lanterns have 2 rotary switches marked A and B on the flasher unit (see top of page 6). Turning the small arrows to the appropriate number or letter will set the code (see 'Flash Code' section, page 7). The unit may take up to one minute to activate a new flash code. A comprehensive list of available flash codes is listed on pages 7-13 of this manual.

Rotary Switches A and B



## **Maintenance and Servicing**

Designed to be maintenance free, the AV23 require minimal attention, though the following maintenance and servicing information is provided to help ensure the life of your Avlite 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 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.

### **Replacing the battery**

The AV23 lantern has a sealed battery compartment, which provides the user with the ability to change the battery after years of operation.

1. Unscrew the two socket cap screws located at either side of the lantern and remove lens cover.
2. Disconnect the positive and negative wires from the battery.
3. Discard old battery in a safe manner.
4. Reattach positive and negative wires to the new battery and then place back into case.
5. Replace lens cover back onto unit, making sure that wires are not protruding, and screw two socket cap screws up tight.
6. To test place dark cover (towel or jacket) on top of light to activate sensor, light will come on.

***Care must be taken to observe the polarity of each wire before they are connected.  
To ensure waterproofing of the unit, make sure that no wires are protruding and that there is  
an even seal when reattaching the lens cover to the unit body.  
Always discard old batteries in a safe manner.***

## Flash Codes

Code reference is listed by number of flashes.

### 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.

Please note, Avlite Systems models will retain full autonomy in normal operating conditions with duty-cycles up to approximately 30%. In applications whereby duty cycles exceed this limit, a reduction in lantern intensity is recommended. Please contact an Avlite consultant if assistance is required.



SWITCH	FLASH CODE	ON	OFF
A	B		
0	0	F (Steady light)	
D	3	VQ 0.5 S	0.2 0.3
E	3	VQ 0.6 S	0.2 0.4
F	3	VQ 0.6 S	0.3 0.3
7	3	Q 1 S	0.2 0.8
8	3	Q 1 S	0.3 0.7
9	3	Q 1 S	0.4 0.6
A	3	Q 1 S	0.5 0.5
8	4	Q 1 S	0.8 0.2
B	3	Q 1.2 S	0.3 0.9
9	4	Q 1.2 S	0.5 0.7
C	3	Q 1.2 S	0.6 0.6
F	4	FL 1.5 S	0.2 1.3
1	0	FL 1.5 S	0.3 1.2
0	5	FL 1.5 S	0.4 1.1
0	4	FL 1.5 S	0.5 1.0
2	0	FL 2 S	0.2 1.8
3	0	FL 2 S	0.3 1.7
4	0	FL 2 S	0.4 1.6
5	0	FL 2 S	0.5 1.5
6	0	FL 2 S	0.7 1.3
7	0	FL 2 S	0.8 1.2
1	2	ISO 2 S	1.0 1.0
8	0	FL 2.5 S	0.3 2.2
9	0	FL 2.5 S	0.5 2.0
D	6	FL 2.5 S	1.0 1.5
1	5	FL 3 S	0.2 2.8
A	0	FL 3 S	0.3 2.7
2	5	FL 3 S	0.4 2.6
B	0	FL 3 S	0.5 2.5
3	5	FL 3 S	0.6 2.4
C	0	FL 3 S	0.7 2.3
D	0	FL 3 S	1.0 2.0
2	2	ISO 3 S	1.5 1.5
5	4	OC 3 S	2.0 1.0
E	2	OC 3 S	2.5 0.5
4	6	OC 3.5 S	2.5 1.0
4	5	FL 4 S	0.2 3.8
5	5	FL 4 S	0.3 3.7
E	0	FL 4 S	0.4 3.6
F	0	FL 4 S	0.5 3.5
6	5	FL 4 S	0.6 3.4
0	1	FL 4 S	0.8 3.2
1	1	FL 4 S	1.0 3.0
2	1	FL 4 S	1.5 2.5
3	2	ISO 4 S	2.0 2.0
3	6	OC 4 S	2.5 1.5
F	2	OC 4 S	3.0 1.0
3	1	FL 4.3 S	1.3 3.0
8	5	FL 5 S	0.2 4.8
4	1	FL 5 S	0.3 4.7
5	1	FL 5 S	0.5 4.5
9	5	FL 5 S	0.9 4.1
6	1	FL 5 S	1.0 4.0
7	1	FL 5 S	1.5 3.5
4	2	ISO 5 S	2.5 2.5
8	2	LFL 5 S	2.0 3.0
0	3	OC 5 S	3.0 2.0



SWITCH		FLASH CODE	ON	OFF
A	B			
1	3	OC 5 S	4.0	1.0
2	3	OC 5 S	4.5	0.5
C	6	FL 6 S	0.2	5.8
B	5	FL 6 S	0.3	5.7
C	5	FL 6 S	0.4	5.6
8	1	FL 6 S	0.5	5.5
9	1	FL 6 S	0.6	5.4
A	1	FL 6 S	1.0	5.0
7	5	FL 6 S	1.2	4.8
B	1	FL 6 S	1.5	4.5
5	2	ISO 6 S	3.0	3.0
9	2	LFL 6 S	2.0	4.0
6	4	OC 6 S	4.0	2.0
3	3	OC 6 S	4.5	1.5
4	3	OC 6 S	5.0	1.0
A	4	FL 7 S	1.0	6.0
9	6	FL 7 S	2.0	5.0
5	6	OC 7 S	4.5	2.5
D	5	FL 7.5 S	0.5	7.0
C	1	FL 7.5 S	0.8	6.7
E	5	FL 8 S	0.5	7.5
B	4	FL 8 S	1.0	7.0
6	2	ISO 8 S	4.0	4.0
A	2	LFL 8 S	2.0	6.0
6	6	OC 8 S	5.0	3.0
B	2	LFL 8 S	3.0	5.0
F	5	FL 9 S	0.9	8.1
C	4	FL 9 S	1.0	8.0
7	6	OC 9 S	6.0	3.0
0	6	FL 10 S	0.2	9.8
1	6	FL 10 S	0.3	9.7
D	1	FL 10 S	0.5	9.5
2	6	FL 10 S	0.8	9.2
E	1	FL 10 S	1.0	9.0
1	4	FL 10 S	1.5	8.5
C	2	LFL 10 S	2.0	8.0
D	2	LFL 10 S	3.0	7.0
7	2	ISO 10 S	5.0	5.0
2	4	LFL 10 S	4.0	6.0
8	6	OC 10 S	6.0	4.0
5	3	OC 10 S	7.0	3.0
6	3	OC 10 S	7.5	2.5
F	1	FL 12 S	1.2	10.8
D	4	FL 12 S	2.5	9.5
3	4	LFL 12 S	2.0	10.0
0	2	FL 15 S	1.0	14.0
4	4	LFL 15 S	4.0	11.0
7	4	OC 15 S	10.0	5.0
A	6	LFL 20 S	2.0	18.0
E	4	FL 26 S	1.0	25.0



SWITCH	FLASH CODE	ON	OFF	ON	OFF
A	B				
0	A	FL (2) 4 S	0.5	1.0	0.5 2.0
E	B	VQ (2) 4 S	0.2	1.0	0.2 2.6
1	A	FL (2) 4.5 S	0.3	1.0	0.3 2.9
2	A	FL (2) 4.5 S	0.4	1.0	0.4 2.7
3	A	FL (2) 4.5 S	0.5	1.0	0.5 2.5
F	9	FL (2) 5 S	0.2	0.8	0.2 3.8
2	C	FL (2) 5 S	0.2	1.2	0.2 3.4
4	A	FL (2) 5 S	0.4	0.6	0.4 3.6
0	7	FL (2) 5 S	0.5	1.0	0.5 3.0
1	7	FL (2) 5 S	1.0	1.0	1.0 2.0
9	B	Q (2) 5 S	0.3	0.7	0.3 3.7
2	9	Q (2) 5 S	0.5	0.5	0.5 3.5
5	A	FL (2) 5.5 S	0.4	1.4	0.4 3.3
7	8	FL (2) 6 S	0.3	0.6	1.0 4.1
A	A	FL (2) 6 S	0.3	0.9	0.3 4.5
6	A	FL (2) 6 S	0.3	1.0	0.3 4.4
7	A	FL (2) 6 S	0.4	1.0	0.4 4.2
9	9	FL (2) 6 S	0.5	1.0	0.5 4.0
2	8	FL (2) 6 S	0.8	1.2	0.8 3.2
3	7	FL (2) 6 S	1.0	1.0	1.0 3.0
3	9	Q (2) 6 S	0.3	0.7	0.3 4.7
A	9	FL (2) 7 S	1.0	1.0	1.0 4.0
7	B	FL (2) 8 S	0.4	0.6	2.0 5.0
8	A	FL (2) 8 S	0.4	1.0	0.4 6.2
4	7	FL (2) 8 S	0.5	1.0	0.5 6.0
8	8	FL (2) 8 S	0.8	1.2	2.4 3.6
5	7	FL (2) 8 S	1.0	1.0	1.0 5.0
4	C	OC (2) 8 S	3.0	2.0	1.0 2.0
5	C	OC (2) 8 S	5.0	1.0	1.0 1.0
F	B	VQ (2) 8 S	0.2	1.0	0.2 6.6
9	A	FL (2) 10 S	0.4	1.6	0.4 7.6
9	8	FL (2) 10 S	0.5	0.5	1.5 7.5
6	7	FL (2) 10 S	0.5	1.0	0.5 8.0
7	7	FL (2) 10 S	0.5	1.5	0.5 7.5
6	9	FL (2) 10 S	0.5	2.0	0.5 7.0
8	7	FL (2) 10 S	0.8	1.2	0.8 7.2
B	9	FL (2) 10 S	1.0	1.0	1.0 7.0
9	7	FL (2) 10 S	1.0	1.5	1.0 6.5
4	9	Q (2) 10 S	0.6	0.4	0.6 8.4
B	A	FL (2) 12 S	0.4	1.0	0.4 10.2
C	9	FL (2) 12 S	0.5	1.0	0.5 10.0
D	9	FL (2) 12 S	1.5	2.0	1.5 7.0
A	8	FL (2) 15 S	0.5	1.5	2.0 11.0
A	7	FL (2) 15 S	1.0	2.0	1.0 11.0
8	B	Q (2) 15 S	0.2	0.8	0.2 13.8
C	A	FL (2) 20 S	1.0	3.0	1.0 15.0
D	A	FL (2) 25 S	1.0	1.0	1.0 22.0



SWITCH	FLASH CODE	ON	OFF	ON	OFF	ON	OFF
A	B						
7	9	Q (3) 5 S	0.5	0.5	0.5	0.5	2.5
5	9	VQ (3) 5 S	0.2	0.3	0.2	0.3	3.8
0	C	VQ (3) 5 S	0.3	0.2	0.3	0.2	3.7
E	9	VQ (3) 5 S	0.3	0.3	0.3	0.3	3.5
3	C	FL (3) 6 S	0.5	1.0	0.5	1.0	2.5
2	B	FL (2+1) 6 S	0.3	0.4	0.3	1.2	3.5
A	B	Q (3) 6 S	0.3	0.7	0.3	0.7	3.7
F	A	FL (3) 8 S	0.5	1.0	0.5	1.0	4.5
0	B	FL (3) 9 S	0.3	1.0	0.3	1.0	6.1
B	7	FL (3) 9 S	0.8	1.2	0.8	1.2	4.2
B	8	FL (3) 10 S	0.3	0.7	0.3	0.7	7.1
C	8	FL (3) 10 S	0.4	0.6	0.4	0.6	6.8
C	B	FL (3) 10 S	0.5	0.5	0.5	0.5	7.5
C	7	FL (3) 10 S	0.5	1.5	0.5	1.5	5.5
D	B	FL (3) 10 S	0.6	0.6	0.6	0.6	7.0
D	7	FL (3) 10 S	1.0	1.0	1.0	1.0	5.0
3	8	FL (2+1) 10 S	0.5	0.7	0.5	2.1	5.7
8	9	OC (3) 10 S	5.0	1.0	1.0	1.0	1.0
B	B	Q (3) 10 S	0.3	0.7	0.3	0.7	7.7
D	8	FL (2 + 1) 10 S	0.5	0.5	0.5	0.5	6.5
1	B	FL (3) 12 S	0.5	1.5	0.5	1.5	7.5
E	A	FL (3) 12 S	0.5	2.0	0.5	2.0	6.5
E	7	FL (3) 12 S	0.8	1.2	0.8	1.2	7.2
B	6	FL (3) 12 S	1.0	1.0	1.0	3.0	5.0
4	8	FL (2+1) 12 S	0.8	1.2	0.8	2.4	6.0
5	8	FL (2+1) 12 S	1.0	1.0	1.0	4.0	4.0
1	8	FL (2+1) 13.5 S	1.0	1.0	1.0	4.0	5.5
F	7	FL (3) 15 S	0.3	1.7	0.3	1.7	10.7
9	D	FL (3) 15 S	0.4	1.0	0.4	1.0	11.8
0	8	FL (3) 15 S	0.5	1.5	0.5	1.5	10.5
F	8	FL (2+1) 15 S	0.6	0.3	0.6	0.3	11.8
0	9	FL (2+1) 15 S	0.7	0.5	0.7	0.5	10.7
1	9	FL (2+1) 15 S	0.7	0.7	0.7	0.7	10.1
6	8	FL (2+1) 15 S	1.0	2.0	1.0	5.0	5.0
1	C	VQ (3) 15 S	0.1	0.5	0.1	0.5	13.7
4	B	FL (3) 20 S	0.5	3.0	0.5	3.0	12.5
3	B	FL (3) 20 S	0.5	1.5	0.5	1.5	15.5
5	B	FL (3) 20 S	0.8	1.2	0.8	1.2	15.2
6	B	FL (3) 20 S	1.0	1.0	1.0	1.0	15.0



SWITCH	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B								
B	F	VQ (4) 4 S	0.25	0.25	0.25	0.25	0.25	0.25	2.25
B	D	Q (4) 6 S	0.3	0.7	0.3	0.7	0.3	0.7	2.7
8	D	Q (4) 6 S	0.4	0.6	0.4	0.6	0.4	0.6	2.6
1	D	FL (4) 10 S	0.5	1.0	0.5	1.0	0.5	1.0	5.0
2	D	FL (4) 10 S	0.8	1.2	0.8	1.2	0.8	1.2	3.2
F	E	Q (4) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	6.7
B	E	FL (4) 12 S	0.3	1.7	0.3	1.7	0.3	1.7	5.7
4	F	FL (4) 12 S	0.5	0.5	0.5	0.5	0.5	0.5	8.5
C	E	FL (4) 12 S	0.5	1.5	0.5	1.5	0.5	1.5	5.5
3	D	FL (4) 12 S	0.8	1.2	0.8	1.2	0.8	1.2	5.2
A	D	Q (4) 12 S	0.3	0.7	0.3	0.7	0.3	0.7	8.7
4	D	FL (4) 15 S	0.5	1.5	0.5	1.5	0.5	1.5	8.5
8	E	FL (4) 15 S	1.0	1.0	1.0	1.0	1.0	1.0	8.0
7	D	FL (4) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	10.5
D	E	FL (4) 16 S	0.5	1.5	0.5	1.5	0.5	1.5	9.5
C	D	FL (4) 20 S	0.3	3.0	0.3	3.0	0.3	3.0	9.8
5	D	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	1.5	13.5
0	D	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	4.5	10.5
3	F	FL (4) 20 S	1.5	1.5	1.5	1.5	1.5	1.5	9.5
0	F	Q (4) 20 S	0.5	0.5	0.5	0.5	0.5	0.5	16.5
E	E	Q (4) 28 S	0.5	0.5	0.5	0.5	0.5	0.5	24.5
6	F	FL (4) 30 S	0.5	0.5	0.5	0.5	0.5	0.5	26.5

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

SWITCH	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B												
F	D	Q (6) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	4.7
A	F	FL (6) 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	9.7
7	F	FL (6) 15 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	7.0
A	E	FL (6) + LFL 15 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	7.0

SWITCH	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	
A	B															
6	E	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	2.0	5.0
7	E	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	2.0	4.4
2	F	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	2.0	7.0
2	E	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	2.0	7.0
3	E	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	2.0	5.8
8	F	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	2.0	9.4

SWITCH	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	
A	B																			
4	E	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	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	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	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	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	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B								
MORSE CODE ( ) INDICATES LETTER									
7	8	MO (A) 6 S	0.3	0.6	1.0	4.1			
7	B	MO (A) 8 S	0.4	0.6	2.0	5.0			
8	8	MO (A) 8 S	0.8	1.2	2.4	3.6			
B	8	MO (U) 10 S	0.3	0.7	0.3	0.7	0.9	7.1	
C	8	MO (U) 10 S	0.4	0.6	0.4	0.6	1.2	6.8	
D	8	MO (U) 10 S	0.5	0.5	0.5	0.5	1.5	6.5	
9	8	MO (A) 10 S	0.5	0.5	1.5	7.5			
8	9	MO (D) 10 S	5.0	1.0	1.0	1.0	1.0	1.0	
A	8	MO (A) 15 S	0.5	1.5	2.0	11.0			
F	8	MO (U) 15 S	0.6	0.3	0.6	0.3	1.4	11.8	
0	9	MO (U) 15 S	0.7	0.5	0.7	0.5	1.9	10.7	
1	9	MO (U) 15 S	0.7	0.7	0.7	0.7	2.1	10.1	
7	D	MO (B) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5 10.5

## Trouble Shooting

### Problem

### Remedy

Lantern will not activate.	<ul style="list-style-type: none"> <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>• Expose lantern to direct sunlight and monitor operation for several days. 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.</li> <li>• Reducing the light output intensity or duty cycle (flash code) will reduce current draw on the battery.</li> <li>• Ensure solar module is clean and not covered by shading during the day.</li> </ul>



## Avlite Systems Warranty

### Activating the Warranty

Upon purchase, the Avlite Systems warranty must be activated for recognition of future claims. To do this you have two (2) options:

1. **Postal Registration** - please complete the Avlite Systems Warranty Registration Card and return to Avlite within 30 days of your purchase.
2. **Online Registration** - please complete the Online Registration Form at; [www.avlite.com](http://www.avlite.com)

***Avlite Systems will repair or replace your lantern in the event of electronic failure for a period of up to three years from the date of purchase.***

***The unit must be returned to Avlite freight prepaid.***

### Warranty Terms

1. Avlite Systems warrants that any Avlite aviation products fitted with telemetry equipment including but not limited to AIS, GSM, GPS or RF ("Telemetry Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of twelve (12) months from the date of purchase by the original purchaser.
2. Avlite Systems warrants that any rotationally-moulded products ("Roto-Moulded Products") and accessory products ("Accessory Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of twelve (12) months from the date of purchase by the original purchaser.
3. Avlite Systems warrants that any Avlite aviation products other than the Telemetry Products, Roto-Moulded Products and Accessory Products ("Avlite Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of three (3) years from the date of purchase by the original purchaser.
4. Avlite Systems will repair or replace, at Avlite's sole discretion, any Telemetry Products, Roto-Moulded Products, Accessory Products or Avlite Products found to be defective in material and workmanship in the relevant warranty period so long as the Warranty Conditions (set out below) are satisfied.
5. If any Telemetry Products or Avlite Products are fitted with a rechargeable battery, Avlite Systems warrants the battery will be free from defect for a period of one (1) year when used within original manufacturer's specifications and instructions.

### Warranty Conditions

This Warranty is subject to the following conditions and limitations;

1. The warranty is applicable to lanterns manufactured from 1/1/2009.
2. The warranty is void and inapplicable if:
  - a. the product has been used or handled other than in accordance with the instructions in the owner's manual and any other information or instructions provided to the customer by Avlite;
  - b. the product has been deliberately abused, or misused, damaged by accident or neglect or in being transported; or
  - c. the defect is due to the product being repaired or tampered with by anyone other than Avlite or authorised Avlite repair personnel.
3. The customer must give Avlite Systems notice of any defect with the product within 30 days of the customer becoming aware of the defect.
4. Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Typical battery replacement period is 3-4 years. Long term exposure to high temperatures will shorten the battery life. Batteries used or stored in a manner inconsistent with the manufacturer's specifications and instructions shall not be covered by this warranty.
5. No modifications to the original specifications determined by Avlite shall be made without written approval of Avlite Systems.
6. Avlite lights can be fitted with 3<sup>rd</sup> party power supplies and accessories but are covered by the 3<sup>rd</sup> party warranty terms and conditions.

7. The product must be packed and returned to Avlite Systems by the customer at his or her sole expense. Avlite Systems will pay return freight of its choice. A returned product must be accompanied by a written description of the defect and a photocopy of the original purchase receipt. This receipt must clearly list model and serial number, the date of purchase, the name and address of the purchaser and authorised dealer and the price paid by the purchaser. On receipt of the product, Avlite Systems will assess the product and advise the customer as to whether the claimed defect is covered by this warranty.
8. Avlite Systems reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.
9. Input voltage shall not exceed those recommended for the product.
10. Warranty does not cover damage caused by the incorrect replacement of battery in solar lantern models.
11. This warranty does not cover any damage or defect caused to any product as a result of water flooding or any other acts of nature.

### Limitation of Liability

To the extent permitted by section 68A of the *Trade Practices Act 1974* (Cth), the liability of Avlite Systems under this Warranty will be, at the option of Avlite Systems, limited to either the replacement or repair of any defective product covered by this Warranty.

### Limited to Original Purchaser

This Warranty is for the sole benefit of the original purchaser of the covered product and shall not extend to any subsequent purchaser of the product.

### Miscellaneous

Apart from the specific warranties provided under this warranty, all other express or implied warranties relating to the above product is hereby excluded to the fullest extent allowable under law. The warranty does not extend to any lost profits, loss of good will or any indirect, incidental or consequential costs or damages or losses incurred by the purchaser as a result of any defect with the covered product.

### Warrantor

Avlite Systems has authorised distribution in many countries of the world. In each country, the authorised importing distributor has accepted the responsibility for warranty of products sold by distributor. Warranty service should normally be obtained from the importing distributor from whom you purchased your product. In the event of service required beyond the capability of the importer, Avlite Systems will fulfil the conditions of the warranty. Such product must be returned at the owner's expense to the Avlite Systems factory, together with a photocopy of the bill of sale for that product, a detailed description of the problem, and any information necessary for return shipment.

Information in this manual is subject to change without notice and does not represent a commitment on the part of the vendor. Avlite products are subject to certain Australian and world-wide patent applications.



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