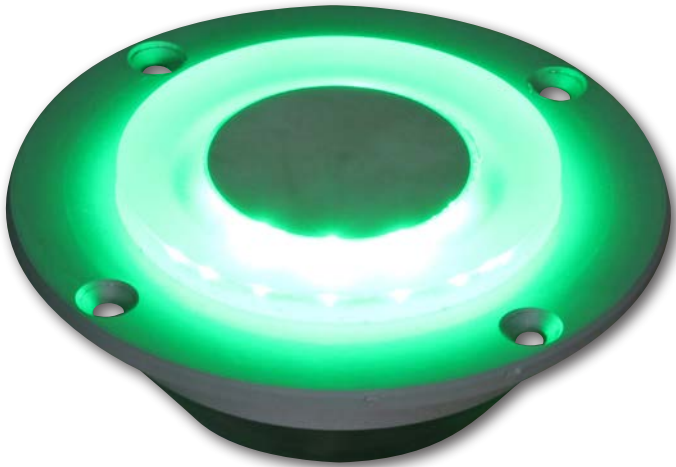


**Avlite**<sup>®</sup>  
www.avlite.com



**AV-HLI2**  
**ICAO & FAA Inset**  
**Helipad Light**  
**Installation & Service Manual**

Version 1.2



Version No.	Description	Date	Approved
1.0	Manual launch	Dec 2016	W.Evans
1.1	General Update	Feb 2017	W.Evans
1.2	Drawing Update	Feb 2017	W.Evans



## Table of Contents

<b>Introduction</b> .....	Page 4
<b>Technology</b> .....	Page 4
<b>AV-HLI2 Models</b> .....	Page 5
<b>Safety Information</b> .....	Page 7
<b>Unpacking, installation, wiring &amp; setup</b> .....	Page 8
Unpacking.....	Page 8
Installation & Wiring.....	Page 9
<b>Maintenance &amp; Servicing</b> .....	Page 11
<b>Trouble Shooting</b> .....	Page 12
<b>Compliance</b> .....	Page 13
<b>Avlite Light Warranty</b> .....	Page 14



## **Introduction**

**Congratulations! By choosing to purchase an Avlite light, you have become the owner of one of the most advanced LED obstruction lights in the world.**

Avlite Systems draws on more than 25 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 9001:2008 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 light.

## **Technology**

***Avlite Systems is a world-class solar lighting systems manufacturer with a proven reputation for rapid, innovative, and agile technology solutions designed specifically for defense, government, civil and humanitarian aid operations in the most remote, toughest environments.***

### **Electronics**

Avlite 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 Avlite lights 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 Avlite products are of a consistent and superior quality.

### **Optical Performance**

Avlite manufactures a range of aviation 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 Avlite's range of innovative designs, with other regional patents pending in Canada, United Kingdom and Europe.



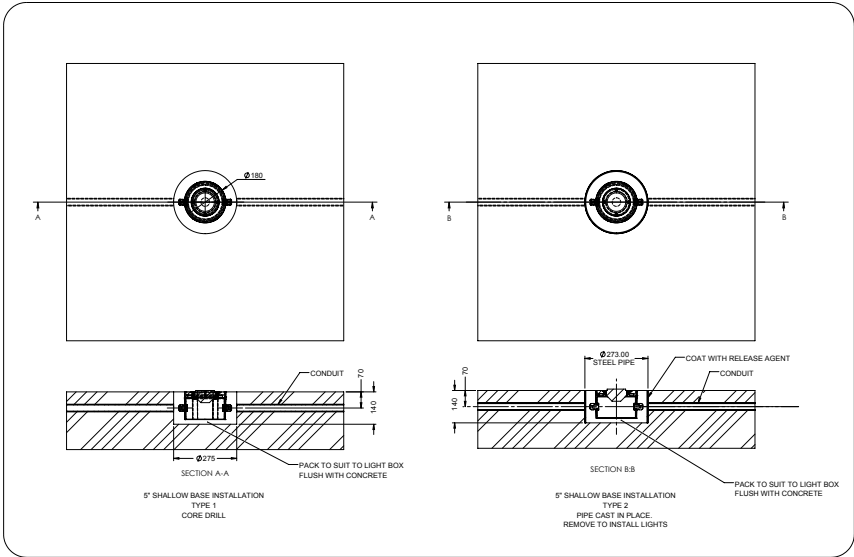
## AV-HLI2 Helipad Inset Light

*The AV-HLI2 is an inset helipad light designed to comply with ICAO Annex 14, Volume II and FAA EB67D requirements in a compact and low profile fixture. The fixture is available in TLOF, FATO, ADI & API configurations to fulfil all surface level and elevated helipad lighting needs.*

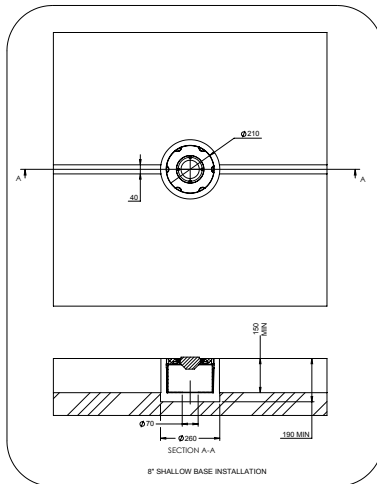
*As an alternative to elevated lights, Avlite's inset helipad lights are an excellent choice for locations where elevated lights are not suitable or can cause interference to passing aircraft and maintenance vehicles. The lights can be dimmed from 100%–0 to suit the application and are available with optional infrared (IR) visibility for pilots using night vision.*

*The inset helipad lights are compatible with existing infrastructure and come with a simple plug and play connection making them simple to install.*

### Inset Light 5 Inch



### Inset Light 8 Inch





## Safety Information

- Install the light in compliance with the effective local electrical code(s).
- Mains power should always be disconnected when work is being done in close proximity to electrical fittings, and electrical work should only be done by a licensed electrician.
- Operate the light only within the indicated electrical ratings and product usage instructions.
- To ensure that the light and peripheral equipment function safely and correctly, use cable in compliance with the effective local electrical code.
- Do not stare at the LED or shine the LED into your eyes or those of another person.
- Do dispose of the product according to the local laws and regulations for your region, for example, at a recycling center that accepts electronic devices.

# Unpacking, Installation, Wiring & Setup

## Unpacking

Unpack all hardware and inspect for damage. If there is any damage, please contact your Avlite Office. Retain original packing material for possible future use in shipping.

## Installation & wiring

Before proceeding with installation or service, make sure the following conditions are met:

- Check the lighting circuit is safe
- Ensure power lines are not 'live' (NO ELECTRICAL HAZARD)
- Avoid touching live circuits!
- Avoid touching any component or any part of the circuitry while the unit is operating. Do not make adjustments to the unit or wiring with the power on.

### ELECTRICAL INSPECTION AND TEST

The inset light is manufactured with a 3 core input fly lead, of default length. One end of the input cable is molded into the light fixture and the other end is terminated with colour coded ferrules. Refer to the table below for details on each conductor and their function.

Ferrule Color Coding	Connection	Function
Red	+24VDC	Input Power
Blue	GND (0V)	Input Power
White	0 -10VDC	Dim

To test the light fixture, connect a 24VDC source to the two input power wires in accordance with table above and apply power, this should result in the light turning on at full (100%) intensity. If dimming is required, connect a variable 0-10VDC source to the remaining conductor. Dimming occurs in accordance with the following table.

Intensity	Voltage
100%	<0.5V
30%	3.5V
10%	8.5V
0% (Off)	>9.5V





## **PREPARATION OF INSTALLATION LOCATION**

The AV-HLI2 can be installed in either a 5" (inch), 8" (inch) or direct mounting configuration.

### **5" Configuration:**

For installation in tarmac or concrete helipads it is recommended to use the Avlite AV-MC-58, 5" (inch) inset shallow base taking into consideration site specific bearing load, leveling and thermal bonding.

For installations using the 5" inset base configuration, the installation location of each light needs to be prepared in accordance with the below mechanical specifications:

### **8" Configuration:**

For installations where there are pre-existing 8" mounting locations or 8" mounting is desired then the Avlite AV-MC-55, 5" to 8", adaptor ring and AV-MC-54, 8" inset shallow base is required.

Note: Reuse of the M10x15 screws is not recommended

For installations using the 8" inset base configuration, the installation location of each light needs to be prepared in accordance with the below mechanical specifications:

### **Direct Mounting:**

For installations where direct mounting of the light fixture to a metal helipad surface is desired, the mounting surface of each light must be prepared in accordance with the following mechanical specification ensuring the mounting surface is level and has adequate heat dissipation characteristics.

### **Example Helipad Installation**

The recommended mechanical layout for the lighting system on an example helipad is detailed below:

## **ELECTRICAL INSTALLATION**

The procedure for connecting the inset light fixture to the corresponding electrical connections is as follows:

- Feed input and output cables through corresponding side mounted gland on inset base
- Connect each conductor of input cable to separate joint connector (not supplied). One for +24VDC, one for GND (0VDC) and one for Dim (0-10V) control line.
- Connect each conductor of output cable to corresponding joint connector
- Connect each conductor of light fly lead to corresponding joint connector as per table
- Tighten each cable gland to ensure sealing

**Note:** Do not cut or modify the fly lead attached to the AV-HLI2 light fixture



## **MECHANICAL INSTALLATION**

### **5" Configuration:**

The procedure for installing an inset light fixture to a 5" base is as follows:

- Ensure the M5 screw holes and flange area on the 5" inset base are clean
- Lower the light fixture onto the inset base, ensuring all electrical connections are properly terminated and fly lead is free and clear of the mounting surface
- Align the screw holes of the inset light fixture with those of the inset base and fasten using silicone greased M10x15 counter sunk screws
- Tighten screws to 3.5 Nm

### **8" Configuration:**

The procedure for installing the adaptor ring onto the inset light fixture and fitting to a 8" base is as follows:

- Ensure the M10 screw holes and flange area on the 8" inset base are clean  
Insert the provided O-ring into the O-ring groove of the adaptor ring
- Lower the light fixture onto the inset base, ensuring all electrical connections are properly terminated and fly lead is free and clear of the mounting surface
- Align the screw holes of the inset light fixture with those of the inset base and fasten using silicone greased M5x12 counter sunk screws
- Tighten screws to 3.5 Nm

### **Direct Mounting:**

The procedure for installing an inset light fixture to a pre-prepared mounting surface is as follows:

- Ensure the M5 screw holes and flange area are clean
- Lower the light fixture onto the mounting surface, ensuring all electrical connections are properly terminated and fly lead is free and clear of the mounting surface
- Align the screw holes of the inset light fixture with those of the mounting surface and fasten using silicone greased M10x15 counter sunk screws
- Tighten screws to 3.5 Nm



## Maintenance & Servicing

Designed to be maintenance free the inset helipad light requires minimal attention, though the following maintenance and servicing information is provided to help ensure the life of your Avlite product.

- Occasional cleaning of the lens may be required using a cloth and warm soapy water.

# Trouble Shooting

Problem	Remedy
Light will not activate.	<ul style="list-style-type: none"> <li>• Remove light from mount</li> <li>• Ensure 24VDC supply source is active</li> <li>• Check that 24VDC is present at joint connector feed the light fixture</li> <li>• Check polarity of supply line wires is correct</li> <li>• Measure voltage of Dim line and check against the table dimming table</li> <li>• If measured voltage on Dim line is less than 0.5V, remove dim line connection and check light functionality</li> <li>• Otherwise replace the light fixture</li> </ul>
Intensity does not match	<ul style="list-style-type: none"> <li>• Remove light from mount</li> <li>• Measure voltage of Dim line and check against the table dimming table</li> <li>• If measured voltage does not match the expected value disconnect the light from the Dim line and re-measure</li> <li>• If measured voltage on the Dim line still does not match expected value, inspect the dim line wiring</li> <li>• Otherwise replace the light fixture</li> </ul>



# Compliance

Compliant to:

- ICAO Annex 14, Volume 2, Heliports, Fourth Edition, July 2013
- FAA Engineering Brief 87



## Avlite Light Warranty V1.3

### Activating the Warranty

Upon purchase, the Avlite Systems warranty must be activated for recognition of future claims. To do this you need to register on-line. 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.***

***Avlite Systems will repair or replace any ancillary or accessory products in the event of failure for a period of up to one year from the date of purchase, as per the terms & conditions below.***

***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 warrants that any Avlite obstruction 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 five (5) years from the date of purchase by the original purchaser.
5. 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.
6. 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 3rd party power supplies and accessories but are covered by the 3rd 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.
12. There are no representations or warranties of any kind by Avlite or any other person who is an agent, employee, or other representative or affiliate of Avlite, express or implied, with respect to condition of performance of any product, their merchantability, or fitness for a particular purpose, or with respect to any other matter relating to any products.

### **Limitation of Liability**

To the extent permitted by acts and regulations applicable in the country of manufacture, 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. Avlite Systems will not be liable to Buyer for consequential damages resulting from any defect or deficiencies in accepted items.

### **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.

Other Avlite Products Available



Solar Aviation Lighting



Helipad Lighting



Obstruction Lighting



Airfield Markers  
& Accessories

Typical Applications

- Temporary & permanent airfield lighting
- Remote, emergency & defence airfield lighting
- Barricade, hazard & perimeter lighting
  - Helipad lighting
- Obstruction lighting

For a complete list of product compliances including ICAO & FAA, please contact Avlite today



Portable Airfield Lighting System



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