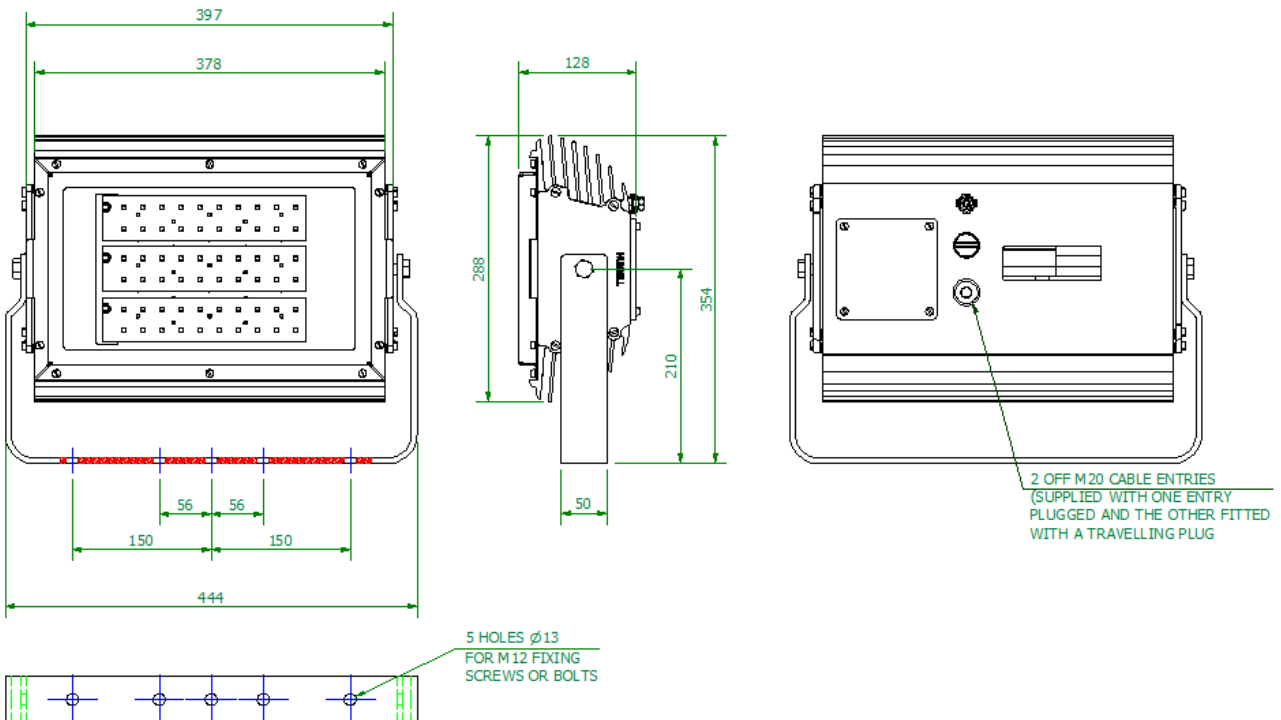




# Arran LED Floodlight Luminaire

## INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

**Important:** Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should be followed at all times and this data should be used as a guide only.




**ARRAN LED FLOODLIGHT (IEx)**  
 ENGLISH

Type Of Protection	Ex nA (non sparking), Ex tb (dust)	
Protection Standards	EN/IEC 60079-0, EN/IEC 60079-15, EN/IEC 60079-31	
Area Classification	Zone 2 areas to ABNT NBR IEC EN60079-10 and installation to ABNT NBR IEC EN60079-14 Zone 21 and Zone 22 areas to ABNT NBR IEC EN60079-10 and installation to ABNT NBR IEC EN60079-14	
Certificate	IEx 15.0271X	
Equipment Coding	Ex nA IIC T* Gc -50°C ≤ Ta ≤ *°C Ex tc IIIC T160°C Dc	Ex tb IIIC T160°C Db -50°C ≤ Ta ≤ *°C
Ingress Protection	IP66	
Photobiological safety of Lamps and Lamp Systems	Risk Group 2 LED product to IEC 62471. Avoid looking at exposed LEDs in operation especially with optical instruments. Eye injury can result.	
<b>WARNING! DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT</b>		

**SPECIAL CONDITIONS FOR SAFE USE**

NONE

**MEGOHM TEST - DUE TO THE SURGE PROTECTION PROVIDED IN THE LUMINAIRE TO PROTECT THE INTERNAL ELECTRONICS AND LEDs, A CIRCUIT WITH THE LED FIXTURE MAY GIVE A FALSE MEGOHMMETER (MEGGAR) READING. IF A MEGOHMMETER TEST IS REQUIRED, THE LED FIXTURE SHOULD BE REMOVED FROM THE CIRCUIT.**

**1.0 Introduction – ARRAN FLOODLIGHT**

The Arran LED Floodlight Luminaire operates from mains voltage.

**Table 1 MODEL VARIATIONS**

CHALMIT MODEL NUMBER	WATTS	Hz	VOLTS	AMPS	T* CLASS AT 40°C	T* CLASS AT 55°C
ARRN/15L/LE/**	122	50/60	120-277	1.0 - 0.5	T6	T5
ARRN/11L/LE/**	81	50/60	120-277	0.7 - 0.3	T6	T5
ARRN/10L/LE/**	66	50/60	120-277	0.6 - 0.3	T6	T5
ARRN/06L/LE/**	53	50/60	120-277	0.5 - 0.2	T6	T5
ARRN/06L/LE/DC/**	53	-	105-250DC	0.6 - 0.3	T6	T5

Fuse & MCB Ratings:- Maximum Inrush Current 34A at 50µs

**2.0 Application**

The luminaire is designed to be safe in normal operation under protection type Ex nA. The luminaire should not be used where there are environmental, vibration or shock conditions above the normal for fixed installations. The gaskets should not be exposed to hydrocarbons in liquid or high concentration vapour states. The luminaire is suitable for applications where Category 3 apparatus can be used. The application is for ignitable gas atmospheres. It is also suitable for Category 2 Dust only environment. Where there is a high risk of mechanical damage a guard should be specified and fitted. (Refer to ABNT NBR IEC 60079-14:2010).



### 3.0 Installation and Safety

#### 3.1 General

There is no health hazards associated with this product whilst in normal use. However, care should be exercised during the following operations. Installation should be carried out in accordance with ABNT NBR IEC 60079-14 or the local hazardous area code of practice, whichever is appropriate, and fitting of specified insulating material to be adhered to where a specific fire resistance rating is required.

In the UK the requirements of the *'Health and Safety at Work Act'* must be met.

Handling and electrical work associated with this product to be in accordance with *the 'Manual Handling Operations Regulations'* and *'Electricity at Work Regulations, 1989'*. Your attention is drawn to the paragraphs

- (i) 'Electrical Supplies',
- (ii) 'Electrical Fault Finding and Replacement' and
- (iii) 'Inspection and Maintenance'. The luminaires are Class 1 and should be effectively earthed.

The luminaires are quite heavy and suitable means of handling on installation must be provided.

Maximum Insulation Resistance Test 500V dc.

Guards and External Reflector can be supplied with or fitted retrospectively, the guard is to protect glass if there is a higher than normal risk of mechanical damage. The guard and External Reflector cannot be fitted together.

This LED Floodlight luminaire has passed thermal shock testing during certification, it is still advisable to mount the Floodlight in locations to reduce the possibility of thermal shock.

Certification details on the rating plate must be verified against the application requirements before installation.

The information in this leaflet is correct at the time of publication. The company reserves the right to make specification changes as required.

#### 3.1.1 Use in Combustible Dust Atmospheres

Where the equipment is used in ignitable dust atmospheres reference must be made to the selection and installation standards in order that the equipment is used correctly. In particular this applies to the de-rating of surface temperature for use where dust clouds may be present. Dust layers should not be allowed to accumulate on the fitting surface and good housekeeping is required for safe operation. Dust in layers has the potential to form ignitable clouds and to burn at lower temperatures. Refer to ABNT NBR IEC 60079-10 & ABNT NBR IEC 60079-14 for additional details of selection and installation.

#### 3.1.2 Hybrid Mixtures – Gas plus Dust.

Where Hybrid mixtures exist as defined in EN1127 as a potentially explosive atmosphere, consideration should be given to verifying that the maximum surface temperature of the luminaire is below the ignition temperature of the hybrid mixture.

#### 3.1.3 Floodlight Orientation in the presence of combustible dust.

The luminaire was tested in accordance with ABNT NBR IEC 60079-31. As the build up of the dust layer can never be guaranteed not to occur, the luminaire must not be mounted in an orientation where the dust could lie on the glass. The temperature on the glass is the hottest point on the luminaire and any obstruction of the radiation from the luminaire would cause the surface temperature to increase.

### 3.2 Tools

4mm A/F socket keys

4mm flat blade screwdriver

Suitable spanners for installing cable glands

Pliers, knife, wire strippers/cutters



### **3.3 Electrical Supplies**

A maximum voltage variation of +6%/-6% on the nominal is expected. The safety limit for T rating is +10%.

### **3.4 Light Source**

The luminaire is fitted with LEDS that can last 80,000 hours depending on ambient temperatures. Therefore depending on the functionality of the fitting replacement of LED's will be rare /unnecessary. If the LED assembly needs replaced refer to

#### **4.2 LED Replacement.**

### **3.5 Mounting**

Luminaires should be installed where access for maintenance is practical and in accordance with any lighting design information provided for the installation. This will usually consist of aiming points and aiming angles. Mounting arrangements should be secured with lock washers or self-locking nuts and bolts.

### **3.6 Cabling and Cable Glands**

#### **3.6.1 Cable Glands**

The installer and user must take responsibility for the selection of cables, cable glands and seals.

The product is certified for INMETRO and to comply with the certification for installation cable glands and sealing plugs must be "Geração E" certified.

Cable glands and sealing plugs when installed must reliably maintain the IP rating of the enclosure IP66.

The cable gland must withstand an impact value of 7Nm where the risk of mechanical damage is high or 4Nm where the risk of mechanical damage is low.

Sealing plugs must be similarly rated and a tool must be used for their removal. Where the cable is not reliably clamped externally to the apparatus, the cable gland must clamp the cable against a pull in Newtons of 20x the cable OD in mm for non-armoured cable and 80x the cable OD for armoured cable. Where brass cable glands are used in a corrosive environment cadmium or nickel plating should be used. Two tapped cable entries are provided, one with a plug and seal suitable for permanent use, the other has a travelling plug. M20 x 1.5 entries are standard, other sizes are available on request up to M25 x 1.5p.

#### **3.6.2 Cable**

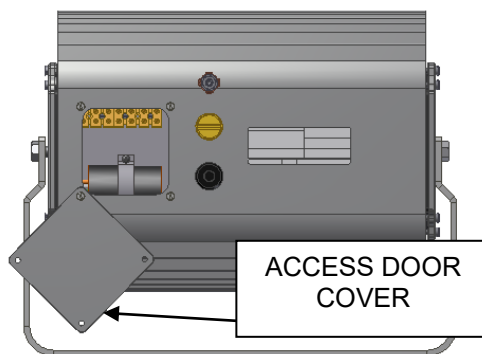
The temperature ratings of the entries at 55°C ambient requires cable rated at 90°C. Cables rated at 35°C above ambient are suitable for use at lower ambient installations.



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### 3.6.3 Cable Connection

The cable connections shall only be installed and wired with cable in an ambient temperature of  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ . Remove access door cover on the back of luminaire. Loosen and remove all but one of the access door captive screws. Rotate access door to allow for entry into fixture. The maximum conductor size is  $6\text{mm}^2$ . Internal earth point is provided next to the main terminal block. The standard looping cable size is up to  $6\text{mm}^2$ . The retaining screws are captive and should be re-greased as required. The conductors should be bared back so that they make full contact in the terminals, but the bare conductor should not be more than 1mm beyond the terminal. Unused terminal screws should be tightened. The core must be identified by polarity and connected in accordance with the terminal markings. Before re-fitting the cover, a final check on the correctness of connections should be made. Cover bolt torque 2 Nm.



### 4.0 Inspection and Maintenance

Individual organisations will have their own procedures for inspection and maintenance. What follows are guidelines based on ABNT NBR IEC 60079-17 and on our experience. Maintenance work and fault finding must be performed by competent personnel under an appropriate permit to work and with the apparatus isolated. Frequency of maintenance will depend on experience and the operating conditions.

**Luminaire should not be opened when an explosive atmosphere is present.**

- 1 Check if any LED's have failed (not lit).
- 2 The LEDs are mounted on boards, if there is 3 or more LED's not working on one board the light output will have dropped to a level where the LED board may need replaced. Refer to **4.2 LED Replacement**.
- 3 Check for mechanical damage/corrosion.
- 4 Check for loose connections including earthing.
- 5 Check for undue accumulations of dust or dirt.
- 6 Verification of tightness of fixing, glands, blanking plugs etc.
- 7 Check for unauthorised modifications.
- 8 Check condition of enclosure gaskets and fastenings.
- 9 Check for any accumulation of moisture.
- 10 Clean the lampglass.
- 11 Check that mountings are secure.
- 12 If there is suspicion that the luminaire has suffered mechanical damage, a stringent workshop check should be made.

**Important:** Where spares are needed, these must be replaced with manufacturer parts. No modifications should be made without the knowledge and approval of the manufacturer.

### 4.1 Electrical Fault Finding and Replacement

Any fault finding must be done by a competent electrician with the luminaire isolated and if carried out with the luminaire in place, under a permit to work. Fault finding is by substitution with known good components.



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### 4.2 LED Replacement.

The need and frequency of replacing LED's be dependent on the functionality of the fitting. If it is continually running at high ambient temperatures it will affect the frequency of LED replacement. If it is necessary to replace the LED's, the LED's are mounted on boards that can be replaced individually. (The boards with LED's supplied by Chalmit ). Remove cover assembly.

Removal of LED assembly is as follows:

1. Unscrew 5 off screws that secure the board to the casting.
2. Carefully lift the plate and disconnect push in connector.

Replacement of LED assembly is the reverse of the removal.

Replace Front cover and fully tighten all bolts.

### 5.0 Disposal of Material

The unit is mostly made from incombustible materials. The control gear contains electronic components and synthetic resin. All these may give off noxious fumes if incinerated. Care must be taken to render these fumes harmless and avoid inhalation. Any local regulations concerning disposal must be complied with. Any disposal must satisfy the requirements of the WEEE directive [2012/19/EU] and therefore must not be treated as commercial waste.



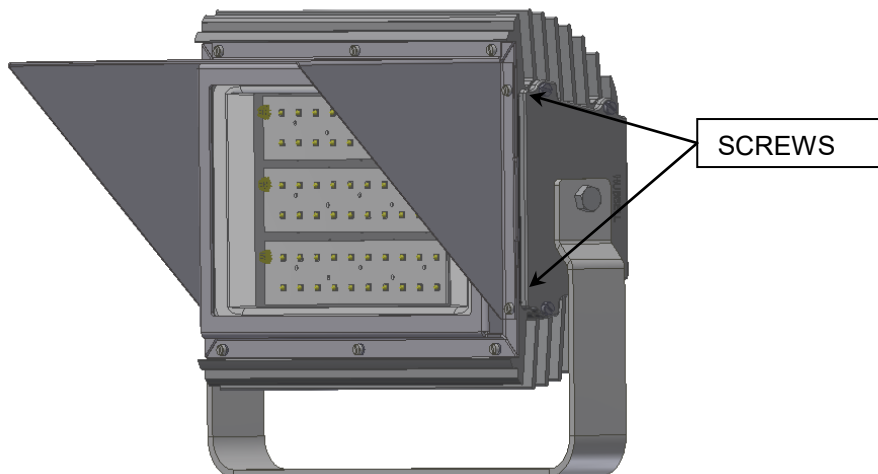
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### Directions for Installation of Accessories

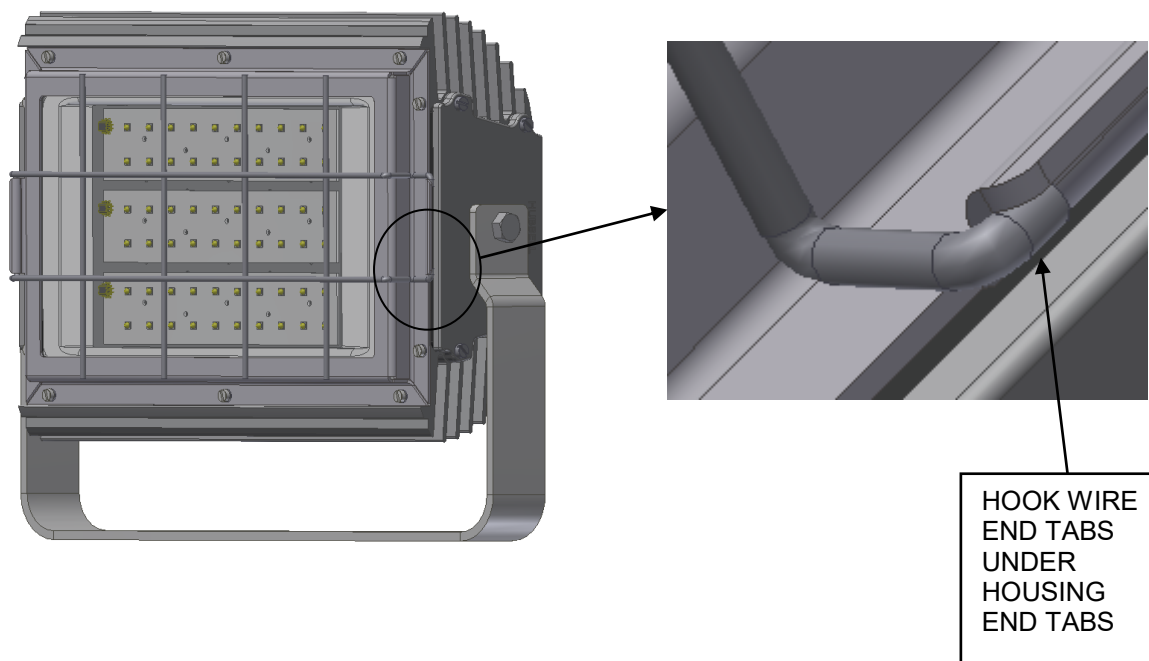
Note: Reflector and Guard cannot be used simultaneously

**WARNING:** Ensure the supply circuit is off before starting installation.

To install reflector, carefully remove the 7 screws provided in housing that align with the locations of the holes on the reflector and retain the screws. Place the reflector into position, lining up the holes in the reflector with the holes on the lens housing. Reinstall the removed 7 screws into the existing hole location, and tighten to secure. **CAUTION** - All screws must be properly installed to maintain the integrity of the lens gasket seal.



To install lens assembly guard, verify that the luminaire is completely assembled. Install lens guard on lens assembly by hooking the guard's end tabs under the luminaire housing's end tabs. Verify a tight attachment.




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To comply with the Waste Electrical and Electronic Equipment directive 2012/19/EU the apparatus cannot be classified as commercial waste and as such must be disposed of or recycled in such a manner as to reduce the environmental impact.

**Chalmit Lighting is a leading supplier of Hazardous Area lighting products**

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**For technical support, please contact: [techsupport@chalmit.com](mailto:techsupport@chalmit.com)**

Note: Chalmit Lighting reserves the right to amend characteristics of our products and all data is for guidance only.



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