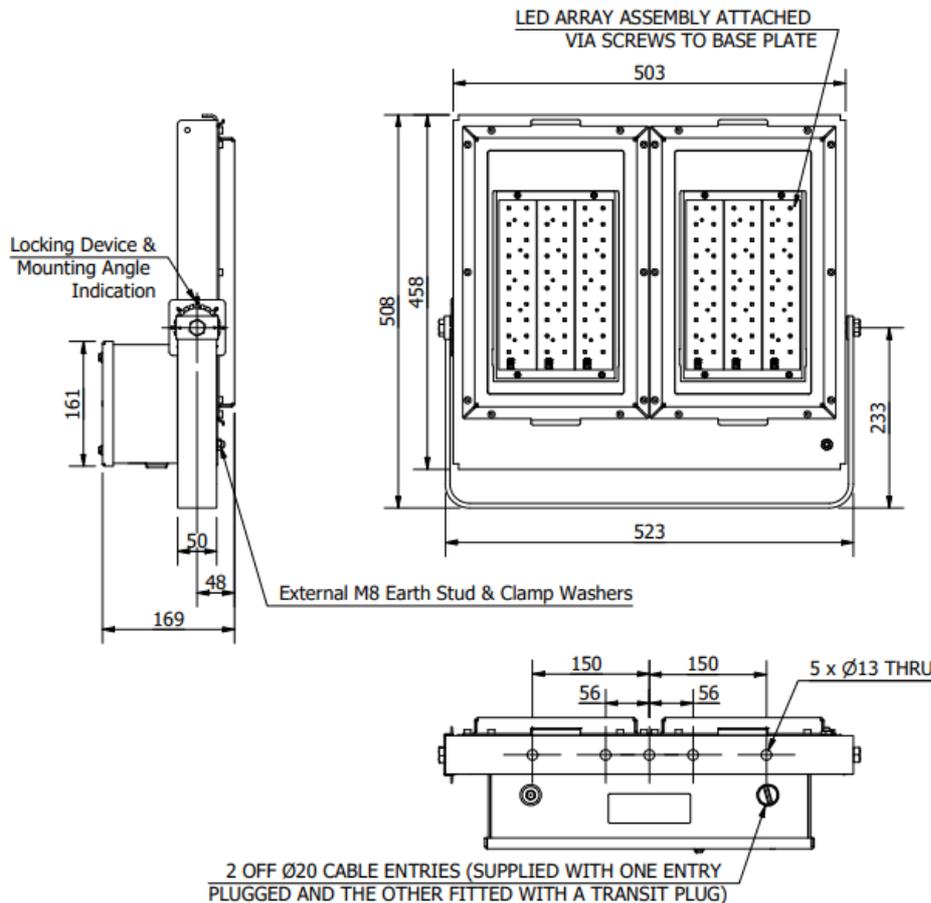


# Arran High Output LED Floodlight Luminaire

ATEX & IECEx and UKEX

## 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.



Specification

Type of Protection	Ex ec (increased safety), Ex tc (dust)
Protection Standards	EN/IEC 60079-0, EN/IEC 60079-7, EN/IEC 60079-31
Area Classification	Zone 2 areas to (IEC) EN60079-10-1. Zone 22 area to (IEC) EN60079-10-2.
Installation	(IEC) EN60079-14
Certificate	IECEX Certificate of Conformity IECEX CML17.0026X Type Examination Certificate CML17ATEX4044X  Type Examination Certificate CML 21UKEX3504X
Equipment Coding	Ex ec IIC T4 Gc -50°C ≤ Ta ≤ *°C (* refer to table for details) Ex tc IIIC T135°C Dc
ATEX/UKEX Coding	Ⓔ II 3 GD
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>	
  	<p>The CE marking of this product applies to "The Electrical Equipment (Safety) Directive", "The Electromagnetic Compatibility Directive", the "Waste Electrical and Electronic Equipment Directive" and the "Equipment and Protective Systems intended for use in Explosive Atmospheres Directive". [2014/35/EU, 2014/30/EU, 2012/19/EU and 2014/34/EU respectively].</p> <p>The UKCA marking of this product applies to "The Electrical Equipment (Safety) Regulations 2016", "The Electromagnetic Compatibility Regulations 2016", the "Waste Electrical and Electronic Equipment Regulations 2012" and the "Equipment and Protective Systems intended for use in Explosive Atmospheres Regulations 2016"</p> <p>The Equipment is declared to meet the provisions of the ATEX directive (2014/34/EU) by reason of the Type Examination/EU Type Examination and meets the UK statutory requirements SI 2016 No.1107 and compliance with the Essential Health and Safety Requirements. M Poutney Technical Manager</p>

**SPECIAL CONDITIONS FOR SAFE USE**

1. The equipment is not capable of withstanding the electric strength test required by clause 23.2.1 of EN/IEC 60079-15: 2010 (2U+1000V) due to internal transient protection devices. This must be taken into account when installing the equipment.
2. Terminals shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C

**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 HIGH OUTPUT FLOODLIGHT**

The Arran High Output LED Floodlight Luminaire operates from mains voltage.

**Table 1 MODEL VARIATIONS**

Power Factor > 0.9 Power is constant over voltage range



CHALMIT MODEL NUMBER	Wattage	Tamb T*°C	T Class	Dust Rating °C	Cable Rating °C	Cable Rise °C	Hz	Voltage Vac	Voltage Vdc	Current Amps
ARHN/40L/LE/**	389	40	T4	135	90	24	50/60	120-277	140-273	3.32 -1.44A
		55								
ARHN/31L/LE/**	254	40	T4	135	90	24	50/60	120-277	140-273	2.15 – 0.93A
		55								
ARHN/22L/LE/**	171	40	T4	135	90	24	50/60	120-277	140-273	1.45 - 0.63A
		55								

## 2.0 Application

The luminaire is designed to be safe in normal operation under protection type Ex ec. 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. Where there is a high risk of mechanical damage a guard should be specified and fitted. (Refer to EN 60079-14:2010).

**The presence of certain chemicals in the explosive atmosphere may cause a chemical reaction with non-metallic materials such as the polycarbonate diffuser and silicone gaskets that could have detrimental effect on their performance. Chemical compatibility is highly dependent on concentration, temperature, humidity and other environmental conditions. The end user will assume responsibility for evaluation of gaseous or direct contact compatibility at their site prior to product installation. If in doubt please contact Chalmit sales.**

## 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 *EN/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 EN(IEC) 60079-10-2 & EN(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 EN/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%.

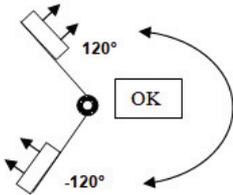
## 3.4 Light Source

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.

Dust applications limit angle between 120° and -120° to minimise build-up.



## 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 ATEX, IECEx and UKEX and to comply with the certification for installation cable glands and sealing plugs must be ATEX, IECEx or UKEX certified depending on site requirements.

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. Entry cables must be suitable for 24°C cable rise minimum above ambient.

### 3.6.3 Cable Connection

The cable connections shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C. Unfasten gearbox lid screws then carefully remove lid to be retained by hanging strap. The maximum conductor size is 6mm<sup>2</sup>. Internal earth point is provided next to the mains terminal block. The standard looping cable size is up to 6mm<sup>2</sup>. 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 *EN/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 lamp glass.
- 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.

### 4.2 LED Replacement.

The need and frequency of replacing LED's be dependent on the functionality of the Shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C 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 LED boards are supplied by Chalmit). Remove cover assembly.

Removal of LED assembly is as follows:

1. Disconnect the LED supply to the LED pcb.
2. Unscrew 5 off screws that secure the board to the casting.
3. Carefully lift the plate.

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 Regulations 2012 ] and therefore must not be treated as commercial waste.



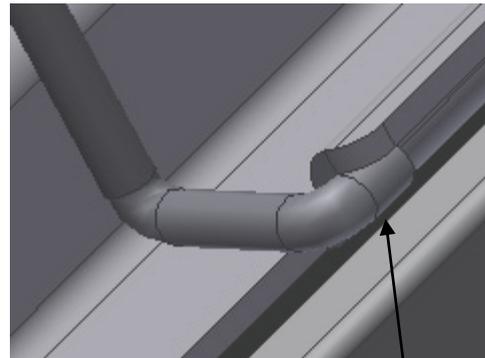
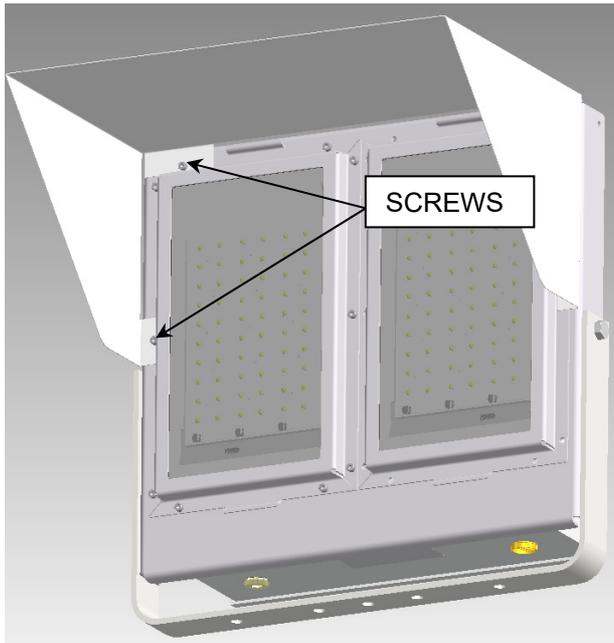
To comply with the Waste Electrical and Electronic Equipment directive 2012/19/EU and Regulations 2012 the apparatus cannot be classified as commercial waste and as such must be disposed of or recycled in such a manner as to reduce the environmental impact.

**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 4 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 4 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.



HOOK WIRE  
END TABS  
UNDER  
HOUSING  
END TABS

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.

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

	<p><b>CHALMIT LIGHTING</b> PO Box 5575 Glasgow, G52 9AP Scotland</p>	
<p>Telephone: +44 (0) 141 882 5555 Fax: +44 (0) 141 883 3704 Email: info@chalmit.com Web: www.chalmit.com</p>	<p>Registered No: 669157 Registered Office: Cannon Place 78 Cannon Street London EC4N 6AF UK</p>	

**For technical support, please contact: techsupport@chalmit.com**

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



	<b>EU/UK-Declaration of conformity</b>		
	<b>UE-Déclaration de conformité</b>		
	<b>EU-Konformitätserklärung</b>		
Manufacturer	Chalmit	Address	388 Hillington Road, Glasgow. G52 4BL Scotland UK
Product	Arran High Output LED Floodlight.		
Notified Body	CML B.V. 2776		
Type Examination Certificate	CML17ATEX4044X		
Approved Body	Eurofins CML 2503		
Type Examination Certificate	CML 21UKEX3504X		
ATEX/UKEX Coding	II 3 GD		
ATEX/UKEX Classification	Group II Category 3 GD		
Equipment Coding	Ex ec IIC T* Gc Ex tc IIC T135°C Dc IP6X		
Ingress Protection	IP66		
The technical basis, with respect to equivalence of			
La base technique, en ce qui concerne l'équivalence de			
Die technische Grundlage hinsichtlich der Normen			
Protection Standards EN 60079-0, EN 60079-7, EN 60079-31			
Area Classification EN 60079-10-1, EN 60079-10-2.			
of compliance with the EHSRs is valid as there are no changes which materially affect the state of technological progress of the product.			
en conformité avec les EESS est valide puisqu'il n'y a aucun changement qui affecte matériellement l'état de l'évolution technologique du produit.			
zur Erfüllung der GSGA ist gegeben, da keine Änderungen erfolgt sind, die einen Einfluss auf den technischen Stand des Produkts haben.			
Terms of the directive:		Standard & Date Certified to	Standards Date Declared to
Prescription de la directive:		Standard & date certifiée à	Normes date Déclaré
Bestimmungen der Richtlinie:		Standard & Datum Zertifiziert nach	Standards Datum erklärt
2014/34/EU SI 2016 No.1107	Equipment and protective systems intended for use in potentially explosive atmospheres.	EN 60079-0: A11 COR3: 2013 EN 60079-7: 2015	
2014/34/UE	Appareils et les systèmes de protection destinés à être utilisés en atmosphères potentiellement explosibles.	EN 60079-31: 2014	
2014/34/EU	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsfähigen Bereichen.		
2014/30/EU Regulations 2016	Electromagnetic compatibility	EN 55015 : 2019	
2014/30/UE	Compatibilité électromagnétique	EN 61547 : 2009	
2014/30/EU	Elektromagnetische Verträglichkeit	EN 61000-3-2 : 2019	
2014/35/EU Regulations 2016	Low voltage equipment	EN 60598-1 : 2015	
2014/35/UE	Équipements électriques à bas voltage	EN 60598-2-5 : 2015	



2014/35/EU	Niederspannungsgeräte / -systeme	EN 60529 : 1992+A2:2013	
2012/19/EU Regulations 2012	Waste of electrical and electronic equipment		
2012/19/UE	Déchets d'équipements électriques et électroniques		
2012/19/EU	Entsorgung der elektrischen und elektronischen Geräte / Systeme		
2011/65/EU Regulations 2012	RoHS II Directive		

On behalf of the Chalmit, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms to all technical and regulatory requirements of the above listed directives.

En tant que représentant du fabricant Chalmit, je déclare qu'à la date où les équipements accompagnant cette déclaration sont mis sur le marché, ceux-ci sont conformes à toutes les dispositions réglementaires et techniques des directives énumérées ci-dessus.

Hiermit bestätige ich, im Namen von Chalmit, dass am Tag der Lieferung des Produkts/der Produkte zusammen mit dieser Erklärung das Gerät/die Geräte alle technischen und regulativen Anforderungen der oben aufgeführten Direktiven erfüllt.

Name and Date Mark Poutney 30/11/2021  
Nom et Date  
Name und Datum

Technical Manager  
Directeur technique  
Technischer Leiter

Quality Assurance Notification by: **SGS Fimko OY**  
Notification d'assurance qualité par: **0598**  
Qualitätssicherungsnotifikation durch:  
  
UKCA Quality Assurance Notification by: **SGS Fimko OY**  
**0598**

Quality Management System Accreditation: **ISO 9001**  
Système de Management Qualité Accréditation:  
Qualitätsmanagementsystem Akkreditierung: **ISO 14001**  
Environmental Management System. **by/par/durch**  
Système de gestion de l'environnement. **Lloyd's Register**  
Umwelt kontroll system. **LRQ 4005876**  
**Certificate No./Certificat N°/Zertifikat Nr.**