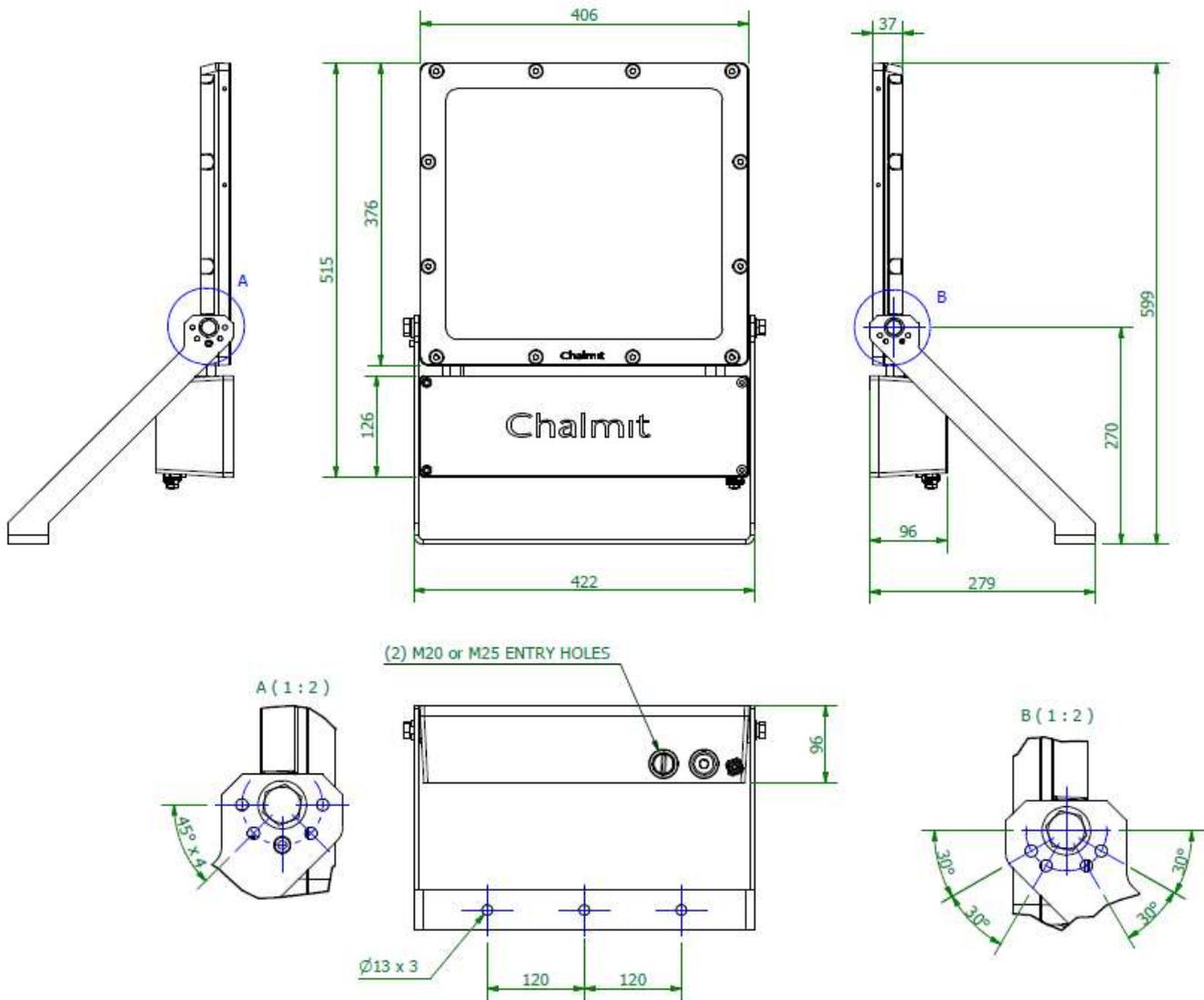




# Evolution X LED Floodlight Luminaire

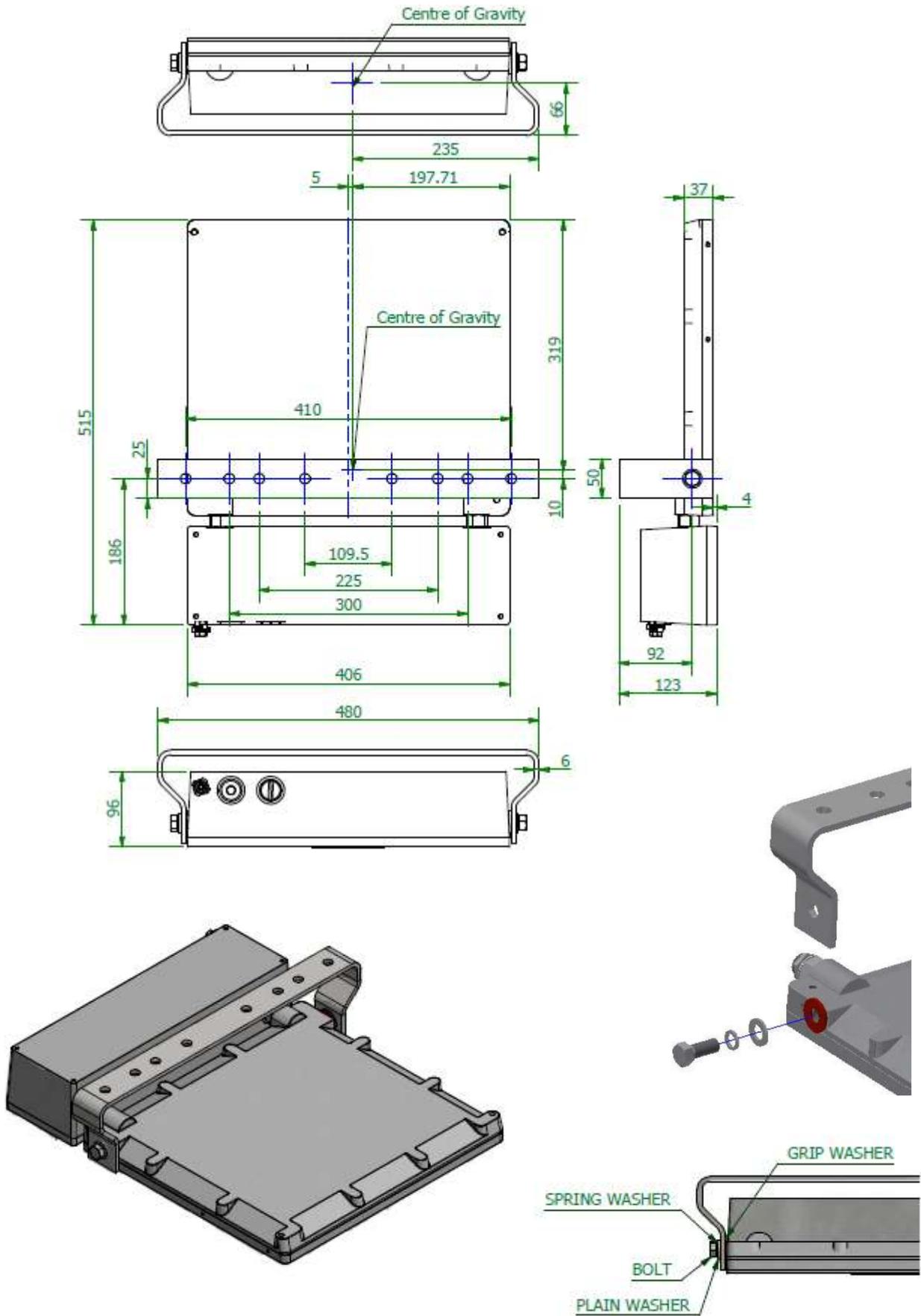
## INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

**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.



**THE EVOLUTION X STIRRUP BRACKET HAS PRE-DEFINED FIXING ANGLES ALLOWING YOU TO AIM THE FLOODLIGHT AT INCREMENTS OF 30° OR 45° PLEASE REFER TO DIAGRAM ABOVE**

## PENDANT MOUNT INSTALLATION



## Specification

Type of Protection	Ex db (flameproof optic lens and LED driver), Ex eb (increased safety LED heatsink and gear-box housing), Ex tb (dust LED heatsink and gearbox housing)
Protection Standards	ABNT NBR IEC 60079-0, 60079-1, 60079-31 IEC 60079-7
Area Classification	Zone 1 areas to ABNT NBR IEC EN60079-10-1. Zone 21 area to ABNT NBR IEC EN60079-10-2.
Installation	ABNT NBR IEC EN60079-14
Certificate	IEEx 21.0009X
Equipment Coding	Ex db eb IIB+H2 T* Gb $-55^{\circ}\text{C} \leq \text{Ta} \leq ^{\circ}\text{C}$ Ex tb IIIC T** $^{\circ}\text{C}$ Db (* and ** refer to table for details)
Ingress Protection	IP66/ 67
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**

1. The equipment is not capable of withstanding the electric strength test required by clause 23.2.1 of ABNT NBR IEC 60079-15 (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  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
3. The optic flamepaths are not intended to be repaired, contact the manufacturer.

**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 – EVOLUTION X LED FLOODLIGHT**

The Evolution X LED Floodlight Luminaire operates from mains voltage.

**Table 1 MODEL VARIATIONS**

Voltage 110-277 Vac Voltage 140-273 Vdc Frequency 50/60 Hz Power Factor >0.9								
CHALMIT MODEL NUMBER	Wattage	Output lm	Tamb $^{\circ}\text{C}$	T* Class	T** Dust Rating $^{\circ}\text{C}$	Cable Rating $^{\circ}\text{C}$	Cable Rise $^{\circ}\text{C}$	Current Amps
EVXB/40L/LE/**	375	40052	40	T5	100	90	20	1.4 - 3.5
			60	T4	135			
EVXB/30L/LE/**	253	29433	40	T5	100	90	20	0.9 - 2.3
			60	T4	135			
EVXB/20L/LE/**	188	20980	40	T5	100	90	20	0.7 - 1.7
			60	T4	135			

**2.0 Application**

The luminaire is designed to be safe in normal operation under protection type Ex eb. 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 2 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 ABNT NBR IEC 60079-14).

**The presence of certain chemicals in the explosive atmosphere may cause a chemical reaction with non-metallic materials such as the 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.**

## 2.1 Storage

Store the luminaires in a cool dry place away from moisture and condensation.

## 2.2 Transport and Packaging

Luminaires are individually packed and placed on a wooden pallet.

## 3.0 Installation and Safety

Only authorized and competent personnel to be used.

### 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.

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. Specifically 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 60079-10-2 & 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. The temperature on the back of the LED HEATSINK is the hottest point on the luminaire any obstruction such as dust build-up can hinder heat dissipation and increase temperature of the LED in turn reduces LED lifespan. Any obstruction or dust build-up on the glass will also 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 120,000 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 contact manufacturer.

### 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.

**CHECK 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 dual certified for INMETRO and to comply with the certification for installation cable glands and sealing plugs must be Certified "Geração E".

Cable glands and sealing plugs when installed must reliably maintain the IP rating of the enclosure IP66/67.

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 20°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 ABNT NBR IEC60079-17 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.**

The service life of the luminaire is 15 years. (120,000 hours of free service at 25°C).

- 1 Check if any LED's have failed (not lit).
- 2 The LEDs are mounted on boards, if there are total of 24 or more LED's not working the light output will have dropped to a level where the LED board may need replaced, contact manufacturer.
- 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.

**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.



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**

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

**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.