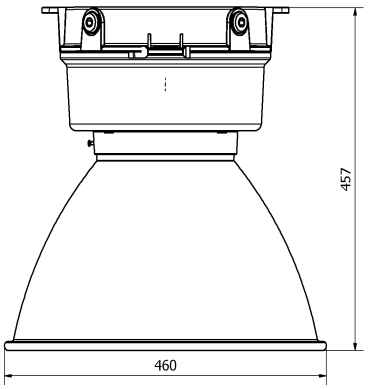
Eclipse II - Wellglass Luminaires (Ex nA)

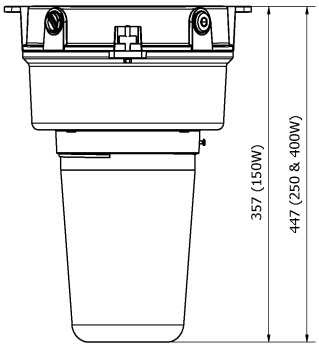
ATEX & IECEx

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

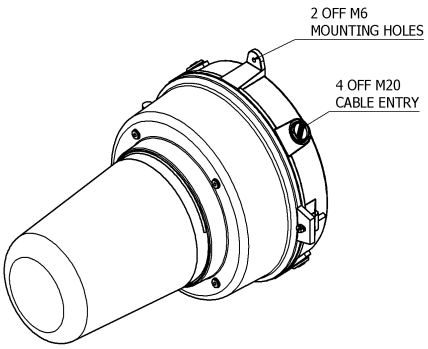
Important: Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should be followed at all times and this data should be used as a guide only.

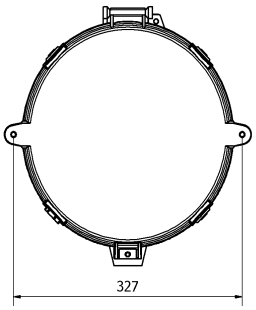


CEILING MOUNT WITH ENCLOSED REFLECTOR



CEILING MOUNT





0.0 Specification	
Type Of Protection	Ex nA, tb, (non-sparking, dust).
Protection Standards	(IEC) EN 60079-0 :2012 + A11:2013, (IEC) EN 60079-15 :2010, (IEC) EN 60079-31 :2014.
Area Classification	Zone 2 areas to EN 60079-10-1, Zone 22 areas to EN 60079-10-2.
Installation	(IEC) EN 60079-14
Certificate	IECEx Certificate of Conformity IECEx QPS 15.0006X EU Type Examination Certificate CML 15ATEX4101X / CML 15ATEX3102X
Equipment Coding	Ex nA IIC T* Ta* Gc Ex tb IIIC T90°C Ta -40°C to *°C Db IP66 (T and amb values see table 1 for details)
ATEX Coding	⟨Ex⟩ II 3G ⟨Ex⟩ II 2D
Ingress Protection	IP66 to EN 60529
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.
WARNING! DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT	
CE Mark CE 0518	The CE marking of this product applies to "The Electrical Equipment (Safety) Regulations 2006", "The Electromagnetic Compatibility Regulations 2004", the "Waste Electrical and Electronic Equipment Regulations 2006" and the "Equipment and Protective Systems intended for use in Explosive Atmospheres Regulations 1996". [This legislation is the equivalent in UK law of EU directives 2014/35/EU, 2014/30/EU, 2012/19/EU and 2014/34/EU respectively]. The Equipment is declared to meet the provisions of the ATEX directive (2014/34/EU) by reason of the Type Examination and compliance with the Essential Health and Safety Requirements. M Poutney Technical Manager

SPECIAL CONDITIONS FOR SAFE USE

The wellglasses form an enclosure when fitted in accordance with the manufacture's instructions. Silicone grease shall be applied to the base of the wellglass or the silicone seal and hand tightened and then tightened a further 10 degrees.

The symmetrical refractor is suitable only for areas with a low risk of mechanical impact.

Cable entry devices must be able to withstand a 7J impact test and maintain the ingress protection rating of the enclosure.

1.0 Introduction - ECLIPSE II Wellglass

This installation leaflet describes the Eclipse II LED range of Zone 2 and Zone 22 wellglass luminaires. The Eclipse II is manufactured from painted corrosion resistant aluminium alloy with a toughened glass globe and silicone rubber gaskets. The integral control gear and LED's are contained within an IP66 enclosure and is classified as Ex nA.

2.0 Application

The luminaire is designed to be safe in normal operation; type Ex n luminaires should not be operated in an ambient temperature in excess of the rated ambient even for a short period.
The luminaire should not be used in conditions 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 Zone 2 apparatus is used. The application is for ignitable gas atmospheres and the presence of combustible dust. The IECEx type examination does not address suitability for portable applications.

Table 1: Model Variations

CHALMIT MODEL NUMBER	WATTS	Hz	VOLTS	AMPS	T* CLASS AT +40°C	T* CLASS AT +55°C
EC2N/06L/LE/**	47	50/60	120-277	0.4 - 0.2	T4	T4
EC2N/09L/LE/**	73	50/60	120-277	0.6 - 0.3	T4	T4
EC2N/12L/LE/**	98	50/60	120-277	0.8 - 0.3	T4	T4
EC2N/16L/LE/**	138	50/60	120-277	1.1 -0.5	T4	T140˚C

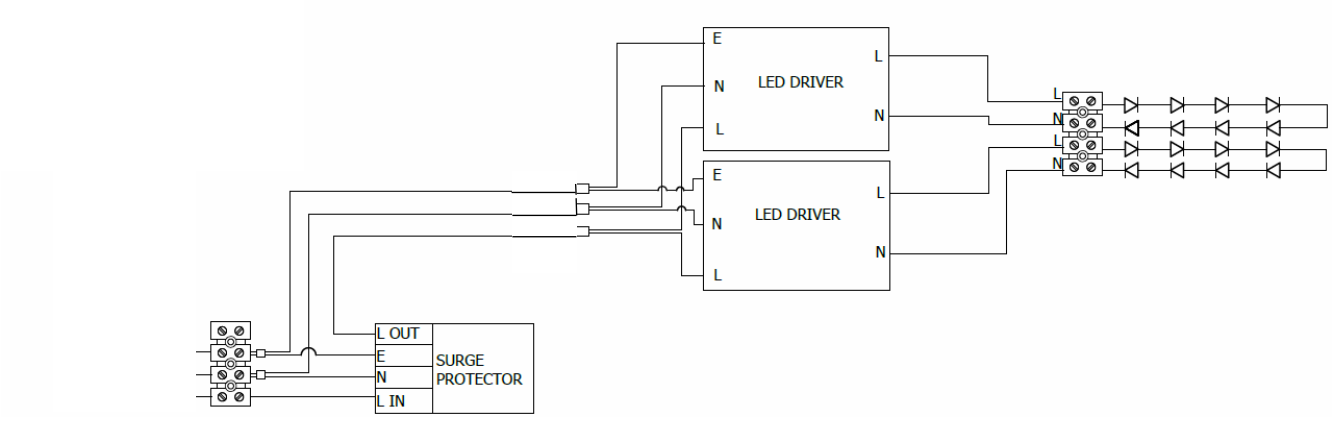
Power factor ≥ 0.90 at 120Vac-277Vac, 100% Load.

Terminals 6mm² as standard, looping has current limit of 16A.

Tamb Storage -40°C to +80°C

Storage Luminaires should be stored in cool dry conditions preventing ingress of moisture and condensation

Fuse and MCB ratings It is recommended that for selection of MCBs users should consult the MCB manufacturer as this unit contains electronic gear. The electronic control gear has a nominal value of inrush current of 60A for 1ms.



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

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. As the build up of the dust layer can never be guaranteed not to occur, 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. Dust in layers has the potential to form ignitable clouds and to burn at lower temperatures.
Refer to EN 60079-10-2 and EN60079-14 for additional details of selection, installation and maintenance.

3.1.2 Hybrid Mixtures – Gas and Dust

Where Hybrid mixtures exist as defined in EN1127-1 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.

3.2 Tools

Strap wrench, 3mm and 5mm flat blade screwdriver.
Pliers, knife, wire strippers/cutters.
A spanner suitable for fitting cable glands.

3.3 Electrical Supplies

The supply voltage and frequency should be specified when ordering a maximum voltage variation of +6%/-6% on the nominal is expected. (The safety limit for T rating is +10%). Luminaires should not be operated continuously at more than +6%/-10% of the rated supply voltage of the control gear or tapping. The user must determine the ***actual*** underlying site supply and purchase or adjust accordingly.

3.4 Mounting

Luminaires should be installed where access for maintenance is practical and in accordance with any lighting design information provided for the installation. The luminaire is designed to operate at up to an angle of 25^{o} from the vertically down position. Ceiling, wall, stanchion & pendant mount versions are available.

1. The wall mounting or ceiling mounting arrangements should be secured with lock washers or self-locking nuts and bolts.
2. The stanchion mounting version must be mounted so as to maintain the IP rating. When fixed using the 1½" NPT threads to a suitably threaded pole the IP66 rating will be achieved. However, if the base of the pole is open to the elements there is a risk of dirt or moisture gaining access. If this is a problem a suitable sealing arrangement should be fitted somewhere inside the pole, normally close to the top or bottom.
3. The threaded portion of the pendant mount version has an M25 thread. A suitable external sealing washer and locking nut should be fitted to ensure the conduit pipe cannot loosen or cause water ingress.

3.4.1 Fitting the Globe

Care must be taken when fitting the Globe The following steps must be taken:

1 Apply silicone grease to the threads of the Globe.
2 Rotate the Globe in the threaded collar until the Globe seals onto the gasket.
3 Rotate the Globe until tight; it may be necessary to use a strap wrench to perform this task.
4 Secure the Globe using the screw.

3.5 Cabling and Cable Glands

3.5.1 Cables

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

3.5.2 Cable Glands

The installer and user must take responsibility for the selection of cables, cable glands and seals.
The product is dual certified for ATEX and IECEx and to comply with the certification for installation cable glands and sealing plugs must be ATEX or IECEx certified (or both) 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.

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 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.

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 2 off screws that secure the board to the casting.
2. Carefully lift the plate and disconnect push in wiring.

4.3 Overhaul

The unit is largely made of materials that are very corrosion resistant. This allows the unit to be completely stripped, cleaned, and then re-built with new electrical parts as required. The internal wiring is 1.0mm² flexible, silicone rubber insulated. All the spares required are available. Please state the model number, LED and optical details. The seal at the end cover is held within a groove by silicone R.T.V. The Globe gasket is similarly held in place by RTV.

If the gaskets have deteriorated by softening or permanent set, new gaskets should be fitted, which can be obtained from Chalmit. To fit the gasket, the old gasket should be removed and remaining RTV scraped off. The gasket is fixed in place and joined with silicone R.T.V. to the body.

5.0 Disposal of Material

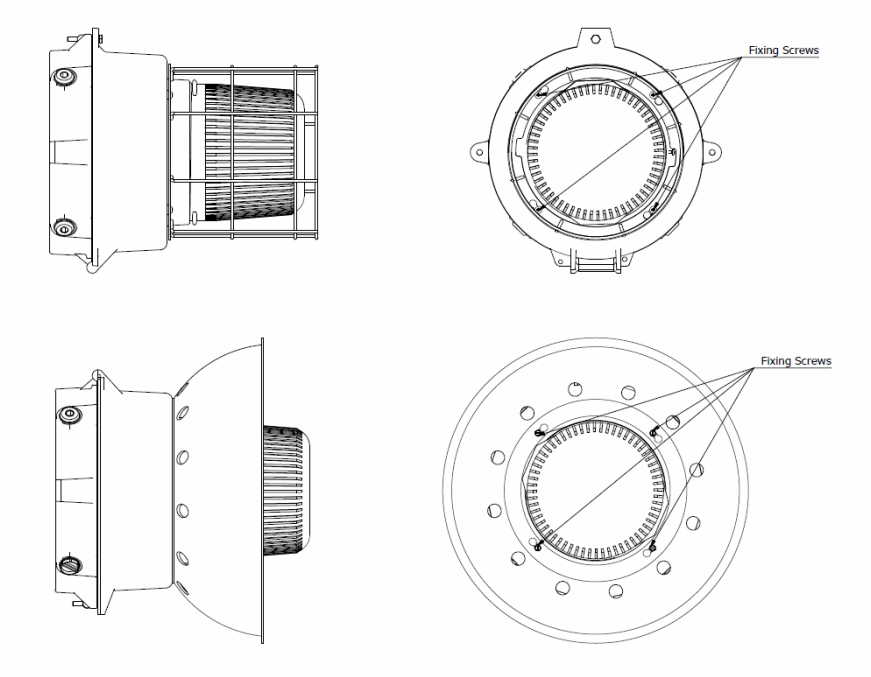
The unit is mostly made from incombustible materials. The control gear contains plastic parts and polyester resin. All electrical components and the body parts may give off noxious fumes if incinerated. Take care to render these fumes harmless or avoid inhalation. Any local regulations concerning disposal 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. The unit is mainly made from incombustible materials. The control gear contains plastic, resin and electronic components. All electrical components may give off noxious fumes if incinerated.

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.

Directions for Installation of Accessories

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.



Chalmit Lighting is a leading supplier of Hazardous Area lighting products

CHALMIT LIGHTING
PO Box 5575
Glasgow, G52 9AP
Scotland

Telephone:	+44 (0) 141 882 5555	Registered No:	669157
Fax:	+44 (0) 141 883 3704	Registered Office:	Cannon Place
Email:	info@chalmit.com		78 Cannon Street
Web:	www.chalmit.com		London EC4N 6AF UK

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

Manufacturer :	*Chalmit* 388 Hillington Road, Glasgow. G52 4BL Scotland UK *Tel : +44 (0) 141 882 5555 | Email: info@chalmit.com*

Declares in its sole responsibility that the product mentioned below

Product Designation :	*LED Luminaires*
Type Designation :	*Eclipse II LED Floodlight*

is in conformity with the essential protection requirements of the following Directive(s),Certification Scheme(s) and Standard(s).

Directive(s) / Scheme(s)	*Standard(s)*
2014/34/EU ATEX Directive	*EN 60079-0:2012+A11:2013* *EN 60079-15:2010* *EN 60079-31:2014*
IEC Certification Scheme For Explosive Atmosphere	*IEC 60079-0:2011, Ed. 6.0* *IEC 60079-15:2010, Ed. 4.0* *IEC 60079-31:2013, Ed. 2.0*

Type Examination Certificate

ATEX	*IECEx*
CML 15 ATEX 3102X Issue No. 3 *CML 15 ATEX 4101X Issue No. 3*	*IECEx QPS 15.0006X Issue No. 7*

Certification Body

ATEX	*IECEx*
Certification Management Limited, *Unit 1 Newport Business Park, New Port Road,* *Ellesmere Port CH65 4LZ,UK* *Reg No.: 2503*	*QPS Evaluation Services Inc,* *81 Kelfield St,Unit 8 Toronto,* *Ontario M9W 5A3,* *Canada.*

Marking (Note 1)

ATEX	*IECEx*
II 3G Ex nA IIC T4 / T140 ^{0}C Gc *II 2D Ex tb IIIC T 83 ^{0}C Db* CE *2813 Ta= -40 ^{0}C to +55 ^{0}C*	*Ex nA IIC T4 Gc* *Ex tb IIIC T83 ^{0}C Db*

Note 1: Ratings provided are maximum ratings and may vary depend on the components used and their installation.Refer Certificate,Installation & Operating manual and rating plate on equipment for details.

QAN compliance has been approved by Notified Body CSA Group Netherlands B.V.,Utrechtseweg 310,6812 AR, Arnhem,Netherlands. (Notified Body number 2813).

To verify the status and authenticity of IECEx Certificate of Conformity, please visit Official IECEx Website

Signature :

Name : *Tom Michalski*
Designation : *Certifications Manager*
Place and Date : *Fenton, 24-03-2020*