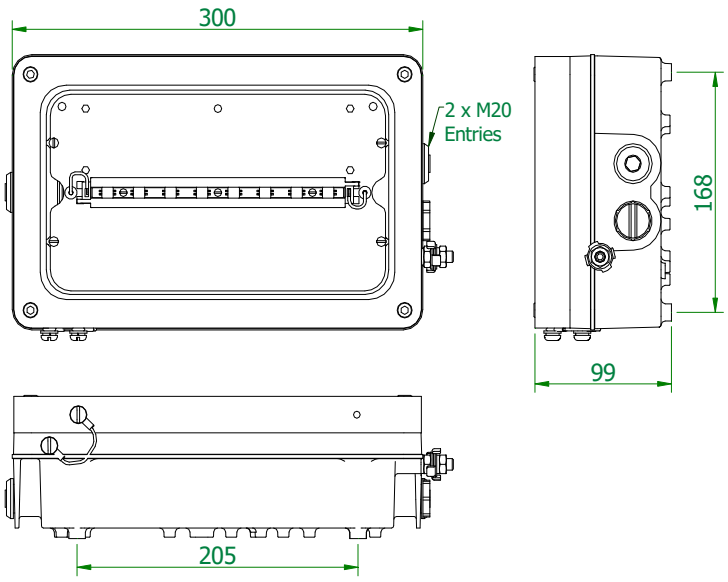
INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

# NexLED - Bulkhead Luminaires (24V)

*ATEX*

**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.



| | |
|---|---|
| Type Of Protection | Ex d e mb (Flameproof, Increased safety,encapsulation), Ex tb (dust) |
| Protection Standards | EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-18, EN61241-1 |
| Area Classification | Zone 1 and Zone 2 areas to EN 60079-10-1<br>Zone 21 and Zone 22 areas to EN 60079-10-2 |
| Installation | EN 60079-14 |
| Certificate | EC- Type Examination Certificate Baseefa04ATEX0245 |
| Equipment Coding | Ex de mb IIC T4 Gb -45˚C ≤ Ta ≤ +55˚C<br>Ex tb IIIC T95°C Db IP6X |
| ATEX Coding | II 2 GD |
| Ingress Protection | IP66/67 to EN 60529 |
| Laser safety class | Class 1 LED product |
| CE Mark<br>CE | 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].<br><br>The Equipment is declared to meet the provisions of the ATEX directive (2014/34/EU) by reason of the EC Type Examination and compliance with the Essential Health and Safety Requirements.<br>M Poutney Technical Manager |

**SPECIAL CONDITIONS FOR SAFE USE**

None

## 1.0 Introduction

The Chalmit NexLED brings to hazardous areas the very latest in lighting technology. It is a compact light source that uses ultra bright light emitting diodes to provide light from mains power. The LEDs are maintenance free and can last up to 80000 hours or more. They are housed in an impact and corrosion resistant marine grade aluminium enclosure with a toughened glass lens. The control gear is electronic with regulated lamp output. The LEDs work equally well at very low temperatures as they do at high and produce a product with very low overall power consumption. The LEDs also emit no ultra-violet light and no forward heat.

The product is available with 4W and an accessory kit is available for exit signs.

| Led | **4 x 1W** |
|---|---|
| Voltage range AC | 24V |
| Frequency range Hz | 0Hz/d.c. |
| Power Watts | 24V - 8W |
| Current Amps | 24V – 0.32A |

The safety limit for surface temperature (T rating) is +/-10% on the rated voltage. Equipment should not be operated continuously at more than +10/-10% of the rated voltage of the control gear.

**Over voltage** 24V +/-25%

**Looping** The looping current rating is 16A. 4mm² terminals are standard.

**Tamb Storage** -40°C to +50°C

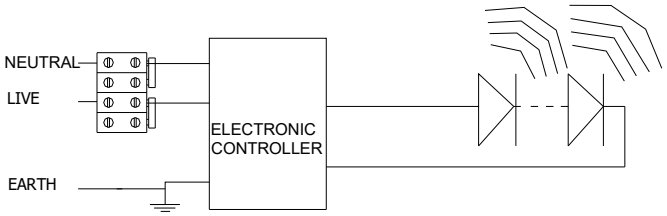
**Storage** Luminaires are to be stored in cool dry conditions preventing ingress of moisture and condensation.

**LED** The LED used in the Nexled is the latest technology and is a class 1 LED product.

**Fuse and MCB Ratings** It is recommended that for selection of MCB's users should consult the MCB manufacturer. MCB ratings can vary depending on the manufacturer and type and the size of the installation, i.e. impedance of conductors, however type 'C' breakers are usually suitable. These figures are worst case with low resistance connections with short cables and low impedance supplies.

## 2.0 Storage

Luminaires and control gear boxes are to be stored in cool dry conditions preventing ingress of moisture and condensation. Any specific instructions concerning emergency luminaires must be complied with.




WIRING DIAGRAM FOR NON-EMERGENCY LED DRIVER

## 3.0 Installation and Safety

### 3.1 General

There are 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. 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 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 60079-10-2 & EN 60079-14 for additional details of selection and installation.

### 3.1.2 Hybrid Mixtures – Gas and Dust

Where hybrid mixtures exist as defined in EN 1127 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
No 1/2 Philips/Pozidriv/T20 Torx screwdrivers
3mm and 5mm flat blade screwdriver
Spanners for installing cable glands. Pliers, knife, wire strippers/cutters.

### 3.3 Electrical Supplies
The standard unit is rated for a nominal 24V dc. A maximum voltage variation of +6%/-6% on the nominal is expected. (The safety limit for T rating is +10%). Equipment must not be operated outside of the rated voltage of the control gear. The lamp supply is regulated therefore the light output over the supply range is constant.

### 3.4 LED Array & Driver
This product is fitted with LED lamps that can last in excess of 80000 hours. Therefore in many applications replacement of the LED array will be unnecessary. If replacement is required ensure mains supplies are isolated before commencing work. Remove the front cover and then remove the LED array mounting plate by disconnecting the cables. In the event that the LED Driver needs replacement first disconnect the cables then remove the Torx head screws. Assembly is the reverse of disassembly making sure that the polarity is correct that the earths are connected and also ensuring the gasket/glass mating surfaces are clean and cables are not trapped.

### 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. Mounting is by 4 holes in the base of the body casting external to the gasket. These should be secured with lock washers or self-locking nuts and bolts and are accessed by removing the front cover. Any mounting attitude may be used.

### 3.6 Cabling and Cable Glands
#### 3.6.1 Cables
The maximum conductor size is 4mm². Internal earth point is provided next to the main terminal block. 300/500V cable ratings are adequate and no special internal construction is necessary. The standard looping cable size is up to 4mm². The selection of cable size must be suitable for the fuse rating. Terminals are supplied with suitability for looping. Where looping is used the maximum current is 16A. Terminals are accessed by removing the front cover and LED array. Maximum cable temperature rise is 20ºC above ambient.

#### 3.6.2 Cable Glands
The installer and user must take responsibility for the selection of cables, cable glands and seals. Three tapped cable entries are provided, two with a plug and seal suitable for permanent use, the other with a travelling plug not suitable for use in service. Sealing plugs are similarly rated and a tool must be used for their removal. Cable entries are M20x1.5. Cable glands and sealing plugs must have ATEX approval or be certified to EN60079-0. For installation outside the EU suitable cable glands in accordance with IEC 60079-0 will meet the technical requirements.
The cable and gland assembly when installed must maintain a minimum of IP54 rating.
The cable glands must be suitable for the application. Where brass cable glands are used in a corrosive environment, cadmium or nickel plating should be used.

### 4.0 Inspection and maintenance
Visual inspection should be carried out at a minimum of 12 monthly intervals and more frequently if conditions are severe; refer to EN 60079-17.

### 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 Routine Maintenance**

Visual tests and checks should be carried out at intervals described by the appropriate regulations, EN 60079-17, and should include the following:
Check that the LEDs are working.
Check for mechanical damage/corrosion.
Check for loose connections including earthing.
Check for undue accumulations of dust or dirt.
Verification of tightness of fixing, glands, blanking plugs etc.
Check for unauthorised modifications.
Check condition of enclosure gasket and fastenings.
Check for any accumulation of moisture.
Periodic inspection of the enclosure seal should be carried out to ensure that the seal is sound.
If the luminaire has been subject to abnormal conditions, for example, severe mechanical impact or chemical spillage, it must be de-energised until it has been inspected by an authorised and competent person. If in doubt, the unit should be returned to Chalmit for examination and, if necessary, replacement.
Before re-assembling, all connections should be checked and any damaged cable replaced.

**6.0 Disposal of Material**

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. 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.

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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|---|---|---|
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| Email: | info@chalmit.com | | 78 Cannon Street |
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**For technical support, please contact: techsupport@chalmit.com**

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| | **EU-Declaration of conformity**<br>**UE-Déclaration de conformité**<br>**EU-Konformitätserklärung** | | | |
| | | | | |
| Manufacturer | Chalmit | Address | 388 Hillington Road, Glasgow. G52 4BL Scotland UK | |
| Product | Nexled Luminaire. | | | |
| EC - Type Examination Certificate | Baseefa04ATEX0245 | | | |
| Notified Body | SGS Fimko OY 0598 | | | |
| ATEX Coding | Ⓔx II 2 GD | ATEX Classification | Group II Category 2 GD | |
| Equipment Coding | Ex de mb IIC T4 Gb , Ex tb IIIC T95°C Db IP6X -45˚C ≤ Ta ≤ +55˚C | | | |
| 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 60079-1, EN 60079-7, EN 60079-18, EN 61241-1 | | | | |
| Area Classification EN 60079-10-1and 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 | Equipment and protective systems intended for use in potentially explosive atmospheres. | | EN 60079-0: 2007<br>EN 60079-1: 2007 | 2012<br>2014 |
| 2014/34/UE | Appareils et les systèmes de protection destinés à être utilisés en atmosphères potentiellement explosibles. | | EN 60079-7: 2007<br>EN 60079-18: 2004 | 2015<br>2015 |
| 2014/34/EU | Geräte und Schutzsysteme zur bestimmungs-gemäßen Verwendung in explosionsfähigen Bereichen. | | EN61241-1:2004 | EN 60079-31: 2014 |
| | | | | |
| 2014/30/EU | Electromagnetic compatibility | | EN 55015 : 2013 | |
| 2014/30/UE | Compatibilité électromagnétique | | EN 61547 : 2009 | |
| 2014/30/EU | Elektromagnetische Verträglichkeit | | EN 61000-3-2 : 2014 | |
| | | | | |
| 2014/35/EU | 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 | |
| | | | | |
| 2012/19/EU | 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 | RoHS II Directive | | | |
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| 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<br>Nom et Date<br>Name und Datum | Mark Poutney | 01/01/2021 | Technical Manager<br>Directeur technique<br>Technischer Leiter | |

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|---|---|---|---|
| Quality Assurance Notification by: | **SGS Fimko OY** | Quality Management System Acreditation: | **ISO 9001** |
| Notification d'assurance qualité par: | **0598** | Système de Management Qualité Accréditation: | |
| Qualitätssicherungsnotifikation durch: | | Qualitätsmanagementsystem Akkreditierung: | |
| | | Environmental Management System. | **ISO 14001** |
| | | Système de gestion de l'environnement. | by/par/durch |
| | | Umwelt kontroll system. | **Loyd's Register** |
| | | **Certificate No./Certificat N°/Zertifikat Nr.** | **LRQ 4005876** |