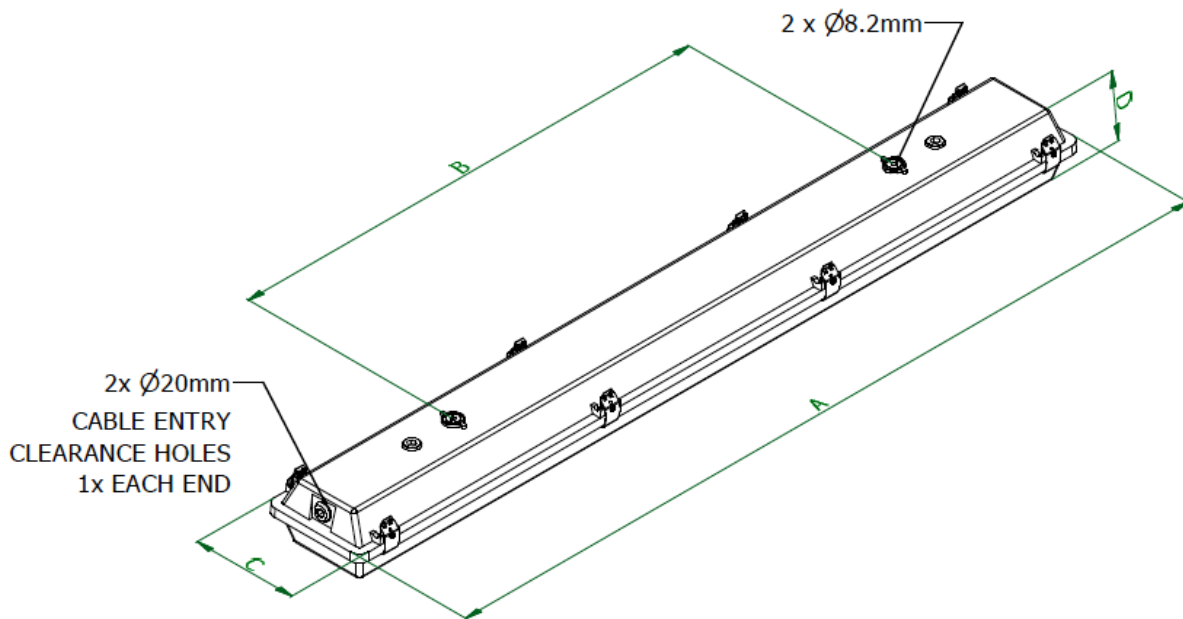


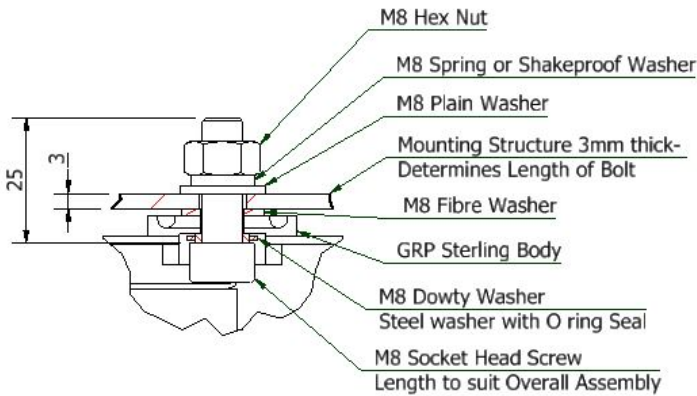
INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS
Sterling III - LED Luminaires
Industrial Emergency

Important:



Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should always be followed, and this data should be used as a guide only.



Dimension			
Dim	03 L	06 L	09 L
A	702	1312	1312
B	500	800	800
C	172	172	172
D	106	106	106



Section Thru Mounting Holes
Typical Arrangement of Sealing Washers

0.0 Specification	
Type of Protection	N/A
Standards	EN 60598-1, EN 60598-2-22
Area Classification	Industrial, (Non- Hazardous)
Ambient	03L EM -20°C to +45°C, 06L EM -20°C to +45°C, 09L EM -20°C to +45°C
Ingress Protection	IP65 to EN 60529
	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". [This legislation is the equivalent in UK law of EU directives 2014/35/EU, 2014/30/EU, 2012/19/EU respectively].
	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". M Poutney Technical Manager

Luminaire is supplied with Battery plug/Socket disconnected, just prior to switching power on, connect battery plug and socket.

Emergency versions – Emergency products with internal Ni-Cad battery packs should not be stored for longer than 9 months without being connected to mains power to allow battery charging to take place. Emergency products ship from the factory with the battery plug and socket disconnected.

See section 3.8.2 for further information.

1.0 Introduction – Sterling III Safe Area LED Luminaire

The Sterling Safe Area LED Luminaires are surface mounted or suspended, utilising the 2 holes on the base of body. They are mainly used in harsh environments and are constructed using a corrosion resistant glass reinforced polyester body attached to an injection moulded polycarbonate diffuser by self-retaining stainless-steel toggle clips. The control gear and LED's are mounted on a removable tray, which for maintenance has hanging straps.

2.0 Storage

To optimise lifetime, luminaires and control gear boxes are to be stored in cool dry conditions preventing ingress of moisture and condensation between +5°C and +25°C Any specific instructions concerning emergency Luminaires must be complied with.



Battery packs in storage should be cycled charged/discharged/charged every 9 months, as per instructions below. **Always disconnect battery plug and socket for storage.**

Any specific instructions concerning emergency luminaires must be complied with.
(Warning: Battery packs not cycled and stored for a year may not be recoverable)

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 the local area code of practice, whichever is appropriate.
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 information in this leaflet is correct at the time of publication. The company reserves the right to make specification changes as required.

3.2 Tools

Screwdriver flat blade 12mm and 3mm. Suitable spanners for installing glands.
Pliers, knife, wire strippers/cutters.

3.3 Electrical Supplies

The supply voltage and frequency should be specified when ordering. A maximum voltage variation of +/-6% on the nominal is acceptable; however, the ballast is designed to accept tolerances of up to +/-10%. Luminaires should not be operated continuously at more than +/-10% of the rated supply voltage of the control gear.

3.4 Light Emitting Diode (LED)

LED's are supplied in 3000, 6000 or 9000 Lumen options with the colour temperature of 3000K,4000K or 5000K (Check nameplate)

3.4.1 Dimming Option

If the product has a /DM suffix this means it comes fitted with a dali dimmable ballast and DALI EM functionality. 2 additional cable cores are needed to run the DALI data cable to DALI switch or PC with compatible software and hardware. EM light output levels cannot be altered through DALI.

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.

On mounting the luminaire by using the 8.2mm \varnothing holes, it is the responsibility of the user to ensure that an adequate seal is made to maintain the desired IP rating with a minimum of IP65. Washers are provided. Other mountings are available on request.

3.6 Cabling and Cable glands

3.6.1 Cables

The GRP models have facility for through wiring but do not have a facility for looping. The metal bodied series have the facility both looping and through wiring.

The temperature conditions of the supply cable entry point are such that 70°C (ordinary PVC) cable can be used. 300/500V cable ratings are adequate and no special internal construction is necessary. Where MCB's are used, the type with the higher short time tripping current ratio used for motor starting and lighting should be specified. The standard maximum looping size is 2.5mm² with 2.5mm² through wiring. An internal earth tag can be fitted to the cable gland.

Note: Through wiring when used, is subject to a maximum current of 16A.



3.6.2 Cable Glands

Cable glands when installed should maintain the minimum IP65 rating of the enclosure. The cable gland should adequately secure the cable in the unit. 2 off 21mm diameter holes are provided. One transit plug is fitted, the other entry is permanently plugged. It is the responsibility of the user to ensure that an adequate seal between the gland body and the apparatus is maintained.

3.7 Cabling

Access for cabling is via diffuser cover, care is to be taken as there is no suspension of diffuser cover. The diffuser clips are undone, and the diffuser laid aside. The gear tray can be removed by undoing the spring clips on the suspension cables. The cable glands should be fitted with suitable washers to maintain the desired IP rating. Any earth tag connections should be fitted. The connecting terminals are identified, and 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 cores 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.

Where switched operation is required on the emergency, remove the link and connect line and switched line separately.

3.8 Replacing LED's

Before opening the diffuser cover, ensure that the luminaire is isolated from mains supply. Access for re-lamping is via the diffuser cover; care is to be taken, as there is no suspension facility for the diffuser cover.

It is recommended on failure of LED's an entire geartray kit including driver should be fitted. This will maximise the lifetime of the product.

Note the diffuser cover orientation on removal as the diffuser cover must be refitted in its original orientation to maintain the IP rating.

The emergency unit has no battery isolating arrangement, so if the LED unit is replaced with the battery charged, take care **not** to touch the metal gear tray when removing or refitting the LED's.

3.9 Inspection and Maintenance

3.9.1 Routine Examination

The luminaire must be de-energised before opening. Individual organisations will have their own procedures. What follows are guidelines based on our experience:

- 1 Ensure LED's are lit when energised by mains supply.
- 2 Visually check diffuser cover for damage, this should only be cleaned using a damp cloth to avoid static, and only use recommended detergents for polycarbonate. If the polycarbonate is discoloured or damaged, a new diffuser cover must be fitted.
- 3 When de-energised and left to cool, there should be no significant sign of internal moisture. If there are any signs of water ingress, the luminaire should be opened, dried and any likely ingress points eliminated by re-gasketing or other replacements.
- 4 Check cable glands for tightness and nip up if required.
- 5 Check any external and internal earths.
- 6 Check all terminations are firmly screwed down, tighten if necessary.
- 7 Check clips visually for any damage and replace if necessary.
- 8 If it has been suspected that the luminaire has suffered mechanical damage, a stringent workshop check on all components should be made. All components can be removed from the luminaire for inspection.

3.9.2 Commissioning

Emergency luminaires are supplied with the Battery plug/Socket disconnected. Just prior to switching power on, connect battery plug and socket.

Energise the mains and check that LED's light when the supply is energised.

Emergency luminaires will require battery packs to be cycled to obtain the full duration/capacity of the Ni-Cd battery cells. It is recommended that the unit is charged for a minimum period of 24 hours, then permitted to discharge via emergency operation (power OFF), and then charged again for a minimum period of 24 hours.

If checking battery duration at this time, it may be necessary to repeat the cycle to obtain the full 3-hour duration.



3.8.3 Post Commissioning Storage

It is assumed that during commissioning the battery plug and socket are connected.

If the power is to be removed after commissioning for a period, our recommendations, along with guidance from the battery manufacturer, are:

- Up to 6 months – No action required. Mains power can be reapplied during this time and the battery will accept a charge.
- 6 to 12 months – Disconnect battery plug and socket to maintain charge in the battery. Before re-connection of mains power re-connect the battery plug and socket. Mains power can be reapplied, and the battery will accept a charge.
- Longer than 12 months – Disconnect battery plug and socket. Approximately every 6 months carry out a charging/discharging cycle, 24 hours charging followed by 3-hour discharge and another 24-hour charge, then isolate power and disconnect battery plug & socket. This is to avoid deep discharge of cells, which is caused by a trickle discharge or by long term storage. This could lead to the cells not accepting a charge from the inverter or not achieving full expected duration.

3.9 Electrical Fault Finding and Replacement

The supply must be isolated before opening the Luminaire.

Any live fault finding must be done by a competent electrician and, if carried out with Luminaire in place, under a permit to work.

If LED's go out repeatedly, and replacement LED's do not work or expected life is reduced, the control gear should be returned for replacement / testing. The electronic drivers are approved components.

On re-assembly, all faulty/damaged wiring should be replaced, and connections checked.

3.9.1 Battery Check and Replacement

The battery is contained in a tube which is sealed. The battery is detached at the plug and socket. Remove the two screws to release the battery. Re-assembly is in reverse order.

Important: *Take care not to short the leads together as this can cause a fire.*

The emergency duration is 3 hours for all Lumen output versions.

This will gradually degrade. The battery must be replaced when the duration is not acceptable.

To check electronic unit is healthy and the LED sound, there should be a little duration after a short period of recharging. The unit should be checked by a substitution.

Take care to fully discharge batteries before transporting, or otherwise ensure that there can be no release of stored energy in transit.

3.9.2 Checking of battery separately

If the battery is to be checked separately, it should be charged using a constant current charger at 200/400mA for 30/15 hours for the 4.2Ah type. Discharge measurement is not easy as the current is proportional to the voltage for resistance loads so it must be averaged. Discharge the battery at a rate of 1 to 2A and multiply current by time. Do not discharge below 1 volt per cell, which is 5V. The capacity should be 75% or more of normal.

4.0 Fuse Ratings

With the availability of MCB's with a wide range of characteristics, the individual engineer can make a better judgement of what is required. Use MCB's suitable for inrush currents to reduce ratings. Where MCB's are used, the type with the higher short time tripping current ratio used for motor starting and lighting should be specified. The inrush current can be calculated where circuit conditions are known. The inrush currents can be obtained from the manufacturer.

The fuse ratings for LED strips in circuits need to take account of the Driver within the construction of the Luminaire. All calculations must satisfy wiring regulations



5.0 Disposal of Material

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. The unit is made from combustible materials, the control gear contains plastic parts and electronic components. 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.

5.1 LED's

LED's in modest quantities are not "special waste". They should be broken in a container to avoid possible injury from fragmentation. Avoid inhaling dust. This applies to the UK; there may be other regulations on disposal operating in other countries.

Important: Do not incinerate LED's.

5.2 Battery Disposal

Nickel cadmium batteries are defined as 'controlled waste' under the hazardous waste regulations and disposer needs to observe a 'duty of care'.

Batteries can be returned to the manufacturers for re-cycling. They must be stored and transported safely, and any necessary pollution control forms completed prior to transportation. Take care to fully discharge batteries before transporting or otherwise ensure that there can be no release of stored energy in transit. For further details refer to Technical Department.



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.

Product code	Body Type	Nominal Volts	Power Consumption Watts
ST3I/03L/LE/EM	2ft Twin	220-240Vac 50/60 Hz	26W
ST3I/06L/LE/EM	4Ft Twin	220-240Vac 50/60 Hz	49W
ST3I/09L/LE/EM	4Ft Twin	220-240Vac 50/60 Hz	65W

No. Of LED Strips	Lumens	Driver current	Line Current (Amp)	Inrush current/Duration
03L 2 x 560mm	3592	300mA	0.12 – 0.11A	26.7A(40.5 μs)
06L 2 x 1120mm	6241	600mA	0.22 – 0.20A	22.8A(30.2 μs)
09L 2 x 1120mm	8798	850mA	0.31 – 0.29A	



6.0 Emergency Self-Test or Battery Monitoring Versions

As standard this version can test the performance of the emergency Luminaire in accordance with IEC 62034. Unless the /NST (Non-self test option has been purchased)

Commissioning

After installation of the Luminaire and initial connection of the mains supply, this will initiate commissioning where the battery should remain on charge for an uninterrupted 24 hours. At this time the module will conduct a commissioning test for the full duration.

The 24 hours recharge occurs also if a new battery is connected or the module exits the rest mode condition. The following automatic commissioning duration test is only performed when a battery is replaced and fully charged (after 24 hrs) and the interval time is not set to zero, otherwise the system is expected to perform the testing.

If the mains supply is to be interrupted for more than 7 days, then the battery MUST be disconnected.

Functional test

The default setting is a 5 second test on a weekly basis.

Duration test

The default setting is a duration test conducted every 52 weeks.

6.1 Versions with option of DALI dimming and controls

If the /DM version of this fitting has been ordered, this comes with the additional ability of monitoring and tailoring test features.

Functional test

The time of day and frequency of the 5 second function test can be set by the DALI controller. The default setting is a 5 second test on a weekly basis.

Duration test

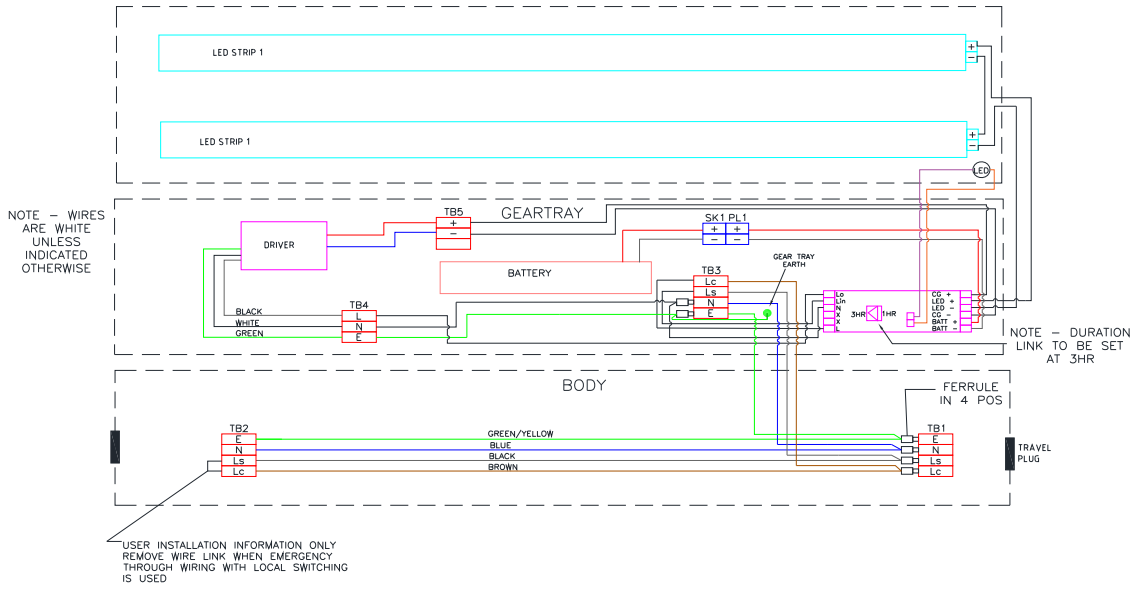
The time of day and frequency of the duration test can be set by the DALI controller. The default setting is a duration test conducted every 52 weeks.

LED Indicator - A bi-colour LED indicates the status of the module as follows:

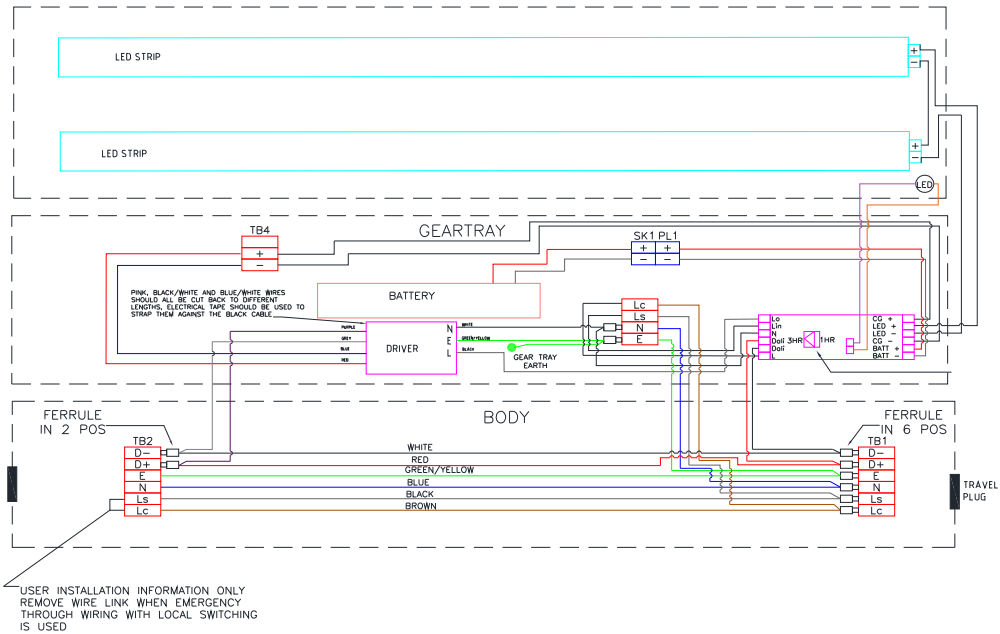
LED Indication	Status	Comment
Permanent green	System OK	AC mode
Fast flashing green (0,1 sec on – 0,1 sec off)	Function test underway	
Slow flashing green (1 sec on – 1 sec off)	Duration test underway	
Red LED on	Load failure	Open circuit / Short circuit / LED failure
Slow flashing red (1 sec on – 1 sec off)	Battery failure	Battery failed the duration test or function test / Battery is defect or deep discharged/ Incorrect battery voltage
Fast flashing red (0,1 sec on – 0,1 sec off)	Charging failure	Incorrect charging current
Green and red off	DC mode	Battery operation (emergency mode)



Typical Emergency LED Wiring Diagram





Typical Emergency Dimming Wiring Diagram



Note: For other Wiring Diagrams, please contact the manufacturer.



Chalmit Lighting is a leading supplier of Hazardous Area lighting products

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<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.



	EU/UK-Declaration of conformity		
	UE-Déclaration de conformité		
	EU-Konformitätserklärung		
Manufacturer	Chalmit	Address	388 Hillington Road, Glasgow. G52 4BL Scotland UK
Product	Sterling III LED Industrial Emergency		
Catalogue	ST3I/**/**/** Example: ST3I/03L/LE/EM		
Area Classification	Industrial, (Non-Hazardous)		
Ingress Protection	IP65		
Ambient	03L EM -20°C to +45°C, 06L EM -20°C to +45°C, 09L EM -20°C to +45°C		
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	
2014/30/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 60598-2-22 : 2014	
		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 11/11/2021
Nom et Date
Name und Datum

Technical Manager
Directeur technique
Technischer Leiter

Quality Management System Accreditation:
Système de Management Qualité Accréditation:
Qualitätsmanagementsystem Akkreditierung:
Environmental Management System.
Système de gestion de l'environnement.
Umwelt kontroll system.
Certificate No./Certificat N°/Zertifikat Nr.

ISO 9001

ISO 14001
by/par/durch
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LRQ 4005876