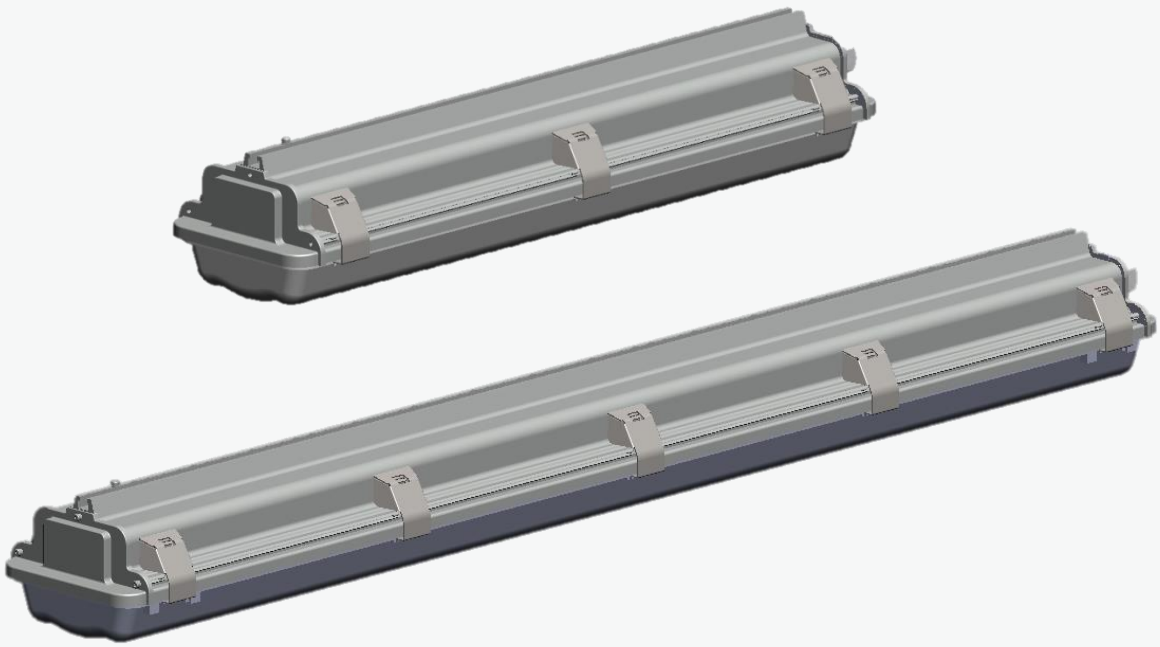
CROUSE-HINDS SERIES

NHLL Series Explosion-protected LED Lighting Fixture



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1. DIMENSIONS

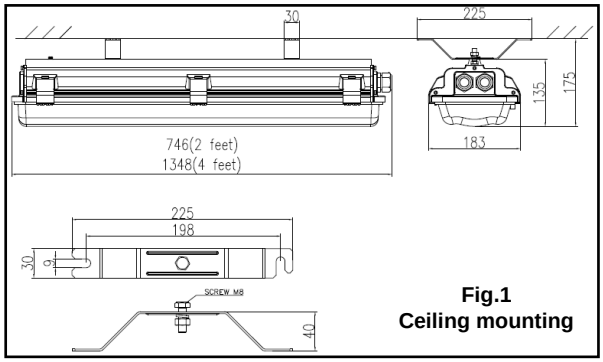


Fig.1
Ceiling mounting

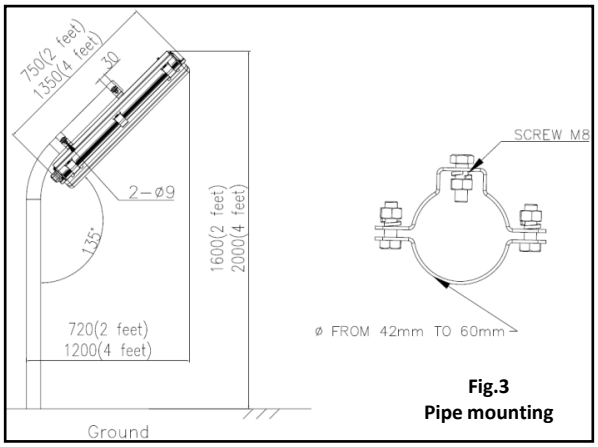


Fig.3
Pipe mounting

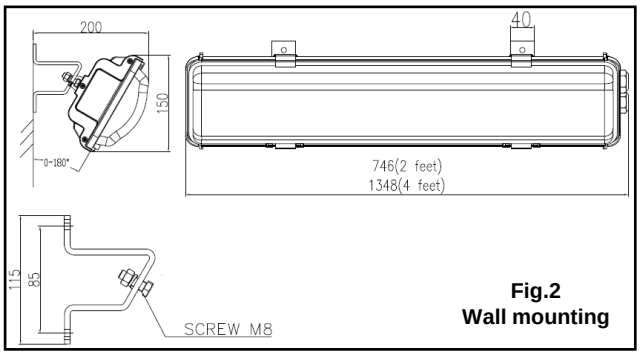


Fig.2
Wall mounting

2. Technical data

Hazardous area specification	
IECEx protection type:	Ex db ec ib mb tb
ATEX protection type:	Ex db ec ib mb tb
IECEx Certification Marking:	Ex db ec IIC T5/T6 Gc(Normal with switch) Ex db ec ib mb IIC T5/T6 Gc(EM with switch) Ex ec IIC T5/T6 Gc (Normal without switch) Ex ec ib mb IIC T5/T6 Gc(EM without switch) Ex tb IIIC T80℃ Db
ATEX Certification Marking:	II3 G Ex db ec IIC T5/T6 Gc(switch) II3 G Ex db ec ib mb IIC T5/T6 Gc(EM switch) Ⓔx II3 G Ex ec IIC T5/T6 Gc (without switch) II3 G Ex ec ib mb IIC T5/T6 Gc(EM w/o switch) II2 D Ex tb IIIC T80℃ Db
Ambient temperature:	-40ºC~+50/55 ºC/-25ºC~+50/55 ºC
Temperature class:	T6
IECEx Certificate No.:	IECEx NEP 18.0003X
EC type examination Certification No.:	SEV 18 ATEX0171X
Degree of protection:	IP 66 acc. to EN60529/IEC60529
Approval of the production	
Quality assurance:	Bassefa ATEX 5952
Enclosure specification	
Material of enclosure:	Aluminum
Finish:	Coating or anodizing
Material of cover:	PC
Mounting bracket:	Stainless steel or Steel painted
Fasteners:	All external fasteners stainless steel
Installation:	Mounting bracket
Weight:	Refer to Type Configuration.
Entry specification	
Indirect entry: M20×1.5 or M25×1.5 cable entry.	
Electrical specification	
Wattage:	30W/40W/60W/80W
Voltage:	110 – 240 or 100 - 240 Vac 50/60Hz, 108 - 250Vdc
Lamp:	LED Arrays
Lumen output at EM	25%/20%
Emergency time	1.5h/3h
CRI:	70
Insulation class:	I acc. to IEC60598
Terminals capacity:	6mm² Terminal: Solid: 1~6mm²

3. Safety Instructions

This product should be installed, inspected, and maintained by a <u>qualified electrician only</u>, in accordance with national regulation, including the relevant standard and, where applicable, in acc. With IEC 60079-17 on electrical apparatus for explosive atmospheres.

The national safety rules and regulations for prevention of accidents and the following safety instructions in these operating instructions, will have to be observed!

- ***The luminaire must not be operated in Zone0 or Zone20 or Zone 1!***
- ***When using in Zone21,Zone22, the requirements of IEC/EN 60079-14 relating to temperature must be observed. The indicated surface temperatures are not related to a layers above 5 mm thickness.***
- ***Do not install where the marked operating temperature exceed the ignition temperature of the hazardous atmosphere.***
- ***Do not operate in ambient temperatures above those indicated on the luminaire nameplate.***
- ***The luminaires shall be operated as intended and only in undamaged and perfect conditions! And Keep tightly closed when in operation!***
- ***The technical data indicated on the luminaire are to be observed!***
- ***Change of the design and modifications to the luminaire are not permitted!***
- ***Multiple, short-term switching must be observed!***
- ***Only genuine Eaton Crouse-Hinds spare parts may be used for replacement!***
- ***Repairs that affect the explosion protection, may only be carried out by Eaton Crouse-Hinds or qualified electrician!***
- ***Potential electrostatic risk clean only with a damp cloth.***

4. Conformity with standards

This explosion protection floodlight meet the requirements of IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7, IEC 60079-11, IEC 60079-18, IEC/EN 60079-31. It also complies with the EU Directives for "Apparatus and protective system for use in explosion atmospheres" (2014/34/EU). It has been designed, manufactured and tested in accordance to the state of the art and according to ISO 9001:2008. The luminaires are suitable for use in explosive atmospheres, Zone 2 according to IEC60079-10-1 and dust area Zone 21 and Zone 22 according to IEC60079-10-2.

5. Cable gland recommend

Entry size	Part No.	Cable size	Torque (Nm)	
			screw-in enclosure	For cable
M20	CAP846694V1	10-16	20	20
M25	CAP846794V1	13.5-21	30	30

Note: Mounting the selected cable glands acc. type and dimensions of the main connection cable. Following their manufacturer instructions.

Directive EU 2019/2022

The 3L&5L products contains a light source of energy efficiency class F

6. Fields of Application

The Luminaire with Ex d e i m protection and IP66 sealing making is suitable for use at potentially explosive atmospheres including ignitable gas and dust applications. The luminaire is designed for use in Zone 2/Zone 21/Zone 22 hazardous areas in indoors and outdoors, in Marine and Wet locations, where moisture, dirt, corrosion, vibration and rough usage may be present. Application ambient temperature is -40ºC~+55ºC or -25ºC~+55ºC . Refer to the luminaire nameplate, For specific information, corresponding operating temperature(T-Code). The enclosure materials used, including any external metal parts, are High quality materials that ensure a corrosion resistance and resistance to chemical substances according to the requirements for use in a "normal" industrial atmosphere. In case of use in an extremely aggressive atmospheres, please refer to manufacture.

7. Configuration & T-code

Std. Cat No.	Color Temp.	System power	LED Qty.	T Class (Gas)	T ℃ (Dust)	Voltage (V)	Tamb. (ºC)	Weight (kg)
NHLL-2-W*-2L-*-*-*-*-*	3000K 4000K	30W	28	T6	80	110-240Vac 50/60Hz 108-250Vdc	-40~+55	6
NHLL-2-W*-2L-*-EM*-*-*-*							-25~+55	7
NHLL-2-C*-3L-*-*-*-*-*	5000K 5700K 6500K						-40~+55	6
NHLL-2-C*-3L-*-EM*-*-*-*							-25~+55	7
NHLL-2-W*-3L-*-*-*-*-*	3000K 4000K	40W	64	T5(55ºC) T6(50ºC)			-40~+55	6
NHLL-2-W*-3L-*-EM*-*-*-*							-25~+55	7
NHLL-2-C*-4L-*-*-*-*-*	5000K 5700K 6500K						-40~+55	6
NHLL-2-C*-4L-*-EM*-*-*-*							-25~+55	7
NHLL-4-W*-4L-*-*-*-*-*	3000K 4000K	60W	56	T6			-40~+55	10
NHLL-4-W*-4L-*-EM*-*-*-*							-25~+55	12
NHLL-4-C*-5L-*-*-*-*-*	5000K 5700K 6500K						-40~+55	10
NHLL-4-C*-5L-*-EM*-*-*-*							-25~+55	12
NHLL-4-W*-7L-*-*-*-*-*	3000K 4000K	80W	128	T6			-40~+55	10
NHLL-4-W*-7L-*-EM*-*-*-*							-25~+55	12
NHLL-4-C*-8L-*-*-*-*-*	5000K 5700K 6500K						-40~+55	10
NHLL-4-C*-8L-*-EM*-*-*-*							-25~+55	12

8. Installation

8.1 General

The respective national regulations IEC/EN 60079-14 as well as the general rules of engineering which apply to the installation and operation of explosion protected apparatus will have to be observed!
The improper installation and operation may result in the explosion protection and invalidation of the guarantee.

8.2 Mounting luminaire

8.2.1 Mounting the bracket

Only use the accompanying mounting bracket! Securely fasten the mounting bracket to a suitable base with sufficient load-bearing capacity. The mounting should be secured with M8 bolts and relative lock washers, nuts should be used.

8.3 Cable entries/Plugs and Breathing valve

The “Increased safety (Exe)" properties must be preserved when select and mount cable entry/plug and breathing valve. Unused holes must be closed with certified plug to establish the Exe protection category. The cable glands/plugs and breathing valve should be Ex tb certified if the whole product is Ex tb certified also. **Cable entries sealing washer(if required by manual of cable gland/plug) must be used to obtain IP66.**
The authoritative mounting guidelines for the cable glands and breathing valve used must be observed. Mounting the selected cable entries acc. type and dimensions of the main connection cable following their manufacturer instructions. The cable temperatures are given as the rise over the max. rated ambient (Tamb). This allows the user to adjust the cable specification for actual maximum site ambient. Only heat resistant cable according to the data on the type label may be used! The max. conductor size is 6mm².

8.4 Opening/closing the luminaire

8.4.1 General

The opening of luminaire always shall be without voltage! All gasket seals must be clean and and undamaged before closing the luminaire. Make sure the luminaires is well closed before operation!

8.4.2 Exe chamber cover

Open the buckles and remove the PC cover. And carry out the steps in reverse order to close the luminaire. Check all buckles to ensure a secure fit during operation

8.5 Electrical connection

The electrical connection of the lamp must only be established by qualified electricians. Make sure the supply voltage is the same as the luminaire voltage! Use proper supply wiring as specified on the nameplate of the luminaire and in this instructions! Excessive tightening may affect or damage the connection.

8.5.1 Wire connection

The conductors shall be connected with special care in order to maintain the explosion category. The conductor itself shall not be damaged. The connectible min. and max. conductor cross-sections shall be observed (see technical data). All terminals, used and unused, shall be fully tightened to prevent incorrect connection between 1.5~1.8Nm. Main connection: See wiring diagram **Fig.4 for details.**

9. Putting into operation

Prior to putting the apparatus into operation, the tests specified in the relevant national regulations shall be carried out. Insulation measurements may only be carried out between PE and the external conductor L1 (L2, L3) as well as between PE and N.
- Measurement voltage: Max. 1.5 KV AC
- Measurement current: Max.5 mA
- The luminaire may only be operated when closed.
- It is generally recommended (see IEC/EN 60079-14) that you ensure the type of protection of the construction is not impaired during installation.

10. Maintenance/Servicing

10.1 General

The relevant national regulations which apply to the maintenance/servicing of electrical apparatus in explosive atmospheres, shall be observed (EN/IEC 60079-17).
The interval between maintenance depends upon the ambient conditions and the hours of operation. The recommendations given within EN/IEC 60079-17 for recurring checks must be observed.

10.2 Checks

The equipment must be de-energized before opening
Visual inspection should be carried out at a minimum of 12 monthly intervals and more frequently if conditions are severe, refer to EN/IEC 60079-17. The time between lamp changes could be very infrequent and this is too long a period without inspection.

10.3 Routine Examination

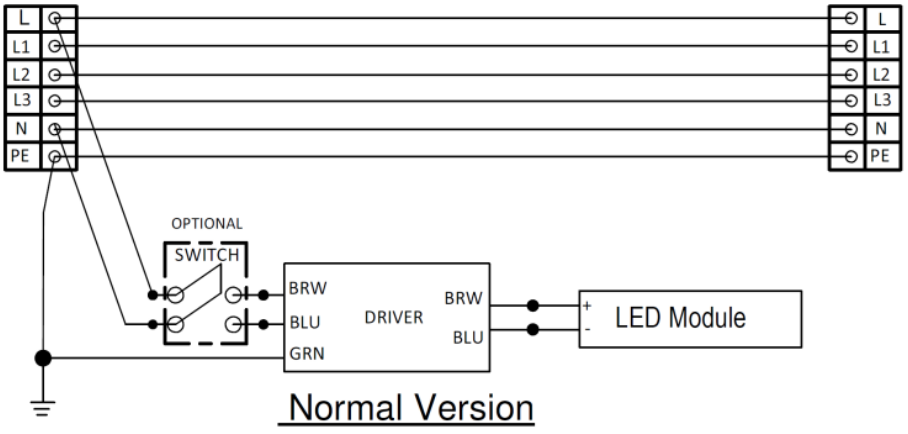
During maintenance, the parts affecting the level of protection must be checked in particular:
- Ensure the lamp is lit when energized and examine the enclosure and glass for any signs of cracks and damage.
- When de-energized and left to cool, there should be no significant sign of internal moisture. If there are signs of water ingress, the luminaire should be opened up, dried out, and any likely ingress points eliminated by re-gasketing, re-greasing or other replacement.
- Check the gasket of pc cover and LED housing for any damage or permanent set and replace as required.
- Terminal, screw glands and blanking plugs for secure fitting.
- To maintain the light output, clean the protective pc cover periodically with a damp cloth or a mild cleaning fluid.
- If this product is used in the combustible dust area, outside of enclosure must be cleaned on a regular basis to prevent accumulation of dust.
- The cable connections should be checked for tightness. The gasket should be checked for cracks or lack of elasticity, and if necessary, replaced.
- Check that mountings are secure and the adjusting bolts are tight.
- If it has been suspected that the luminaire has mechanical damage, a stringent workshop overhaul will be required. Where spares are needed, these must be replaced with factory specified parts. No modifications should be made without the knowledge and approval of the manufacturer.
-For EM configurations, the EM function should be test once at least 6 months. The battery should be replaced after warranty period.

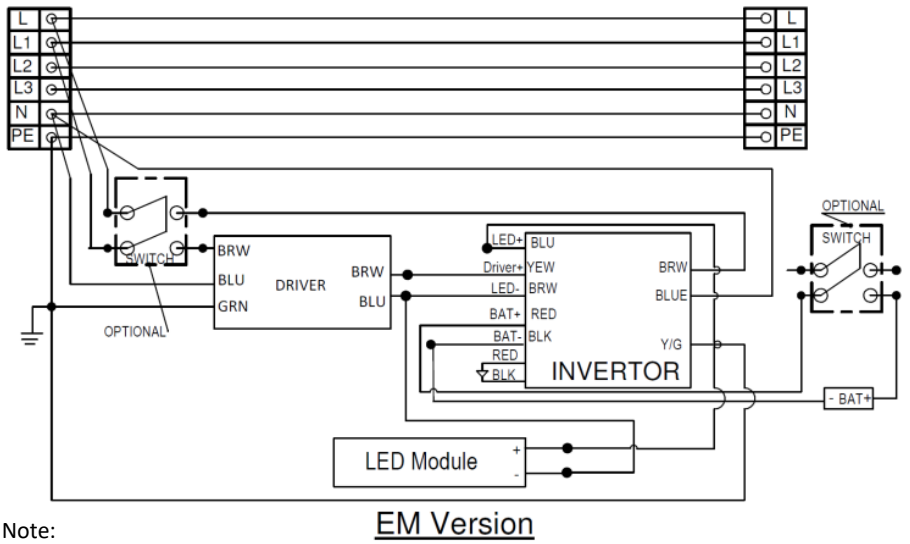
Cleaning the joint of housing assy. and pc cover use a damp cloth or a mild cleaning fluid.

11.Repair/Overhaul/Modifications

11.1 General

The national regulations EN/IEC60079-19 have to be observed! Repairs and overhaul may only be carried out with genuine Eaton Crouse-Hinds spare parts. In the case of battery failure, the battery pack must be replaced as a complete unit from the manufacture and by Eaton person or the person qualified by Eaton. Before replacing or disassembling individual parts, observe the following:
Disconnect the power supply to the equipment before maintenance/repair. Make sure that there is no explosive atmosphere when opening the equipment. See section 8.4 for notes on opening and closing the lamp.
Only use original spare parts. If the luminaire was previously in operation then wait to cool enough before opening. Repairs that affect the explosion protection, may only be carried out by Eaton Crouse-Hinds or a qualified electrician in compliance with the applicable national rules.
Modifications to the device or changes to its design are not permitted. After carrying out repair or overhaul work, ensure that the “Exde" properties have not been affected. Assistance may also be obtained through Cooper Electronic Technologies (Shanghai) Co., Ltd. Sales Service department, 955 ShengLi Road, Pudong Shanghai 201201 Phone (86) 21-28993943





Note:
When connect wire to terminal: Rigid or with cable lug,
flexible with ferrule, pin cable lug or cable lug.
2 conductor per clamping unit max. 6mm2+1 up to 4 x cable lug max. 2.5mm2.

Fig4

12. Disposal/Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed. **Regarding waste disposal, observe the relevant national regulations! The plastic materials are marked with material identification.**

13. Catalog No. definition

NHLL	-2	-W1	-2L	-EM1	-1/6-120	-C	-N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

(1). NHLL
Indicates basic catalogue series designation.
(2). Indicates Length
-2 = 2 feet length; -4 = 4 feet length.
(3). Indicates LED colour temperature.
-C1 = 5000K, C2 =5700K, C3 =6500K;
-W1 = 3000K, -W2 = 4000K
(4). Indicates Total Luminous Flux.
-2L = 2000 Lm, -3L = 3000 Lm
-4L = 4000 Lm, -5L = 5000 Lm
-7L = 7000 Lm, -8L = 8000 Lm
(5). Emergency Duration.
Blank = Non-Emergency;
-EM1 = 25% Output 1.5h;
-EM2 = 25% Output 3h;
-EM3 = 20% Output 3h.
(6). Indicates wire and entry type.
-1/6-120 = 6mm^2 Single-ended 1×M20
-1/6-220 = 6mm^2 Single-ended 2×M20
-1/6-125 = 6mm^2 Single-ended 1×M25
-1/6-225 = 6mm^2 Single-ended 2×M25
-2/6-120 = 6mm^2 Through wiring 2-1×M20
-2/6-220 = 6mm^2 Through wiring 2-2×M20
-2/6-125 = 6mm^2 Through wiring 2-1×M25
-2/6-225 = 6mm^2 Through wiring 2-2×M25
(7). Indicates Coating.
Blank = No coating; -C = Coating
(8). Indicates safety switch.
Blank = with safety switch;
-N = No safety switch.

EU-Konformitätserklärung
EU-Declaration of conformity
UE-Déclaration

SEV18ATEX0171X

Wir / *We* / *Nous*

Cooper Electric (Changzhou) Co., Ltd.
No. 189, Liuyanghe Road, Xinbei District,
Changzhou, Jiangsu, 213031 China

erklären in alleiniger Verantwortung, dass das Produkt
hereby declare in our sole responsibility, that the product
déclarons de notre seule responsabilité, que le produit

Explosion-protected LED Lighting Fixture

NHLL Series

- **II 3 G Ex db ec IIC T5/T6 Gc**
- **II 3 G Ex ec IIC T5/T6 Gc**
- **II 3 G Ex db ec ib mb IIC T5/T6 Gc**
- **II 3 G Ex ec ib mb IIC T5/T6 Gc**
- **II 3 G Ex db ec mb IIC T6 Gc**
- **II 3 G Ex ec mb IIC T6 Gc**
- **II 2 D Ex tb IIIC T80° C Db**

den folgenden EU-Richtlinien, den entsprechenden harmonisierten Normen, und weiteren normativen Dokumenten entspricht.
complies with the following EU directives, their corresponding harmonised standards, and other normative documents.
correspond aux directives européennes suivantes, à leurs normes harmonisées, et aux autres documents normatifs suivants.

Bestimmungen der Richtlinie *Terms of the directive* *Prescription de la directive*		Titel und / oder Nr. sowie Ausgabedatum der Norm *Title and / or No. and date of issue of the standard* *Titre et / ou No. ainsi que date d'émission des normes:*
2014/34/EU: 2014/34/EU: 2014/34/UE:	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen. *Equipment and protective systems intended for use in potentially explosive atmospheres.* *Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles.*	**EN IEC 60079-0:2018+AC:2020** **EN 60079-1:2014+AC:2018** **EN IEC 60079-7:2015/A1:2018** **EN 60079-11:2012** **EN 60079-18:2015/A1:2017** **EN 60079-31:2014**
2014/30/EU: 2014/30/EU: 2014/30/UE:	Elektromagnetische Verträglichkeit *Electromagnetic compatibility* *Compatibilité électromagnétique*	**EN IEC 55015:2019+A11:2020** **EN 61547:2009** **EN 61000-3-2:2014** **EN 61000-3-3:2013** **EN 61000-6-4:2007/A1:2011** **EN 61000-6-2:2005/AC:2005**
2011/65/EU: 2011/65/EU: 2011/65/UE:	RoHS –Richtlinie *RoHS – directive* *Directive RoHS*	**EN IEC 63 000: 2018**

Shanghai,
2024.07.16

Ort und Datum
Place and date
Lieu et date

Head of quality department

Head of approval office

(1) Benannte Stelle (EG-Baumusterprüfbescheinigung)
Notified body (EC-type examination certificate)
Organisme notifié (Examen CE de type)

Eurofins Product Testing Italy S.r.l (0477)
Via Cuorgne, 21
10156 Torino-Italia

QAN: Baseefa ATEX 5952

(2) Benannte Stelle (Qualitätssicherung Produktion)
Notified body (Production Quality Assurance)
Organisme notifié (Assurance Qualité de Production)

SGS Fimko Oy (0598)
Takomotie 8, FI-00380 Helsinki Finland

Für den sicheren Betrieb des Betriebsmittels sind die Angaben der zugehörigen Betriebsanleitung zu beachten.
For the safe use of this apparatus, the information given in the accompanying operating instructions must be followed.
Afin d'assurer le bon fonctionnement de nos appareils, prière de respecter les directives du mode d'emploi correspondant à ceux-ci.