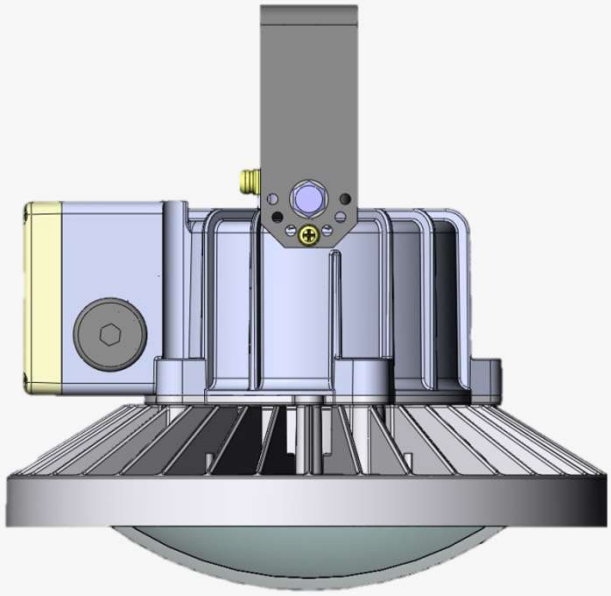
CROUSE-HINDS SERIES

HPL Series LED
Explosion Protected Luminaire



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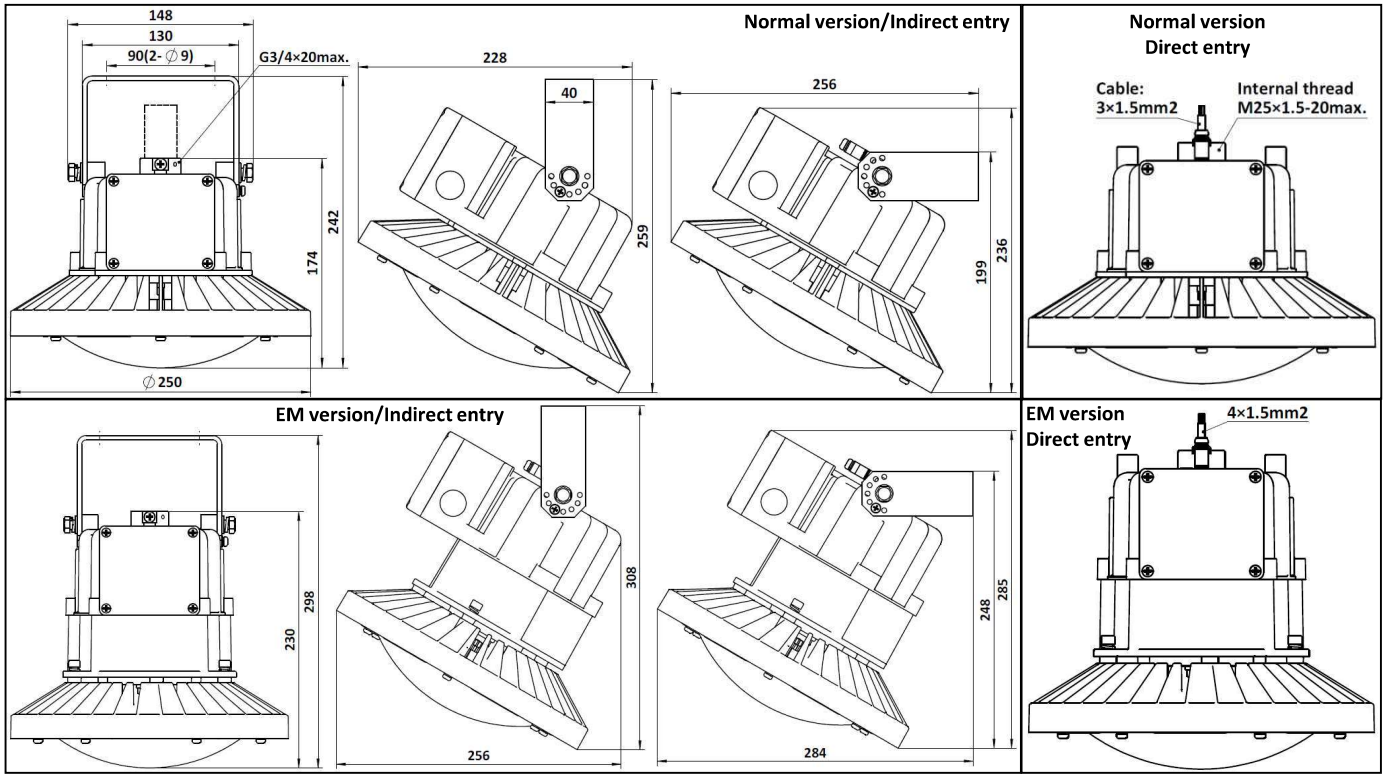
1. Dimensions



2. Technical data

Hazardous area specification	
Type of protection:	Ex d e m & Dust protected enclosure
ATEX classification:	Group II Category 2 G D
Certification Marking:	II2 G Ex db eb mb op is IIC T6 Gb II2 D Ex tb op is IIIC T80ºC Db
Ambient temperature:	-40ºC~+40ºC/45 ºC/50ºC
Temperature class:	Refer to Type configuration
EC type examination Certification No.:	EPT 16ATEX 2405X
Degree of protection:	IP 66 acc. to EN60529/IEC60529
Approval of the production Quality assurance:	Baseefa ATEX 5952
Enclosure specification	
Material of enclosure:	Aluminum alloy without Cu
Finish:	Painted polyester power coating
Material of globe:	Tempered glass
Mounting bracket:	Stainless steel or Steel painted
Fasteners:	All external fasteners stainless steel
Installation:	Mounting bracket with aiming quadrant
Weight:	Refer to Type Configuration.

Entry specification

Indirect entry: M20×1.5 or M25×1.5 cable entry. One entry is fitted with an Exe stopping plug. **Direct entry**: Exd M25×1.5 cable entry.

Electrical specification	
Wattage:	25W~80W
Voltage:	AC: 100V-240V 50/60Hz, DC: 108~250V
Lamp:	LED Arrays
CRI:	70
Insulation class:	I acc. to IEC60598
Terminals capacity:	3 core or 6 core conductor/cable Solid: 0.5~6mm², Flexible: 0.25~4mm²

3. Safety Instructions

This product should be installed, inspected, and maintained by a qualified electrician only, in accordance with national regulation, including the relevant standard and, where applicable, in acc. With IEC/EN 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 and in Zone20!***
- ***When using in Zone21,Zone22, the requirements of IEC/EN 60079-14 relating to temperature must be observed. The indicated surface temperatures in table 7 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 Cooper Crouse-Hinds spare parts may be used for replacement!***
- ***Repairs that affect the explosion protection, may only be carried out by Cooper Crouse-Hinds or qualified electrician!***

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/EN 60079-18, IEC/EN 60079-31. It also complies with the EC 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 9001:2000. The luminaires are suitable for use in explosive atmospheres, Zone1,Zone2 according to IEC60079-10-1 and dust area Zone21 and Zone22 according to IEC60079-10-2.

5. Fields of Application

The ATEX category 2 GD Luminaire with a separate Exe terminal box utilizes Ex dem protection and IP66 sealing making it suitable for use for potentially explosive atmospheres including ignitable gas and dust applications.

The luminaire is designed for use in Zone1/Zone21 and Zone2/Zone22 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~+40/45/50ºC for different version. 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.

6. Cable gland recommend

Entry size	Part No.	Cable size	Torque (Nm)	
			screw-in enclosure	For cable
M20	CAP816609	8.5-16	20	20
M25	CAP816709	12-21	30	30
M25	CCL0803086	12-15	25	42

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

6. Type configuration and Max. Ambient and Temperature Ratings

Fixture Cat.No.	LED Qty.	Wattage (W)	Temperaure Rating		Ta (˚C)	LED parameter		Weight (Kg)	Input Voltage	CCT
			Gas	Dust(˚C)		Forward Current(If)	Forward Voltage(Vf)			
HPL-3L******	3pcs	25	T6	80	-40~+50	700mA	11~12V	4.5	AC:100~240V 50/60Hz DC:108~250V	Cool white: 5700K Warm white: 3000K
HPL-5L******	6pcs	50				630mA				
HPL-3L***-F** HPL-4L***-F** HPL-5L***-F**	6pcs Max.	50 Max.	T6	80	-40~+45	630mA				
HPL-3L******	21pcs Max.	40 Max.	T6	80	-40~+50	700mA	2.75~3.25V			
HPL-4L****** HPL-5L****** HPL-3L***-F** HPL-4L***-F**						630mA				
HPL-6L******	24pcs Max.	50 Max.	T6	80		700mA				
HPL-5L-W****										
HPL-7L******	30pcs Max.	56-75W	T6	80	-40~+45					
HPL-8L******										
HPL-6L-W****										
HPL-5L***-F**			T6	80	-40~+40					
HPL-6L***-F**										
HPL-5L-W*-F**										
HPL-3L*****EM1 HPL-4L*****EM1 HPL-5L*****EM1	6pcsMax. or 21pcs Max.	25-50W	T6	80	-40~+45	700mA	11~12V or 2.75~3.25V	6		
HPL-3L*****EM2 HPL-4L*****EM2 HPL-5L*****EM2			T6	80						

Note: When the fixture is used as a portable product, the special condition for safe use should be follow: Shall not be moved while connected to an electrical suppply. When in use, the equipment shall be supported and mounted in a fixed and stable arrangement.

Fig.1 Permissible angle of adjustment

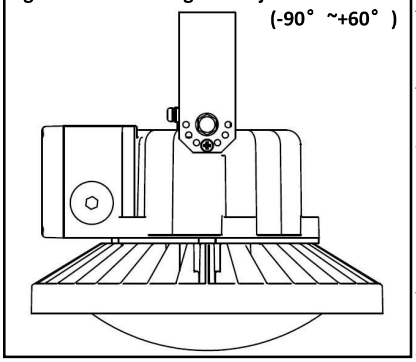


Fig.2 Electrical connection

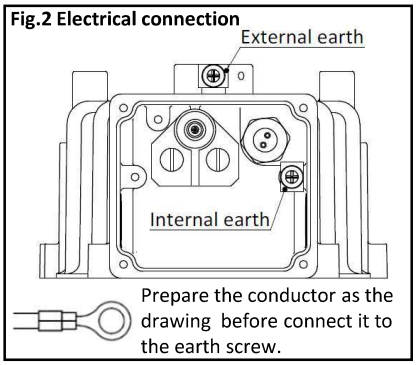
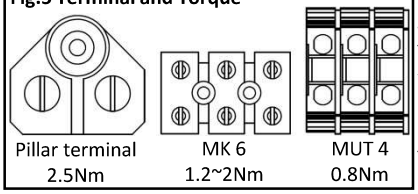


Fig.5 Terminal and Torque



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.***

8.1.1 Emergency light attention

Charging the battery: In mains operation the light fitting is charged by means of constant current output from inverter. Charging takes place via the un-switched external phase L to prevent an interruption, even when the luminaire is switched off. With regular operation of the light fitting, the charging time is requested to more than 16h. It is suitable for a continuous charge of the battery.

Standard emergency output and discharge time refer to Item 6. Regularly inspection on battery states. It is necessary to check if the

battery cell is leak. **LED indicator is green light during the luminaire is normal work and charging battery; LED indicator is flash during battery is discharging; LED will not work, when no supply power, or inverter & battery is bad, or battery is full discharged;**

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.

8.2.2 Adjustment of floodlight

The luminaire can be adjust and lock the luminaire to 30-degree intervals. The holes in the bracket gives increments of 30 degree. Loosen the set screw and fixing bolts to rotate the bracket to set the required tilt angle. Re-tighten the set screw and fixing screws. **See Fig.1 for details**.

The minimum distance between the luminaire and illuminated surface, directly in front of the luminaire, is 0.5 meter. The lamp must not be illuminated when at a distance of less than 0.5m from inflammable material.

8.3 Cable entries/Blanking plugs

The "Increased safety (Exe)" properties must be preserved when select and mount cable entry and plug. Unused holes must be closed with certified plug to establish the Exe protection category. The cable glands and plugs 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 used must be observed. Mounting the selected cable entries acc. type and dimensions of 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. The standard looping cable size is 4mm².

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 undamaged before closing the luminaire. Make sure the luminaires is well closed before operation!

The Driver/Inverter housing is Exd type of protection with cylinder joint. The LED arrays is encapsulated in the Lens sealed with compound to make an Exm type of protection. Make sure the type of protection without damaged during opening/closing.

Open the Exe chamber cover for wiring connection. Open the Driver/Inverter housing to change the battery.

8.4.2 Exe chamber cover

Unscrew the screws and remove the terminal chamber cover and carry out the steps in reverse order to close the luminaire. Check all screws to ensure a secure fit during operation (Torque for screws: 1.5 ~2Nm).

8.4.3 Exd chamber

Unscrew the 5 pcs screws and open the Exd housing to change the battery. And carry out the steps in reverse order to close the luminaire. Check all screws to ensure a secure fit during operation.

8.5 Electrical connection

The electrical connection of the lamp must only be established by qualified electricians.

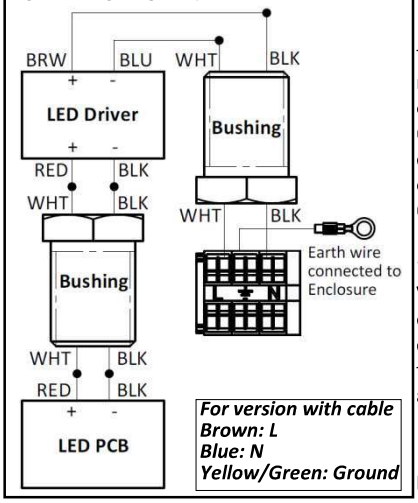
Make sure the supply voltage is the same as the luminaire voltage! Use proper supply wiring as specified on the nameplate of the luminaire and in this instructions! Excessive tightening may affect or damage the connection.

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 1.2~2Nm for MK/6, 0.5~0.7Nm for BK, 2.5Nm for Pillar terminals. 0.8Nm Max for MBK3 and MUT. Main connection: See wiring diagram.

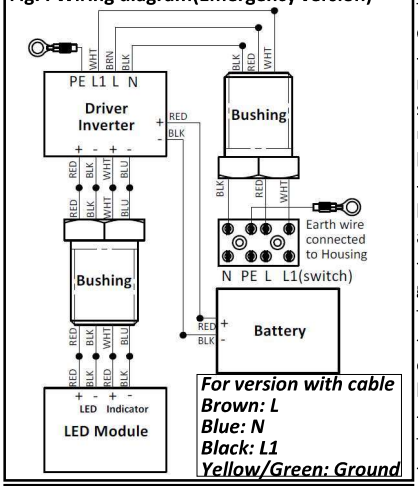
Note: Set one switch at L1 outside of the lighting, when switch off power, but still charge battery at daytime; if the Emergency luminaire and Normal luminaire use one same supply source, refer to Fig 5.

Fig.3 Wiring diagram(Normal version）



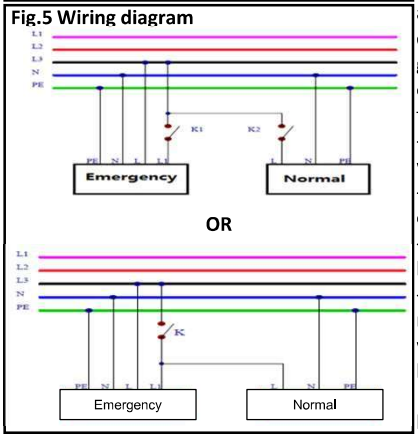
For version with cable
Brown: L
Blue: N
Yellow/Green: Ground

Fig.4 Wiring diagram(Emergency version)



For version with cable
Brown: L
Blue: N
Black: L1
Yellow/Green: Ground

Fig.5 Wiring diagram



The charging conductor L1 and the luminaire's mains connection must always be connected to the same external conductor of the mains supply!

See Fig.2, Fig.3 Fig.4 and Fig.5 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 KV AC/DC
- Measurement current: Max.10 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 (IEC/EN 60079-17). The interval between maintenance depends upon the ambient conditions and the hours of operation. The recommendations given within IEC 60079-17 for recurring checks must be observed.

10.2 Checks

The equipment must be de-energised before opening
Visual inspection should be carried out at a minimum of 12 monthly intervals and more frequently if conditions are severe, refer to IEC/EN 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 energised and examine the enclosure and glass for any signs of cracks and damage.
- When de-energised 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 terminal chamber gasket and LED housing for any damage or permanent set and replace as required.
- To maintain the light output, clean the protective glass 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.
- Terminal, screw glands and blanking plugs for secure fitting.
- The terminal chamber should be opened periodically and checked for moisture and dirt ingress. The cable connections should be checked for tightness. The gasket should be checked for cracks or lack of elasticity, and if necessary, replaced. Cover bolt torque: 1.5~2Nm.
- The flameproof path can not be readily checked, it will not go out of shape.
- The battery should be charged and discharged once every 6 months.
- 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.

Cleaning the rests of grease and corrosion do not use sharp metallic devices that can damage the threads of the joint, and greasing them using appropriate grease terminally and chemically stable with a drop point≥200℃ like e.g.: HTL lubricant from Cooper Crouse-Hinds! When the housing need to be repainted, pay attention that the flameproof joints test without any part with coating!

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 Cooper Crouse-Hinds spare parts.
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.

Battery pack replacement:
In the case of battery failure, the battery pack must be replaced as a complete unit from the manufacturer. First, open the cover, then change the failure battery, last, close the cover.

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 Cooper 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

12. Disposal/Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.

13. Catalog No. definition

HPL	-3L	-W			-1M	-S886	*	*	*	*	*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

(1). HPL — Indicates basic catalog series designation.
(2). Indicates Total Luminous Flux.
-3L—3000Lm, -4L—4000Lm, -5L—5000Lm
-6L—6000Lm, -7L—7000Lm, -8L—8000Lm
(3). Indicates LED colour temperature.
Default — 5700K, -W — 3000K
(4). Indicates Optics type.
Default — Type V optic standard
(5). Indicates ballast voltage.
Default — 100-240V AC 50/60Hz, 108-250V DC
(6). Indicates entry type and size.
-1M — M20×1.5, -2M — M25 ×1.5
-D1 — M25 ×1.5(only use for Direct entry)
(7). Indicates Entry quantity.
Default — One entry, -S886 — Dual entry
(8). Indicates Terminal:
-T1—Pillar terminal, -T2—MK 6/3, -T3— MK 6/6,
-T4—MUT 4（3 pole）, -T5—MUT 4（6 pole）
(9). Indicates Glass
Default—Clear Glass, -F—Foggy Glass
(10). Indicates Entry Acc.
Default—No entry acc, -1P—two entries with 1 Plug
-2G—all entries, with plastic cable gland
-3G—two entries, with 1 plastic plug, 1 cable gland
(11). Indicates Mounting Type.
Default—G3/4 Pendant mount only
-B1—With Painted bracket mount only
-B2—with 304SST bracket mount only
-B3—with 316SST bracket mount only
-B4—with both Painted bracket mount, also available for G3/4 Pendant mount
-B5—with both 304SST bracket mount, also available for G3/4 Pendant mount
-B6—with both 316SST bracket mount, also available for G3/4 Pendant mount
-B7—G3/4 Pendant mount, also with mounting bracket hole cut, but bracket need to order separated.
-B8—only with mounting bracket hole cut, mounting bracket need to be ordered separated.
(12). Emergency duration
Default—Normal version
EM1—1.5H, 30% output; EM2—3H, 15% output;

EU-Konformitätserklärung
EU-Declaration of conformity
UE-Déclaration

EPT16ATEX2405

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

LED Explosion Protected Luminaire

HPL Series

II 2 G Ex db eb mb op is IIC T6 Gb
II 2 D Ex tb op is IIIC T80°C Db IP66

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** **EN 60079-1:2014** **EN IEC 60079-7:2015/A1:2018** **EN 60079-18:2015/A1:2017** **EN60079-31:2014** **EN60079-28:2015**
2014/35/EU 2014/35/EU: 2014/35/UE:	Niederspannungsrichtlinie *Low voltage directive* *Directive basse tension*	**EN 60598-1:2015/A1:2018** **EN 60529:1991/A2:2013/AC:2019- 02**
2014/30/EU: 2014/30/EU: 2014/30/UE:	Elektromagnetische Verträglichkeit *Electromagnetic compatibility* *Compatibilité électromagnétique*	**EN 55015:2013** **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**
2011/65/EU: 2011/65/EU: 2011/65/UE:	RoHS –Richtlinie *RoHS – directive* *Directive RoHS*	**EN 50 581: 2012**

Shanghai, 2021.03.26

Ort und Datum *Place and date* *Lieu et date*	*Head of quality department* Franklin Xu	*Head of approval office* Joyce Zhang

(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.

Crouse-Hinds by EATON