EU Type Examination Certificate CML 17ATEX3305X Issue 1

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **HLL Series LED Explosion Protected Luminaire**

3 Manufacturer **Cooper Electric (Changzhou) Co., Ltd.**

4 Address **No.189 Liuyanghe Road,**
Xinbei District, Changzhou, 213031,
Jiangsu, China

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012 +A11:2013	EN 60079-1:2014	EN 60079-7:2015
EN 60079-11:2012	EN 60079-18:2015	EN 60079-28:2015
EN 60079-31:2014		

10 The equipment shall be marked with the following:

	EM version (HLL****-EM*-****)	Normal version (HLL********)
	Ex II 2 G D	Ex II 2 G D
With Safety Switch	Ex db eb ib mb op is IIC T6 Gb Ex tb op is IIIC T80°C Db	Ex db eb mb op is IIC T6 Gb Ex tb op is IIIC T80°C Db
Without Safety Switch	Ex eb ib mb op is IIC T6 Gb Ex tb op is IIIC T80°C Db	Ex eb mb op is IIC T6 Gb Ex tb op is IIIC T80°C Db
	Ta = -25 ºC to +55 ºC	Ta = -40 ºC to +55 ºC

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11 Description

The HLL Series LED Explosion Protected Luminaire are LED lighting fixtures consisting of housing, end caps and PC cover. The end caps are secured to the housing by screws, and the PC cover is secured to the housing by metal hasps. Gaskets are provided between the housing and end caps and between the housing and PC cover to meet IP66 rating.

The LED lighting fixture is suitable for use in Gas and Dust environments. The input cord is fed in via certified cable glands. Unused entries are sealed with certified plugs to maintain the degree of protection.

The LED lighting fixture for type HLL******** employs a separately certified safety switch to disconnect the power of the LED module when the PC cover is opened.

Nomenclature:

Example Cat.No.	**HLL**	**-2**	**-W**	**-2L**	**-D**	**-EM1**	**-1/6-120**	**-C**	**-R**	**-N**
	(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**	**(h)**	**(i)**	**(j)**

Where:

(a) **HLL = basic catalog series designation.**

(b) Indicates Length.

-2	2 feet length;
-4	4 feet length;

(c) **LED CCT.**

Blank	5000K/ 5700K/ 6500K
-W	3000K/ 4000K

(d) **Total Luminous Flux.**

-2L	2000 Lm (2 feet length 3000K / 4000K only)
-3L	3000 Lm (2 feet length 4000K/ 5000K /5700K/ 6500K only)
-4L	4000 Lm (4 feet length 3000K/ 4000K only)
-5L	5000 Lm (4 feet length 5000K/ 5700K/ 6500K only)

(e) **Zone Area.**

-D	Use for Zone 1

(f) **Emergency duration.**

Blank	Normal version
-EM1	1.5H, 25% output
-EM2	3H, 25% output

(g) **Entry type and size.**

-1/6-120	6 mm^2 Single-ended 1×M20;
-1/6-220	6 mm^2 Single-ended 2×M20;
-1/6-125	6 mm^2 Single-ended 1×M25;
-1/6-225	6 mm^2 Single-ended 2×M25;
-2/6-120	6 mm^2 Through wiring 2-1×M20;
-2/6-220	6 mm^2 Through wiring 2-2×M20;
-2/6-125	6 mm^2 Through wiring 2-1×M25;
-2/6-225	6 mm^2 Through wiring 2-2×M25;
-1/4-120	4 mm^2 Single-ended 1×M20;
-1/4-220	4 mm^2 Single-ended 2×M20;

-1/4-125	4 mm^2 Single-ended 1×M25;
-1/4-225	4 mm^2 Single-ended 2×M25;
-2/4-120	4 mm^2 Through wiring 2-1×M20;
-2/4-220	4 mm^2 Through wiring 2-2×M20;
-2/4-125	4 mm^2 Through wiring 2-1×M25;
-2/4-225	4 mm^2 Through wiring 2-2×M25;

(h) **Surface finished**

Blank	Body No Coating
-C	Coating

(i) **LED module replacement**

Blank	No replace part
-R	Replacement

(j) **Safety Switch**

Blank	With safety switch
-N	Without safety switch

Rating

Voltage: 110 Vac to 240 Vac 50/60 Hz;
108 Vdc to 250 Vdc
Power: HLL-2********: 30 W;
HLL-4********: 60 W

Battery Packs (EM Versions):

HLL-2********: 30 W;	9.6V 3Ah lithium battery pack
	Type IFR26650-9.6V3.0Ah28.8wh
	9.6V 3Ah Ni-Cd battery pack
	Type KRH26/51(C)3000TX8 9.6V
HLL-4********: 60 W	9.6V 6Ah Ni-Cd battery pack
	Type KRHT33/62(D)6000TX8 9.6V

Variation 1:

This variation introduces the following modifications:

i. To include a 3Ah Ni-Cd battery pack 30W arrangement.
ii. To include different colour temperature LEDs of 4000K, 5000K & 6500K.
iii. To allow alternative silicone gasket materials.
iv. To allow the upper ambient to be increased to +55 °C.
v. Addition of 2 securing buckles to the fixture cover.
vi. Change to the certificate description to include the model number nomenclature.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	09 Mar 2018	R2371A/00	Initial Release
1	25 Jul 2018	R11720A/00	Introduction of Variation 1

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

13.1 Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

A copy of the certificate and instructions for each separately certified part installed within the equipment shall be provided as part of the document pack with each arrangement supplied.

13.2 The manufacturer shall fit only the certified Ex Components listed in the Equipment Description in accordance with the certification documentation and the manufacturer's instructions. All Special Conditions of Certification/ Special Conditions for Safe Use/ Schedule of Limitations must be satisfied for each part fitted.

13.3 Dielectric strength test in accordance with IEC 60079-7:2014, CL 7.1 shall be carried out at 1,500 Vac between the input terminal and aluminium housing and maintained for at least 1 min without breakdown.

Alternatively, the test may be carried out at 1,800 Vac (1.2 times the above test voltage), but maintained for at least 100 ms.

Alternatively, a DC voltage may be applied at 140% of the stated AC values.

13.4 Dielectric strength test in accordance with IEC 60079-18:2014, CL 9.2 of shall be carried out at 1500 Vac between the input leads of LED module and aluminium housing and maintained for at least 1 min without breakdown.

Alternatively, the test may be carried out at 1800Vac (1.2 times the above test voltage) but maintained for at least 100 ms.

13.5 Visual inspection according to IEC 60079-18:2014 CL 9.1

14 Special Conditions for Safe Use (Conditions of Certification)

The following conditions relate to safe installation and/or use of the equipment.

14.1 Potential electrostatic charging hazard – Clean only with a damp cloth.

14.2 Flameproof joints shall not be repaired. Contact the manufacturer for information on the flameproof joints.

14.3 All cable gland and stopper plug shall be suitably rated and shall be:

- Certified for II 2 G D, Groups IIC and IIIC, and EPL Gb and Db.
- Rated IP 66.
- Suitable for the ambient temperature range:

Version		Ambient Temperature
Normal version	HLL*******	-40 ºC to +55 ºC
EM version	HLL****-EM1*** and HLL****-EM2***	-25 ºC to +55 ºC

Certificate Annex

Certificate Number	CML 17ATEX3305X
Equipment	HLL Series LED Explosion Protected Luminaire
Manufacturer	Cooper Electric (Changzhou) Co., Ltd.

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
CHLAS0589	1 of 4	B	09/03/2018	HLL Certification Drawing (2 Feet Version)
CHLAS0589	2 of 4	B	09/03/2018	HLL Certification Drawing (4 Feet Version)
CHLAS0589	3 of 4	B	09/03/2018	HLL Certification Drawing (Wiring Diagram)
CHLAS0589	4 of 4	B	09/03/2018	HLL Certification Drawing (Mounting)
CHLPK1216	1 of 1	1	09/03/2018	ATEX Nameplate

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
CHLAS0589	1 of 4	3	25 Jul 2018	HLL Certification Drawing (2 Feet Version)
CHLAS0589	2 of 4	3	25 Jul 2018	HLL Certification Drawing (4 Feet Version)
CHLAS0589	3 of 4	3	25 Jul 2018	HLL Certification Drawing (Wiring Diagram)
CHLAS0589	4 of 4	3	25 Jul 2018	HLL Certification Drawing (Mounting)
CHLPK1216	1 of 1	2	25 Jul 2018	ATEX Nameplate