



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 09ATEX5159X** Issue: **14**

4 Equipment: **HDL106 Warrior Modular Floodlight/Bulkhead**

5 Applicant: **Chalmit Lighting**

6 Address: (Trading as Hadar Lighting)

388 Hillington Road

Glasgow G52 4BL

United Kingdom

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Articles 17 and 21 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 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012

EN 60079-7:2007

IEC 60079-18:2009 Ed 3

EN 60079-31:2009

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

Refer to the Schedule

Project Number 70126524

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N Jones  
Certification Manager

**Sira Certification Service**

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**SCHEDULE**

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Issue 14**

13 **DESCRIPTION OF EQUIPMENT**

**Marking**

**All Versions**



II 2 G D

**HDL106S and HDL106N (100 V to 254 V 50/60 Hz)**

Ex e mb IIC T4 Gb  
Ex tb IIIC T103°C Db IP66/67  
Ta = -20°C to +50°C

Ex e mb IIC T3 Gb  
Ex tb IIIC T103°C Db IP66/67  
Ta = -20°C to +59.5°C

**HDL106E and HDL106NE**

Ex e mb IIC T4 Gb  
Ex tb IIIC T103°C Db IP66/67  
Ta = -20°C to +50°C\*

Ta = -20°C to +55°C\*

**HDL106N (18 V to 54 V AC/DC)**

Ex e mb IIC T4 Gb  
Ex tb IIIC T87°C Db IP66/67  
Ta = -20°C to +55°C

**HDL106A**

Ex e mb IIC T6 Gb  
Ex tb IIIC T70°C Db IP66/67  
Ta = -20°C to +50°C

Ex e mb IIC T5 Gb  
Ex tb IIIC T85°C Db IP66/67  
Ta = -20°C to +65°C

\* See certificate conditions.

The Type HDL106 Warrior Modular Floodlight/Bulkhead comprises an aluminium or stainless steel rectangular base with clear or translucent polycarbonate cover. The cover is secured to the base by four M6 x 16mm screws. The module is intended for use in fixed installations and is provided with appropriate mounting brackets for this purpose.

The base of the enclosure houses an encapsulated power supply and control board. An LED assembly is mounted to the base of the enclosure, such that it sits above the encapsulated power supply and control board, but behind the outer polycarbonate cover. The LED assembly comprises two compartments, each with integral polycarbonate cover, which are effectively encapsulated onto an aluminium base plate. Each compartment is fitted with 24 LEDs; the LEDs can be white, infra red, coloured or a combination.

The base of the enclosure is also fitted with Exe certified terminals, which provide connection facilities for incoming cables and between the control board and LED assembly.

The interior of the enclosure may also be fitted with an encapsulated fuse assembly.

Up to 8 cable entry holes may be provided depending on customer requirements.

Internal and external earthing facilities are provided.

The units are designed for use on an electrical supply of either 100 to 254 V 50/60 Hz or 24 V ac/dc dependant upon their construction.

An optional photocell may be supplied, which is located in an appropriate cable entry hole and provided with a steel or stainless steel shroud.

Up to 6 modules may be interlinked to provide overall higher output assemblies.

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**Variation 1** - This variation introduced the following changes:

- i. The numbering of the Special Conditions for Safe Use was corrected.
- ii. The Special Condition for Safe Use that controls the replacement of the LEDs was amended, refer to clause 15.8.
- iii. The optional addition of a coloured glass plate to the inside of the LED assembly housing was recognised.

**Variation 2** - This variation introduced the following changes:

- i. The introduction of two alternative encapsulated power supply and control board assemblies.

**Variation 3** - This variation introduced the following changes:

- i. The addition of an optional, aluminium battery housing to the rear of the unit, this allows battery operation. In this arrangement, the unit is designated as a HDL106E Emergency LED Floodlight.
- ii. The Description of Equipment was amended to clarify that the applicable electrical rating depends on the construction of the unit.

**Variation 4** - This variation introduced the following changes:

- i. The introduction of a new luminaire, type reference HDL106A, with a T6 temperature classification.
- ii. Following appropriate assessment to demonstrate compliance with the requirements of a later standard, EN 61241-0:2006 and EN 61241-1:2004 were replaced by EN 60079-31:2009.
- iii. The inclusion of an extra wide beam (90°) version.
- iv. The option of a 'warm white light version' and the separation of the 'yellow light version' into two categories; 'yellow filter white light' and 'yellow filter warm white light' was endorsed.
- v. A 'single compartment' LED enclosure version was recognised.

**Variation 5** - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the requirements of the latest technical knowledge, EN 60079-0:2012 replaced EN 60079-0:2006.

**Variation 6** - This variation introduced the following changes:

- i. The value of three, board mounted resistors, R1, R7 and R15, was changed from 47 kΩ 0.12 W to 22 kΩ 0.27 W.

**Variation 7** - This variation introduced the following changes:

#### **R29742A/00**

- i. The use of an alternative control board for the emergency version of the luminaire was approved.
- ii. It was recognised that an optional switch may be mounted in the wall of the casting of the emergency version of the luminaire.
- iii. Type GP700DHT Battery packs were allowed to be used in the emergency battery enclosure.
- iv. The Weidmuller IECEx certified terminals, IECEx SIR 05.0035U and IECEx SIR 05.0037U, were replaced by the ATEX equivalent versions, Sira 01ATEX3247U and Sira 01ATEX3249U, consequently, the associated Special Conditions for Safe Use were amended.
- v. The Wago IECEx certified terminals, IECEx PTB 04.0003U and IECEx PTB 04.0004U, were replaced by the ATEX equivalent versions, PTB 98ATEX3129U and PTB 98ATEX3125U.

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#### R32243A/00

- i. The certification drawings were updated to show how the LED Assembly cables are sheathed.
- ii. The following changes to the encapsulation process were recognised:
  - a. The clear LED cover is now sealed to the base of the LED Light Engine plaque using silicone compound prior to encapsulation to create a sealed void.
  - b. Silicone compound is applied to the cables at the rear of the LED tray to plug the cable entry hole.
  - c. The curing times of the encapsulant have been increased.

#### **Variation 8** - This variation introduced the following changes:

- i. The use of an alternative power supply and control board for use with a 24V ac/dc supply was approved.
- ii. The recognition of a new product code "N" for a high output LED.
- iii. The product code was modified to recognise additional cable entry options.
- iv. Drawing WF-710 was removed from the list of certified documents.

#### **Variation 9** - This variation introduced the following changes:

- i. A new version of the High Output LED Modular Floodlight/Bulkhead was introduced; this version has a low voltage power supply, 18 V to 54 V AC/DC, and is suitable for an ambient temperature range of -20°C to +55°C.
- ii. Because of previous inconsistencies, the model numbers of the currently available versions of the Transportable Modular Floodlight/Bulkhead were clarified, see list below; the marking section was amended to recognise the safety information applicable to these versions.

HDL106	Generic Name
HDL106S	Standard Version
HDL106A	T6 Rating Version
HDL106N	High Output LED Version (100 V to 254 V 50/60 Hz)
HDL106N	High Output LED Version (18 V to 54 V AC/DC)
HDL106E	Emergency Version
- iii. The application of a Trimate coating on the lens cover was permitted.
- iv. The voltage range of the high voltage version quoted in Product Description was changed from 100 to 240 V 50/60 Hz to 100 to 254 V 50/60 Hz as detailed in section 1.7 of Sira report R19590A/00 and on the manufacturer's drawings.

#### **Variation 10** - This variation introduced the following changes:

- i. The option of using an encapsulated fuse on the neutral terminal of the equipment was introduced.
- ii. The option of using blue LEDs was introduced.
- iii. The dust certification code was amended to reflect the 'alternative' marking recognised by the standards.
- iv. The condition relating to the fuse protecting the circuit was modified to remove reference to the optional fuse

#### **Variation 11** - This variation introduced the following changes:

- i. Correct typographical error on certificate. The battery which is currently listed as being "GP770DHT" has been corrected to read "GP700DHT".

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- ii. Increase of the ambient temperature to +65°C for the "T6 version". Alternate temperature markings were introduced.
- iii. Increase of the ambient temperature to +59.5°C for "High Voltage Assembly C" control board option of the HDL106S version. Alternate temperature markings were introduced.
- iv. Increase of the ambient temperature to +55°C for the emergency version when operated at a 50% output. Alternate temperature markings were introduced.
- v. Introduction of a fuse on the control board for the HDL106N (18 V to 54 V AC/DC) version.
- vi. Removal of two control board options from the scope of the certification.
- vii. Recognition of the HDL106NE version.

**Variation 12** – This variation introduced the following change:

- i. The certificate was transferred:

From:	To:
Hadar Lighting	Chalmit Lighting
Jubilee Industrial Estate	(Trading as Hadar Lighting)
Ashington	388 Hillington Road
Northumberland NE63 8UG	Glasgow G52 4BL
United Kingdom	United Kingdom
- ii. A typographical error was corrected in the Specific Conditions of Use.

**Variation 13** - This variation introduced the following changes:

- i. The introduction of a glass lens diffuser design as an optional alternative to the existing polycarbonate diffuser.

## 14 DESCRIPTIVE DOCUMENTS

### 14.1 Drawings

Refer to Certificate Annexe.

### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	16 February 2010	R19590A/00	The release of the prime certificate.
1	17 June 2010	N/A	Issued to correct the date listed in Issue 0
2	27 August 2010	R22684A/00	The introduction of Variation 1.
3	24 January 2011	R23576A/00	The introduction of Variation 2.
4	12 July 2011	R24254A/00	The introduction of Variation 3.
5	21 December 2012	R27847A/00	The introduction of Variation 4.
6	27 February 2013	R29154A/00	The introduction of Variation 5.
7	19 September 2013	R31385A/00	The introduction of Variation 6.
8	27 February 2014	R29742A/00 R32243A/00	The introduction of Variation 7.
9	08 May 2014	R70004694A	The introduction of Variation 8.
10	02 April 2015	R70005931A	The introduction of Variation 9.
11	29 May 2015	R70029223A	The introduction of Variation 10.

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Issue	Date	Report number	Comment
12	11 July 2016	R70055620A	This Issue covers the following changes: <ul style="list-style-type: none"><li>• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i></li><li>• The introduction of Variation 11.</li></ul>
13	24 February 2017	R70055620A/01 R70120554A	The introduction of Variation 12.
14	23 March 2017	R70126524A	The introduction of Variation 13.

- 15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)
- 15.1 Except for internal wiring, not more than one single or multiple strand lead shall be connected into either side of any terminal, unless multiple conductors have been joined in a suitable manner, e.g. two conductors into a single insulated crimped boot lace ferrule.
- 15.2 Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1 mm of the metal of the terminal throat
- 15.3 When terminals in accordance with certificate Sira 01ATEX3247U are used, all terminal screws, used and unused, shall be tightened down to between 0.5 Nm and 0.7 Nm.
- 15.4 When terminals in accordance with certificate Sira 01ATEX3249U are used, all terminal screws, used and unused, shall be tightened down to between 1.2 Nm and 2 Nm.
- 15.5 When terminals in accordance with certificates Sira 01ATEX3247U and Sira 01ATEX3249U are used, they shall only be installed and wired with cable within a temperature range of -10°C to 80°C.
- 15.6 When cross-connecting combs are used on terminals to certificates Sira 01ATEX3247U and Sira 01ATEX3249U, the relevant conditions associated with those certificates shall be applied.
- 15.7 Cable entry holes shall be fitted with either an appropriately certified cable gland or appropriately certified blanking element. These shall provide and maintain a minimum enclosure ingress protection of IP66 or IP67 as appropriate.
- 15.8 If more than 8 individual LEDs are not illuminated, the LED assembly shall be replaced.
- 15.9 The supply circuit shall be protected by a fuse capable of withstanding a prospective short circuit current of 1500 A.
- 15.10 The HDL106E and HDL106NE, the battery powered emergency versions, are suitable for an ambient temperature range of -20°C to +50°C when installed with the terminal cross-link in accordance with the manufacturer's installation instructions, which achieves a 100% output, i.e. 48 illuminated LEDs. The HDL106E and HDL106NE are suitable for an ambient temperature range of -20°C to +55°C when the terminal cross-link is not installed, which achieves 50% output, i.e. 24 illuminated LEDs.

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### Sira Certification Service

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- 16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)**  
The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.
- 17 **CONDITIONS OF MANUFACTURE**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 Every unit, including fuse assembly when fitted, shall be subjected to a routine dielectric strength test of at least 1508 V r.m.s. a.c. applied for at least 1 s, or at least 1810 V r.m.s. a.c. applied for at least 100 ms, between all terminals and the equipment enclosure, in accordance with Clause 9.2 of IEC 60079-18:2009.
- 17.4 Every unit shall be subjected to a visual inspection in accordance with Clause 9.1 of IEC 60079-18:2009.

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# Certificate Annexe



**Certificate Number:** Sira 09ATEX5159X  
**Equipment:** HDL106 Warrior Modular Floodlight/Bulkhead  
**Applicant:** Chalmit Lighting

## Issue 0

Number	Sheet	Rev.	Date	Description
ALC0014	1 to 3	0	16 Jul 09	HDL 106 LED Luminaire
ALC0003	1 of 1	-	08 Mar 06	Encapsulated Fuse Assembly

**Issue 1** No new drawings were introduced.

## Issue 2

Number	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 of 3	0	26 Aug 10	HDL 106 LED Luminaire
ALC0014	2 of 3	1	26 Aug 10	HDL 106 LED Luminaire
ALC0014	3 of 3	0	26 Aug 10	HDL 106 LED Luminaire

## Issue 3

Number	Sheets	Rev.	Date (Sira stamp)	Title
ALC0015	1 of 1	0	18 Jan 11	Alternative Control Gear

## Issue 4

Number	Sheets	Rev.	Date (Sira stamp)	Title
ALC0016	1	04	06 Jul 11	HDL 106 Emergency Battery Enclosure

## Issue 5

Number	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 3	05	11 Dec 12	HDL106 LED Luminaire Ex emb

**Issue 6** No new drawings were introduced.

## Issue 7

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0025	1 & 2	00	18 Sep 13	Schematic
ALC0024	1	-	18 Sep 13	Bill of Materials

## Issue 8

R29742A/00 introduced the following:

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 3	08	22 Oct 13	HDL106 LED Luminaire Ex emb
ALC0016	1 & 2	07	22 Oct 13	HDL106 Emergency Battery Enclosure
ALC0021	1 of 1	02	16 Oct 13	Exe Increased Safety Ni/Mh Battery Assembly 6V 7Ah
WF-710*	1 to 3	06	22 Oct 13	HDL106T Transportable LED Luminaire Ex emb

\* Removed from drawing list at Issue 9.

R32243A/00 introduced the following:

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 3	10	24 Feb 14	HDL106 LED Luminaire Ex emb
WF-710*	1 to 3	8	24 Feb 14	HDL106T Transportable LED Luminaire Ex emb

\* Removed from drawing list at Issue 9.

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# Certificate Annexe



**Certificate Number:** Sira 09ATEX5159X  
**Equipment:** HDL106 Warrior Modular Floodlight/Bulkhead  
**Applicant:** Chalmit Lighting

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## Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 4	11	17 Apr 14	HDL106 LED Luminaire
ALC0026	1 of 1	00	17 Apr 14	HDL106 LV Control Gear

## Issue 10

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 4	12	16 Mar 15	HDL106 LED Luminaire Ex emb

## Issue 11

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0014	1 to 4	14	19 May 15	HDL106 LED Luminaire Ex emb

## Issue 12

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
ALC0014	1 to 3	15	08 Apr 16	HDL106 LED Luminaire Ex emb
ALC0015	1 of 1	01	08 Apr 16	Alternative Control Gear for HDL106S LED Luminaire
ALC0037	1 of 1	00	08 Apr 16	HDL106 Cert Drawings

## Issue 13

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
H038919	1 of 1	0	14 Feb 17	HDL106 Nameplates

## Issue 14

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
H038775	1 of 1	0	09 Mar 17	Diffuser variant

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