



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx SIR 06.0027** issue No.: **3**

Status: **Current**

Date of Issue: **2014-05-21** Page 1 of 4

Certificate history:

Issue No. 3 (2014-5-21)
Issue No. 2 (2014-4-14)
Issue No. 1 (2014-2-28)
Issue No. 0 (2006-11-13)

Applicant: **Hadar Lighting Limited**
Factory 1
Jubilee Industrial Estate
Ashington
Northumberland NE63 8UG
United Kingdom

Electrical Apparatus: **HDL102 & HDL108 Recess Luminaires**
Optional accessory:

Type of Protection: **Increased safety, Encapsulation, Flameproof and Dust**

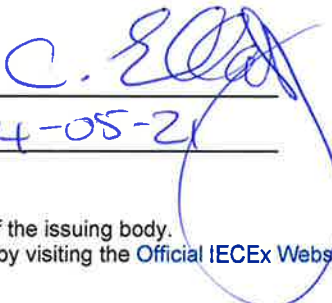
Marking: **For Full Marking see Annexe**

Approved for issue on behalf of the IECEx Certification Body: **C Ellaby**

Position: **Deputy Certification Manager**

Signature:
(for printed version)

Date:


2014-05-21

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the **Official IECEx Website**.

Certificate issued by:

SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

sira
CERTIFICATION





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Manufacturer: **Hadar Lighting Limited**
Factory 1
Jubilee Industrial Estate
Ashington
Northumberland NE63 8UG
United Kingdom

Additional Manufacturing location
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|--|---|
| IEC 60079-0 : 2004 Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| IEC 60079-1 : 2003 Edition: 5 | Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd' |
| IEC 60079-18 : 2004 Edition: 2.0 | Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus |
| IEC 60079-7 : 2001 Edition: 3 | Electrical apparatus for explosive gas atmospheres - Part 7: Increased safety 'e' |
| IEC 61241-0 : 2004 Edition: 1 | Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements |
| IEC 61241-1 : 2004 Edition: 1 | Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/SIR/ExTR06.0111/00
GB/SIR/ExTR14.0126/00

GB/SIR/ExTR14.0013/00

GB/SIR/ExTR14.0093/00

Quality Assessment Report:

GB/SIR/QAR06.0035/00
GB/SIR/QAR06.0035/03

GB/SIR/QAR06.0035/01
GB/SIR/QAR06.0035/04

GB/SIR/QAR06.0035/02



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The recess luminaires are available in 2 x 58 W, 2 or 4 x 36 W or 2 or 4 x 18 W T8 lamp versions or a 2 x 18 W compact fluorescent version. The recess standard and emergency luminaires are designed for use with an electrical supply of either 110 V to 254 V a.c. 50/60 Hz, 110 V to 130 V a.c. 50/60 Hz or 220 to 254 V 50/60 Hz a.c. 50/60 Hz. The standard luminaire is also suitable for use with d.c. voltages.
For a Full Description and the Marking Details see the Annexe of this certificate.

CONDITIONS OF CERTIFICATION: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

| | |
|---|--|
| Issue 1 – this Issue introduced the following changes: | |
| 1. | A change to the revision status of the existing Mackwell SM484 inverter PCB on the manufacturer's drawings, from Rev 3 to Rev 5, this recognises changes to the physical construction. |
| 2. | The introduction of a new inverter model, Mackwell type S5CHE, as an alternative to the existing model, the Mackwell type SM484. |
| Issue 2 – this Issue introduced the following change: | |
| 1. | The introduction of alternative lamp terminals on the HDL102 & HDL108 luminaires was recognised. |
| Issue 3 – this Issue introduced the following change: | |
| 1. | The certification drawing was corrected to show that the cells within the battery pack are connected in series. |

Annexe to: IECEx SIR 06.0027 issue 3
Applicant: Hadar Lighting Ltd
Apparatus: HDL102 & HDL108 Recess Luminaires



Product Description

The HDL102 & HDL108 Recess Luminaires are increased safety fittings that comprise a steel body, control gear, lampholders suitable for use with T8 bi-pin lamps or a terminal arrangement when compact fluorescent lamps are used, a diffuser frame, and, for the emergency fittings, a battery assembly. The diffuser frame may be fitted with either plain or prismatic toughened glass and utilises either a silicone or polyurethane gasket for sealing the glass into the frame and further secured by means of a mechanical plate and M6 nuts. M6 screws seal the frame, fitted with a silicone gasket to the main body.

The HDL102 Recess Luminaires are manufactured with appropriate enclosure features to enable them to be fitted to modular or non-modular ceilings or surface mounted. The HDL108 Recess Luminaires may be mounted in any attitude.

The standard and emergency luminaires are designed for use with an electrical supply of either 110 V to 254 V a.c. 50/60 Hz, 110 V to 130 V a.c. 50/60 Hz or 220 to 254 V 50/60 Hz a.c. 50/60 Hz. The standard luminaire is also suitable for use with d.c. Voltages.

The control gear comprises an encapsulated gear assembly consisting of a fuse, inverter and ballast. Both the control gear and battery pack are secured to a metal gear tray, which is fixed into the base of the main body using screws.

The ballast incorporates circuit design with lamp end of life detection, which complies with the draft requirements of IEC 60079-7 Edition 4, Annex H.

Cable entry holes for suitably ATEX or IECEx certified cable glands are provided within the main body.

The supply terminal block is either a Wago 262 series terminal block, Wago 264 series terminal block or a Weidmüller Type MK6 terminal block, certified under IECEx PTB 04.0004U, IECEx PTB 04.0003U and IECEx SIR 05.0037U respectively. The internal terminal blocks used are Weidmüller Type BK terminal blocks, certified under IECEx SIR 05.0035U. All terminal blocks are coded Ex e II.

Options

- Lamp ratings:
 - 2 x 18 W CFL (Compact Fluorescent Lamps)
 - 2 or 4 x 18 W
 - 2 or 4 x 36 W
 - 2 x 58 W
- The Recess Luminaires may be used as an emergency luminaire when fitted with a battery pack.
- The Recess Luminaires have the option of utilising a previously certified Ex 'de' microswitch to either isolate the supply when the diffuser is removed or, in the case of the emergency luminaire, isolate the battery.

Annexe to: IECEx SIR 06.0027 issue 3
Applicant: Hadar Lighting Ltd
Apparatus: HDL102 & HDL108 Recess Luminaires



Marking Details

2 x 58 W Standard Units:

Ex emb II T5 (-40°C to +40°C)
Ex demb IIC T5 (-40°C to +40°C)
Ex emb II T4 (-40°C to +55°C)
Ex demb IIC T4 (-40°C to +55°C)
Ex tD A21 IP 64 T75°C

2 or 4 x 36 W & 2 or 4 x 18 W Standard Units:

Ex emb II T5 (-40°C to +40°C)
Ex demb IIC T5 (-40°C to +40°C)
Ex emb II T4 (-40°C to +55°C)
Ex demb IIC T4 (-40°C to +55°C)
Ex tD A21 IP 64 T75°C

2 x 58 W Emergency Units:

Ex emb II T5 (-15°C to +40°C)
Ex demb IIC T5 (-15°C to +40°C)
Ex emb II T4 (-15°C to +55°C)
Ex demb IIC T4 (-15°C to +55°C)
Ex tD A21 IP 64 T75°C

2 or 4 x 36 W & 2 or 4 x 18 W Emergency Units:

Ex emb II T5 (-15°C to +40°C)
Ex demb IIC T5 (-15°C to +40°C)
Ex emb II T4 (-15°C to +55°C)
Ex demb IIC T4 (-15°C to +55°C)
Ex tD A21 IP 64 T75°C

2 x 18 W CFL Standard Units:

Ex emb II T3 (-40°C to +55°C)
Ex demb IIC T3 (-40°C to +55°C)
Ex emb II T4 (-40°C to +35°C)
Ex demb IIC T4 (-40°C to +35°C)
Ex tD A21 IP 64 T90°C

2 x 18 W CFL Emergency Units:

Ex emb II T3 (-15°C to +55°C)
Ex demb IIC T3 (-15°C to +55°C)
Ex emb II T4 (-15°C to +35°C)
Ex demb IIC T4 (-15°C to +35°C)
Ex tD A21 IP 64 T90°C

Note: The luminaires that are fitted with a Ex 'de' microswitch are marked 'demb'

Conditions of Manufacture

The manufacturer shall note the following conditions:

- 1 The following routine tests are to be performed on each product manufactured:
 - i The encapsulated parts of the apparatus shall be subjected to a visual inspection. No visible damage of the compound shall be evident, such as cracks, exposure of the encapsulated parts, flaking, impermissible shrinkage, discoloration, swelling decomposition or softening, as required by IEC 60079-18:2004 Clause 9.1.
 - ii An electric strength test of $2U + 1000$ V (where U is the supply voltage) with a minimum of 1500 V ac, shall be applied between circuit and casing for at least 1 minute as required by IEC 60079-7:2003 Clause 6.1. Or the test shall be made at 1.2 times the test voltage for at least 100 ms in accordance with IEC 60079-18:2004 Clause 9.2. No breakdown shall occur. No breakdown shall occur.
- 2 The Luminaires covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the Luminaires.

Date: 20 May 2014

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Form 9530 Issue 1

Sira Certification Service

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