



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 06ATEX3079X** Issue: **1**

4 Equipment: **HDL100S & HD100E Fluorescent Luminaires**

5 Applicant: **Hadar Lighting Ltd**

6 Address: Factory 1
Jubilee Industrial Estate
Ashington
Northumberland
NE63 8UG

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 Article 9 of Directive 94/9/EC of 23 March 1994, 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 60079-0:2004	EN 60079-7:2003	EN 60079-18:2004
IEC 61241-0:2004	IEC 61241-1:200	

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC 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:

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



II 2 G D
Ex emb II T5 (-30°C to +32°C)
Ex emb II T4 (-30°C to +55°C)
Ex tD A21 IP 66/IP 67 T100°C

2 x 58 W Standard Units:



II 2 G D
Ex emb II T4 (-30°C to +53°C)
Ex tD A21 IP 66/IP 67 T100°C

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



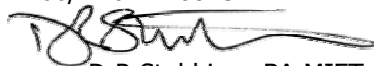
II 2 G D
Ex emb II T5 (-15°C to +32°C)
Ex emb II T4 (-15°C to +55°C)
Ex tD A21 IP 66/IP 67 T100°C

2 x 58 W Emergency Units:



II 2 G D
Ex emb II T4 (-15°C to +53°C)
Ex tD A21 IP 66/IP 67 T100°C

Project Number 51L14344
C. Index 05


D R Stubbings BA MIET
Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

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Issue 1

13 DESCRIPTION OF EQUIPMENT

These Fluorescent Luminaires are available as either a standard version (HDL100S) and an emergency version incorporating an integral battery (HD100E). They comprise a lamp envelope, a control gear housing and an extruded aluminium reflector. A silicone gasket is used to seal the lamp envelope and the lid to the main body. The lamp envelope has a clear polycarbonate oval section tube, one end is fitted with a moulded end plate and the other is fitted with a moulded connection plate; both are secured with silicone adhesive. Two M6 screws secure the moulded connection plate to the control gear housing.

Four, bi-pin lampholders are mounted on a tube carrier enclosed within the lamp envelope, this carrier consists of an aluminium conduit and moulded mounting plates. Electrical connection is achieved by connecting two of the lampholders and the neutral lead to Fa6 connection pins, thus, the Fa6 connection pins on the lamp carrier plate and on the control gear enclosure are connected together.

An isolating switch for the luminaire control gear is not required because replacement of the lamps is carried out by removing the lamp enclosure, this withdraws Fa6 connection pins from the lampholders fitted to the control gear enclosure, thus disconnecting the electrical supply to the lamps.

The control gear housing consists of a main body and a lid secured by four, M6, captive screws. Within the housing, a battery pack (emergency version only) and an encapsulated gear assembly, comprising of a fuse, inverter and ballast, are fixed to the main body using self-tapping screws into the base of the enclosure. The main body is secured to the reflector by two M6 bolts and dowty washers, these are retained with a nut located in the channel of the extruded reflector.

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

Two cable entry holes for suitably ATEX certified cable glands are provided in the control gear housing, these facilitate through wiring of the luminaires. When the pole mounted version is used, a single entry is also located in the rear of the enclosure.

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

The fluorescent 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.

- Options:**
- i. Available lamp ratings: 2 x 18 W; 2 x 36 W; 2 x 58 W
 - ii. The fluorescent luminaires may be mounted in any attitude, pole mounted and are suitable for use with Unistrut or equivalent accessories.
 - iii. The fluorescent luminaires are suitable for use with either T8 bi-pin or T8 single pin lamps.
 - iv. An earth continuity plate may be fitted.



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Variation 1: This variation introduced the following changes:

- i The option of a 2 x 18 W standard (Type HD109S) and emergency (HD109E) Bulkhead Luminaire to be added to the range coded as follows:

2 x 18 W Standard Units:

Ex emb II T3 (-20°C to +40°C)

Ex tD A21 IP 66/IP 67 T100°C

2 x 18 W Emergency Units:

Ex emb II T3 (-15°C to +40°C)

Ex tD A21 IP 66/IP 67 T100°C

- ii The HD100 fluorescent luminaires may be installed in areas of high mechanical risk when used down to -20°C ambient temperature.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	7 July 2006	R51L14344A	The release of prime certificate.
1	14 June 2007	R51L16290A	This Issue covers the following changes: All previously issued certification was rationalised into a single certificate, Issue 1, and included Variation 1, changes made to 15.2 and 17.6 as a result.

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

- 15.1 The encapsulant has not been tested for resistance to moisture absorption because the enclosure is designed to maintain IP 66/67. The luminaire shall be installed such that the IP 66/67 rating will be maintained.
- 15.2 The HD100 Fluorescent Luminaires shall only be installed in areas of low mechanical risk when used below -20°C, although the lens of the fluorescent luminaire is suitable for high impacts.
- 15.2 WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD – Refer to the instruction on how to clean the equipment safely and prevent Static charge build up.

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.

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17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The following routine tests are to be performed on each product manufactured:
- 17.4 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 EN 60079-18:2004 Clause 7.1.
- 17.5 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 EN 60079-7:2003 Clause 6.1. No breakdown shall occur.
- 17.6 This report relies on the following previously certified products. When used as part of the ballast/inverter assemblies, the key attributes listed in the table below shall still be maintained by their original certificate.

Description	Certificate Number	Key Attributes
Wago 262	IECEX PTB 04.0004U	EEx e II and compliance with the electrical parameters stated in the prime certificate.
Wago 264	IECEX PTB 04.0003U	EEx e II and compliance with the electrical parameters stated in the prime certificate.
Type MK 6	IECEX SIR 05.0037U	EEx e II and compliance with the electrical parameters stated in the prime certificate.
Type BK 6	IECEX SIR 05.0035U	EEx e II and compliance with the electrical parameters stated in the prime certificate.

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Certificate Annexe

Certificate Number: Sira 06ATEX3079X
Equipment: HDL100S & HD100E Fluorescent Luminaires
Applicant: Hadar Lighting Ltd



Issue 0

Number	Sheet	Rev.	Date (Sira stamp)	Description
ALC0001	1 to 3	-	03 Jul 06	Increased Safety Fluorescent & Bulkhead Luminaire
ALC0002	1 of 1	-	28 Jun 06	EEx e Increased Safety Bi Pin Lamp Holder
ALC0003	1 of 1	-	28 Jun 06	EEx e Encapsulated Fuse Assembly
ALC0004	1 of 1	-	28 Jun 06	EEx e Increased Safety Ni/Cd Battery Assembly
ALC0006	1 of 1	-	05 Jul 06	EEx m Encapsulated Ballast & Ballast/Inverter

Issue 1

Number	Sheet	Rev.	Date (Sira stamp)	Description
ALC0001	2 of 3	1	29 May 07	HDL100S & HDL100E Increased Safety Luminaire
ALC0010	1 of 1	-	29 May 07	HDL109S & HDL109E Increased Safety Luminaire

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