1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 08ATEX3098X** Issue: **6**

4 Equipment: **Wolf Fluorescent Leadlamp**

5 Applicant: **Wolf Safety Lamp Company Limited**

6 Address: Saxon Road Works
Sheffield
S8 0YA
England

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 60079-0:2009 EN 60079-7:2007 EN 60079-18:2009 EN 61241-0:2006 EN 61241-1:2004

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 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:

II 2 G D
Ex emb IIC T* Gb (-**°C to +**°C)
Ex embd IIC T* Gb (-**°C to +**°C)
Ex tD A21 IP 66/IP 67/IP 68 T***°C
(Refer to certificate schedule for markings applicable to particular models)

Project Number 28113

C Ellaby
Deputy Certification Manager

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13 **DESCRIPTION OF EQUIPMENT**

These Fluorescent Luminaires are suitable for temporary lighting installations for use in fixed installations; they are available as either a standard version or an emergency version incorporating an integral battery. The luminaires comprise a clear, circular, polycarbonate lamp envelope with two aluminium end caps. The lamp envelope will have a clear anti static coating to safely dissipate any static electricity. The end caps are secured to the tube via the internal gear tray/reflector, which is fabricated from steel or aluminium, two M6 screws and dowty washers are used to secure each end cap. A silicone gasket is fitted within a groove on each end cap, thus maintaining the required IP64 rating. The luminaires have additionally been independently tested according to the requirements of EN 60529 to meet IP 66/67/68 (3 m for 30 minutes) ratings; note that when sockets are fitted, only IP66 is applicable.

2xCFL Variants – These are suitable for use with 2 x 18, 36 or 55 W compact fluorescent lamps with 2G11 base, the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks on one side and lamp supports on the other, this distributes light through 180°.

4xCFL Variants - These are suitable for use with 4 x 18, 36 or 55 W compact fluorescent lamps with 2G11 base, each side of the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks and lamp supports, this distributes light through 360°.

2xT8 Variants – These are suitable for use with 2 x 18, 36 or 58 W T8 fluorescent lamps, either bi pin (G13 cap) or single pin (Fa6 cap), the gear tray/reflector contains one encapsulated ballast assembly complete with associated terminal blocks on one side and bi pin or single pin lampholders on the other side, this distributes light through 180°. On emergency versions, an encapsulated inverter, fuse and Ex e battery are also present alongside the ballast t.

The ballast incorporates circuit design with lamp end of life detection, which complies with the requirements of IEC 60079-7 Edition 4, Annex H. Cable entry holes for suitably ATEX or IECEx certified cable glands are provided in the end caps to facilitate through wiring of the luminaires. The supply terminal block is either a Wago 262 series terminal block, Wago 264 series terminal block, a Weidmüller Type BK4 terminal block or a Weidmüller Type MK6 terminal block, certified under IECEx PTB 04.0004U, IECEx PTB 04.0003U, IECEx SIR 05.0035U and IECEx SIR 05.0037U respectively; all terminal blocks are coded Ex e II.

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 24 or 42 Volts d.c.

The Wolf Fluorescent Leadlamp is supplied with an alternative polyurethane end cap, which is longer and is ridged thereby minimising the risk of static electric charge when cleaning.

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Luminaires can be supplied with sockets fitted to the end caps with bolts, nuts and sealing washers and/or various lengths of cable with plugs fitted. The following optional certified plugs and sockets may be fitted:

Manufacturer	Type Ref.	Coded	Certificate Number
Cooper Crouse-Hinds GmbH	Type GHG 51. ....R....	Ex ed [ia] IIC T6 or T5	IECEx BKI 04.0002
Cooper Crouse-Hinds GmbH	Type GHG 57. ....R....	Ex de IIC T6 Ex tD A21 IP66 T52°C	IECEx BKI 06.0005X
R. Stahl	Type 8591/...-..-....	Ex de IIC T6 Ex ia/ib IIC T6 Ex tD A21 IP66 T52°C	IECEx BKI 07.0001X
ATX	Type PCX	Ex ed IIC T6 or T5 Ex tD A21 IP66 T68°C	IECEx LCI 04.0014
R. Stahl	Type 8570/...-..-....	Ex de IIC T6 Ex de [ia] IIC T6 Ex tD A21 IP66 80°C	IECEx PTB 05.0023

Options

i. Temporary and Fixed installation luminaires, lamps ratings:
- 4 or 2 x 18 W Compact Fluorescent Lamps
- 4 or 2 x 36 W Compact Fluorescent Lamps
- 4 or 2 x 55 W Compact Fluorescent Lamps
- 2 x 18 W T8 Lamps Standard & Emergency Units
- 2 x 36 W T8 Lamps Standard & Emergency Units
- 2 x 58 W T8 Lamps Standard & Emergency Units

ii. The T8 lamp variants may be used as an emergency luminaires when fitted with a battery pack.

iii. The luminaires may be mounted in any attitude and are suitable for use with Unistrut or equivalent accessories, magnets may also be used to mount the luminaire Alternatively, when used as a temporary lighting luminaire, a carrying strap can be fitted.

iv. The luminaires are suitable for use with either T8 bi-pin or single pin lamps or compact fluorescent lamps.

v. The luminaire may be fitted with certified plugs and sockets to the end caps.

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 08ATEX3098X**
Issue 6

Full list of product markings applicable to particular models (including those introduced by variations)

4 x 55 W, 36 W & 18 W CFL Standard Units:
Ex emb IIC T3 Gb (Ta = -20°C to +35°C)
Ex embd IIC T3 Gb (Ta = -20°C to +35°C), with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 55 W, 36 W and 18 W CFL Standard Units:
Ex emb IIC T3 Gb (Ta = -20°C to +44°C)
Ex embd IIC T3 Gb (Ta = -20°C to +44°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 58 W, 2 x 36 W & 2 x 18 W T8 Standard Units:
Ex emb IIC T4 Gb (Ta = -20°C to +53°C)
Ex embd IIC T4 Gb (Ta = -20°C to +53°C), with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 58 W, 2 x 36 W & 2 x 18 W T8 Emergency Units:
Ex emb IIC T4 Gb (Ta = -15°C to +53°C)
Ex embd IIC T4 Gb (Ta = -15°C to +53°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 36 W and 2 x 18 W CFL Standard Units fitted with Voltage Booster:
Ex emb IIC T3 Gb (Ta = -20°C to +44°C)
Ex embd IIC T3 Gb (Ta = -20°C to +44°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 36 W and 2 x 18 W T8 Standard Units fitted with Voltage Booster:
Ex emb IIC T3 Gb (Ta = -20°C to +44°C)
Ex embd IIC T3 Gb (Ta = -20°C to +44°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

4 x 36 W and 4 x 18 W CFL Units fitted with Voltage Booster:
Ex emb IIC T3 Gb (Ta = -20°C to +35°C)
Ex embd IIC T3 Gb (Ta = -20°C to +35°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 55 W, 36 W & 18 W CFL 360° Units:
Ex emb IIC T3 Gb (Ta = -20°C to +44°C)
Ex embd IIC T3 Gb (Ta = -20°C to +44°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 36 W and 2 x 18 W CFL 360° Units fitted with Voltage Booster:
Ex emb IIC T3 Gb (Ta = -20°C to +44°C)
Ex embd IIC T3 Gb (Ta = -20°C to +44°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T100°C

2 x 36 W and 2 x 18 W Emergency CFL Units:
Ex emb IIC T3 Gb (Ta = -15°C to +53°C)
Ex embd IIC T3 Gb (Ta = -15°C to +53°C) – with plugs & sockets
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T102°C

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Variation 1 - This variation introduced the following changes:

i. The use of an alternative rubber end cap cover design was recognised.
ii. The use of an optional, removable, protective film that is secured to the lens was approved.
iii. The details of the certificate identified at section 14.3 have been amended.

Variation 2 - This variation introduced the following changes:

i. The introduction of 18 W, 36 W and 55 W 2x CFL luminaires, this option has one CFL on either side of gear tray to provide light distribution through 360°.
ii. The introduction of 18 W and 36 W 2x CFL luminaires with voltage booster, this option has one CFL on either side of gear tray to provide light distribution through 360°.

Variation 3 - This variation introduced the following change:

i. The introduction of the 2 x 18 W and 2 x 36 W CFL emergency luminaires .

Variation 4 - This variation introduced the following changes:

i. The reference to certificate number Sira 07ATEX3032 was removed because it no longer requires to be a supporting, descriptive document, a full list of certified drawings was also introduced to allow the Wolf Safety Lamp Company Limited to manufacture the products in their own right.
ii. The reference 'LL-500' was removed from the product name.
iii. Internal branding labels were allowed to be fitted.
iv. The option to fit a clear cover over the approval label was recognised.
v. The voltage range of the 24 Vdc encapsulated voltage booster was increased to 24-28 Vdc.
vi. Following appropriate re-assessment to demonstrate compliance, the originally listed standards EN 60079-0:2006 and EN 60079-18:2004 were replaced by EN 60079-0:2009 and EN 60079-18:2009 respectively, the marking was changed accordingly and the conditions of certification were modified to reflect these changes.

Variation 5 - This variation introduced the following changes:

i. The option to use Type VNTDUHC cells was recognised.
ii. The option to fit Marechal sockets was recognised; these are certified under LCIE 99ATEX6027X.

Variation 6 - This variation introduced the following changes:

i. The removal of the word 'portable' in the product description, as the luminaires are intended for 'temporary lighting' or fixed applications.
ii. The product description was updated with the following statement; "The luminaires have additionally been independently tested according to the requirements of EN 60529 to meet IP 66/67/68 (3 m for 30 minutes) ratings; note that when sockets are fitted, only IP66 is applicable."
iii. The introduction of two alternative polycarbonate lamp envelope materials for all 18 W, 36 W and 55 W twin versions only.
iv. Alternative potted fuse construction and the increase of potting depth on existing version from 1 mm to 3 mm; as detailed on Drawing ALC0003.
v. The list of ballast manufacturer drawings were removed on Drawing ALC0006 Sheet 1 and Drawings LL-951, LL-952 and LL-953 were introduced, covering the ballast design.
vi. The introduction of an optional PVC board to insulate between the fuse board and windings on the inverter; as detailed on Drawing ALC0006 Sheet 1.

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vii. The increase on thermal fuse rating from 126°C±2°C to 130°C max; as detailed on Drawing ALC0006 Sheet 1.
viii. Additional thermal protective fuses permitted; as detailed on Drawing ALC0006 Sheet 1.
ix. Update of the note with respect to the routine flash test, to now refer to the Certificate condition; as detailed on Drawing ALC0006 Sheet 1.
x. Alternative PCB 'spider board' track layout; as detailed on Drawing ALC0006 Sheet 1.
xi. Correction of internal general layout view; as detailed on Drawing ALC0006 Sheet 2.
xii. Update of the Bill of Materials to detail new thermal fuse rating of 130°C max and other minor component changes; as detailed on Drawing ALC0006 Sheet 2.
xiii. The update of the schematic on Drawing ALC0006 Sheet 3; image made clearer, no other modifications.
xiv. The removal of the reference 'dowty seal' and replaced with the term 'bonded seal'; as detailed on Drawing ALC0008 Sheet 1.
xv. The introduction of an optional insulator over the CFL connections and additional clips on gear tray to further support lamps; as detailed on Drawing ALC0008 Sheet 1.
xvi. The addition of the dual socket end view to Drawing ALC0008 Sheet 1; this was previously permitted although no details were added to the drawing.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	30 April 2008	R51A18189A	The release of the prime certificate
1	19 August 2008	R51A18788A	The introduction of Variation 1.
2	03 September 2009	R51A20908A	The introduction of Variation 2.
3	23 September 2009	R20999A	The introduction of Variation 3.
4	25 January 2011	R24182A/00	The introduction of Variation 4.
5	09 March 2012	R27073A/00	The introduction of Variation 5, as a result, a Special Condition for Safe Use were introduced and therefore an 'X' suffix was added to the certificate number
6	21 June 2013	R28113A/00	The introduction of Variation 6.

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

15.1 The user/installer shall ensure that when the Type DXN1 Marechal sockets are fitted; covered under LCIE 99 ATEX 6027X /04 they take into account any restrictions or special conditions for safe use that are applicable to the previously certified devices.

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 shall 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 60079-18:2009 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 EN 60079-7:2006, Clause 6.1. No breakdown shall occur.

17.4 The products 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 their products.

17.5 The manufacturer shall take all reasonable steps to ensure that the user/installer complies with the special conditions for safe use associated with the DXN1 plugs and sockets, in addition, the manufacturer shall provide the user/installer with an appropriate copy of the certificate for each certified device that is fitted.

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Certificate Annexe

Certificate Number: **Sira 08ATEX3098X**

Equipment: **Wolf Fluorescent Leadlamp**

Applicant: **Wolf Safety Lamp Company Limited**

Issue 0 The drawings listed with these Issues were rationalised and have been superseded by those detailed in Issue 4

Issues 1 to 3 (No new drawings were introduced.)

Issue 4

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
ALC0002	1 of 1	1	19 Jan 10	Ex e Increased Safety Bi Pin lamp Holder
ALC0003	1 of 1	1	19 Jan 10	Ex e Encapsulated Fuse Assembly
ALC0004	1 of 1	1	19 Jan 10	Ex e Increased safety Ni/Cd Battery Assembly
ALC0006	1 of 3	2	19 Jan 10	Ex m Encapsulated Ballast & Ballast/Inverter
ALC0006	2 of 3	1	19 Jan 10	Ex m Encapsulated Ballast & Ballast/Inverter
ALC0006	3 of 3	1	19 Jan 10	Ex m Encapsulated Ballast & Ballast/Inverter
ALC0008	1 of 4	4	19 Jan 10	Increased safety Luminaire
ALC0008	2 of 4	4	19 Jan 10	Increased safety Luminaire
ALC0008	3 of 4	4	19 Jan 10	Increased safety Luminaire
ALC0008	4 of 4	2	19 Jan 10	Increased safety Luminaire

Issue 5

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
ALC0004	1 of 1	2	08 Mar 12	Ex e Increased safety Ni/Cd Battery Assembly
ALC0008	1 to 4	5	08 Mar 12	Increased safety Luminaire

Issue 6

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
ALC0003	1 of 1	2	28 May 13	Ex m Encapsulated Fuse Assembly
ALC0006	1 to 3	3	28 May 13	Ex m Encapsulated Ballast & Ballast/Inverter
ALC0008	1 to 4	7	10 Jun 13	Increased safety Luminaire
LL-951	1 to 3	1	28 May 13	SMD EVG 2x36W T8, 230/2x18W T8, 110/230V
LL-952	1 to 3	1	28 May 13	EVG 2x58W T8, 230V
LL-953	1 to 3	1	28 May 13	EVG 2x36W T8, 110V

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