



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 08ATEX3098** Issue: **3**

4 Equipment: **Wolf Fluorescent Leadlamp LL-500**

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

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 II T* (-**°C to +**°C)
Ex embd IIC T* (-**°C to +**°C)
Ex tD A21 IP 66/IP 67/IP 68 (3 m for 30 minutes) T***°C
(Refer to certificate schedule for markings applicable to particular models)

Project Number 20999
C. Index 05


C Ellaby
Certification Officer

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13 DESCRIPTION OF EQUIPMENT

These Fluorescent Luminaires are suitable for portable lighting or for use in fixed installations, they are available as either a standard version (LL-500) or an emergency version incorporating an integral battery (LL-500E). 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 IP66/67/68 (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.

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 LL-500 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. The Portable versions of the luminaires may be transported whilst energised.
 - 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
- ii. 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
- iii. The LL-500 T8 lamp variants may be used as an emergency luminaires when fitted with a battery pack.
- iv. The LL-500 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 portable luminaire, a carrying strap can be fitted.
- v. The LL-500 luminaires are suitable for use with either T8 bi-pin or single pin lamps or compact fluorescent lamps.
- vi. The LL-500 luminaire may be fitted with certified plugs and sockets to the end caps.

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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 II T3 (Ta = -20°C to +35°C)
Ex embd IIC T3 (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 II T3 (-20°C to +44°C)
Ex embd IIC T3 (-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 II T4 (Ta = -20°C to +53°C)
Ex embd IIC T4 (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 II T4 (Ta = -15°C to +53°C)
Ex embd IIC T4 (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 II T3 (-20°C to +44°C)
Ex embd IIC T3 (-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 II T3 (-20°C to +44°C)
Ex embd IIC T3 (-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 II T3 (-20°C to +35°C)
Ex embd IIC T3 (-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 II T3 (-20°C to +44°C)
Ex embd IIC T3 (-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 II T3 (-20°C to +44°C)
Ex embd IIC T3 (-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 II T3 (-15°C to +53°C)
Ex embd IIC T3 (-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 .

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.

14.3 Certificate number Sira 07ATEX3032 Issue 5 dated 23 September 2009.

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

None

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 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 EN 60079-18:2004 Clause 7.1.
- 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 60079-7:2003 Clause 6.1. No breakdown shall occur.

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- 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.

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Certificate Annexe

Certificate Number: Sira 08ATEX3098
Equipment: Wolf Fluorescent Leadlamp LL-500
Applicant: Wolf Safety Lamp Company Limited



Issue 0

Drawing No.	Sheet	Rev.	Date	Description
LL-901	1 of 1	1	22 Apr 08	Leadlamp Approval Label
LL-902	1 of 1	1	30 Apr 08	Leadlamp – Optional End Cap

Issues 1 to 3

No new drawings were introduced.

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