



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 02ATEX5099X** Issue: **3**

4 Equipment: **Turbolite Compressed Air Powered Luminaire Types A-TL44A, A-TL44B, A-TL45A and A-TL45B**

5 Applicant: **The Wolf Safety Lamp Company Ltd**

6 Address: Saxon Road Works
Sheffield
S8 0YA
UK

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 1127-1:1997

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:



I M2



II 2GD

II T4

Ta = -20°C to +55°C T135°C

Project Number 51A18930
C. Index 05

C Ellaby
Certification Officer

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EC TYPE-EXAMINATION CERTIFICATE

Sira 02ATEX5099X
Issue 3

13 DESCRIPTION OF EQUIPMENT

The Turbolite Luminaire is fitted with a 250 W lamp and is powered by a compressed air driven integral turbine generator at 4 to 8 bar. The luminaire may be manufactured from brass or aluminium with either a reflector head assembly (Type 45) or a bay light assembly (Type 44). The air outlet is fitted with a particle trap that vents into the hazardous area. When the particle trap is replaced with additional hose fitted to the air outlet to take air to a safe area, this permits the luminaire to be used where there is a hazard from dust or fibres. The enclosure has blind threaded holes that provide mounting facilities. A bridle assembly may be fixed to these holes to permit the luminaire to be mounted on a hook.

The luminaire is connected to the air supply via suitable anti-static hose. The air inlet to the equipment includes an air regulator that is capable of adjustment using special tools. Adjustment of the regulator to achieve the correct lamp output is carried out in the safe area according to manufacturer's instructions.

The air supply is fed through the enclosure to the reflector head or bay light assembly, then back to the generator housing to power the turbine generator. The generator comprises a rotor fitted with permanent magnets, turbine wheel and ball bearings that runs inside a wound stator. The air is directed on to the turbine wheel and then exits the enclosure through the turbine housing cover via a particle trap or hose depending on the type reference. The housing cover is fixed in position by a machined spigot joint and three cap head screws.

The stator winding leads are connected to insulated connection studs with crimped cable lugs. The studs pass through the wall of the enclosure and further leads from the lamp holder are fitted to them with crimped cable lugs. The lampholder is fixed to the turbine enclosure with screws and is able to accept M36 or M33 type lamps rated at 250 W, 24 V.

The reflector head assembly comprises a conical housing with a toughened glass lens retained by a lens ring and high tensile strength cap head screws. A moulded gasket is used to seal the lens in the reflector head. A reflector is fitted inside the housing and this is also retained by the lens ring. The reflector head is fitted to the generator housing by a screw thread and an O ring is used to seal the joint.

The bay light assembly comprises a ball glass fitted with a sealing gasket that fits into a recess in the generator housing. A metal washer is fitted over the gasket and a polycarbonate guard with integral lockscrew ring is screwed on to the generator housing to provide clamping pressure. The lockscrew ring has a number of holes to prevent the guard becoming pressurised in the event of a seal or ball glass failure.

Variation 1 - This variation introduced the following changes:

- i. The modification of the reflector head assembly to increase the number of fixing screws.
- ii. The recognition of minor design modifications; these changes do not affect the aspects of the product that are relevant to explosion safety.
- iii. The recognition of the marking that was omitted from the previous documentation.



SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 02ATEX5099X
Issue 3

Variation 2 - This variation introduced the following changes:

- i. The recognition of minor drawing changes do not affect the aspects of the product that are relevant to explosion safety.
- ii. To permit the grooved rubber washer that seals the lens to be manufactured from alternative, elastomeric materials.

Variation 3 - This variation introduced the following changes:

- i. The use of an alternative sealing plug was endorsed.
- ii. The label drawing was modified, these modifications are administrative and do not affect the aspects of the product that are relevant to explosion safety.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	21 October 2002	R53A6895A	The release of the prime certificate.
1	19 June 2003	R53A10032A	The introduction of Variation 1.
2	21 October 2005	R51A13821A	The introduction of Variation 2.
3	31 July 2009	R51A18930B	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 3, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The introduction of Variation 3.

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

- 15.1 This equipment shall only be supplied with air from a clean, dry source that is free from contamination with hazardous gas, dust or fibres.
- 15.2 When this equipment is used in the presence of combustible dust, the air outlet shall be fitted with additional hose so that it is piped to a safe area instead of venting into the hazardous area.
- 15.3 The hoses that are fitted to this equipment shall be anti-static with a resistance between 10^4 and 10^8 ohms.

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.

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com

Certificate Annexe

Certificate Number: Sira 02ATEX5099X
Equipment: Turbolite Compressed Air Powered
Luminaire Types A-TL44A, A-TL44B,
A-TL45A and A-TL45B



Applicant:

Issue 0

Drawing No.	Sheet	Rev.	Date	Title
A4-701	1 to 2	1	1 Sep 02	Wolf Turbolite Lamp
A4-801	1 to 3	1	1 Sep 02	Wolf Turbolite generator
A4-901	1 of 1	1	1 Sep 02	Stator assembly
A4-902	1 of 1	1	1 Sep 02	Bulbholder assembly
A4-903	1 of 1	1	1 Sep 02	Label details (ATEX)

Issue 1

Drawing No.	Sheet	Rev.	Date	Title
A4-701	1 to 3	2	01 May 03	Wolf Turbolite Lamp
A4-801	1 to 3	2	01 May 03	Wolf Turbolite generator
A4-901	1 of 1	2	-	Stator assembly
A4-902	1 of 1	2	01 May 03	Bulbholder assembly
A4-903	1 of 1	2	-	Label details (ATEX)

Issue 2

Drawing No.	Sheet	Rev.	Date	Description
A4-701	1 to 3	3	27 Jul 05	Wolf Turbolite Lamp
A4-801	1 to 3	3	27 Jul 05	Wolf Turbolite Generator

Issue 3

Drawing No.	Sheets	Rev	Date	Title
A4-801	1 to 3	5	23 Apr 09	Wolf Turbolite - Generator
A4-903	1 of 1	3	28 Jan 09	Turbolite Approval Label

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