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 12.0070X issue No.:4

Status: **Current**

Date of Issue: **2016-09-01** Page 1 of 4

Certificate history:
Issue No. 4 (2016-9-1)
Issue No. 3 (2016-4-21)
Issue No. 2 (2015-12-15)
Issue No. 1 (2012-12-6)
Issue No. 0 (2012-6-19)

Applicant: **Wolf Safety Lamp Company Limited**
Saxon Road Works
Sheffield S8 0YA
United Kingdom

Equipment: **LX-XXX LinkEx LED Luminaires**
Optional accessory:

Type of Protection: **Increased Safety, Encapsulation and Dust Protection by Enclosure**

Marking:

Luminaires fitted with Mk1 Drivers	**Luminaires fitted with Mk2 Drivers**
Ex eb mb op is IIC T3 Gb Ex tb op is IIIC T170°C Db IP 6X	Ex eb mb op is IIC T4 Gb Ex tb op is IIIC T135°C Db IP 6X (-20°C to +55°C)

Luminaires that are fitted with either Stahl Type 8575 or Stahl Type 8591 Sockets do not bear any marking that relates to Dust applications, as detailed below:

Luminaires fitted with Mk1 Drivers	**Luminaires fitted with Mk2 Drivers**
Ex eb mb op is IIC T3 Gb	Ex eb mb op is IIC T4 Gb (-20°C to +55°C) When equipment incorporating the Mk2 Drivers are fitted with **Paint Spray Covers** the upper ambient temperature is limited to +45°C

Approved for issue on behalf of the IECEx Certification Body: N Jones

Position: Certification Manager

Signature:
(for printed version)

Date: 2016-09-01

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
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

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Manufacturer: **Wolf Safety Lamp Company Limited**
Saxon Road Works
Sheffield S8 0YA
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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-18 : 2014 Edition: 4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
IEC 60079-28 : 2015 Edition: 2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition: 5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*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/ExTR12.0134/00 GB/SIR/ExTR12.0278/00 GB/SIR/ExTR15.0329/00
GB/SIR/ExTR16.0019/00 GB/SIR/ExTR16.0220/00

Quality Assessment Report:

GB/BAS/QAR06.0017/03

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The LX-XXX LinkEx LED Luminaires are suitable for temporary lighting installations and are fully described in the Annexe to this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The user/installer shall ensure that, when the luminaire is fitted with a previously certified Socket that has associated special conditions for safe use, they shall take into account any restrictions or conditions for safe use that are applicable to these devices.
2. Some of the Sockets used in this equipment may bear intrinsically safe marking, this safety concept is not relevant to the construction of the luminaires covered by this certificate, however, these luminaires do rely on the other concepts, flameproof and increased safety, that are applied to these certified Sockets. The user shall therefore take this into consideration when installing this equipment and the luminaires shall not be involved with any intrinsically safe circuitry.

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

Issue 1– for changes refer to Issue 1

Issue 2 – this Issue introduced the following changes:

1 The use of the MK2 Low Voltage (LV) and MK2 High Voltage (HV) LED Driver Units was recognised; in addition, it was clarified that the devices used in the original Luminaires are referred to as the MK1 Low Voltage (LV) and MK1 High Voltage (HV) LED Driver Units.
The MK1 LV Driver Units have a certified rating of 19 V d.c./a.c., rms to 28 V d.c./a.c., rms.
The MK1 HV Driver Units have a certified rating of 85 V a.c. to 264 V a.c., 50/60 Hz.
The MK2 LV Driver Units have a certified rating of 0 V to 50 V a.c./d.c.
The MK2 HV Driver Units have a certified rating of 0 V to 264 V a.c.
New temperature markings were introduced for Luminaires which use the MK2 Driver Units.

2 The introduction of the following design options:
- The Ex terminal block may optionally be mounted to the chassis instead of the end cap with the associated mounting claws on the end cap optionally removed.
- The option of including a larger bump ring on the socket fitted to the linkable versions of the product.

3 The dust marking was brought into line with the specific requirements of the compliance standards.

4 The introduction of a textile or plastic material to cover both end-caps.

Issue 3 – this Issue introduced the following change:

1 Correction of the routine dielectric condition to allow the dc alternative test and to provide the 500 V test option for the low voltage driver.

Issue 4 – this Issue introduced the following changes:

1 Following appropriate assessment to demonstrate compliance with the requirements of more up to date standards, IEC 60079-0:2007-10 Ed 5, IEC 60079-7:2006-07 Ed 4, IEC 60079-18:2009 Ed 3 & IEC 60079-31:2008 Ed1 were replaced by IEC 60079-0:2011-06 Ed 6, IEC 60079-7:2015-06 Ed 5, IEC 60079-18:2015 Ed 4, IEC 60079-31:2013 Ed2, the marking was amended accordingly.

2 Conduct appropriate assessment to demonstrate compliance with the requirements of IEC 60079-28:2015 Ed 2, the marking was amended accordingly.

3 The use of additional resistors was permitted on the HV Mk2 variant.

4 Alternative Types of emitters (LEDs) have been permitted for equipment incorporating the Mk2 Drivers only.

5 Alternative PCB layout to accommodate linked pairs of fuses has been permitted for equipment incorporating the Mk2 Drivers only.

6 Addition of optional paint spray protection sleeve has been permitted for the Mk2 variant luminaire, resulting in a reduced maximum ambient from +55°C to +45°C, as a result two new conditions of Manufacture were added.

Annex: IECEx SIR 12.0070X Issue_4_Annexe.pdf

Annexe to:	**IECEx SIR 12.0070X Issue 4**
Applicant:	**Wolf Safety Lamp Company Limited**
Apparatus:	**LX-XXX LinkEx LED Luminaires**

The LX-XXX LinkEx LED Luminaires are suitable for temporary lighting installations. The luminaires comprise a clear, tubular, polycarbonate lamp envelope with two polycarbonate end mouldings. The lamp envelope is all treated with a clear anti static coating to safely dissipate any static electricity. The end mouldings are secured to the tube via the internal gear tray, which is fabricated from steel or aluminium, two M5 and two M6 screws and bonded seals are used to secure each end cap. A silicone gasket is fitted within a groove on each end cap, thus maintaining the IP54/IP64 (as applicable) ratings. The luminaires have additionally been independently tested according to the requirements of EN/IEC 60529 to meet IP 67, with no sockets fitted, IP 66 when sockets are fitted and IP54 for Stahl Type 8575 or 8591 sockets.

The luminaires' are fitted with replaceable bump ring clamped between the seal ring and end plate, giving additional protection to the luminaire.

180° variant – These comprise a main gear tray, with the driver and terminal connection blocks on the underside with two LED strips fitted to the upper, distributing the light through 180°.

360° variant – These comprise two gear trays and two narrow channels, with the driver and terminal connection blocks fitted along with two LED strips, one fitted to each side, distributing the light through 360°.

The following optional supply terminal blocks may be fitted:

Manufacturer	Type Ref.	Coded	Certificate no.
Weidmüller	Type BK	Ex e II	IECEx SIR 05.0035U
Weidmüller	Type MK6	Ex e II	IECEx SIR 05.0037U
Phoenix Contact GmbH & Co. KG	Type G5/..-EX	Ex e II	IECEx PTB 06.0043U

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 sockets may be fitted to the linkable versions only:

Manufacturer	Type Ref.	Coded	Certificate Number
Cooper Crouse-Hinds GmbH	Type GHG 51. ....R....	Ex ed [ia] IIC T6 or T5 Ex tD A21 IP66 T80°C	IECEx BKI 04.0002
R. Stahl	Type 8591/...-..-....	Ex de IIC T6 Ex tD A21 IP66 T52°C	IECEx BKI 07.0001
ATX	Type PCX	Ex de IIC T6 or T5 Ex tD A21 IP66 T68°C	LCIE 02 ATEX 0001U
Marechal	Type DXN1	Ex de IIC T* Ex tD A21 IP66/67 T*	IECEx LCI 09.0005X
Stahl	Type 8570	Ex de IIC T6 Ex tD A21 IP 66 T80°C	IECEx PTB 05.0023

The luminaires when fitted with MK1 drivers are designed for use with an electrical supply of either 85 Vac to 264 Vac, 50/60 Hz or 19 Vdc/ac, rms to 28 Vdc/ac, rms.

The luminaires when fitted with MKII drivers are designed for use with an electrical supply of either 0 Vac to 264 Vac 50/60 Hz or 0 V to 50 V ac/dc, 50/60 Hz

The luminaires may be mounted in any attitude and are suitable for use with accessories.

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Annexe to:	**IECEx SIR 12.0070X Issue 4**
Applicant:	**Wolf Safety Lamp Company Limited**
Apparatus:	**LX-XXX LinkEx LED Luminaires**

Conditions Of Manufacture

i. The following routine tests shall be performed on each product manufactured:
   - 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 60079-18:2015 Clause 9.1.
   - For equipment rated in excess of 90 V peak, 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 60079-7:2015, Clause 6.1. No breakdown shall occur.
   - For equipment rated less than 90 V peak, and electric strength test of 500 V r.m.s. shall be applied between the circuit and the casing for at least 1 minute, as required by EN 60079-7:2015, Clause 6.1. No breakdown shall occur.

   Alternatively a test at 1.2 times the test voltage may be applied for at least 100 ms.
   The test is also permitted to be conducted at a dc voltage of 140% of the specified ac r.m.s. test voltage.

ii. 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.

iii. When the luminaire is fitted with a socket that has associated special conditions for safe use, the manufacturer shall take all reasonable steps to ensure that the user/installer complies with these conditions.

iv. When providing the Paint Spray Cover in the form of a plastic bag, the manufacturer shall select a suitable material so as to ensure that the surface resistance does not exceed the following values:
   - 10^{9} Ω when measured at (50 ± 5) % relative humidity; or
   - 10^{11} Ω when measured at (30 ± 5) % relative humidity.

   Alternatively, when providing the Paint Spray Cover in the form of a plastic film, the manufacturer shall select a suitable material so as to ensure that the maximum thickness shall not exceed 0.2 mm.

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