EU Type Examination Certificate CML 18ATEX3373X Issue 1

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **Wolf Worklite Type WL-****

3 Manufacturer **Wolf Safety Lamp Company**

4 Address **Saxon Road Works**
Sheffield, S8 0YA
United Kingdom

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V., Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018	EN IEC 60079-7:2015+A1:2018	EN 60079-11:2012
EN 60079-18:2015+A1:2017	EN 60079-28:2015	EN 60079-31:2014

10 The equipment shall be marked with the following:

II 2 GD

Ex eb ib mb op is IIC T4 Gb

Ex tb op is IIIC T135°C Db

IP64/66/67

T_{amb}= -20°C to +40°C/+45°C[1]/+50°C[2]

[1] *WL-50 Only*

[2] *WL-50HT Only*

S. Roumbedakis
Technical Manager

11 Description

The Wolf Worklite Type WL-** is a portable battery powered luminaire for use in a hazardous area. It comprises a 12 V, sealed lead acid battery and encapsulated electronics, these are housed inside a stainless-steel enclosure that is intended to provide an ingress protection to at least IP64/66/67. The enclosure comprises a welded frame which secures a lamp head containing an array of LEDs. The lamp housing can be swivelled to point the light in the desired direction. Also attached to the welded frame above the lamp housing is a carry handle made from stainless steel.

There are six versions of the Worklite:

WL-85 Worklite - 18 LED lamp head, 12 V, 35 Ah battery

WL-80 Worklite - 18 LED lamp head, 12 V, 18 Ah battery

WL-75 Worklite - 12 LED lamp head, 12 V, 35 Ah battery

WL-70 Worklite - 12 LED lamp head, 12 V, 18 Ah battery

WL-50 Worklite – 18 LED lamp head, 12 V, 10 Ah battery

WL-50HT Worklite - 18 LED lamp head, 12 V, 9 Ah battery

The battery and the encapsulated electronic block are situated inside the steel housing and are held in place using plastic packing material. The battery is fitted with vents to allow gases generated by the cells to escape outside the battery housing.

The lamp comprises a panel of high output LEDs (either an array of 12 or 18) and a terminal block, both mounted behind a 5.8mm toughened glass window and inside an extruded aluminium heat sink, which forms part of the lamp housing. Connections between the lamp and the encapsulated electronics are made via a braided, multi-core cable through Ex e approved glands at each end.

The encapsulated control electronics ensure a constant current supply to the lamp LEDs giving maximum light output. Fitted to the battery enclosure lid is an intrinsically safe push-button, this controls the output in high power or low power mode, offering extended battery life on the low power setting. Also fitted to the lid is an intrinsically safe indication LED, this indicates the state of charge for the battery. The control circuit uses a microcontroller to monitor the battery voltage and cut off the connection to the battery to prevent deep discharge. The battery is recharged in the safe area and the charging socket is fitted with a blanking cover.

Design Options:

Option 1 - Alternative internal wiring scheme using a 6-way terminal block in place of the existing 8-way terminal block was recognised.

Option 2 - Adhesive label marking option.

Option 3 - Option to use an anti-static protective bag with the WL-50 / WL-50HT versions.

Variation 1

This variation introduced the following changes:

i. Addition of the WL-50 and WL-50HT models to the range. The WL-50 and WL-50HT models have a smaller sized enclosure with different driver encapsulation and battery options.
ii. To allow for the option of using a protective bag with the WL-50 and WL-50HT models.
iii. To allow for the new driver encapsulants to be used with all models in the range.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	16 Jan 2019	R12067A/00	Issue of Prime Certificate
1	03 Feb 2020	R12256A/00	Introduction of Variation 1

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

ii. Each encapsulated LED Array and Driver shall be subject to a routine visual inspection to ensure no damage of the encapsulant is evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion, or softening.

iii. Each encapsulated LED Array shall be subject to a routine dielectric strength test of 700 Vdc, for a period of 60 seconds, without breakdown between the positive solder pad of the folded PCB and the surface of the potting compound directly above the positive solder pad. Alternatively, a test at 1.2 times the test voltage may be applied for at least 100 ms.

iv. Each encapsulated Driver shall be subject to a routine dielectric strength test of 700 Vdc, for a period of 60 seconds, without breakdown between the charge input crowbar PCB connection lead and the surface of the potting compound directly above the charge input crowbar PCB, alternatively a test at 1.2 times the test voltage may be applied for at least 100 ms. These test locations shall be chosen irrespective of the internal or external fitting of crowbar circuit.

v. Each set of component certified terminals fitted into the Battery Housing or LED Housing shall be subject to a routine dielectric strength test of 700 Vdc, for a period of 60 seconds, without breakdown between the un-insulated live parts and the enclosure. Alternatively, a test at 1.2 times the test voltage may be applied for at least 100 ms.

vi. Each battery used within the equipment shall be subject to a routine insulation resistance test of 100 V between the battery terminal and the battery enclosure, producing a resistance reading of not less than 1 MΩ.

vii. Each luminaire shall be subject to a routine dielectric strength test of 700 Vdc, for a period of 60 seconds, without breakdown between the positive charging socket pin and the carry handle. Alternatively, a test at 1.2 times the test voltage may be applied for at least 100 ms.

viii. The manufacturer shall fit suitably certified cable entry devices that are certified to EN 60079-0, EN 60079-7, and EN 60079-31. The cable entry devices shall maintain the degree of ingress protection IP64/66/67 considering the interface sealing arrangement and limiting temperatures of the equipment. The cable entry devices shall be suitable for the final application.

ix. The WL-50 versions of the equipment shall include ventilation openings for when the battery is being charged.

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

i. The equipment is approved with a range of accessories that are designed to protect the product. Only authorised spare parts shall be used, refer to the manufacturer's instructions regarding the replacement frequency of the approved accessories.

Certificate Annex

Certificate Number **CML 18ATEX3373X**

Equipment **Wolf Worklite Type WL-****

Manufacturer **Wolf Safety Lamp Company**

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No.	Sheets	Rev	Approved date	Title
W-701	1 of 1	4	16 Jan 2019	Worklite Assembly and Marking (Large)
W-702	1 of 1	5	16 Jan 2019	Worklite – Lamp Housing Assembly (Large)
W-703	1 of 1	4	16 Jan 2019	Worklite – Battery Box Assembly with Vent (Large)
W-704	1 of 1	3	16 Jan 2019	Worklite – Battery Box Assembly (Large)
W-705	1 of 1	3	16 Jan 2019	Worklite – Pictorial Layout (18 LED)
W-711	1 of 1	4	16 Jan 2019	Worklite – Assembly and Marking (Small)
W-712	1 of 1	5	16 Jan 2019	Worklite – Lamp Housing Assembly (Small)
W-713	1 of 1	4	16 Jan 2019	Worklite – Battery Box Assembly (Small Battery)
W-714	1 of 1	3	16 Jan 2019	Worklite – Battery Box Assembly (Small Battery)
W-715	1 of 1	3	16 Jan 2019	Worklite – Pictorial Layout (x6 led)
W-801	1 of 1	4	16 Jan 2019	Worklite – Switcher Circuit
W-802	1 of 1	3	16 Jan 2019	Worklite – Control Circuit
W-803	1 of 1	3	16 Jan 2019	Worklite – Power Circuit
W-804	1 of 1	5	16 Jan 2019	Worklite – Control Circuit Board
W-805	1 of 1	2	16 Jan 2019	Worklite – LED Circuit Board (x12 led)
W-806	1 of 1	2	16 Jan 2019	Worklite – LED Circuit Board (x6 led)
W-809	1 of 1	1	16 Jan 2019	Worklite – Folded PCB LED Array
W-819	1 of 1	1	16 Jan 2019	Worklite – Folded PCB LED Array (Small)

Certificate Annex

Certificate Number	**CML 18ATEX3373X**
Equipment	**Wolf Worklite Type WL-****
Manufacturer	**Wolf Safety Lamp Company**

Issue 1

Drawing No.	Sheets	Rev	Approved date	Title
W-721	1 of 4	01	03 Feb 2020	WL-50 General Assembly
W-731	1 of 1	01	03 Feb 2020	WL-50 Approval Markings
W-722	1 of 1	01	03 Feb 2020	WL-50 Battery Assembly
W-723	1 of 1	01	03 Feb 2020	Worklite Compact Potted Driver Assembly