

Translation

(1) EC-Type Examination Certificate

(2) Equipment and protective systems intended for use
in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 14 ATEX E 106 X**

(4) Equipment: **Hand and machine lamp type *L**d ***** ****

(5) Manufacturer: **thuba EHB Ltd.**

(6) Address: **Blauensteinerstraße 16, 4015 Basel, Switzerland**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the Test and Assessment Report BVS PP 14.2147 EG.


(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 General requirements
EN 60079-1:2007 Flameproof enclosure "d"
EN 60079-31:2009 Protection by Enclosure "t"

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 **II 2G Ex d IIC T5 Gb**
II 2D Ex tb IIIC T95°C Db

DEKRA EXAM GmbH
Bochum, dated 2014-02-07

Signed: Simanski

Certification body

Signed: Dr. Wittler

Special services unit

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 14 ATEX E 106 X

(15) 15.1 Subject and type

Hand and machine lamp type *L**d ***** **

Asterisk Description

1 Type of lamp

H Hand lamp
M Machine lamp

2..3 Diameter of the tube

43 Ø 43 mm
50 Ø 50 mm
60 Ø 60 mm
70 Ø 70 mm

4..8 Power and type of illuminate

6 Fluorescent lamp 6 W nominal power ¹
8 Fluorescent lamp 8 W nominal power ¹
13 Fluorescent lamp 13 W nominal power ¹
15 Fluorescent lamp 15 W nominal power
18 Fluorescent lamp 18 W nominal power
24 Fluorescent lamp 24 W nominal power
30 Fluorescent lamp 30 W nominal power
36 Fluorescent lamp 36 W nominal power
40 Fluorescent lamp 40 W nominal power
55 Fluorescent lamp 55 W nominal power
58 Fluorescent lamp 58 W nominal power

LED6 LED module with nominal power 6 W ²
LED8 LED module with nominal power 8 W ³
LED20 LED module with nominal power 20 W ⁴ (comparable 18 W fluorescent lamp)
LED24 LED module with nominal power 24 W ⁴ (comparable 30 W fluorescent lamp)
LED30 LED module with nominal power 30 W ⁴ (comparable 36 W fluorescent lamp)
LED40 LED module with nominal power 40 W ⁴ (comparable 58 W fluorescent lamp)
LEDxx LED module with nominal power xx W (maximum 80 W for special custom designs)

¹ These fluorescent lamps are available with one or two lamps. Variants with two lamps are marked with x/2

² Only available in print version

³ Available in print and in tube version

⁴ Only available in tube version

9..12 Length of the tube regarding the diameter

L_{max} for Ø 43 mm 1000 mm
L_{max} for Ø 50 mm 1530 mm
L_{max} for Ø 60 mm 1830 mm
L_{max} for Ø 70 mm 900 mm

13..14 Not relevant for explosion protection

15.2 Description

The hand and machine lamp type *L**d ***** ** is designed in type of protection Flameproof Enclosure 'd' for use in areas endangered by gas atmospheres and in type of protection Protection by Enclosure 't' for use in areas endangered by dust atmospheres.

It consists of a transparent tubular housing made from polycarbonate with end caps made of aluminium. One end cap is designed as a blind plug and the other end cap has got a cable gland for the fix installed supply line.

Inside the housing either one or two fluorescent lamp or LED modules as printed or tubular version are mounted. In both cases the required electronic is also built into the housing of the hand and machine lamp.

15.3 Parameters

Electrical parameters (fluorescent lamps)

| | | | |
|--------------------------|----|--------------|----|
| Range of input voltage | AC | 24 up to 250 | V |
| Range of input voltage | DC | 24 up to 250 | V |
| Range of power | | 6 up to 58 | W |
| Frequency (for AC types) | | 50 up to 400 | Hz |

Electrical parameters (LED modules)

| | | | |
|--------------------------|----|--------------|----|
| Range of input voltage | AC | 85 up to 265 | V |
| Range of input voltage | DC | 12 up to 370 | V |
| Range of power | | 6 up to 80 | W |
| Frequency (for AC types) | | 50 up to 60 | Hz |

Thermal ratings

| | |
|---------------------------|---|
| Ambient temperature range | $-20\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq 60\text{ }^{\circ}\text{C}$ |
| Temperature class | T5 |

(16) Test and Assessment Report

BVS PP 14.2147 EG as of 2014-07-02

(17) Special conditions for safe use

The lengths of the flameproof joints are in parts longer and the gaps of the flameproof joints are in parts smaller than the values of table 2 of IEC 60079-1:2007. For information of the dimensions of the flameproof joints contact the manufacturer.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 2014-07-02
BVS-Kir/Mu A 20130869

A blue ink signature, likely of a representative of the certification body.

Certification body

A blue ink signature, likely of a representative of the special services unit.

Special services unit