



Prüf- und Zertifizierungsstelle

ZELM Ex



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-TYPE-EXAMINATION CERTIFICATE Number:

ZELM 02 ATEX 0104

(4) Equipment: **LED Torch type Lite-Ex LED 30**

(5) Manufacturer: **ecom instruments GmbH**

(6) Address: **D-97959 Assamstadt**

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 in accordance with Article 9 of the Council 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 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 confidential report ZELM Ex 0620217154.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50 014: 1997+A1+A2
EN 50 284: 1999

EN 50 020: 1994
EN 1127-1: 1997

EN 50 281-1-1: 1998

(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, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

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



II 1 G EEx ia IIC T4
II 2 D T 90°C IP52

Zertifizierungsstelle ZELM Ex

fl. Zelm
Dipl.-Ing. Harald Zelm



Braunschweig, November 15, 2002

Sheet 1/2

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. In the case of dispute, the German text shall prevail.



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 02 ATEX 0104**

(15) Description of equipment

The LED Torch type Lite-EX LED 30 is intended for the hand-held use in the explosive atmosphere of category 1 G or 2 D respectively.

The equipment consists of the housing made from several brass parts, three LEDs in parallel and the push-button switch. The power supply is made by three LR1 type battery cells.

Electrical data

Supply circuit

three built-in batteries type LR1 EEx ia IIC

The internal circuit is intrinsically safe.

The maximum permissible ambient temperature is $-20\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$

The maximum case temperature is $+90\text{ }^{\circ}\text{C}$

References:

The instruction manual has to be considered.

For applications of this LED torch in category 1 G or 2 D areas the back-side hand sling must be used.

To open the housing in the explosive atmosphere is not permitted.

(16) Report No.

ZELM Ex 0620217154


(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

In general met by standards. For category 2 D applications the degree of protection IP 52 has been accepted against the standard, due to the achievement of equivalent safety by the type of protection Intrinsic Safety considering the hand-held properties of the equipment.

Zertifizierungsstelle ZELM Ex


Dipl.-Ing. Harald Zelm



Braunschweig, November 15, 2002