



(1) **EC-Type Examination Certificate**

- (2) Equipment and Protected Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**
- (3) EC-Type Examination Certificate Number

**ZELM 05 ATEX 0272 X**

- (4) Equipment: **LED-Torch Type Lite-Ex PL \***
- (5) Manufacturer: **ecom instruments GmbH D-97959**
- (6) Address: **Assamstadt**
- (7) The design of this equipment and its various approved embodiments are defined in the attachment to this type examination certificate.
- (8) The Prüf- und Zertifizierungsstelle ZELM, notified body no. 0820 in accordance with Article 9 of the EC Council Directive dated March 23, 1994 (94/9/EC), certifies that this equipment has been found to conform with the essential health and safety requirements for the design and construction of equipment and protected systems for proper intended use in potentially explosive areas in accordance with Appendix II of the directive.

The results of the test are documented in the confidential test report no. ZELM Ex 0380512412.

- (9) The essential health and safety requirements are met by virtue of conformity with  
**EN 60 079-0: 2004**      **EN 50 020: 2002**      **EN 50 281-1-1: 1998**  
**EN 50 284: 1999**      **EN 1127-1: 1997**
- (10) If the certification number is followed by an "X", then this indicates that special conditions exist for the safe operation of the equipment. These special conditions are contained in the attachment to this certificate.
- (11) This EC-type examination certificate only refers to the construction/design, checking and testing of the specified equipment or protection system in accordance with Directive 94/9/EC. Further requirements contained in this directive may apply with regard to the manufacturing process and the supply of the equipment or protected system. Such requirements are not covered by this certification.
- (12) The equipment must be labelled with the following information:

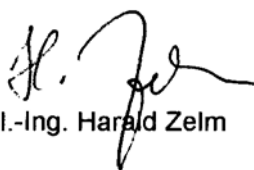


**II 1 G EEx ia IIC T4**  
**II 1 D T 130°C IP65**

Certification Body **ZELM Ex**



Braunschweig, 18 Nov. 2005

  
Dipl.-Ing. Harald Zelm



(13)

Attachment

(14)

EC-type examination certificate ZELM 05 ATEX 0272 X

(15)

Description of the equipment

The LED-Torch Type Lite-Ex PL\* serves as a handheld, portable operating resource for use in potentially explosive atmospheres of categories 1G or 1D.

The "\*" in the type designation denotes a two-digit number sequence that indicates alternative versions.

The unit is made of an aluminium housing consisting of several pieces, which in turn is enclosed by an exterior plastic housing. The plastic surface is electrostatically conductive, or to be more precise, the possibility of dangerous electrostatic charging is eliminated by virtue of area demarcation and shape. A light diode provides a source of light. Power is supplied from suitable primary batteries.

Electrical data

Power supply three integral LR14 batteries  
The internal circuit is intrinsically safe.

The maximum permitted ambient temperature is -20 °C to + 50 °C.

(16)

Test report no. ZELM Ex

0380512421

(17)

Special conditions

1. Do not open the housing in potentially explosive atmospheres.
2. The integral batteries may only be replaced outside of the potentially explosive area and only with battery types approved by the manufacturer.
3. A visual and functional examination must be conducted at regular intervals to ensure that the exterior condition of the torch remains sound. In the event of flat batteries or visible damage, the torch must be removed from the potentially-explosive area.
4. Damaged seals may only be replaced in accordance with the directions in the operating instructions.
5. The operating instructions must be followed.

[18]

Fundamental health and safety requirements

Satisfied by virtue of the standards.

Certification Body ZELM Ex

  
Dipl.-Ing. Harald Zelm



Braunschweig, 18.11.2005

# Prüf- und Zertifizierungsstelle (Test and Certification Body)

**ZELM Ex**

## **1st amendment**

**(Amendment in accordance with EC Directive 94/9, appendix III number 6)  
to EC type approval test certificate  
ZELM 05 ATEX 0272 X**

### **Translation**

Device: **LED flashlight type Lite-Ex PL \***

Manufacturer: **ecom instruments GmbH**

Address: **D-97959 Assamstadt**

#### Description of the amendment

The flashlight is supplemented by a new cover plate. This can be used as an alternative to the cover plate that is currently being used. The ignition protection class, the electrical data and all other information as well as the special conditions remain unaltered and are effective for this 1st amendment. The flashlight can be optionally used in the future with the alternative cover plate.

#### Note:

The operating manual is to be observed.

#### Test report no.

ZELM Ex 0120715540

#### Basic health and safety requirements

The basic health and safety requirements are fulfilled through compliance with the standards specified in the EC type approval test certificate.

Zertifizierungsstelle ZELM EX  
Dipl.-Ing. Harald Zelm

Braunschweig, 21.06.2007

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## 2nd amendment

(Amendment in accordance with EC Directive 94/9, appendix III number 6)

**ZELM ex**

### to EC type approval test certificate

## ZELM 05 ATEX 0272 X

### Translation

Device: **LED flashlight type Lite-Ex PL \***

Manufacturer: **ecom instruments GmbH**

Address: **D-97959 Assamstadt**

#### Description of the amendment

The conformity of the device with the current standards has been verified within the scope of the 2nd amendment and the designation adapted accordingly.

The designation of the device in the future is:



The electrical data and all other information as well as the special conditions remain unaltered and are also applicable for this 2nd amendment. The device may be manufactured in future with reference to this 2nd amendment.

#### Test report no.

ZELM Ex 0060924674

#### Basic health and safety requirements

The conformity of the device with the current standards has been verified within the scope of the 2nd amendment. Furthermore, the basic health and safety requirements are met by virtue of conformance with:

EN 60079-0:2006  
EN 1127-1 :2007

EN 60079-11 :2007  
EN 61241-0:2006

EN 60079-26:2007  
EN 61241-11:2006

EN 60079-28:2007

ZELM ex  
Zertifizierungsstelle  
Braunschweig, 06.03.2009

Zertifizierungsstelle ZELM ex  
Dipl.-Ing. Harald Zelm

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Siekgraben 56  
D-38124 Braunschweig

### 3rd amendment

(Amendment in accordance with EC Directive 94/9, appendix III number 6) ZELM ex

Translation

to EC type approval test certificate

### ZELM 05 ATEX 0272 X

Device: LED flashlight type Lite-Ex PL \*

Manufacturer: ecom instruments GmbH

Address: D-97959 Assamstadt

#### Description of the amendment

The subject of the 3rd amendment concerns modifications made to the structural configuration of the device.

The ignition protection class, the electrical data and all other information as well as the special conditions remain unaltered and are effective for this 3rd amendment.

The flashlight may be manufactured in future with reference to this 3rd amendment.

#### Test report no.

ZELM Ex 1160924719

#### Basic health and safety requirements

The basic health and safety requirements are fulfilled through compliance with the standards specified in the 2nd amendment.

ZELM Ex  
Zertifizierungsstelle

Braunschweig, 02.10.2009  
Zertifizierungsstelle ZELM ex  
Dipl.-Ing. Harald Zelm

ZELM Ex

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D-38124 Braunschweig

## 4th Amendment

(Amendment in accordance with EC Directive 94/9, appendix III number 6)

### to EC type approval test certificate

#### ZELM 05 ATEX 0272 X

Device: **LED flashlight Lite-Ex PL \***  
Manufacturer: **ecom Instruments GmbH**  
Address: **D-97959 Assamstadt**

#### Description of the amendment:

The 4th amendment concerns an additional version of the LED flashlight.

The name of the new device is as follows:

#### **LED flashlight Lite-Ex PL 10**

The designation of the device is as follows:



**II 1 G Ex ia op is IIC T4 Ga**  
**II 1 D Ex ia IIIC T130°C Da**

The maximum permitted ambient temperature range is: -20 °C to + 50° C

#### Electrical data:

Power supply: provided by three installed LR03 batteries  
The internal electric circuit is intrinsically safe.

Special conditions for LED flashlight Lite-Ex PL 10 are as follows:

#### Special conditions:

Opening the housing within the explosive area is not permitted.

1. The installed batteries may only be exchanged outside the explosive area and only by those types approved by the manufacturer.
2. A visual and functional inspection should be conducted at regular intervals to ensure an orderly external condition of the flashlight. If the batteries are depleted or there is visible damage, the flashlight is to be removed from the explosive area.
3. Damaged seals should only be exchanged in accordance with the instructions in the operating manual.
4. The operating manual is to be observed.

**4th Amendment  
to EC type approval test certificate ZELM 05 ATEX 0272 X**

Test report No.  
ZELM Ex 0241019802

Basic health and safety requirements

The basic health and safety requirements are met by virtue of conformance with the following standards:

EN 60079-0:2009    EN 60079-11:2007    EN 60079-26:2007  
EN 60079-28:2007    EN 61241-11:2006

Translation

ZELM ex  
Certification body

Brunswick, 01.10.2010

Zelm ex

Zertifizierungsstelle (certification body) ZELM ex  
Dipl.-Ing. Harald Zelm

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(Test and Certification Body) ZELM EX

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38124 Braunschweig

# 5. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

**ZELM ex**

## to EC-type-examination Certificate

### ZELM 05 ATEX 0272 X

Equipment: **LED-Flashlight Type Lite-Ex PL \***

Manufacturer: **ecom instruments GmbH**

Address: **D-97959 Assamstadt**

#### Description of supplement

The 5<sup>th</sup> supplement concerns minor changes of the mechanic of the already approved types, as well as the evaluation of the usage of alternative batteries and a new type of LED lamp will be considered.

The new type of LED-headlamp will be:

#### **Lite-Ex PL 10 H**

#### Type of protection / Marking of Lite-Ex PL 10 H:



**II 1 G Ex ia op is IIC T4 resp. T3 Ga**

**II 1 D Ex ia IIIC T130°C Da**

#### Electrical Data of Lite-Ex PL 10 H

Power supply out of three built-in batteries LR03  
The internal circuit is intrinsic safe.

The maximum permissible ambient temperature range will be: - 20 °C up to + 50 °C

The type of protection, the marking the ambient temperature range, as well as the electrical data of the Lite-Ex PL 30 and Lite-Ex PL 10 will be unchanged and are still valid.

The Special conditions for safe use of the LED-flashlight Lite-Ex PL 10 and LED-headlamp Lite-Ex PL 10 H are as follows:

#### Special conditions for safe use

1. The opening of the enclosure within explosion hazardous areas is prohibited.
2. Before the lamp will be put into operation, a functional test shall be made. If a considerable loss of illuminating power will be detected, the batteries shall be changed. If the batteries are low or visible damages are detected, the LED lamps shall be not put into the explosion hazardous area.
3. The exchange of the built-in batteries shall be only done outside the explosion hazardous area and only with battery types approved by the manufacturer.



**5. Supplement  
to EC-type-examination Certificate ZELM 05 ATEX 0272 X**

**ZELM ex**

4. If electrolyte leakage is detected, the device shall not be put into the explosion hazardous area and shall be send to the manufacturer for inspection.
5. Only by the manufacturer approved accessories resp. spare parts shall be used.
6. Damaged gaskets shall only be exchanged according to the instructions inside the operating manual.
7. The operation manual has to be observed.

The special conditions for safe use of the LED-headlamp Lite-Ex PL 10 H are in addition as follows:

8. Only the original headband HB 10 H shall be used.
9. If the headlamp will be used with batteries of type Energizer No. E92 the Lite-Ex PL 10 H only fulfills the temperature class T3.

The special conditions for safe use of the LED-flashlight Lite-Ex PL 30 remain unchanged and are still valid.

Report No.

ZELM Ex 0851219944

Essential Health and Safety Requirements

The essential health and safety requirements are still fulfilled by compliance with the following Standards:

**EN 60079-0:2009      EN 60079-11:2007      EN 60079-26:2007**  
**EN 60079-28:2007      EN 61241-11:2006**

Braunschweig, 2012-11-26

**ZELM ex**

**Zertifizierungs-  
stelle**



Zertifizierungsstelle ZELM ex  
Dipl.-Ing. Harald Zelm

**ZELM  
ex**

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