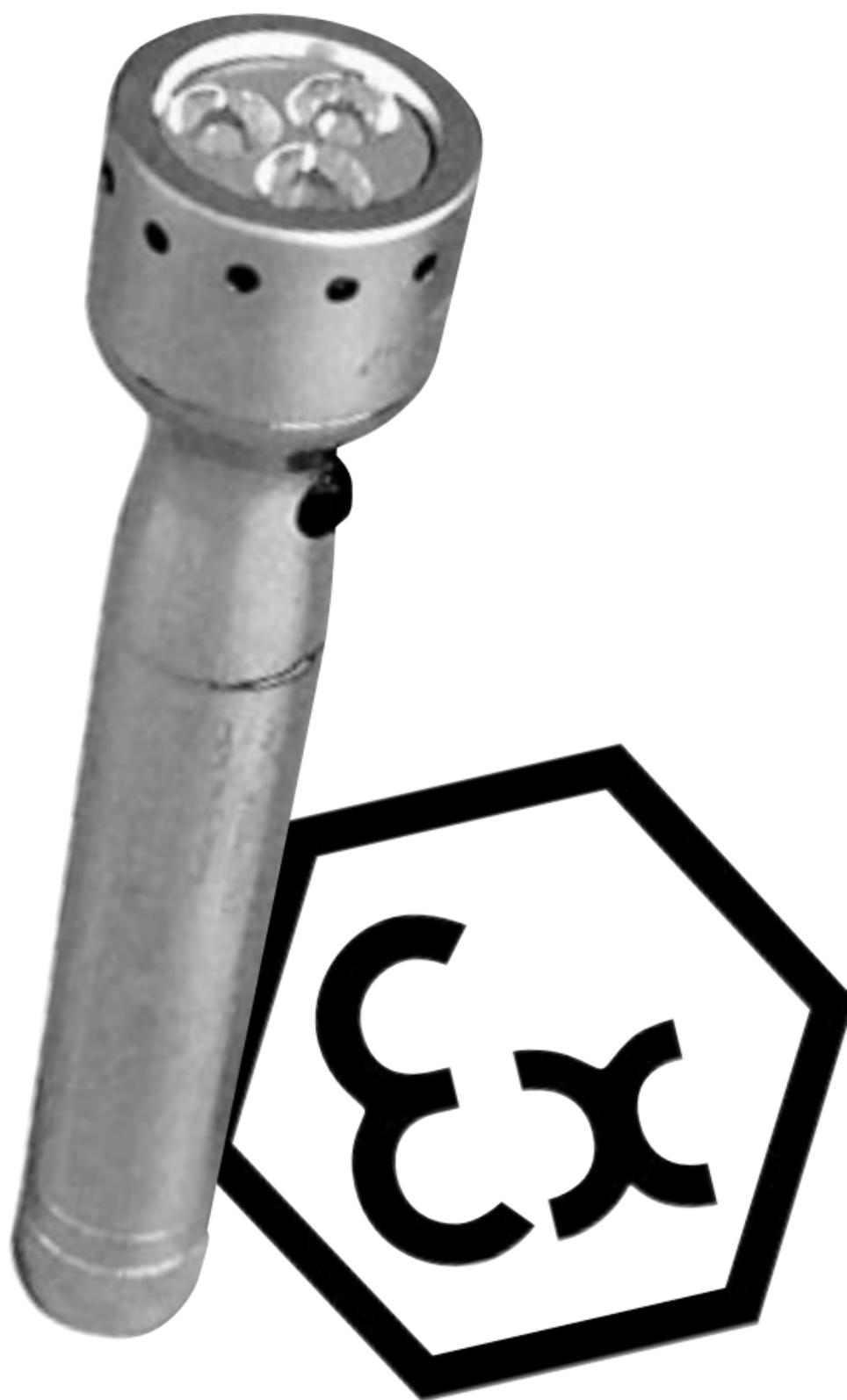


Lite-Ex LED 30



Operating Instructions

ecom
instruments

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1. Introduction

Easy to operate, the Lite-Ex LED 30 is a compact and robust LED torch, making it ideal for inspection lighting within Ex-hazardous areas classified as either Zone 2, 1 and 0 as well as 22 and 21 according to IEC/CENELEC and Div. 1 according to NEC.

2. Safety Advice

This operating manual contains information and safety recommendations which must be complied with in order to guarantee safe functioning of the unit under conditions described. Non compliance with this information and recommendations can have dangerous consequences or infringe regulations.

Please read these operating instructions very carefully before using the unit !

In case of any doubt (e.g. due to translation and/or printing errors) the original German language version should be referred to.

3. Faults and Damage

If there is any reason to suspect that the safety of the unit has been affected then it must be immediately withdrawn from use and precautionary measures taken in order to prevent any further use of in the Ex-hazardous area. It is recommended that the equipment be then sent back to the manufacturers for testing.

For example, the safety of the unit could be endangered when:

- External damage to the housing.
- Exposure to excessive loads.
- Incorrect storage of the unit.
- Damage sustained in transit.

- Correct certification is illegible.
- Functionality errors occur.
- The permitted limitations are exceeded.

4. Safety Regulations

4.1 General regulations

The use of the intrinsically safe Lite-Ex LED 30 meets the requirements of the regulations providing that the user observes and applies the requirements as laid down in the regulations and that improper and incorrect use of the unit is avoided.

The following safety regulations must be complied with:

- The unit must not be opened within the Ex-hazardous area.
- Batteries (see technical data) must only be changed outside the Ex-hazardous area.
- Spare batteries must not be taken into the Ex-hazardous area.
- Only the "type approved" batteries as listed in these operating instructions may be used.
- The lens head and switch part of the unit are permanently fixed and cannot be opened. Further, to do so should not be attempted.
- Only those accessories approved by *ecom instruments GmbH* may be used.
- Special care should be taken when opening and closing the base cap (for access to the battery compartment) not to damage the sealing ring.
- The unit is to be taken out of service with immediate effect should the rubber cover on the switch or the torch sealing ring become damaged.
- The maximum allowable environmental temperatures are not to be exceeded.

4.2 Special conditions for use in areas of Zone 0 or 21

1. The Lite-Ex LED 30 is only certified and permitted for use in Zone 0 or 21 providing it is secured to the user with the provided lanyard/wrist strap.
2. The torch unit should be prevented from being dropped.
3. The torch unit must not be left anywhere or stored in Zones 0 or 21.

4.3 Special conditions in dusty Ex-areas

1. After each change of batteries, the torch must be blown out or internally cleaned with a suitable device.
2. The sealing ring must be checked for any deterioration or damage.

5. Ex-Data

EC Certificate of Conformity No.:
ZELM 02 ATEX 0104

Ex-Designation:
 II 1 G EEx ia IIC T4

 II 2 D T90°C IP 52

Approved for Zone 2, 1 and 0; equipment group II, gas group IIC; explosive gases, vapours or fog, temperature class T4.

Approved for Zone 22 and 21; equipment group II, explosive dusts; T90°C



Report Job Identification No.: 3015562

FM-Certification:

I.S. Class I Division 1 Group A-D T4

6. Technical Data

Ambient operating

temperature Ta: -20 ... +50°C

Storage temperature: -20 ... +60°C

Batteries / power supply: 3 x LR1 as per IEC

(see table of approved battery types)

Table of approved battery types

Manufacturer	Type
Duracell	Alkaline MN9100
Varta	Electronics 4001
Eveready Battery Company, Inc.	Energizer E90

Battery life: approx. 80 h (continuous use)

Dimensions: 140 x 26 mm (l x Ø)

Weight: approx. 160g (with batteries)

EC-Designation:  0102

Light source:

Type: Gallium-Nitrit-LED
(NSPW500BS)

Life expectancy: 100.000 operating hours

7. Use and Application / Operating Instructions

Before use, please read these operating instructions very carefully in order to familiarise yourself with your Lite-Ex LED 30.

For your own safety and information, please read the following instructions.

7.1 Commissioning

In order to be able to use the torch in the Ex-hazardous area, you must first check that the base cap is tightly fastened and that the safety screw is securely and completely fitted. After checking these points the torch can be used in the Ex-hazardous areas – operation is by pressing the switch. The torch is supplied with factory fitted batteries.

7.2 Battery Replacement

When the brightness is no longer satisfactory and the batteries are to be replaced, it is strongly recommended that all 3 batteries should be replaced as a set. When replacing the batteries

ensure that only type-approved batteries are used (see table of type-approved batteries in section 6 of the technical details).

PLEASE NOTE:

The batteries must only be changed outside of the Ex-hazardous area.

The use of any other type of batteries is strictly forbidden in that it will invalidate the Ex-data certification.

To change the batteries, first remove the safety screw – using a suitable screwdriver. The base cap can now be removed - by unscrewing in an anticlockwise direction.

The batteries can now be removed.

Before fitting new batteries ensure that the contacts of the new batteries and those in the torch are clean. After the batteries have been inserted, refit the base cap and secure with the safety screw.

Please check that the sealing ring has not become damaged when opening and closing the torch
(ref. special conditions see paragraph 4.3).

8. Repairs

Should any repairs or service be necessary, then the conditions of ELEX V must be complied with. It is recommended that the manufacturer carry out such repairs in order to check for the safe functioning of the protective circuits.

9. Cleaning and Maintenance

The unit should only be cleaned with a suitable cloth or sponge. Do not use solvents, abrasives or other cleaning solutions.

10. Guarantee and Liability

For this product, *ecom instruments GmbH* guarantees the function and material for a period of two years under normal operating and maintenance conditions.

The guarantee does not apply to products which are improperly used, modified, neglected, damaged in accidents or exposed to abnormal operating conditions.

Claims under the guarantee can be made by returning the defective equipment to the factory. We reserve the right to repair, renew the settings or exchange the device.

The above-mentioned guarantee conditions are the sole and only rights of the purchaser to compensation, are exclusively valid and replace all other contract or legal warranty obligations. *ecom instruments GmbH* accepts no responsibility for special, direct, indirect, accompanying or consequential damage as well as losses including the loss of data which may arise through the use or acquisition of the equipment independent of whether it was caused by violation of the warranty obligation, lawful or unlawful action, action in good faith or any other action.

If in certain countries the limitation of a legal guarantee as well as the exclusion or limitation of accompanying or consequential damage is not permissible, it may be that the above-mentioned limitations and exclusions are not valid for every purchaser. Should any such clauses of these guarantee terms be declared null and void or not realisable

by a competent court, then the effectiveness or enforceability of any of the other conditions of these guarantee terms will be unaffected by the court decision.

11. Declaration of EC-Conformity

We

ecom instruments GmbH

Industriestraße 2

D-97959 Assamstadt

declare under our sole responsibility, that the product

Lite-Ex LED 30

to which this declaration relates is in accordance with the provision of the following directives,

94/9/EC Equipment and protective systems in explosion-endangered areas

and is in conformity with the following standards or other normative documents

EN 50014:1997 Electrical apparatus for potentially explosive atmospheres
General requirements

EN 50020:1994 Electrical apparatus for potentially explosive atmospheres
Intrinsic safety "i"

EN 50281:1998 Electrical apparatus for use in the presence of combustible dust

EN 50284:1999 Special requirements for construction, test and marking of electrical apparatus of equipment group II, category 1G

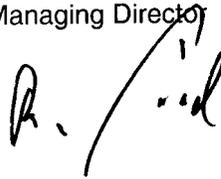
EN 1127-1:1997 Explosive atmospheres
-Explosion prevention and protection

ecom instruments GmbH

Assamstadt, 20.02.03

Rolf Nied

Managing Director



12. EC-Type Examination Certificate



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 0820217154.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50 014: 1997+A1+A2 EN 50 020: 1994 EN 50 281-1-1: 1998
EN 50 284: 1999 EN 1127-1: 1997
- (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

Braunschweig, November 15, 2002

Dipl.-Ing. Harald Zelm



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.

Prüf- und Zertifizierungsstelle ZELM Ex • Siegraben 56 • D-38124 Braunschweig



Prüf- und Zertifizierungsstelle

ZELM Ex



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 °C to +50 °C
The maximum case temperature is +90 °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

Braunschweig, November 15, 2002

Dipl.-Ing. Harald Zelm



Sheet 2/2

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.

Prüf- und Zertifizierungsstelle ZELM Ex • Siegraben 56 • D-38124 Braunschweig

13. Certificate of Compliance


FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781 762 4300 F: 781 762 9375 www.fmglobal.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

Life-Ex LED 30 FlashLight
IS / I / 1 / ABCD / T4, Ta = 50 °C

Equipment Ratings:
Intrinsically safe for Class I Division 1, Groups A, B, C, and D T4 Ta = 50 °C hazardous (classified) locations

Approved for:
ecom instruments
D-67359 Asslarstedt, Germany

FM Approval # HLC 8023015562
Page 1 of 2



This certifies that the equipment described has been found to comply with the following FM Approval Standards and other documents:

Class 3600	1998
Class 3810	1999
Class 3810	1999

Original Project ID: 3015562 FM Approval Granted: November 13, 2002

Subsequent Revision Reports / Date FM Approval Amended

Report Number	Date	Report Number	Date
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FM Global Technologies LLC



Nicholas P. Ludlam
Technical Team Manager

Nicholas P. Ludlam

Date

FM Approvals HLC 8023015562
Page 2 of 2



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