



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU17ATEX1134 X** | Issue 0

[4] Product: **Helmet light**
Type: KS-7830-IX and KS-7840-IX

[5] Manufacturer: KSE-Lights GmbH

[6] Address: Thüngenfeld 8
58256 Ennepetal
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 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 product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.


The examination and test results are recorded in the confidential test report IB-17-3-0004.


[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN 60079-0:2012+A11:2013 EN 60079-11:2012 EN 60079-28:2015 EN 60079-35-1:2011
except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **I M1 Ex ia op is I + H2 Ma EN 60079-35-1**

 **II 1G Ex ia op is IIC T4 Ga**

-20 °C ≤ T_a ≤ +50 °C

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By order

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Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2017-11-08

[13] **Schedule**

[14] **Certificate number IBExU17ATEX1134 X | Issue 0**

[15] **Description of product**

The helmet light type KS-7830-IX and KS-7840-IX is a LED light that is intended for use in potentially explosive atmospheres of zone 0 as well as in mines susceptible to firedamp. The light is equipped with the two LED light sources and is powered by an integrated rechargeable Lithium ion battery. In total, there are 3 or 4 different illumination modes that can be activated one after another by pressing the power button multiple times. The helmet light is implemented in type of protection intrinsic safety "ia" and inherently safe optical radiation "op is". Charging of the battery is performed outside of the explosion hazard area using a special charging device. The charging procedure takes place via wireless power transfer using inductive coupling.

Technical data:

- Ambient temperature: -20 °C ... +50 °C
- Battery:
 - Nominal voltage: 3.7 V
 - Capacity (min./typ.) 2x 1620 mAh / 1700 mAh
- Associated charging device : IX charging unit (for inductive charging)
 - Transmitter:
 - Input: 12 V DC; 0.45 A
 - Transmitter coil: 6.5 µH ± 10 % at 100 kHz (approx. 10 windings)
 - Output: max. 5 W transmission power
 - Receiver:
 - Receiver Module RX (in the helmet light)
 - Input: ≤ 5 W reception power
 - Receiver coil: 11 µH ± 10 % at 100 kHz (approx. 15 windings)
 - Output: 6 V DC; 450 mA

[16] **Test report**

The test results are recorded in the confidential test report IB-17-3-0004 of 2017-11-08.

The test documents are part of the test report and they are listed there.

Summary of the test results

The helmet light type KS-7830-IX and KS-7840-IX fulfils the requirements of explosion protection for equipment of Group I, Category M1, as well as Group II, Category 1G, in type of protection intrinsic safety "i" and inherently safe optical radiation "op is" for explosion group I + H2 as well as IIC, temperature class T4.

[17] **Specific conditions of use**

1. The light emission window of the helmet light must not be covered.
2. Charging of the helmet light is only permitted outside of the explosion hazard area with the associated charging device at an ambient temperature of 0 °C... +35 °C.
3. The supply voltage of the charging device shall not be greater than 14.8 V under the condition that the turns ratio between the receiver coil and the transmitter coil is ≤ 1.8. This voltage may be provided by one of the following means in accordance with IEC 60079-14:
 - where U_m does not exceed 50 V AC or 120 V DC, in a SELV or PELV system
 - via a safety isolating transformer complying with the requirements of IEC 61558-2-6 or a technically equivalent standard
 - directly connected to apparatus complying with the IEC 60950 series, IEC 61010-1 or a technically equivalent standard
 - fed directly from cells or batteries

[18] **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

[19] **Drawings and Documents**

The documents are listed in the test report.

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