

E.L.B. EX-GERÄTE



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Technical Documentation
ELBCam 1

USB Photo Camera EEx i 

ELBCam 1

Instruction Manual ELBCam 1

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General Information

This manual mainly contains data concerning explosion protection. Operational data and instructions for operating with a PC are described more detailed in the manual for the Non-ex version and the DVD enclosed with the camera.

1 Functional Description

The intrinsically safe USB camera **ELBCam 1** can take photos in a hazardous area (Ex area, potentially explosive atmosphere), that can be edited immediately on a PC in a safe area via the USB port. This does not require special software, because the camera acts like an external hard disk drive and the photos are saved as JPG files.

Further advantages:

- small size, light weight
- two alkaline cell supply size AAA
- close-up switch (for 15 - 30 cm distance)
- optical indicators for operation in noisy industry environments
- 256 MB memory, sufficient for more than 200 photos (according to the degree of compression)
- data retention for 10 years without supplying
- USB memory stick for all kinds of data

Special notes concerning the explosion protection:

- In a hazardous area the locking bag for USB and battery cover must be used.
- Do not open the USB or battery cover in hazardous areas.
- Do not take the USB lead or other accessories into explosive areas. (Neck loop and carrier bag allowed.)
- Ambient temperature -20°C ... +50°C
- Pay attention to the technical data and the safety advice!

2 Delivery Components

Delivery includes:

- USB photo camera **ELBCam 1**
- 2 alkaline battery cells size AAA
- USB lead (not allowed in a hazardous area !)
- Manual for the Ex version
- Manual for the Non-ex version (on paper and DVD)
- Driver for Windows 98 on DVD (driver for higher versions not necessary)
- Locking bag for battery and USB cover
- Carrier bag with belt clip and neck loop

3 Operating

Please note the safety advices and the data for hazardous areas use !

For additional information concerning operating and optical data refer to the manual of the Non-Ex version enclosed with the camera. The buzzer, which is mentioned there, has been removed however.

Taking photos:

- Press the button on the back of the camera for 4 seconds. Camera operation starts with one flash of the red lamp and the blue lamp flashing continuously.
- If the camera does not start after about 5 seconds, please try again. If it does not start at all, please exchange the batteries (not allowed in hazardous areas).
- Chose between standard distance and close-up with the macro switch.
- Press the button again, but only briefly to take a photo. The blue lamp on the side is continuously on now. Up to three seconds later the photo is taken depending on the subject, illumination and motion. The blue lamp stays on until the photo taking process is completed and the picture edited (compression and saving).
- The camera is ready again, when the blue lamp starts to flash.
- The camera switches off automatically after about 90 seconds without pressing the button.

Editing:

- Connect the camera with a USB port of your PC, if necessary with the extension lead enclosed with the camera. The camera is now powered by the PC and appears like an additional hard disk drive.
- Operation starts with the same signals as powering-on with the button, but the blue lamp is on continuously. During data transfer the red lamp is also on.
- The photos can be found in the folder [character for the drive] \ DCIM \ 100Media \ ...
- Please close all folders, before you unplug the camera.

Battery:

- Replacing of batteries and removing of the battery cover is prohibited in hazardous areas.
- Use of rechargeable batteries prohibited even in Non-ex areas.
- 2 alkaline cells size AAA
- Battery life during standby about 60 days. Please remove the battery, if you are not going to use the camera for a long time.

Technical Data

4 Operating Data

Certificate no.: IBExU 06 ATEX 1021

Kind of protection:  2 G Ex ia IIC T4

Ambient temperature: -20°C ... +50°C

Supply:

2 alkaline cells size AAA

Type of cells: Duracell MN 2400 AAA, capacity: 1150 mAh ...

... or further cells approved according to EN50020, §10.9:

Manufacturer:	Type:	Manufacturer:	Type:
Daimon	Alkaline	Eveready	Alkaline Energizer No. E92
Duracell	Alkaline Plus	GP	Super Alkaline Battery 24 A
Duracell	Alkaline Procell	Varta	Alkaline No. 4803
Duracell	Alkaline Ultra	Toshiba	Alkaline LR03GR
Energizer	Ucar Gold		

Current consumption during operating: ~ 130 mA

during standby: ~ 1 mA

Case:

IP protection: IP20
Material: ABS
Dimensions: 130 x 32 x 22 mm
Weight: ca. 50 g (without battery and bag)

Cleaning:

Clean with a soft dry cloth or brush. There are gaps and holes in the case, so do not use a fluid cleansing agent. Do not clean in hazardous areas because of potential static charging of the cleaning tool.

5 Safety Advices

In hazardous areas the battery and the USB cover must always be protected against opening by the locking bag.

Do not open the battery or USB cover in hazardous areas.

In hazardous areas any access to the battery or the USB plug is prohibited.

Operation with rechargeable batteries prohibited, even in the Non-Ex-Area.

After exchanging of the battery, the camera function must be verified before entering the hazardous area, e. g. by checking the flashing of the lamps after switching on.

USB lead and other accessories (except neck loop and carrier bag) are prohibited to be taken into hazardous areas.

Read the manual completely and carefully before operation. Only the latest documentation is valid.

Installation, maintenance and cleaning of the units must only be performed by persons trained and authorized for this purpose, insofar as they are familiar with the units.

If it can be assumed that safe operation is no longer possible, switch off the unit and secure it against being used again.

It is prohibited for the operator or his staff to open the units in a way that is not described in this manual. This may only be done by specifically authorized personnel of E.L.B. Ex-Geräte GmbH & Co. KG.

Modifications and conversions to the units are not permissible and will cause the Ex protection and the guarantee to become void.

E.L.B. Ex-Geräte GmbH & Co. KG is not liable for any consequential damage.

The technical data specified for hazardous areas comply with the values certified in the European EEx approval. The user bears the sole responsibility of examining the equipment with regard to its suitability for the intended application and environmental conditions. E.L.B. Ex-Geräte GmbH & Co. KG accepts no liability for any lack of suitability.

For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable ordinances and provisions concerned with explosion protection (VDE 0160, VDE 0165 or EN 60079-14, EN 50014 - 50039) as well as the Accident Prevention Regulations (UVV) and codes of practice in your region.

Appendix

6 Liability

The technical data specified for hazardous areas comply with the values certified in the European EEx approval. The user bears the sole responsibility of examining the equipment with regard to its suitability for the intended application and environmental conditions. E.L.B. Ex-Geräte GmbH & Co. KG accepts no liability for any lack of suitability.

7 EC Declaration of Conformity



We hereby confirm the conformity of the equipment listed below with the directives of the Council of the European Community. The safety and installation instructions of the product documentation must be observed.

Model:	USB Photo Camera ELBCam 1	
Directive:	EMC Directive 98/336/EC*)	
European Standards:	EN 55022:	1998, class B
	EN 55024:	May 1999
Directive:	Low Voltage Directive 73/23/EC*)	
European Standards:	EN 60950*	
Directive:	94/9/EC*)	
European Standards:	EN 60079-0:	2004
	E IEC 60079-11:	2004

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[1] **EC-TYPE EXAMINATION CERTIFICATE**

according to Directive 94/9/EC, Annex III

(Translation)



[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU06ATEX1021**

[4] Equipment: USB-photo camera
type ELBCam1

[5] Manufacturer: E.L.B. Ex-Geräte Bachmann GmbH & Co. KG

[6] Address: An der Hartbrücke 8
64625 Bensheim
Germany

[7] The equipment mentioned in [4] and any acceptable variation thereto are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23rd 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 intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the test report IB-05-3-371 of 26th January 2006.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2004 and E IEC 60079-11:2004.

[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 under [17] in the schedule to this EC-Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned in [4] shall include the following:

Ex II 2G Ex ia IIC T4
-20 °C ≤ T_a ≤ +50 °C

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Authorised for certifications Explosion protection

Freiberg, 27th January 2006

By order

(Dr. Lösch)



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.

Schedule

[13]

Schedule

[14]

to the EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1021

[15]

Description of equipment

The USB-photo camera is a hand-held intrinsically safe apparatus which serves for recording and storing of photos in explosive areas. It consists of a plastic housing with a view-finder and 2 LED. The camera is supplied by 2 Alkaline primary cells size AAA, which must be replaced only outside of the hazardous area.

Electrical data

internal supply electrical circuit

Operating voltage: 2 x 1.5 V Alkaline primary cell, size AAA (Micro)

Safety technical notes

- In the hazardous area the battery and USB cover must be locked by the safety bag.
- Any access to the battery holder or the USB plug is inadmissible in the hazardous area.
- Only the battery types listed in the operating manual are to be used.
- After exchanging the battery the camera function must be checked outside of the hazardous area.

[16]

Test report

The test results are recorded in the test report IB-05-3-371 of 26th January 2006. The test documents are components of the test report and listed there.

Summary of the Test Result:

The USB-photo camera Type ELBCam1 fulfils the requirements of the Type of protection Intrinsic Safety for an explosion-proof electrical apparatus for Equipment Group II, Category 2G, Explosion Group of IIC, Level of Protection ia and Temperature Class T4.

[17]

Special conditions
none

[18]

Essential Health and Safety Requirements

Confirmed by norms (see [9]).

By order

Freiberg, 27th January 2006



(Dr. Lösch)