MSA
The Safety Company

Operating Manual

Luminator Cap Lamp

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CE

Order No.: 10153186/00

MSA AUER GmbH
D-12059 Berlin
Thiemannstraße 1
Germany

EC Declaration of Conformity

The manufacturer or his in the community established authorized representative

MSA AUER GmbH

Thiemannstrasse 1

D-12059 Berlin

declares that the product:

LUMINATOR

based on the EC-Type Examination Certificate:

BVS 13 ATEX E 076

complies with the ATEX directive 94/9/EC, Annex III. Quality Assurance Notification complying with Annex IV of the ATEX directive 94/9/EC has been issued by DEKRA EXAM, Notified Body number: 0158.

Standards: EN 60079-0:2012, EN 60079-11:2012

The product is in conformance with the directive 2004/108/EC, (EMC):

EN 61000-6-2:2006, EN 61000-6-4:2007

The product is in conformance with the directive 2006/66/EC.

Dr. A. Schubert

MSA AUER GmbH

Dr. Axel Schubert

Manager R&D Instruments

& Approvals INT-T

Berlin, July 2013

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1 Safety Regulations

1.1 Correct Use

The Luminator Cap Lamp (hereinafter called device) is a mobile safety light source. The device is attached on any mine helm, e.g. V-Gard, battery-supplied with the battery compartment worn on at the belt. The device is designed for all underground mining, emergency services, security services and maintenance services.

The device is intended for use by trained and qualified personnel.

It is imperative that this operating manual be read and observed when using the product. In particular, the safety instructions, as well as the information for the use and operation of the product, must be carefully read and observed. Furthermore, the national regulations applicable in the user's country must be taken into account for a safe use.

Danger!

This product is supporting life and health. Inappropriate use, maintenance or servicing may affect the function of the device and thereby seriously compromise the user's life.

Before use the product operability must be verified. The product must not be used if the function test is unsuccessful, it is damaged, a competent servicing/maintenance has not been made, genuine MSA spare parts have not been used.

Alternative use, or use outside this specification will be considered as non-compliance. This also applies especially to unauthorised alterations to the product and to commissioning work that has not been carried out by MSA or authorised persons.

1.2 Liability Information

MSA accepts no liability in cases where the product has been used inappropriately or not as intended. The selection and use of the product are the exclusive responsibility of the individual operator.

Product liability claims, warranties also as guarantees made by MSA with respect to the product are voided, if it is not used, serviced or maintained in accordance with the instructions in this manual.

1.3 Safety and Precautionary Measures to be Adopted

Attention!

The following safety instructions must be observed implicitly. Only in this way can the safety and health of the individual operators, and the correct functioning of the device, be guaranteed.

- The device is intended for use by trained and qualified personnel.
- Before each day use, check the function of the device.
- Be aware of the procedures for handling electrostatically sensitive electronics.
- The device contains electrostatically sensitive components. Do not open or repair the device without using appropriate electrostatic [ESD] protection. The warranty does not cover damage caused by electrostatic discharges.
- Follow all relevant national regulations applicable in the country of use.
- Be aware of the warranty regulations.
- The warranties made by Mine Safety Appliance Company with respect to the product are voided if the product is not used and maintained in accordance with the instructions in this manual. Please protect yourself and other by following them. We encourage our customers to write or call regarding this equipment prior to use or for any additional information relative to use or service.
- Do not charge in hazardous areas.

Recycling of Batteries

Used batteries must be returned to the dealer or manufacturer for disposal. They should never be disposed of in household waste.

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2 Description

2.1 Overview

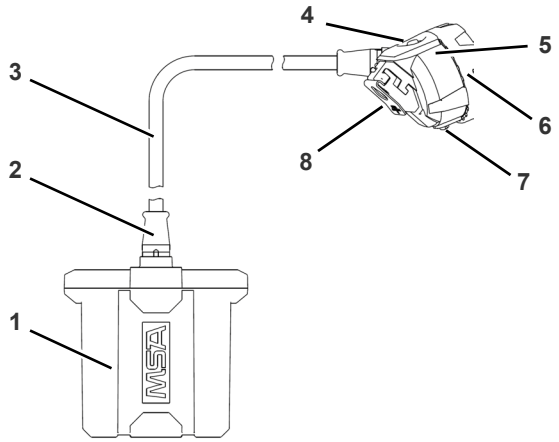

Fig. 1 Overview Luminator Cap Lamp

1	*Battery Pack*	*5*	*Headpiece with RFID Tag*
2	*Cable Gland*	*6*	*Bezel Ring*
3	*Cable*	*7*	*Lock Screw / Charger Contact [Positive]*
4	*ON/OFF Button*	*8*	*Clip / Protected Charger Contact [Minus]*

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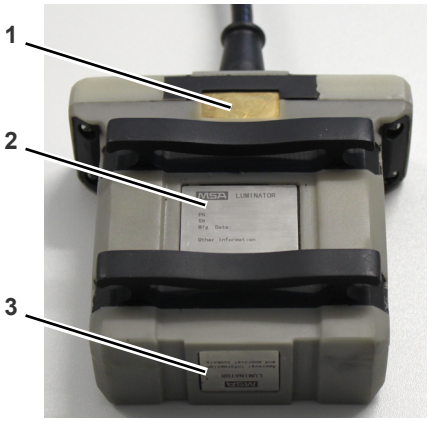
2.2 Labels

The battery pack is equipped with 3 labels:



1 User defined Label

2

MSA LUMINATOR

BVS 13 ATEX E 076 Ⅰ M1 Ex ia Ⅰ Ma
Ⅱ 1G Ex ia Ⅱ C T4 Ga

IECEx BVS 13.0084 Ex ia Ⅰ Ma
Ex ia Ⅱ C T4 Ga

CE 0158

-20°C ≤ Ta ≤ +60°C

Li-Ion 9000mAh

Um ≤ 7V DC

MSA AUER GmbH 12059 Berlin, Germany

3

MSA LUMINATOR

PN: 115

SN:

Mfg.Date:

Ⅰ A No.: MS-XPL / 12.0128 X

Ex ia Ⅰ / Ⅱ C T4

-20°C ≤ Ta ≤ +60°C

3.6V 9Ah Um ≤ 7V DC

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3 Cable Management

The battery pack is equiped with a cable management at the belt loops.

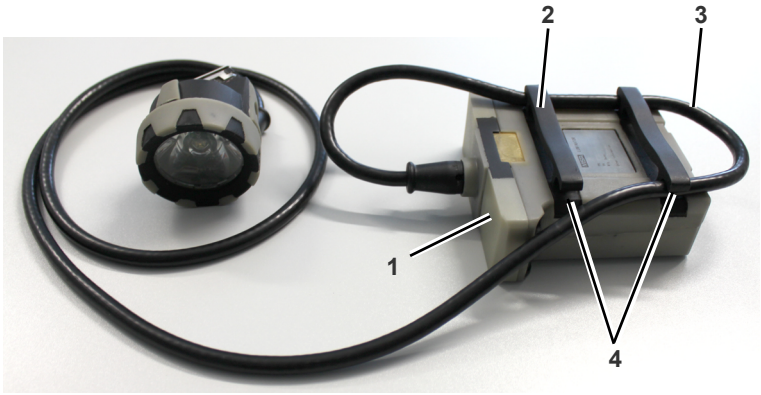
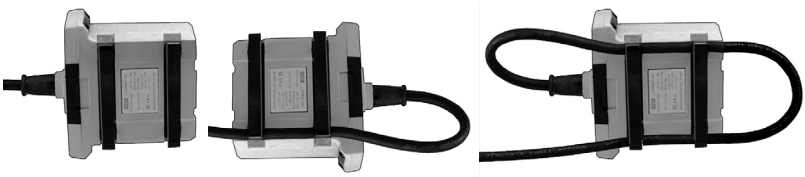


Fig. 2 Cable Management

1	*Battery Pack*	*3*	*Cable*
2	*Belt Loop (2x)*	*4*	*Cable Fixing (4x)*

Attention!
Do not twist the cable.

The cable length can be adjusted by fixing the cable at the end of each belt loop (cable fixing).



Total lenght of the cable:	160 cm
Fixing at 1 side (2 cable fixings):	10-15 cm shorter cable
Fixing at 2 sides (4 cable fixings):	30-60 cm shorter cable

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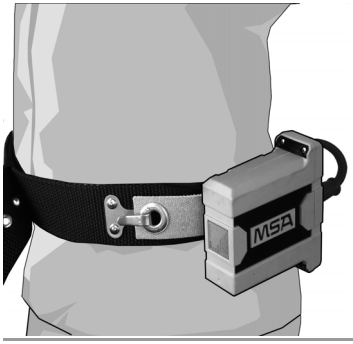
4 Donning

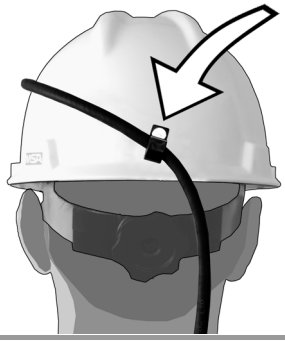


(1) Adjust cable lenght according to chapter 3.

(2) Insert the belt into the belt loops of the battery pack.

(3) Lay the cable at the back, to move freely.

(4) Attach the headpiece with the clip on the helmet.



(5) Insert the cable into the clamp at the back side of the helmet.

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5 Use

5.1 Turning ON/OFF

(1) Press the ON/OFF button to turn on the device.
(2) Press the ON/OFF button to turn off the device.

5.2 Changing Operation Mode

The device is equipped with at least 3 operation modes.

	OFF
	Mode 1: Extended walking light
	Mode 2: Working light and extended walking light
	Mode 3: Working light

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The selection of the mode will be done by pressing the ON/OFF button.

(1) Press the ON/OFF button to turn on the device.

(2) Press the ON/OFF button gently and it will change the mode.

With each ON/OFF sequence, or just by pressing the ON/OFF button gently, the mode will change to the next.

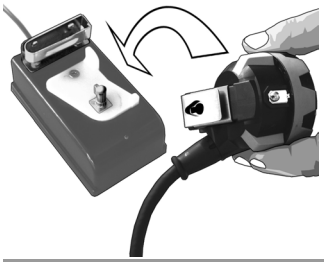
5.3 Battery Warning

Before the battery pack is completely depleted the device turns automatically into the emergency light mode. The emergency light mode will last at least 2 h.

5.4 Battery Charging

Warning!
Do not charge the device in hazardous area.

The device is designed for a key charging system which supplies 5 VDC [min 5 VDC max. 7 VDC] and at up to 1 A per charge point.



(1) Clean the device before charging.

(2) Place the headpiece on the charger key in the right way.

(3) Turn the headpiece 180 degree to start the charging process.

▷ The charge time is up to 12 h for a complete depleted battery pack and less than 6 h after an 12 h working shift.

6 Maintenance

6.1 Maintenance Intervals

Attention!
To maintain the intrinsic safety certification of the device all personnel performing any service or repair have to be trained and certified in maintaining intrinsically safe equipment.

Work to be carried out	Maximum Intervals	
	Before Use	After Use
Cleaning		X
Visual and Functional Check	X	X

6.2 Visual Test and Function Test

Visual Test

(1) Inspect the device for possible damages like for example dirt, deformations, cracks or loosen parts.

(2) Defective or damaged parts have to be replaced immediately.

Functional Test

The device has to be tested for unrestricted mobility.

(1) Turn ON/OFF, to check the lamp.

(2) Gently press the ON/OFF button, to check the operation mode.

6.3 Cleaning

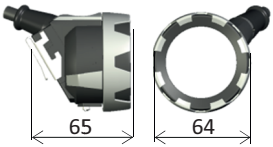
Do not use solvents to clean the device.

(1) Clean the device with a clean soft cloth.

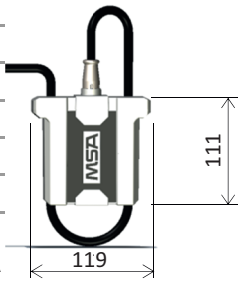
(2) Avoid any cleaning method that may lead to scratching of the lens or reflectors.

7 Technical Data

Head Piece	
Width	64 mm
Depth	65 mm
Weight	< 160 g



Battery Pack	
Type	$LiFePO_4$
Width	119 mm
Height	111 mm
Depth	41 mm
Weight	< 550 g
Universal charge rack	4.9 VDC - 5.3 VDC at up to 1 A



Light	
Narrow beam	≤ 8°
Intensity	> 6,000 cd
Peripheral Light	120°
Intensity	> 3.0 cd
Walking light	
Intensity	> 4.0 cd
Correlated Color Temparature [CCT]	4,000 K
Color Rendering Index [CRI]	> 93%
Ingress Protection	IP 68
Cable length	1.60 m
Run time	Up to 36 h
Emergency light after 8 h shift	100 h

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8 Approvals

8.1 Marking, Certificates and Approvals according to the Directive 94/9/EC (ATEX)

Manufacturer:	MSA AUER GmbH Thiemannstraße 1 D-12059 Berlin
Product:	LUMINATOR
EC-Type Examination Certificate:	BVS 13 ATEX E 076
Type of protection:	EN 60079-0:2012, EN 60079-11:2012

Marking:	
	I M1 Ex ia I Ma II 1G Ex ia IIC T4 Ga -20°C ≤ Ta ≤ +60°C
Battery:	LiFePO4 3,6 V / 9000 mAh U_m: 7 V

Special conditions for safe use:

In hazardous locations the Multifunctional LED-Lamp type LUMINATOR has to be used according to the following regulations:

- The device has to be carried at the body. Don't put the device away out of your supervision. This is to prevent the device from electrostatic charge.
- The charging of the LUMINATOR is only allowed outside of the hazardous area.
- For charging follow the manual instructions (5 V/1 A, U_m = 7 V).

Quality Assurance Notification:	0158
Year of Manufacture:	see Label
Serial Nr.:	see Label
RFID TAG:	The instrument is installed with an passive RFID-TAG: FTZU 11 ATEX 0177 X.

Special conditions for safe use:

The antenna used for the activation of the transponders in an hazardous area must only be with the RF radiation power not exceeded 6 W for Group I and 2 W for Group IIC.

8.2 Marking and Certificates according to IECEx

Manufacturer:	MSA AUER GmbH Thiemannstraße 1 D-12059 Berlin
Product:	LUMINATOR
IECEx-Type Examination Certificate:	IECEx BVS 13.0084

Marking:	
	Ex ia I Ma Ex ia IIC T4 Ga -20°C ≤ Ta ≤ +60°C
Type of protection:	IEC 60079-0:2011, IEC 60079-11:2011
Battery:	LiFePO4 3,6 V / 9000 mAh U_m: 7 V

Special conditions for safe use:

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Quality Assurance Notification:	0158
Year of Manufacture:	see Label
Serial Nr.:	see Label

8.3 Marking and Certificates according to SANS

Manufacturer:	MSA AUER GmbH Thiemannstraße 1 D-12059 Berlin
Product:	LUMINATOR
SANS :	IA No.: MS-XPL / 12.0128 X
DMR:	PN: 115

Marking:	
	Ex ia I / IIC T4 -20°C ≤ Ta ≤ +60°C
Type of protection:	IEC 60079-0:2011, IEC 60079-11:2011
Battery:	LiFePO4 3,6 V / 9000 mAh U_m: 7 V

Special conditions for safe use:

- The charging of the LUMINATOR is only allowed outside of the hazardous area.
- For charging follow the manual instructions (5 V/1 A, U_m = 7 V).

Year of Manufacture:	see Label
Serial Nr.:	see Label

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9 Ordering Information

Description	Part No.
Luminator, Cap Lamp, Heavy Duty	10150602
Luminator, Cap Lamp, Heavy Duty (20 pieces)	10153597
Charger Stand, Luminator	10153261
Charger power supply, Luminator	10153262

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