



Instruction Manual

ELTROTEC Endolight FOT Halogen 20

Halogen light source

MICRO-EPSILON
Eltrotec GmbH
Heinkelstraße 2

73066 Uhingen / Germany



Tel. +49 (0) 7161 / 98872-300
Fax +49 (0) 7161 / 98872-303
e-mail eltrotec@micro-epsilon.de
www.micro-epsilon.com

Certified acc. to DIN EN ISO 9001: 2008

Contents

1.	Safety	5
1.1	Symbols Used	5
1.2	Warnings	5
1.3	Notes on CE Identification	6
1.4	Proper Use	7
1.5	Proper Environment	7
2.	Functional Principle, Technical Data	8
2.1	Short Description	8
2.2	Technical Data	8
3.	Delivery	9
3.1	Unpacking	9
3.2	Storage	9
4.	Mounting	10
4.1	Light Source	10
4.2	Control Elements	11
5.	Operation	12
5.1	Commissioning	12
5.2	Fuse Replacement	13
5.3	Changing the Lamp	14
6.	Instructions for Operation	15
6.1	General	15
6.2	Cleaning	15
	6.2.1 Housing and Power Supply	15
	6.2.2 Quartz Glass of Light Source	15
7.	Warranty	16

8.	Service, Repair	16
9.	Decommissioning, Disposal	16
Appendix		
A 1	Optional Accessories	17
A 2	Spare Parts	20
A 3	Factory Setting.....	20

1. Safety

The handling of the system assumes knowledge of the instruction manual.

1.1 Symbols Used

The following symbols are used in the instruction manual:



Indicates a hazardous situation which, if not avoided, may result in minor or moderate injuries.



Indicates a situation which, if not avoided, may lead to property damage.



Indicates a user action.



Indicates a user tip.

Measure

Indicates a hardware or a button/menu in the software.

1.2 Warnings



Connect the power supply in accordance with the safety regulations for electrical equipment.

> Danger of injury

> Damage to or destruction of the light source

Do not look directly into the light source

> Danger of injury, damage to the eyes or skin

Let the light source and the power supply cable cool off a few minutes after switching off before touching it or drag the light source connector.

> Risk of burns by the still hot lamp

Do not touch any exposed electrical contacts and no moving parts in the light source.

> Danger of injury

Leave enough space in front of the vents and do not cover it, so that sufficient ventilation is ensured.

> Risk of fire by heat

NOTICE

Keep the light source away from liquids and splashes of water.

> Damage to or destruction of the light source

The power supply must not exceed the specified limits.

> Damage to or destruction of the light source

The light source may not be operated with removed housing cover.

> Damage to or destruction of the light source

Do not insert foreign objects into the openings of the light source.

> Damage to or destruction of the light source

1.3 Notes on CE Identification

The following applies to the ELTROTEC Endolight FOT Halogen 20 light source:

- EU directive 2004/108/EC
- EU directive 2006/95/EC
- EU directive 2011/65/EU, "RoHS" category 11

Products which carry the CE mark satisfy the requirements of the quoted EU directives and the European standards (EN) listed therein. The EC declaration of conformity is kept available according to EC regulation, article 10 by the authorities responsible at

MICRO-EPSILON Eltrotec GmbH
Heinkelstraße 2
73066 Uhingen / Germany

The ELTROTEC Endolight FOT Halogen 20 light source is designed for use in industry and satisfies the requirements of the standards

- EN 61000-6-1: 2007
- EN 61000-6-4: 2007

The system satisfies the requirements if they comply with the regulations described in the instruction manual for installation and operation.

1.4 Proper Use

- The ELTROTEC Endolight FOT Halogen 20 light source is designed for use in industrial area with various fiber optics applications (lighting, endoscopy, etc.) for illuminating smaller cavities and objects in small distance.
- Light output for up to 5 mm fiber diameter
- The ELTROTEC Endolight FOT Halogen 20 light source is not suitable for medical purposes.
- The system may only be operated within the limits specified in the technical data, see Chap. 2.2.
- Use the ELTROTEC Endolight FOT Halogen 20 light source in such a way that in case of malfunctions or failure personnel or machinery are not endangered.
- Take additional precautions for safety and damage prevention for safety-related applications.

1.5 Proper Environment

- Operating temperature: -10 °C to 40 °C (+14 °F to +104 °F)
- Storage temperature: -25 °C to 60 °C (-13 °F to +140 °F)
- Humidity: 15 to 95 %
- Ambient pressure: Atmospheric pressure
- Electromagnetic compatibility (EMC): EN 61000-6-1: 2007
EN 61000-6-4: 2007

2. Functional Principle, Technical Data

2.1 Short Description

The ELTROTEC Endolight FOT Halogen 20 light source is regarded as the universal solution when using external light sources in the endoscopy. It has a high light output and is easy to operate without light control. The lamp cooling is without fan via air vents.

2.2 Technical Data


Model	ELTROTEC Endolight FOT Halogen 20
Power	20 W
Fiber diameter	Ø max. 5 mm
Operating life time	approximately 100 h
Power supply	220 V / 50 Hz
Luminous flux	480 lm
Light source	6 V / 20 W
	Osram type HLX 64250
Lamp cooling	Vents (no ventilator)
Intensity control	keine
Fuse	0,4 AT
Dimensions	90 x 64 x 140 mm
Operating temperature	-10 °C to 40 °C (+14 °F to +104 °F)
Storage temperature	-25 °C to 60 °C (-13 °F to +140 °F)
Weight	1,4 kg
Electromagnetic compatibility (EMC)	EN 61000-6-1: 2007 and EN 61000-6-4: 2007

3. Delivery

3.1 Unpacking

- ELTROTEC Endolight FOT Halogen 20 light source
- Halogen lamp Osram type HLX 64250 6 V / 20 W
- Power supply cable, 1.5 m long

You will find the suitable fiber optic cables and fiber-optic lighting units under Optional Accessories, see Chap. [A 1](#).

 Check the delivery for completeness and shipping damage immediately after unpacking.

 In case of damage or missing parts, please contact the manufacturer or supplier immediately.

3.2 Storage

- Storage temperature: -25 °C to 60 °C (-13 °F to +140 °F ¹⁾)
- Humidity: 15 to 95 %
- Ambient pressure: Atmospheric pressure

4. Mounting

4.1 Light Source



Fig. 1 Dimensions ELTROTEC Endolight FOT Halogen 20 front view

Dimensions in mm (inches), not to scale

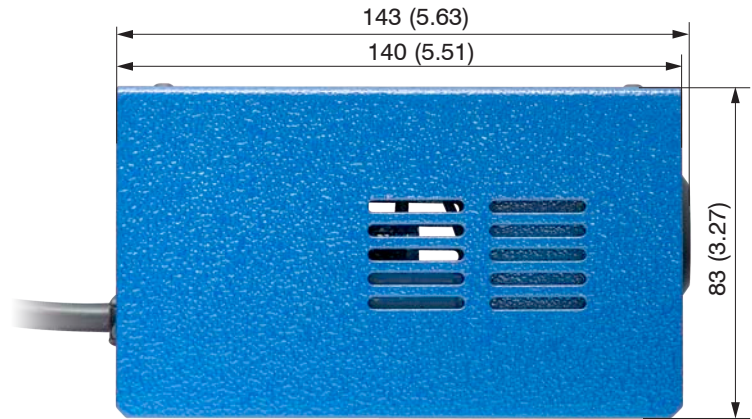
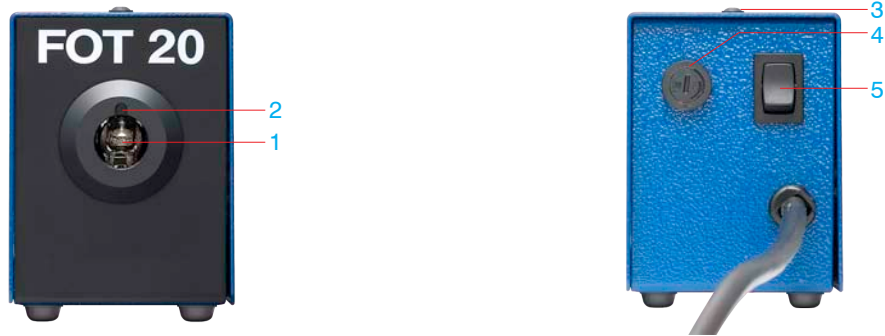


Fig. 2 Dimensions ELTROTEC Endolight FOT Halogen 20 side view

4.2 Control Elements



1 Fiber optic cable connection	4 Fuse holder
2 Anti-rotating device keyway	5 On / off switch
3 2 mounting screws for housing cover (Open for changing the lamp)	

Fig. 3 Control elements front side and rear side

5. Operation

5.1 Commissioning

The light source is supplied as standard for the connection to 220 VAC operating voltage, see Chap. A 3.

➡ Connect the power supply cable to the power supply (socket) .

➡ Connect the fiber optic cable to the fiber optic cable connection (1), see Chap. 4.2.

Some fiber optic cables (e.g. multi-armed gooseneck fiber optic cables) and adapters are fitted with a cam (anti-rotation device), which enters the anti-rotation device keyway (2), see Chap. 4.2, to prevent rotation of the connector.

➡ Press the on / off switch (5), see Chap. 4.2, so that the red mark is visible (= position On) .



Let the light source cooling down still some minutes after switching off before storing in any closed room or in the original packaging.

> Risk of fire by heat

Let the light source and the power supply cable cool off a few minutes after switching off before touching it or drag the light source connector.

> Risk of burns by the still hot lamp

NOTICE**5.2 Fuse Replacement**

Please use only fuses with the values that are specified in the instruction manual (0,4 AT).

> Damage to the electronics of the light source

- ➡ Switch off the light source.
- ➡ Unplug the power supply cable from the socket.

The fuse (5 x 20 mm, 0.4 AT) is in the fuse holder (4), see Chap. 4.2.

- ➡ Turn the fuse holder element at the designated cut about 1/4 turn counter-clockwise (bayonet lock) using a screwdriver or a coin and pull it out (2).

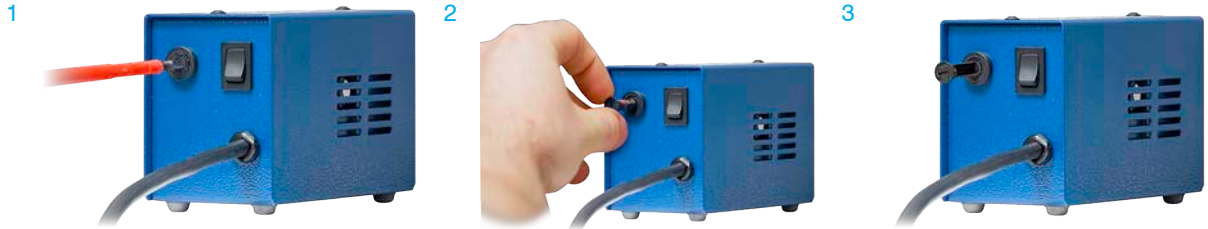


Fig. 4 Fuse replacement

- ➡ Remove the defective fuse (3) and insert a new fuse (0.4 AT).
- Please use only the fuses recommended in the appendix under optional accessories (0.4 AT), see Chap. A 1.
- ➡ Insert the fuse holder again and close it with a 1/4 turn right.
 - ➡ Plug in again the power supply cable.
 - ➡ Turn on the light source again.

5.3 Changing the Lamp

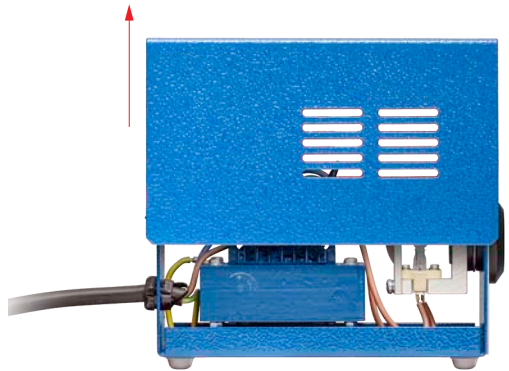
CAUTION

Let the light source cool off for a few minutes before changing the lamp.
> Risk of burns by the still hot lamp

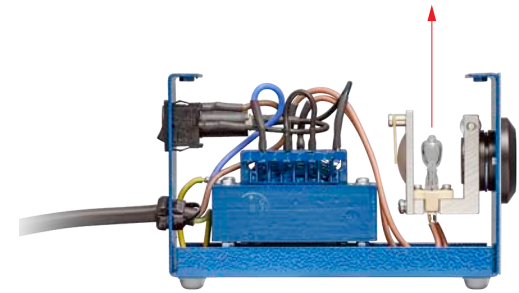
NOTICE

Do not touch the lamp socket and the reflection mirror with bare fingers before and after changing the lamp.
> Reducing the intensity and lifetime of the lamp by finger prints and dust

- ➡ Switch off the on / off switch and disconnect the power supply cable from the socket.
- ➡ Turn out the 2 screws (1) at the top of the light source, see [Fig. 3](#), whereupon the housing cover can be removed (2).
- ➡ Pull the defect lamp from the lamp socket carefully (3).



2 Lift and remove the cover



3 Pull the fuse

NOTICE

➡ Hold the new lamp with a cloth or a piece of paper.

Do not touch the lamp bulb with your fingers.

> Reducing the intensity and lifetime of the lamp by finger prints and dust

➡ Insert the new lamp into the lamp socket carefully and check that the lamp is properly seated.

Other settings are not required, as the holding system provides an optimum adjustment with a footprint up to 5 mm (maximum applicable fiber diameter).

➡ Mount the housing cover again with the 2 screws, see [Fig. 3](#).

➡ Plug in the power supply cable.

6. Instructions for Operation

6.1 General

Except the descriptive maintenance work (change of lamp, see Chap. [5.3](#), fuse replacement, see Chap. [5.2](#)) no repairs or changes at the light source may be made, see Chap. [7.](#), see Chap. [8.](#).

6.2 Cleaning

6.2.1 Housing and Power Supply

➡ Turn off the ELTROTEC Endolight FOT Halogen 20 light source and disconnect the power supply cable from the wall socket.

➡ Wipe the exterior surfaces using a damp cloth with mild soapy water.

➡ Wipe the power supply cable using a damp cloth with mild soapy water.

6.2.2 Quartz Glass of Light Source

➡ Remove any fingerprints using a cotton swab or isopropyl alcohol (rubbing alcohol).

NOTICE

Do not immerse the device in water.
Do not connect the device/power supply cable if it is damp.
The light source may get damaged or destroyed.

7. Warranty

All components of the device have been checked and tested for perfect function in the factory. In the unlikely event that errors should occur despite our thorough quality control, this should be reported immediately to MICRO-EPSILON Eltrotec.

The warranty period lasts 12 months following the day of shipment. Defective parts, except wear parts, will be repaired or replaced free of charge within this period if you return the device free of cost to MICRO-EPSILON Eltrotec. This warranty does not apply to damage resulting from abuse of the equipment and devices, from forceful handling or installation of the devices or from repair or modifications performed by third parties. No other claims, except as warranted, are accepted. The terms of the purchasing contract apply in full. MICRO-EPSILON Eltrotec will specifically not be responsible for eventual consequential damages. MICRO-EPSILON Eltrotec always strives to supply the customers with the finest and most advanced equipment. Development and refinement is therefore performed continuously and the right to design changes without prior notice is accordingly reserved. For translations in other languages, the data and statements in the German language operation manual are to be taken as authoritative.

8. Service, Repair

In the event of a defect on the ELTROTEC Endolight FOT Halogen 20 light source or on power supply cable please send us the effected parts for repair or exchange.

In the case of faults the cause of which is not clearly identifiable, the whole measuring system must be sent back to:

MICRO-EPSILON Eltrotec GmbH
Heinkelstraße 2
73066 UHINGEN / Germany

Tel. +49 (0) 7161/ 98872-300
Fax +49 (0) 7161 / 98872-303
eltrotec@micro-epsilon.de
www.micro-epsilon.com

9. Decommissioning, Disposal



➡ Disconnect the power supply cable from the light source.






The light source is produced according to the directive 2011/65/EU, „RoHS“.



➡ Do the disposal according to the legal regulations (see directive 2002/96/EC).

Appendix

A 1 Optional Accessories

Fiber optic cable			
Designation	Photo	Description	Article number
Fiber optic cable EL 1/4 1800 MEP/S with Lemo 1 adapter		Endoscope fiber optic cable with high packing density, fiber bundle diameter: 4 mm Length: 1800 mm Metal protective conduit with PVC coating. One side FOT light source connector One side Lemo1 connector = cladding diameter 7.6 mm	20710831
Liquid fiber optic cable EFL 1/4 1800 MEP with Lemo 1 adapter		Endoscope liquid fiber optic cable, fiber bundle diameter: 4 mm Length: 1800 mm Cladding diameter: Metal protective conduit with PVC coating. One side FOT light source connector One side Lemo1 connector.	20710446

Designation	Photo	Description	Article number
Fiber optic cable 1 arm, UL1 - 1200		Length: 1200 mm, metal protective conduit with PVC coating, outer diameter 8 mm, fiber bundle diameter 3 mm, one side FOT light source connector	20710424
Fiber optic cable 1 arm, UL1 - 1800		Length: 1800 mm, metal protective with PVC coating, outer diameter 8 mm, fiber bundle diameter 3 mm, one side FOT light source connector	20710425
Faser-optic lighting units			
Gooseneck attachment		Gooseneck attachment from semi-rigid metal-tube, chrome plated. Fiber bundle diameter 3 mm. Attachable to cable type UL	20710430
Rigid probe, Straight model UST/A		Attachable to UL fiber optic cables, length 150 mm, outer diameter 3 mm, bundle diameter 2 mm for the illumination of drill holes, specially for tool making	21060435
Rigid probe Lightly angled, UST/C			21060436
Rigid probe Angled at 90°, UST/B, r = 10 mm			21060547

Designation	Photo	Description	Article number
Mirror deflection		US1 mirror on fixture, ø 21 mm	21060432
		US2 mirror on fixture, ø 25 mm	21060433
		USP mirror fixture	21060431
Focussing lens		Focussing lens, UFL 21060438; attachable to UL fiber optic cable	21060438

More fiber optic cables or faser-optic lighting units are available on request.

A 2 Spare Parts

Designation	Description	Article number
Endolight FOT 20 spare halogen lamp	Osram HLX 64250 6 V / 20 W	21320385

Designation	Article number
Endolight FOT 20 fuse no. 543, 0.4 AT	21310398
Endolight FOT 20 lamp socket	21310405

A 3 Factory Setting

Voltage input: 230 VAC operating voltage



SCIGATE AUTOMATION (S) PTE LTD

No.1 Bukit Batok Street 22 #01-01 Singapore 659592

Tel: (65) 6561 0488

Fax: (65) 6562 0588

Email: sales@scigate.com.sg

Web: www.scigate.com.sg

Business Hours: Monday - Friday 8.30am - 6.15pm



MICRO-EPSILON Eltrotec GmbH

Heinkelstr. 2 · 73066 Uhingen / Germany

Tel. +49 (0) 7161 / 98872-300 · Fax +49 (0) 7161 / 98872-303

eltrotec@micro-epsilon.de · www.micro-epsilon.com

X9751324-A011045HDR

