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Operation manual

Medical illuminator

Type BOB OM

MODELS:

BOB OM 100 x 1 [ ]

BOB OM 100 x 2 [ ]

BOB OM 150 x 1 [ ]

**BOB OM 150 x 2 [ ]**





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List of contents:

1. Designation and identification	3, 4
2. Technical specifications	5
3. Construction	5
4. Safety and operating conditions	6
5. Operation	7
6. Cleaning	7
7. Troubleshooting	7
8. Repairs conditions	8
9. Inspections	9
10. Environment protection – disposal	9
11. Optical fibres	10
11.1 Cleaning	10
11.2 Disinfecting and sterilization	10
11.3 Final remarks	11
12. Equipment	12
12.1 Treatment illuminator BOB-OZ	12
12.2 Universal rectoscope BOB-R	13
12.3 Head illuminator BOB-OC	14
12.4 Transilluminator	14

1. Designation and identification



	<p>OZ – treatment illuminator (vascular)</p>
	<p>R – universal rectoscope</p>
	<p>OC – head illuminator</p>
	<p>DF - Transilluminator</p>

Medical illuminators BOB OM are the source of cold light used to illuminate not readily accessible places with high intensity light and using connectable optical fibre and application tip.

Medical illuminator

Designation TYP BOB OM

Light source - halogen of power: (W)

Number of light tracks

Equipment

Type of equipment:

OZ – Treatment illuminator

R – Rectoscope

OC – Head illuminator

DF – Transilluminator

Example: BOB OM 150 x 2 – OZ

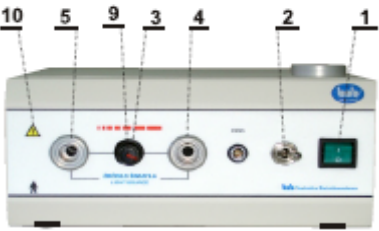

Light source of power 150 W, two light tracks

Equipment – vascular light pipe

## 2. Technical specifications BOB OM X x X

LIGHT SOURCE halogen bulb 100 W 12 V	Manufacturer	OSRAM cat. No 64637 min. 1500 h
LIGHT SOURCE halogen bulb 150 W 15 W	Manufacturer	OSRAM cat. No 64620 min. 500 h
LIGHT SOURCE halogen bulb 150 W 15 W (only for treatment illuminator)	Manufacturer	OSRAM cat. No 64634 min. 50 h
Temperature of colour		3200 K
Control – smooth control of intensity		20-100%
Operating conditions – ambient temperature	0 - +40°C	85% RH
Type of operation – periodical	Track 1, 2	2.5 hours of work / 15 min. break
Working position - horizontal		
Supply BOB OM 100 – voltage	110-120V 60 Hz	Power max. 110 W
Supply BOB OM 150 – voltage	110-120V 60 Hz	Power max. 170 W
Protection class	Class I	Protection type B
Casing protection degree		IP 20
Dimensions l x h x d BOB OM 100, BOB OM 150		235 x 115 x 255
Weight		3.8 kg

## 3. Construction BOB OM 100, 150






	<p>Front panel of the illuminator</p> <ul style="list-style-type: none"> <li>Green power button – 1</li> <li>Light tracks switch – 2</li> <li>Light intensity regulator - 3</li> <li>Yellow shield – 9</li> <li>Optical fibre inputs – 4, 5</li> <li>NOTE see item (4E) – 10</li> </ul>
	<p>Back panel of the illuminator</p> <ul style="list-style-type: none"> <li>Power cord input – 6</li> <li>Fuse – 7</li> <li>Nameplate – 8</li> </ul>

#### 4. Safety and operating conditions

Illuminators should:

- A. Be positioned so that unobstructed air flow is provided around the illuminator, away from heat-sensitive materials.
- B. Avoid kinking of the optical fibre. During transport, optical fibre should be disconnected from the input.
- C. Avoid direct looking at the light source through the input and at the tip of the optical fibre
- D. Immediately disconnect the device from the mains when:
  - Cooling fan does not work
  - Controls are not working
- E. Warning symbols on the front panel inform that the panel near the optical fibre input may be hot after extended use.

Symbols used in the product documentation, acc. to standard PE-EN 60601-1:2006

	Application part type B
	Failure to observe the instructions identified with this symbol may lead to serious damage to equipment or even hazard to health or life
	Triangle without yellow background – see the operation manual (nameplate)
	Year of production
	Manufacturer
<b>SN</b>	Serial number



To avoid electrocution, the device must be connected to grounded outlet.

Do not modify the device.

The device cannot be modified without manufacturer's consent.

Should the device be modified, suitable inspections and tests must be performed to confirm operational safety.

## 5. Operation

- A. Connect the optical fibre to the input (4)
- B. Connect the application tip to the optical fibre (in case of retroscope)
- C. Connect supply cable to the illuminator and to grounded mains outlet
- D. Turn on the supply by switching the supply (1) from O to I.
- E. Using the regulator (3) set the light intensity.
- F. In two-track illuminators, in case of burning of one bulb, reconnect the optical fibre to the second input (5) and switch the track switch (2)

## 6. Cleaning

Illuminators can be washed and disinfected. When necessary, clean the casing and optical fibre tip with soft, moist cloth with commonly used cleaning agents, after disconnecting the device from the mains.

## 7. Troubleshooting

Note! It is forbidden to disassemble the illuminator without previous disconnecting it from the mains.

Illuminator does not turn ON NO ILLUMINATION	Burnt fuse	Replace fuse
Fan is working Illumination switch ON NO LIGHT	Burnt bulb	Replace bulb
Fan not working	Defective fan	Call service

### A. Replacement of fuse

- Disconnect the supply cable from the mains
- Remove fuse holder from the socket (7), back panel
- Replace fuse to new one - BOB OM 100 – T2 – 3.0A  
BOB OM 150 – T2 – 4.0A

### B. Replacement of halogen bulb

- Unscrew 4 screws fixing the cover and remove the cover
- Remove defective bulb from its holder
- Install new bulb in reverse order

## 8. Repair conditions

Upon general terms, manufacturer provide 60-month guarantee starting at the date of purchase.

The condition to receive 5-year guarantee is obligatory paid inspection after 36 months.

Guarantee does not cover:

- Bulbs
- Mechanical damage to casing
- Mechanical damage to optical fibre
- Damage due to misuse of the illuminator

After the guarantee period, manufacturer provides paid service

Production and services BOB – Technika Światłowodowa

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Illuminator serial number

Camera serial number

Date and signature

1120715



E 0003504W



## 9. Inspections

Manufacturer expects that the medical illuminator's life to be 12 years. It is possible to extend the life by three more years upon positive inspection.

Obligation to make the inspections is imposed by the Medical Products Act of May 20, 2010, Journal of Laws No 107, item 679, art. 90, item 4 – method and principles are set in the standard PN-EN 62353 “Electrical medical devices – Periodical inspections and tests after repair of electrical medical devices”.

The following inspections are mandatory:

1. Before commissioning – upon manufacturer's cost
2. After guarantee repair – upon manufacturer's cost
3. After post-guarantee repair – upon customer's cost
4. One per 36 months – upon customer's cost

Note that operation of illuminators without valid periodical inspections infringes the Medical Products Act regulations and the Decision of the Ministry of Health “Medical Incident” (Journal of Laws 2011, No 33, item 167, February 02, 2011).

### NOTE!

The inspections can only be performed by person with valid license issued by SEP (Polish Electricians Association) within the scope of electrical measurements above 1kV using calibrated equipment.

## 10. Environment protect – disposal

According to waste disposal act, Journal of Laws 2001.62.628 and Directive 91/689/EEC of the European Union it is forbidden to dispose electrical equipment to municipal dump. Customer is obliged to send used equipment to specialist company which will dispose of the equipment according to own or manufacturer's instruction.

## 11. Optical fibres

Used optical fibres: STORZ type

Length: 1.8 – 2.0 m

Diameter – 4 – 4.8 mm

Medical optical fibres are high class optical devices and can be irrevocably damaged due to misuse.

Before use please read carefully the instructions.

1. Connect the source of cold lights cooperating with the optical fibre to the grounded mains.
2. Avoid any contact of the optical fibre with sharp edges, which may damage the optical fibre shield.
3. Do not disconnect the optical fibre tip from the cold light source by pulling flexible shield.
4. Do not leave the optical fibre tip ON near flammable materials. High intensity light may lead to ignition of such materials.
5. In any case do not look directly at the optical fibre tip when it is ON, this may lead to eye damage.
6. When not working, store the optical fibre in dry, clean place.
7. Apply as large optical fibre bending radii as possible.

### 11.1 Cleaning

When necessary, it is recommended to manually clean with mild detergent or soap and flush in lukewarm water. Wipe with cotton cloth or in delicate air stream.

Do not dry with hot air of temperature exceeding 60°.

Periodically, clean the front panel of the illuminator using cotton swab moistened in 70% solution of isopropyl or ethyl alcohol.

#### NOTE

Application of mechanical or ultrasound cleaners is forbidden.

### 11.2 Disinfection and sterilization

Gas sterilization in formaldehyde or ethylene oxide is recommended. Note that the optical fibre must be air dried after sterilization.

## NOTE

During sterilization, avoid tight bending of the optical fibre. This may lead to breaking the fibres inside the shield.

During disinfection and sterilization, do not put any place any tools or other optical fibres on the optical fibre.

### 11.3 Final remarks

Perform periodical visual inspection of the optical fibre by directing one end of the fibre to sunlight and observing the other end. Broken optical fibres are manifested in the form dark points. Optical fibre should be repaired or replaced to new one, when the observation comfort is deteriorated (30% of fibres are damaged).

Failure to observe the instructions may lead to loss of guarantee



CE

## 12.1 Treatment illuminator BOB-OZ



### Application

Intensive light directed by the optical fibre to the operating tip in the form of a cut ring allows for observing veins located under the skin.

### Operation

- Connect the optical fibre tip to the halogen illuminator of power 150W
- Install disposable cover provided in the set on the cut ring
- Turn on the light
- Observe the vessels by illuminating from top after applying and depressing the ring
- During observation, it is preferred that the ambient light is reduced
- Level of illumination is selected using the regulator on the light source
- During examination, slightly depress the ring in order to provide contact with the skin
- Cutting in the ring facilitates usage of laser during sclerotherapy and a syringe

### NOTE

It is recommended to use disposable covers of transparent plastic.

## 12.2 Universal rectoscope BOB – R

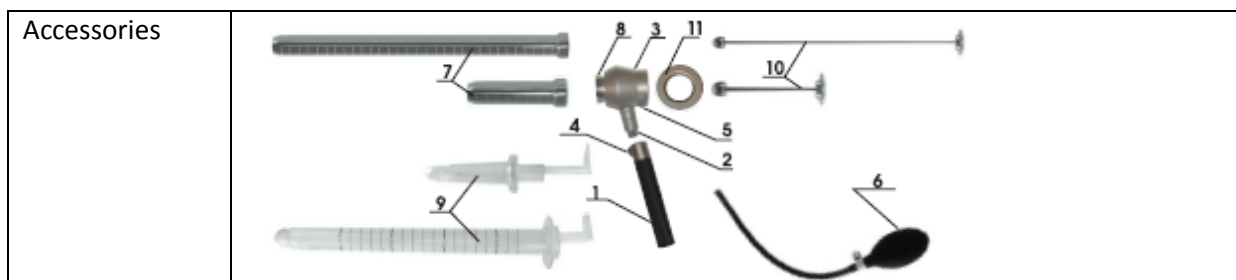
### Application

Universal rectoscope BOB – R is a medical device used to perform diagnostic examination and treat anus, rectum and sigmoid column diseases. It is possible to use re-use tubes and disposable tubes.

In case of disposable tubes, it is recommended to apply tubes made by HEINE OPTOTECHNI GmbH, which have approval certificate:

1. Sigmoidoscope tube with obturator dia. 20 mm length 250 mm Cat. No E-03.18.825, E-03.18.811
2. Proctoscope tube with obturator dia. 20 mm length 130 mm Cat. No E-03.19.825, E-03.19.811
3. Anusscope tube with obturator dia. 20 mm length 85 mm Cat. No E-03.19.925, E-03.19.911

Disposable and re-use tubes are made so that the light from the light source, through the optical fibre, is sent to the tube end and illuminates the observation area with intensive light.




### Operation

- Connect the optical fibre to light source
- Thread the other tip of the optical fibre through the grip (1) and connect to the input (2) of the optical fibre head (3)
- Fit the grip (1) in the socket (2) using the knob (4).
- Slide rubber hose of the insufflation pump (6) on the stub pipe (5)
- Screw the connector (8) on the tube (7). It is possible to use disposable tubes (9)
- Push the obturator (10) home through hole in the optical fibre head (3), holding the resctoscope by its grip
- Hold the resctoscope with a thumb
- Turn on the light source
- Rectoscope is ready for application
- After application, remove the obturator (10) and select required intensity of light
- When it is necessary to use insufflation pump (6), screw the eyepiece (11) to the head (3), to seal the optical fibre head and at the same time increase the observe area by 1.5 x

### 12.3 Head illuminator BOB – OC

#### Application

Illumination of ear, nose, throat	
Working distance 20 – 60 cm	
Light output with focus (depending on the model)	
Working area 11 – 300 mm (depending on the model)	
Operation Connect the optical fibre to the light source Turn on the light source	

### 12.4 Transilluminator



#### Application

Transilluminator is a modern device that allows for transilluminating newborn body using high intensity, cold white light.

In neonatology and podiatry, transilluminator is used for:

Transillumination of cranium of newborns and infants

(hydrocephalus diagnostics)

Transillumination of chest of newborns and infants

(pneumothorax diagnostics)

Transillumination of soft tissues

(puncture of arterial vessels and venous vessels)

#### Operation

Connect the optical fibre to the light source

Turn on the light source

Apply funnel tip of the optical fibre to body