OPH-1800 ION

Ophthalmoscope Rechargeable Lithium
Handle Charger
Zipper Bag

Operation Manual



MINI Ophthalmoscope
User's Guide



Thank you for purchasing the MINI direct ophthalmoscope. Before using the MINI ophthalmoscope, read these instructions carefully and keep them in a safe place for future reference.

Symbols:

Consult User's Guide

Internal electrical power source

Cautions

1、 **Read User's Guide for Cautions and Instructions for use.**
2、 **This product must not be used in the presence of flammable gases.**
3、 **This product should not be immersed in fluids.**
4、 **Please ensure that the control is in the off position when the examination has been completed.**
5、 **Federal law restricts this device to sale or order of a physician.**

1. Purpose and features of the product

1.1 Purpose

MINI ophthalmoscopes described in these instructions for use have been designed for the examination of the eye and its background.

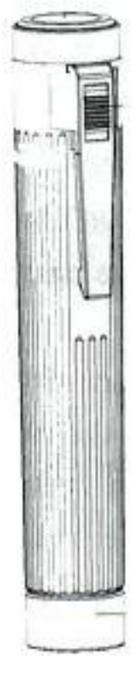
1.2 Features

- MINI Ophthalmoscope is available with two AA alkaline or Ni-MH batteries. The bulb model is P2000 (2.5 V / 1.6 W).
- Diopters (D): 0, ±1, ±2, ±3, ±4, ±6, ±8, ±10, ±15, ±20.
- Aperture wheel:
  a) Red-free filter
  b) Large spot
  c) Small spot
  d) Hemispot
  e) Fixation aperture.

2. Operating Instructions

2.1 Starting and stopping

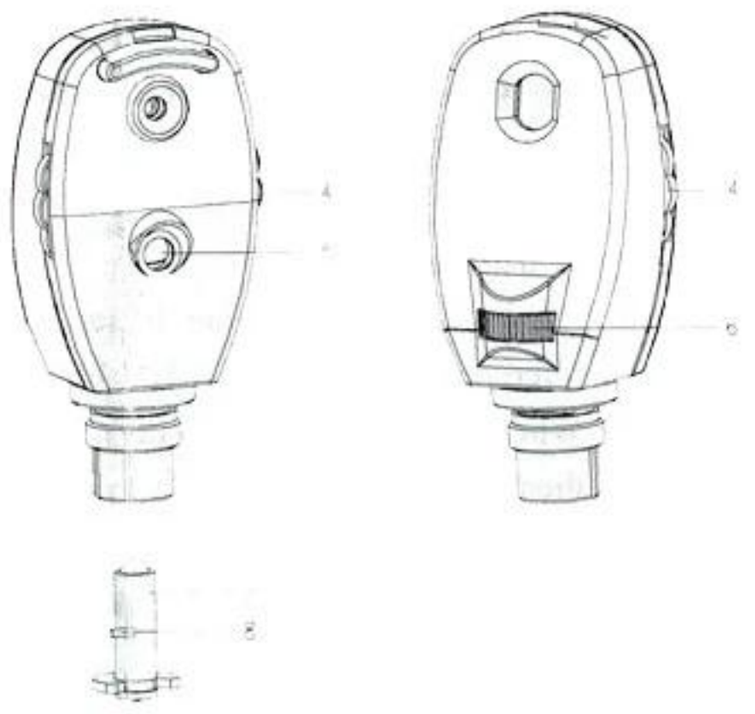
The clip on the handle is equipped with an On/Off slide. When pushing the slide(2) down, the unit is switch on ,when pushing the slide (2) up, the unit is off.



Caution: To minimize bulb housing temperatures, on-time should not exceed 2 minutes with off-time not less than 5 minutes.

Caution: If the handle is too hot or batteries leak, pushing the slide (2) up immediately, turn the instrument off and take the batteries out.

2.2 lens wheel and correcting lenses



The correcting lenses may be adjusted on the lens wheel (4). The following correcting lenses are available: diopters 0 to +20 and 0 to -20. Readings will be displayed on a lit panel (5) .Plus values are displayed in black digits, minus values in read digits.

2.3 Apertures and filters

The following apertures and / or filters may be selected by

the aperture and filter wheel (6):

- Red-free filter: excludes red rays from examination field for easy identification of veins, arteries, and nerve fibers.
- Large spot: for dilated pupil examination of the eye, wider vision can be obtained.
- Small spot: provides easy view of the fundus through an undilated pupil.
- Hemispot (semi-circle) to reduce reflexes in small pupils
- Fixation aperture: The pattern of an open center and thin lines permits easy observation of eccentric fixation without masking the macula.

3. Maintenance

3.1 Replacing the consumables

3.1.1 Replacing the bulb

Remove instrument head from battery handle(1).

The bulb is in the bottom section of the instrument head. Remove bulb, by using your thumb and forefinger or a suitable tool, from instrument head. Insert new bulb (7) with the pin (8) on the bulb fitted in the recess provided on the head of the case. The type of bulb is P2000 .

Caution: Please use the appropriate bulb. When the product is used on battery power for an extended period, the bulb may become hot. Switch off the instrument and allow the bulb to cool before attempting to replace it.

3.1.2 Replacing batteries

Turn the instrument off. Unscrew the bottom cap(3), insert the two new batteries, check to be sure the batteries is in the correct orientation, then close the bottom cap(3).

Caution: Please attach the terminal of the batteries before you throw them。Do not let the metal contacts on the battery touch another metal objects. This may fire or explode.

Caution : The battery should never be placed in municipal waste. Please check local regulations for disposal of batteries.

3.2 Battery use and care

- Please use AA alkaline batteries (IEC standard reference LR6) or AA Ni-HM batteries only.
- When inserting batteries, do not attempt to insert them upside down or backwards.
- If it is not used for a long period, please take the batteries out, otherwise the batteries may leak and damage the product.

3.3 Cleaning Recommendations

Wipe all external surfaces with cloth dampened with a mild detergent and water solution, a mild detergent and water solution, a solution of 70% isopropyl alcohol and water solution, or a solution of 10% Clorox and water. DO NOT immerse. Wring out the cloth to prevent excess moisture from entering the assembly.

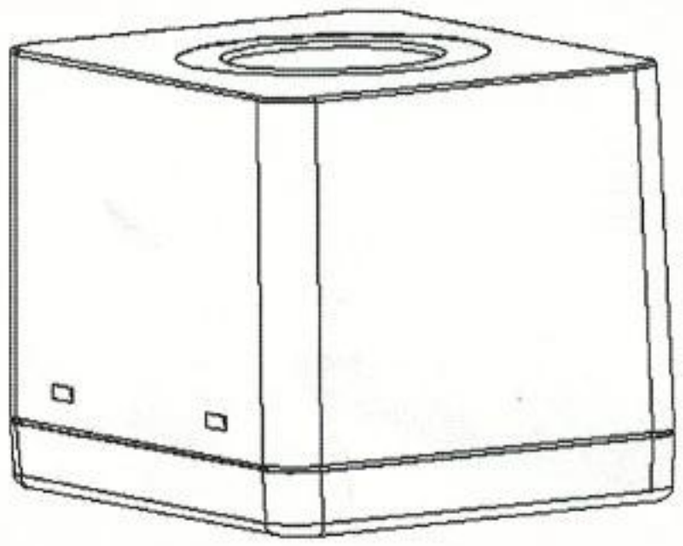
Clean instrument windows with a cotton swab dipped in alcohol.

Caution: Excess solution entering the assembly could damage internal components. Use caution to ensure cloth is not saturated with solution.

4. Technical Specifications

Optical Specifications		
Diopter (D)	0, ±1, ±2, ±3, ±4, ±6, ±8, ±10, ±15, ±20	
Aperture	Red-free filter Large spot Small spot Hemispot Fixation aperture	
Electrical Specifications		
Power	Two AA alkaline or Ni-MH batteries	
Type of bulb	2.5 V / 1.6 W	
Electrical Safety	Complying with EN60601-1 EN60601-1-2 Protection: Internal electrical power source Operation mode: Intermittent. 2 minutes "ON" 5 minutes "OFF".	
Environment requirements		
Operation	Environment Temperature	+10 ℃ – +35 ℃
	Relative Humidity	30% – 75%
	Atmospheric Pressure	700 hPa – 1060 hPa
Shipping	Common Conveyance	
Storage	Temperature	-40 ℃ – +55 ℃
	Relative Humidity	10% – 90%
	Air Pressure	500 hPa – 1060 hPa

Charger
User's Guide



Thank you for purchasing this changer. To prevent damage to your changer or injury to yourself or to others, read the following safety precaution in their entirety before using this equipment. Keep these safety instructions where all those who use the device will read them.

Symbols:

Class II

Attention: Read user's guide for warnings and cautions and instructions for operating.

Warnings and Cautions

Attention. Read user's guide for cautions and instructions for operating.

Warning: This device must not be used in the presence of flammable gases.

Warning: This device should not be immersed in fluids.

Warning: Please use special certificated power adapter.

Warning: Federal law restricts this device to sale or order of a physician.

1. Purpose and features of the device

1.1 Purpose

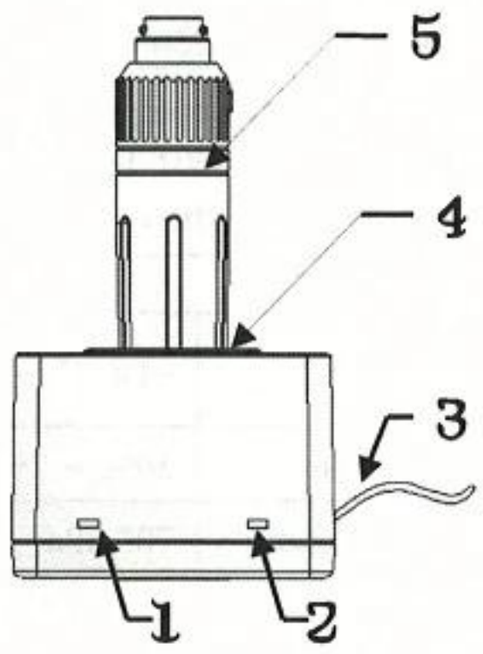
The charger is only intended to charge the rechargeable Li-ion battery handle.

1.2 Features

- Power-on indicator. Charging state indicator.
- Automatic charging when inserting the handles to charging port.
- When take the handle away, the charging state indicator automatically turns off.
- 3.7V Li-ion battery .
- Pre–charge – CC – CV Operation model.
- Circuit short, reverse-voltage ,over-voltage protection.
- Low battery indicator.

2. Operating Instructions

2.1 The lithium battery charger external diagram is as follow:



1	Power indicator	The green led lit indicate that the charger is powered
2	Charge indicator	The yellow led lit indicate the charging The green led lit indicate charging is completed
3	Power line	Connect the power adapter
4	Charging port	Insert the rechargeable Li-ion battery handle
5	Rechargeable lithium battery	Pay attention to the direction of the handle inserted.

2.2 Connecting power adapter to mains and the charger, When the green Power led is lit that indicates that the charger is powered and ready to charge the battery.

2.3 Place the rechargeable lithium battery handle into the charging port of the charger. When the charging indicator shows yellow that indicate charging is carry on, the charge indicator shows green that indicates charging is complete.

2.4 Take the handle from the charging port.The lithium battery charger will stop charging, charging indicator light turn off.

2.5 Power adapter output: 5VDC, 2A.

3. Maintenance

3.1 Cleaning Recommendations

Wipe all external surfaces with cloth dampened with a mild detergent and water solution, a mild detergent and water solution, a solution of 70% isopropyl alcohol and water solution, or a solution of 10% Clorox and water.

DO NOT immerse. Wring out the cloth to prevent excess moisture from entering the assembly.
Clean instrument windows with a cotton swab dipped in alcohol.

Caution: Be careful to prevent the solvent into the instrument.

4. Technical Specifications

Electrical Specifications		
Input voltage	5 VDC	
Input power	2A	
Li-ion battery specifications	3.7 V	
Charging port	1	
maximum charge time	≤ 3.5 h	
Power adapter specifications		
Input	100 VAC – 240 VAC 50 Hz / 60 Hz ≤ 14 VA	
Output	9 VDC – 12 VDC 800 mA –1250 mA	
Electrical Safety	Complying with EN60601-1, EN60601-1-2 Protection : Class II	
Environment requirements		
Operation	Environment Temperature	+10 ℃ – +35 ℃
	Relative Humidity	30% – 75%
	Atmospheric Pressure	700 hPa – 1060 hPa
Shipping	Common Conveyance	
Storage	Environment Temperature	-40 ℃ – +55 ℃
	Relative Humidity	10% – 90%
	Atmospheric Pressure	500 hPa – 1060 hPa

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