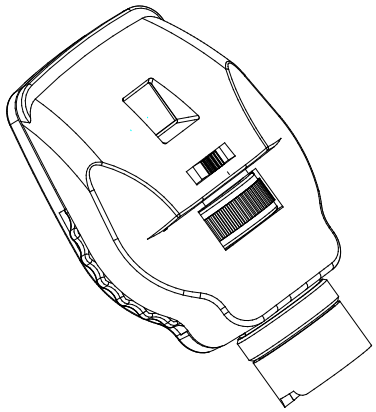
3.5V Coaxial Ophthalmoscope
User's Guide



CE The CE mark on this product indicates it has been tested to and conforms with the provisions noted within the 93/42/EEC Medical Device Directive.

Thank you for purchasing the 3.5V coaxial ophthalmoscope. To prevent damage to the 3.5V coaxial ophthalmoscope 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 product will read them.

Attention. Read operating manual for cautions and instructions for use

Warnings and Cautions

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

Warning: This product should not be immersed in fluids.

Warning: Use 3.5V Coaxial Ophthalmoscope only with all approved 3.5V power.

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

1. Part list

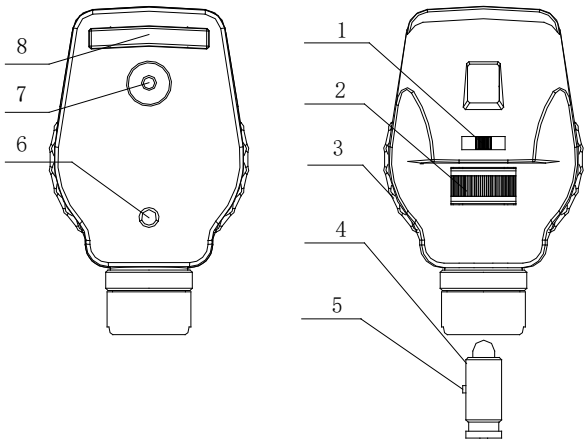


Fig. 1

1. Polarizing filter / red-free filter switch;
2. Aperture selection dial;
3. Diopters selection disc;
4. Bulb;
5. Dowel pin of bulb;
6. Illuminated Diopters indicator;
7. Peep hole;
8. Rubber brow rest;

2. Operating Instructions

a) Connect the 3.5V Coaxial Ophthalmoscope to the power.

b) For examination of the right eye, sit or stand at the patient's right side.

c) Select "0" on the illuminated lens disc of the ophthalmoscope and start with the small aperture.

d) Take the ophthalmoscope in the right hand and hold it vertically in front of your own right eye with the light beam directed toward the patient and place your right index finger on the edge of the lens dial so that you will be able to change lenses easily if necessary.

e) Dim room lights. Instruct the patient to look straight ahead at a distant object.

f) Position the ophthalmoscope about 6 inches (15 cm) in front and slightly to the right (25°) of the patient and direct the light beam into the pupil. A red "reflex" should appear as you look through the pupil.

g) Rest your left hand on the patient's forehead and hold the upper lid of the eye near the eyelashes with the thumb. While the patient is fixating on the specified object, keep the "reflex" in view and slowly move toward the patient. The optic disc should come into view when you are about 1 to 2 inches (3-5 cm) from the patient. If it is not focused clearly, rotate lenses with your index finger until the optic disc is as clearly visible as possible. The hyperopic, or far-sighted, eye requires more "plus" (green numbers)

lenses for clear focus of the fundus; the myopic, or nearsighted, eye requires minus" (red numbers) lenses for clear focus.

h) Now examine the disc for clarity of outline, color, elevation and condition of the vessels. Follow each vessel as far to the periphery as you can. To locate the macula, focus on the disc, then move the light approximately 2-disc diameters temporally. You may also have the patient look at the light of the ophthalmoscope, which will automatically place the macula in full view. Look for abnormalities in the macula area. The 8. To examine the extreme periphery, instruct the patient to:

- Look up for examination of the superior retina
- Look down for examination of the inferior retina
- Look temporally for examination of the temporal retina
- Look nasally for examination of the nasal retina. This routine will reveal almost any abnormality that occurs in the fundus.

i) To examine the left eye, repeat the procedure outlined above but hold the ophthalmoscope in red-free filter facilitates viewing of the center of the macula.

3. Maintenance

3.1 Replacing the illumination bulb

Turn off the main power switch, remove the 3.5V coaxial ophthalmoscope from the power. grasp end of bulb and pull out. Insert replacement bulb, Push bulb in firmly.

The specification of bulb for the 3.5V Coaxial Ophthalmoscope is P4900 (3.5V, 2.7W).

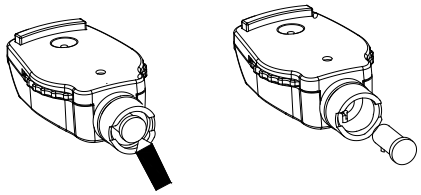


Fig.2

3.2 Cleaning

The cleaning of all 3.5V Coaxial Ophthalmoscope is easily accomplished by wiping the external surface with a cloth dampened with a mild detergent and water solution, or a 70% isopropyl alcohol, or a 10% bleach solution (by volume). Do not immerse.

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

4. Technical Specifications

Optical specification		
Diopter		0D, ±1D, ±2D, ±3D, ±4D, ±5D, ±6D, ±7D, ±8D, ±9D, ±10D, +12D, ±15D, ±20D, -25D, +40D
Aperture		Large aperture, small aperture, Micro aperture, Slit aperture, Cobalt blue aperture, Fixation aperture.
Filter		Red free filter / Polarizing filter
Environment requirements		
Operation	Environment Temperature	+10 ℃…+35 ℃
	Relative Humidity	30%…75%
	Atmospheric Pressure	700 hPa…1060 hPa
Storage	Environment Temperature	-40 ℃…+55 ℃
	Relative Humidity	10%…90%
	Atmospheric Pressure	500 hPa…1060 hPa

Caution： The 3.5V Coaxial Ophthalmoscope should never be placed in municipal waste.

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Streak Retinoscope
User's Guide

Thank you for purchasing this Streak Retinoscope. To prevent damage to your ophthalmoscope 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 product will read them.

Symbols:

Internal electrical power source

Attention: Read User's Guide for warning and cautions and instructions for use.

Warnings and Cautions

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

Warning: This product should not be immersed in fluids.

Warning: Please ensure that the control is in the off position when the examination has been completed.

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

1. Purpose and features of the product

1.1 Purpose

This retinoscope is designed exclusively to determination of the refraction of the eye. The streak retinoscope is found by most practitioners to be easy to use, fast, accurate, and especially valuable in determining the axis of astigmatism.

1.2 Features

- Control ring allows for easy adjustment and continuous 360° rotation. Maintains the same plane of focus during rotation.
- Ergonomic shape. Protects the examine`s orbita from stray light.
- 100% dustproof housings and glass cover on the front keep the instrument cleaner longer.

2. Operating Instructions

2.1 Starting and stopping

a) Connect instrument head to the handle.

b) Depress On /Off. Button (2) on Rheostat Section (1) and rotate the light intensive control .Refer to Fig.1.

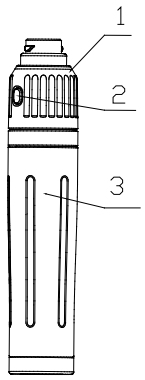

Fig.1

Caution: To minimize bulb housing temperatures, on-time should not exceed 1 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.

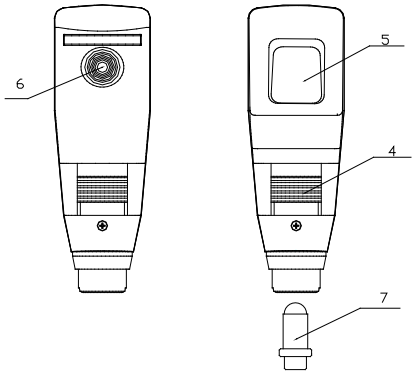

Fig.2

2.2 Operating

The control ring (4) is used to rotate the streak image through 360o. The lowest position gives a divergent beam,

the highest position focuses the streak at a distance of ca. 25 cm in front of the retinoscope. Refer to Fig.2.

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) to the hole of the head of the case. The type of bulb is 3.5 V/2.7 W. Refer to Fig.3.

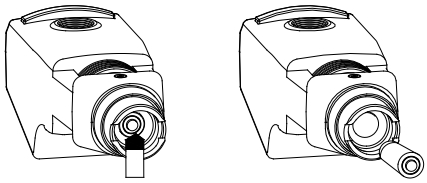

Fig.3

Caution: Please use the appropriate bulb. When the product is used on battery power for an extended period, the bulb may become hot. Before removing the bulb, allow the bulb to cool.

3.2 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	
Rotation	⩾ 190°
Distance from the instrument to which the real image[a] of the lamp filament is adjustable	⩽ 450 mm
Distance from the instrument to which the virtual image[a] of the lamp filament is adjustable	⩽ 450 mm
Length of streak image[b]	⩾ 30 mm
Width of streak image[b]	⩽ 1.5 mm
Deviation from linearity of the streak image at the focus[b]	⩽ 2 mm
Rotation decentring of centre of streak image[b]	⩽ 10 mm
a: All distances are measured from the light exit of the instrument b: When focus at 500 mm	

Electrical Specifications	
Rated voltage	3.7 V rechargeable Li-Ion battery
Type of bulb	3.5 V 2.7 W
Operation mode	Intermittent: on-time should not exceed 2 mins with off-time not less than 5 mins
Electrical Safety	IEC60601-1, IEC60601-1-2 Protection: Internal electrical power source

Environment requirements		
Operation	Temperature	+10 ℃ − +35 ℃
	Rel. humidity	30% − 75%
	Air pressure	700 hPa − 1060 hPa
Shipping	Common conveyance	
Storage	Temperature	-40 ℃ − +55 ℃
	Rel. humidity	10% − 90%
	Air pressure	500 hPa −1060 hPa

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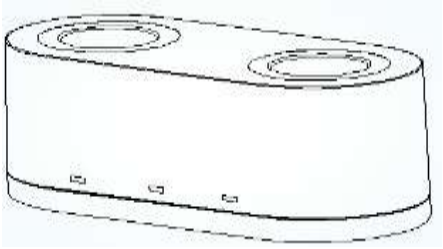
Charger
User's Guide



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 product will read them.

Symbols:

Class Ⅱ

Attention： Read User's Guide for Warnings and Cautions and Instructions for use.

Warnings and Cautions

Attention. Read operating manual for cautions and instructions for use

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

Warning: This product 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 product

1.1 Purpose

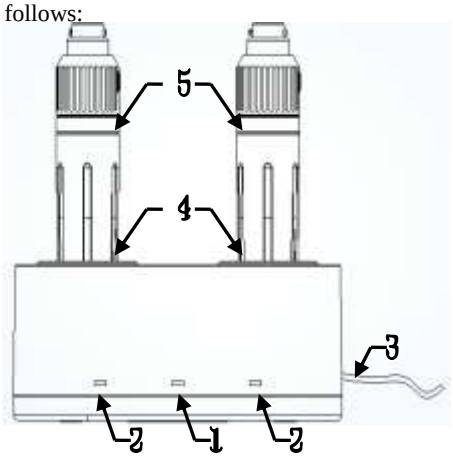
The charger is only intended to charge the rechargeable battery handles.

1.2 Features

- Power-on indicator. Charging state indicator.
- When take the handle away, the charging state indicator automatically turns off.
- 3.7V lithium battery. .
- 2×charging port,
- 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 follows:



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 lithium battery handles
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 charger. When the charging indicator shows yellow that indicate charging is carry on, the charge indicator shows green that indicates charging is completed.

2.4 Take the handle from the charging port . 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	
Lithium battery specifications		3.7 V	
Charging port		2	
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		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	