User Manual

Portable Fundus Camera

Introduction

Thank you for purchasing portable fundus camera.

This instrument is used to observe, take and record the fundus image through pupil.

Features as followed:

- To capture images of high quality stably
- Portable to carry for doctor outgoing diagnosis
- With photography, preservation, real-time observation and other functions

Signs and warnings

⚠️	Be careful and refer to attached documents
🧍	Signs of degree of protection against electric shock for B application part
📖ℹ️	Refer to the operating instructions
🏭	Date of manufacture
((•))	Non-ionizing radiation symbol

Precautions：

⚠️ This instrument is a medical device manufactured in accordance with Chinese law.

⚠️ Before operating this instrument, please read "WARNING SIGNS" and "SAFETY PRECAUTIONS".

⚠️ In order to prevent injury and damage to the instrument, please follow the instructions.

⚠️ When operating the instrument, make sure that the optical lens does not contact with eyes or nose

⚠️ To avoid electric shock, do not disassemble or repair the instrument.

⚠️ Please be sure to use the charging plug provided by products, to avoid electric shock and damage to the instrument.

⚠️ To prevent electric shock, do not insert metal objects into the holes or slots of the instrument.

⚠️ If the instrument malfunctions: smoke or emit scorched odor, please turn off the power and remove the battery immediately to prevent fires. .

⚠️ To prevent loosening due to vibration, place the instrument in the box when the instrument is not in use.

⚠️ The instrument is not waterproof, so do not put the cup or container filled with water next to the instrument to prevent fire and damage the instrument. When the instrument is wet with water, do not use baking, microwave, high pressure or ultraviolet drying.

⚠️ To prevent electric shock, fire, short circuit or other hazards, do not place the instrument in a water or humid environment.

⚠️ The instrument must be kept clean and should be kept away from fire.

⚠️ Do not use damaged instruments. Before operation, make sure to check whether the instrument has been damaged or has any signs of damage or defects.

⚠️ Battery of 3.7V@2600nAh is only permitted, otherwise all the consequences will be unrelated to the Supplier.

⚠️ If other Micro SD to be used, the format must be FAT32.

⚠️ Do not use illumination of high intensity, otherwise it will cause damage to the eyes.

⚠️ When lighting and photographing, do not use the instrument to do too much testing, otherwise it will cause harm to the human eye.
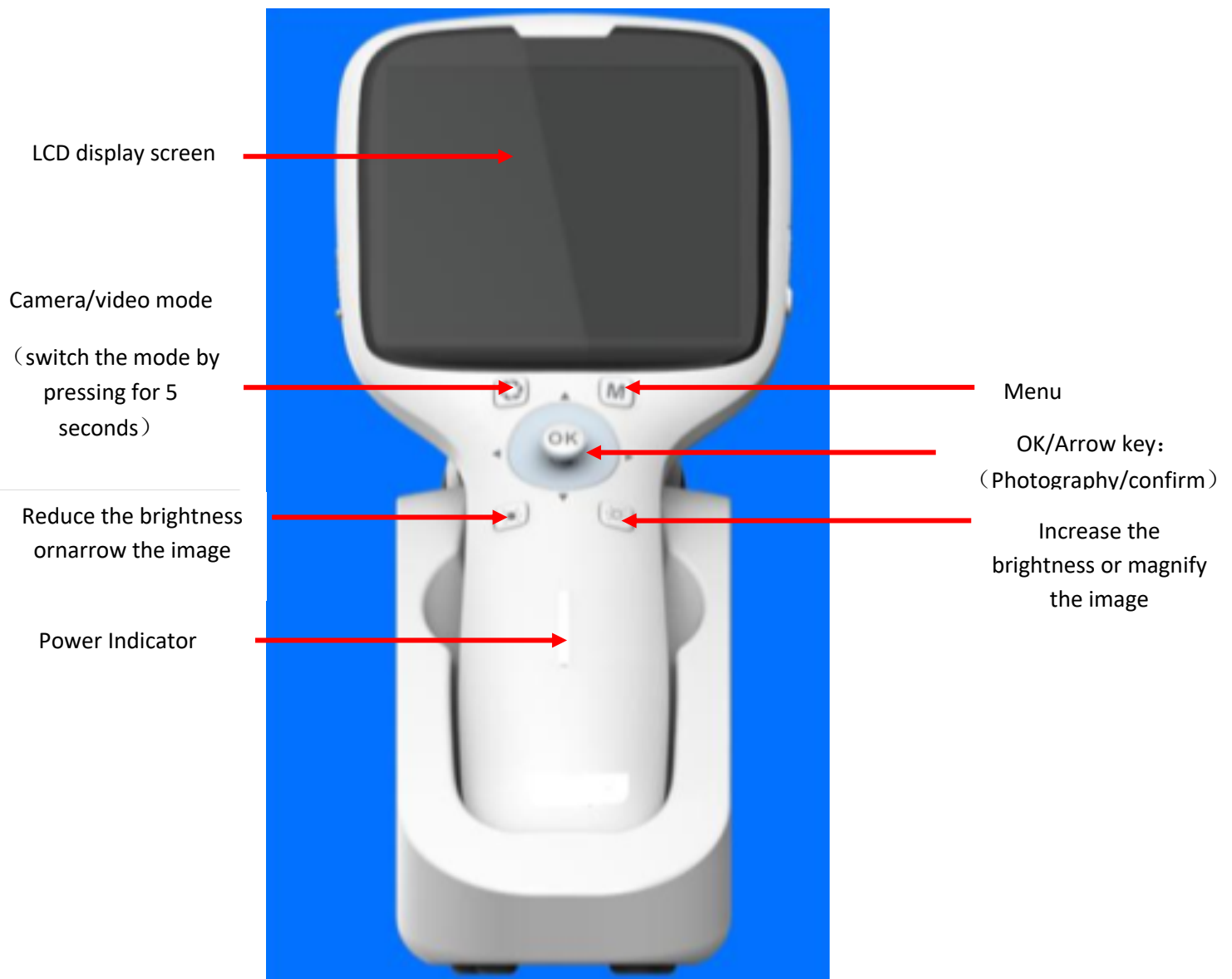
Contents

Operation Instructions

1．Scope of application

This device is used in nonmydriatic conditions, to observe, capture, access to patients' retinal image, for medical practitioners in the medical diagnosis of fundus diseases.

2．Basic composition

LCD display screen

Camera/video mode （switch the mode by pressing for 5 seconds）

Reduce the brightness ornarrow the image

Power Indicator

Menu

OK/Arrow key： （Photography/confirm）

Increase the brightness or magnify the image

Camera connecting

Camera installation marks

Camera block button

Illumination circuit interface

Focus adjustment

Battery cover

Micro SD interface

Photograph taken camera

Charging base

3.Battery Installation

With a certain strength to remove the battery cover up, insert the battery
and make sure "+" of the battery and "+" of the device is in the same
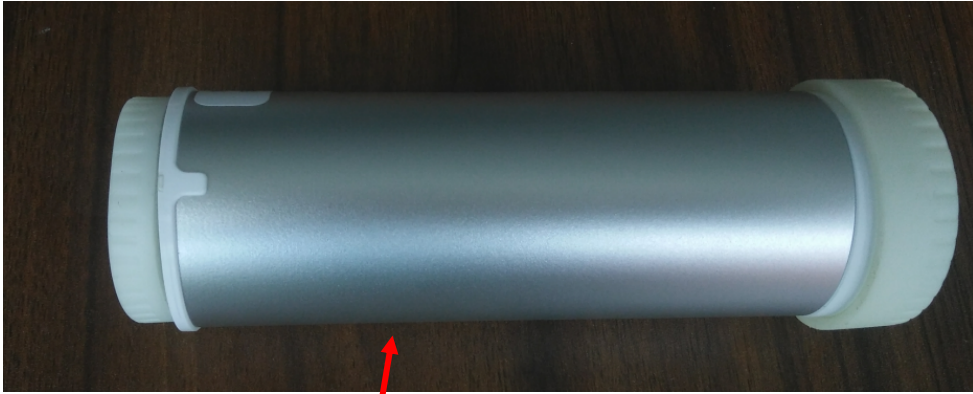direction. Before the first use, the portable fundus camera should be
connected to the adapter for charging, charging time around 5 hours.

4.Camera installation

Step 1: Align the camera mounting symbol with the handle mounting symbol.

Step 2: Insert the camera into the connector and align, rotate, and tighten
the optical lens until you can hear the positioning pin fixed sound. Then
the camera cannot be rotated anymore.

Step 3:Press the power button to open the device.

The process of turning on the machine takes about 20 to 30 seconds

5.How to take photographs

Step 1: align the lens at the human eye, from about 30mm. Then rotate the adjustment button until the image is clear

Step 2: Put the camera on one hand.

Step 3: Put your fingers on the patient's forehead to keep the camera in a horizontal position

Step 4：Adjust the device to display the fundus totally on the screen.
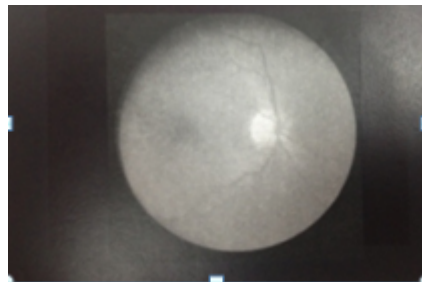
Step 5：Adjust the focus and press "OK" button to capture the image.
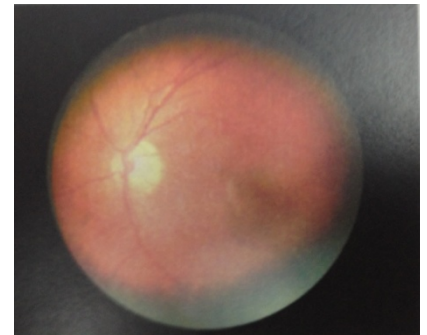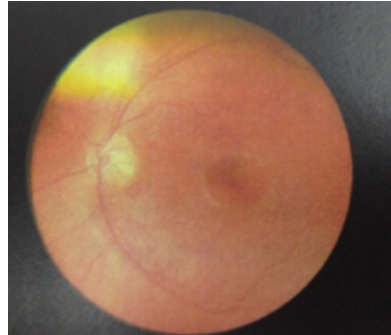
Connecting to Micro USB

Step 1: Connect the computer to the camera with the data cable

Step 2: Press the power button for 3 to 5 seconds until the power is on

Step 3: When the removable disk displayed on the computer, open the removable

disk and the image can be copied and analyzed.

WIFI Connection

Step 1: Press the power button for 3 to 5 seconds until the power icon

Step 2: Open the cellphone or pad with app installed

Step 3: Open the app and connect to the device.

Step 4: When the portable fundus camera starts to take images, the

photographs will be directly displayed on the app

Display panel instruction
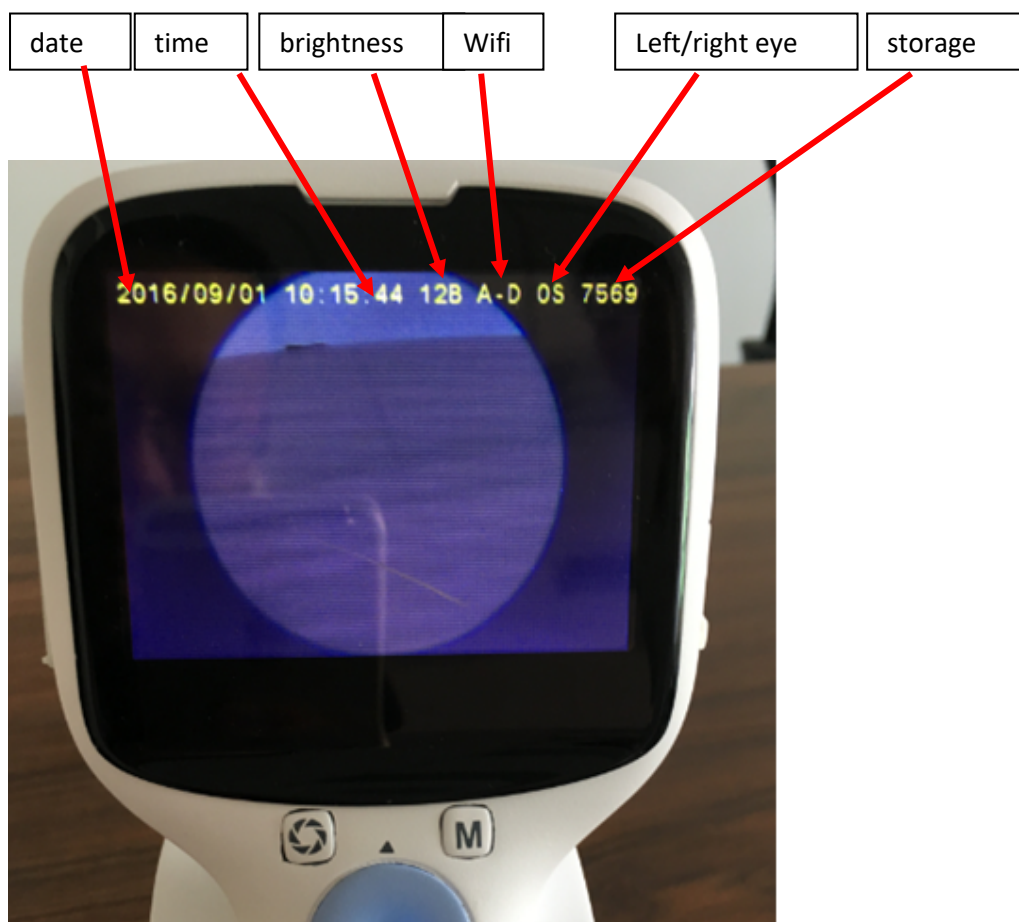
Menu Instruction;

Press Menu to enter the Menu Mode

Press △/▽ to choose different menus

Press ◢/◣ to choose "YES" or "NO", press "OK" to confirm
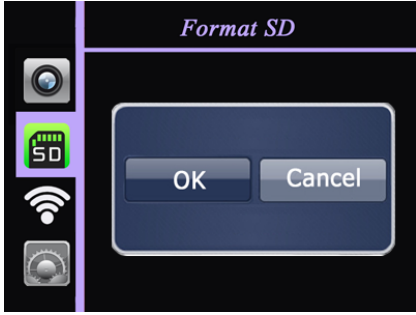
Press "M" to back to camera mode

Under Menu mode, system will come to camera mode if no operation taken after

15 seconds

Settings as follows：

code	display	description	settings
1	Display picture OK Cancel	Display the image	1. Choose "YES" to view iamges 2. Press " " to magnify the image, and press "�⟡" to back to the standard mode 3. When enlarging the image, turn "OK" to right or left to view the different position of the image. 4. Press ⟳ to go back to camera mode.

2	*Default AP* — OK / Cancel	Wifi settings	AP mode for standard press "OK" to confirm
3	*Format SD* — OK / Cancel	Format SD Card Note： All the documents will be deleted after format	If you want to format the SD card, choose "YES"and press"OK". When being formatted, LCD screen will be shut off.
4	*Set wifi mode* — AP / ST	Wifi mode selection	standard: AP other: ST Press "ok" to confirm

Charging/data transmission

Charging/data transmission：

Please place the portable fundus camera on the charging base and connect the

charger.

Data wire : connect to computer for documents transmission and etc.

Charger：Place the device with battery on the base, and insert the plug of the charger to the base for charging.

Data wire
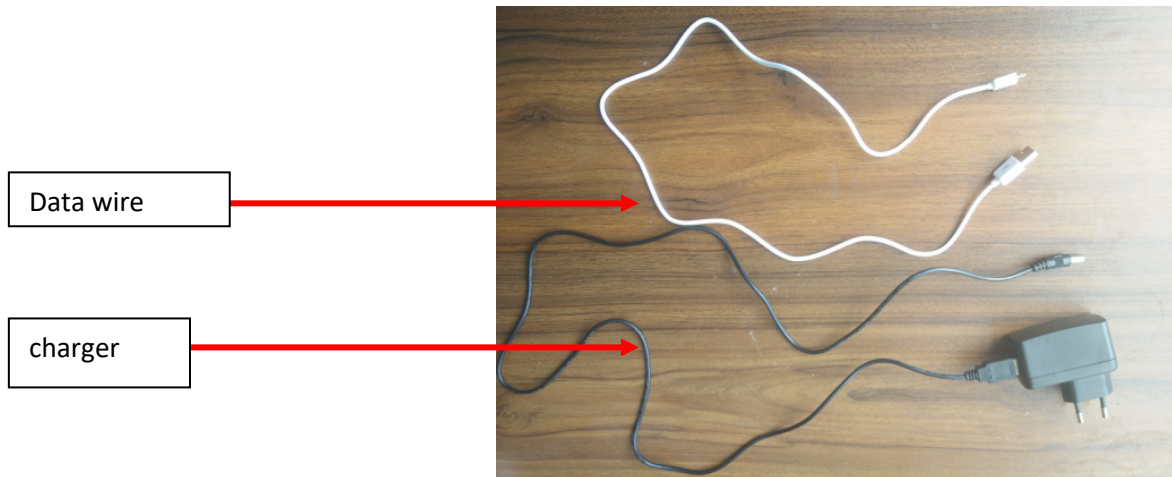
charger

Charging mode instruction

power	condition
Green light	Battery margin more than 25%, camera on or standby
Yellow light	Battery margin less than 10%，or it is in charge or connected to the computer
No light	Camera off or no power

Battery replacement instruction

Position of battery cathode →

Position of battery anode →

Open the battery cover,

Open the battery cover downwards.

Remove the old battery, and put a new battery to confirm the positive and negative direction of the battery are right to the positive and negative mark on the machine, and then close the battery cover.

Note: To ensure safety and no damage to the product.

Battery maintenance instruction

After the battery is fully charged, please unplug the power cord to avoid overcharging the battery.

When the instrument does not apply for a long time, the battery should be removed.
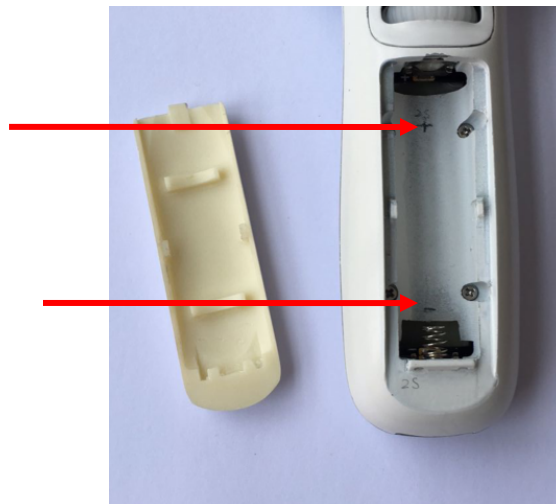
When the battery does not apply for more than three months, it should be charged once every 3 months.

Statement:

The portable fundus camera is a precision optical instrument, so be sure to gently operate it. Note as follows:

Be sure to turn off the power before doing any cleaning

Use a soft cloth with alcohol to clean the machine, and please connect to power after it is completely dry.

Be sure to use a professional optical lens cleaning cloth or cleaning paper towel, such as lens cleaning products.

Note: The portable fundus camera is not a sterile product.

Application environment

Temperature 5° C ～40° C
Relative humidity：10%～80% (no condensation)
Air pressure：860hPa ～1060hPa

Storage and warranty

1.   Storage environment with or without package

-40°C ~ 55°C
Humidity：less than 93%
Air Pressure：860hPa ~ 1060hPa

2. Make sure that the following conditions are required to store the machine:
A. No water on the instrument.
B. Storage location of air pressure, temperature, humidity, ventilation, light, dust, air PHetc. will not make any negative effect to the instrument.
C. The main components of this instrument are optical and electronic devices, so please be sure to gently to operate it.
D. Do not place the instrument in a location where there is a chemical or gas.

3. Warranty: 1 year after receiving the product.

Maintenance Instructions

1. Periodically inspect instruments and components.

2. Re-use after Long-term shutdown, please confirm that the instrument can work normally.

3. Do not leave the objective lens stained with any fingerprints or dust, otherwise the picture quality will be affected.

4. Close the hood and place it in the box after use.

5. The quality of fundus image will be affected if there is any dust or other impurities on the lens. In such a case, clean it with following method.
Clean the outer surface of the lens:
5.1. Blow away the dust attached to the lens.
5.2. Prepare solution mixed by 20% ethanol and 80% ether.
5.3. Use a clean gauze (washed and dry) dipped in the mixed solution, starting from the center to expand the ring gently wipe the lens surface. Repeat rubbing if necessary. Do not wipe the lens surface hard in case of surface scratches.
5.4. If there are still stains, rub repeatedly. If you wipe the lens very hard, the surface will be damaged. Be careful not to damage the iris.

6. Precautions

◇ If qualified technician repairs the equipment parts specified by the manufacturer, the circuit diagram of the camera, the list of components, illustrations, correction rules and other information can be provided by contacting the manufacturer.

◇Environmental protection: circuit board, control panel and power box and other components needed to be replaced, should be collected and processed by the manufacturer, to reduce environmental pollution. At the end of the life of the camera, the manufacturer shall keep track of the product and record it, and it should be reclaimed and disposed of in accordance with local regulations.

◇ The camera can be affected by electromagnetic interference. Keep it away from magnetic objects and strong magnetic fields (≥1mT).

◇ The camera generates and emits electromagnetic energy. Normal use will not interfere with other equipment. If the installation method is not correct or is not used according to the user manual, it may affect the efficiency of other equipment.

Technical Parameters

Size: 19cm*10cm*21cm
Net Weight: 400g (Typical)
Field of View: 42 degree
Minimum Pupil: 2.5mm
Image Resolution: 1920*1080 (1080P)
Refractive Compensation: -20D～+20D
Focus Mode: Manual
Flash Mode: White LED/ Near Infrared LED
LCD Screen: 3.5 inch TFT Colored Screen
Picture Format: JPEG(Photograph)
Interface: Micro USB
Image Transmission: Micro USB ，Wifi Transmission
Storage: Micro SD card. Maximum to 32G
Power: Li-on rechargeable Battery 3.6V/3400mAh

Operating Time:	3h（under 2.5watts）
Charging Time:	5h
Output format	JPEG/AV
Power consumption	≤6VA
The relative color temperature of the camera flash	4500K≤TC≤6700K
Operating mode	Continuously
Resolution at the center of the field of view	≥60 lp/mm
Resolution The middle of the field of view	≥40 lp/mm
Resolution at the edge of the field of view	≥25 lp/mm
Near－infrared spectral range	800nm～880nm
White LED spectral range	400nm～750nm

Warranty Statement

Batteries are warranted for 6 months
The warranty starts from the delivery date.