AI-Optic Vision Screener

Product Instruction

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MANUFACTURER

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Thank you for choosing our product.
Please read these instructions carefully before use.

CONTENTS

1 Before you Start

Use this product according to the regulations.
The following table describes the meanings of the special symbols.

⚠	Caution: Reminds the user of a matter that requires special attention.
💡	Note: Provides additional information about use of the AI-Optic Vision Screener.

The AI-Optic Vision Screener can quickly detect refractive disorders such as myopia, hyperopia, and astigmatism. Serious refractive disorders include: high hyperopia in children of preschool age, which may lead to amblyopia (lazy eye); significant eyesight difference between the left and right eyes, which may lead to amblyopia (lazy eye); high myopia or pathologic myopia, which may lead to unrecoverable fundus lesions; and high astigmatism, which may lead to corneal ectasia such as keratoconus.

The AI-Optic Vision Screener can detect the refractive states of both eyes by measuring the sphere and cylinder values and pupillary distance, to quickly identify possible refractive disorders and prompt the subject to turn to an optometrist or ophthalmologist as soon as possible.

As we age, the conditions of our eyes are constantly changing, and new vision problems may arise. Infants and preschoolers should take a vision examination at least once a year. We recommend that teenagers take vision screening at least once every semester. Those who fail the screening should turn to an optometrist or ophthalmologist for further examination.

Note: The tests provided by the AI-Optic Vision Screener should not replace a professional examination by an optometrist or ophthalmologist. The optometrist or ophthalmologist reserves the right to interpret the measured values. The measured values cannot be directly used for eyeglass prescription.

2 Precautions

Please read this information carefully before operation.

Make sure that the external device connected to this product meets the electrical safety and electromagnetic compatibility requirements stipulated in the IEC 60601-1 and IEC-60601-1-2 standards.

Caution: Do not disassemble this product without authorization.

Caution: Use the rechargeable battery provided with this product.

Caution: The use of other accessories, signal amplifiers, or wires that are not specified by the manufacturer may cause high electromagnetic radiation or degrade the electromagnetic safety of this product, thereby affecting the proper operation of this product.

Caution: Do not place this product next to or use it with other devices during operation, to reduce improper use. If you need to use it with other devices, carefully monitor it to ensure its proper operation.

3 Introduction to the AI-Optic Vision Screener

The AI-Optic Vision Screener captures eye images at a distance of 40 inches using a deep learning (AI) and advanced infrared photorefraction (EIR) techniques, to quickly detect refractive disorders such as myopia, hyperopia,and astigmatism.

3.1 Principles of Operation

Acquire eye images via the EIR technique

The device projects infrared light to the retina through the pupils, and the infrared light reflects back to the device and presents different patterns based on different refractive states. Using infrared light can avoid glare and miosis caused by bright light.

Obtain refractive states through deep learning algorithms

Most vision screeners on the market measure eyesight by means of traditional image processing algorithms and built-in high-end hardware and CPU after the camera captures eye image patterns.

The AI-Optic Vision Screener employs deep learning algorithms and uploads eye images to the cloud server for calculation, which then sends back the results of the examination.

3.2 Parts

After you receive the product, check whether the outer packaging is intact andwhether there are any missing components. If any parts are missing, contact the AI-Optic Vision Screener distributor immediately.

Packing list:
AI-Optic Vision Screener x 1
Product Instruction x 1
Type-C power cable x 1
Power adapter x 1
Tripod x 1
Screen cleaning cloth x 1

3.3 Product Appearance

4 Preparations before Measurement

Press the power button. The startup animation will appear

Figure 4-1 Startup animation

Select a WIFI network.

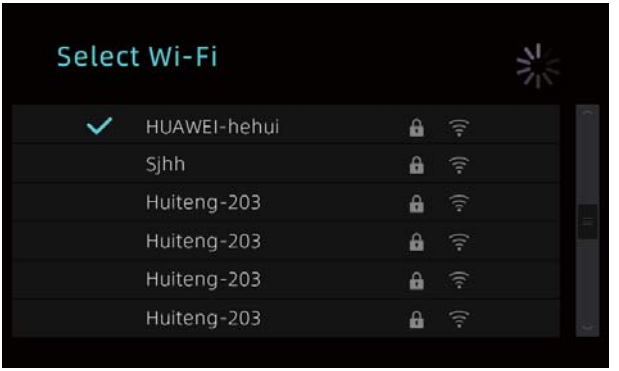

Figure 4-2 Selecting a WIFI

Enter the WIFI password and tap Connect, as shown in Figure 4-3.

Figure 4-3 Entering the password of the WIFI

Go to the Home screen and enter the name, gender, and date of birth of the subject, as shown in Figure 4-4. Then tap the Camera icon to start the exam.

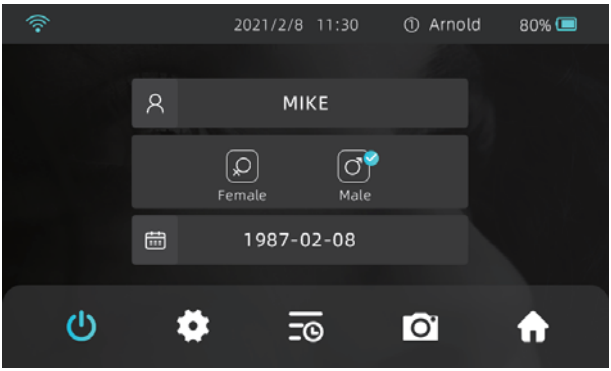

Figure 4-4 Entering examinee information

The scanning screen appears, as shown in Figure 4-5.

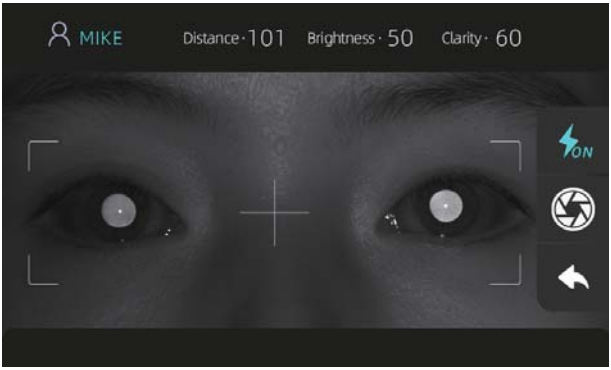

Figure 4-5 Shooting screen

Note: The recommended examination distance is about 3 feet.

Note: The brightness value should be 50 or below. If the value is greater than 50, the flash cannot be turned on, and you need to reduce the brightness of the surrounding environment. If the brightness is 50 or below, turn on the flash. Then, you can start the procedure.

5 Measurement Procedure

Figure 5-1 Taking photos

Hold the device at eye level of the subject, about 3 feet away from their face,as shown in Figure 5-1.

Adjust the device position to ensure that the eyes of the subject can be seen on the screen. Then, move the device back and forth slowly until clear corneal reflection points are obtained.In addition,in order to improve the stability and accuracy of the measurement, we recommend that customers use the included tripod stabilizing device.

Now, you can start the measurement, as shown in Figure 5-2.

Tap the camera icon on the screen.

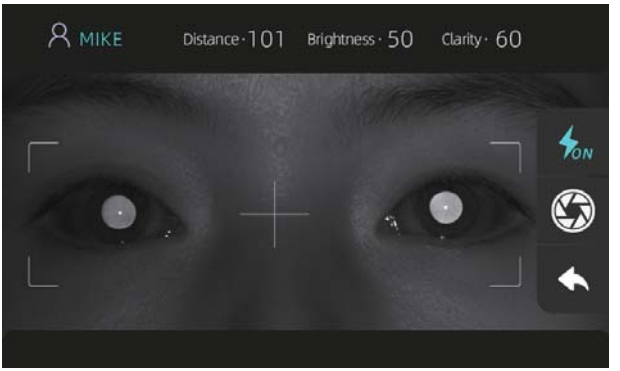

Figure 5-2 Shooting at an appropriate distance with clear corneal reflection points on the screen

Note: During shooting, make sure that the camera is oriented vertically, as shown in Figure 5-3.

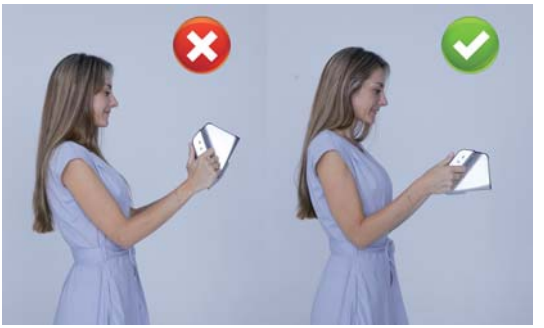

Figure 5-3 Orientation of the AI-Optic Vision Screener during shooting

The entire examination process lasts about 5 seconds. After the scan is completed, a dialog box appears, as shown in Figure 5-4. You can tap View Results to check the examination results.

Figure 5- 4 Shooting completed

After the scan is completed, the examination results will be ready within approximately 10 seconds, as shown in Figure 5-5. The name of the subject, the date of examination, the spherical degrees and cylinder degrees of both eyes, and the pupillary distance are displayed.

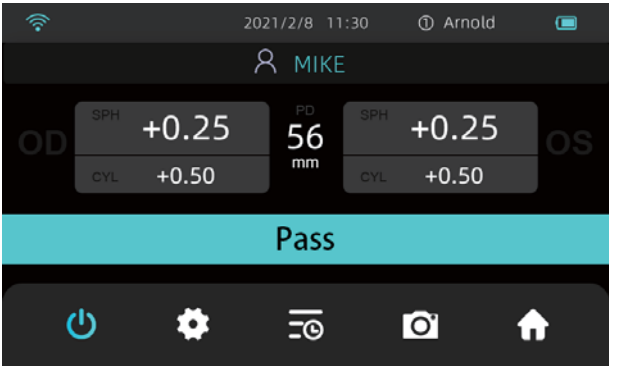

Figure 5- 5 Examination results

6 Repair, Warranty, and After-sales Services

The mechanical structure and principles of operation of the device are similar to those of a camera.

Maintenance and calibration

The device does not require ongoing maintenance and calibration. Please keep the device in its original package properly when it is not in use.

Cleaning

Please use the included screen cleaning cloth or clean and damp Microfiber cloth to wipe clean the device.

After-sales services

If any failure occurs, please read the brief instructions for use first to see whether you can find the corresponding solution. If you need further help, you can contact AI-Optic or our authorized distributors.

Free upgrade

You can view it every year by clicking System Upgrade on the Settings screen to check whether the latest system is downloaded.

Warranty

The device has a 12-month warranty. The warranty does not cover external damages caused by incorrect operations or cleaning methods, or transport without using the original package (the device's package). The warranty will be invalidated if you disassemble the device yourself. Peripherals such as the keyboard and mouse are not covered by the warranty either.

Mail-in repair

If you need repair in/out of the warranty period, please send the device in its original package to us for repair. Shipping fees will apply.

Note: After the device is repaired, you can still access historical data because it is stored in the device. If you replace the device, we recommend that you erase all historical data from your original device.

7 Technical Specifications

Technical Specifications

Measuring distance: 100±5 cm
Pupil diameter: 4.0 to 9.0 mm
Pupillary distance: 50 to 70 mm (permissible error: ±1 mm)
Spherical power: –8D to +8D (error: ±0.25D)
Cylindrical power: –3.5D to +1.0D (error: ±0.25D)
User group: people aged 3 to 50

Device, port, and standard

Measurement time: < 15s
Data transmission: Wi-Fi transmission
Display: 7-inch LCD touch screen
Resolution: 1920*1080P
Standard: EN 60601-1
IR: wavelength: 850 nm

⦿ Power supply

Charging port: USB port
External power adapter: input: 100 to 240 V, 50/60 Hz, 35 VA; output: 5 V, 2 A
Battery life between charges: about 5 hours

⦿ Wi-Fi

Operating Frequencies: 2.4~2.484GHz
Host Interface is SDIO 2.0
IEEE Standards: IEEE 802.11b/g/n
Wireless data rate can reach up to 150Mbps

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.