



#### TECHNICAL INDEXES

New optical system, unique imaging impression

Hartman imaging analyzing and processing technology, accurate measurement result

TFT touch screen, can move front and back freely

Motorized chinrest

Manual focusing, auto measuring

Vertex Distance(VD): 0.0, 12.0, 13.75, 15.0

SPH: -20.00D~+20.00D (VD=12mm, 0.01, 0.06, 0.12, 0.25 Unit)

CYL: 0.00D~± 6.00D (0.12, 0.25 Unit)

Axis(AX): 1° ~180° (1° Unit)

Cylinder Form: -, +, ±

Pupile Distance(PD): 10~85mm

Minimum Pupil Diameter: 2.0mm

Measuring Time: < 0.5s

Pupil Diameter: 2.00~8.00mm

Measuring Light Energy: < 30uw (Insure measuring safety)

Radius of Curvature: 5.0~10.0mm (0.01mm Unit)

Corneal Power: 33.00D~67.00D

(In case that the corneal equivalent refractive power is 1.3375)

Corneal Astigmatism: 0.00D~15.00D (0.06D/0.12D/0.25D Unit)

Data Storing: Each 10 measured values of left eyes and right eyes

Axis: 1° ~180°

Chart: Auto fog

Monitor: 7" TFT LCD touch screen (Angle of view adjustable)

Built-in Printer: 57mm thermal printer

Electrical Power: AC 100~250V, 50/60Hz

N.W.: 16kg

G.W.: 19.5kg

Dimensions(packing): (L)650mm X (W)400mm X (H)620mm

## AR(K) 7680

### Auto Refrac(Kera)tometer





Do what you want to do, save what you hope in time and money

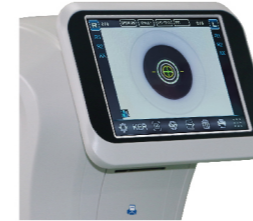
# AR(K)7680

Auto Refrac(Kera)tometer

The most cost-effective  
Hartmann refrac(kera)tometer in the world

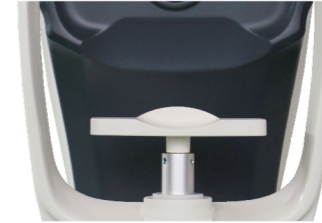


### Adjustable LCD Touch Screen



High brightness and contrast 7" wide color TFT LCD screen, smooth touch mode, different angle can be adjusted

### Motorized Chin Rest



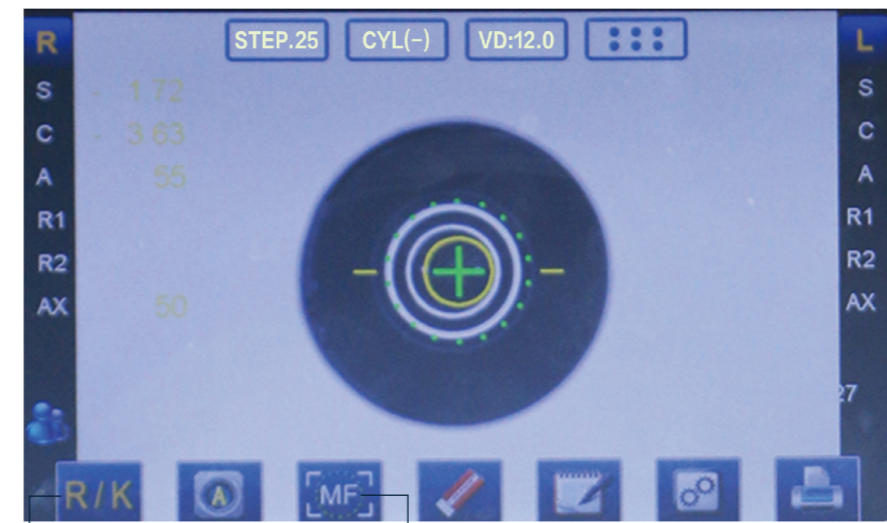
By pressing the Up & Down buttons, the users can set and adjust the height of the patient's chin freely and quickly

### Data Record

DATA RECORD							
R	SPH	CYL	AX	L	SPH	CYL	AX
1	-0.50	-1.50	95	1	-0.50	-1.25	99
2	-0.50	-1.50	95	2	-0.50	-1.25	99
3	-0.50	-1.50	95	3	-0.50	-1.25	99
4	-0.50	-1.50	95	4	-0.50	-1.25	99
5	-0.50	-1.50	95	5	-0.50	-1.25	99
6	-0.50	-1.50	95	6	-0.50	-1.25	99
7	-0.50	-1.50	95	7	-0.50	-1.25	99
8	-0.50	-1.50	95	8	-0.50	-1.25	99
9	-0.50	-1.50	95	9	-0.50	-1.25	99
10	-0.50	-1.50	95	10	-0.50	-1.25	99
AVG	-0.50	-1.50	95	AVG	-0.50	-1.25	99

3 groups of data stored each measurement, maximum 10 groups of data can be stored

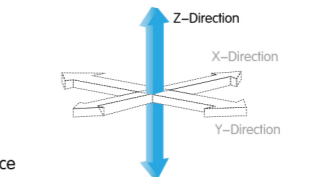
### Operation interface function



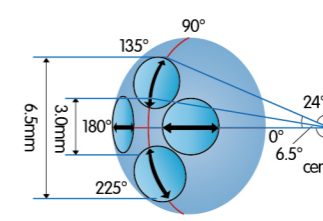
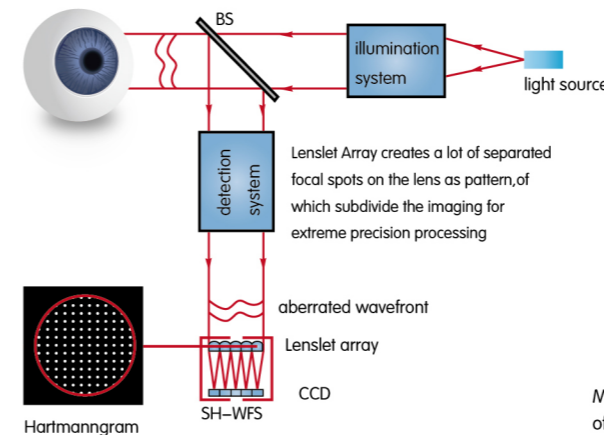
- KER Keratometry
- REF Refractometry
- R/K Refrackeratometry
- Manual Measuring
- Auto Measuring
- Up/down Auto Tracking
- Clear
- Data Record
- Menu Set
- Printing

Intuitive icons provide the user an easier operating circumstances, and make the measurement become more convenient and the data to be measured more accurate and fast

### Up/down Auto Tracking



### Hartmann imaging processing technology



Measure peripheral keratometry precision of eyes with contact lenses fitting

### Professional Design



# Auto Refracto(Kera)tometer User's Manual



Please be sure to read this manual carefully before using the instrument and keep it handy for ready reference.



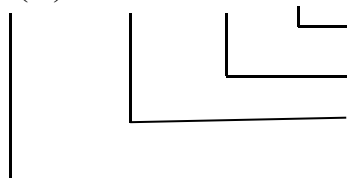
Thanks for your choice and use of this instrument. AR(K)7680 Auto RefracKeratometer is one high precision instrument of objective measuring the patient's eyes with unique optical system inside and accurate imaging analyzing and processing in Hartman technology. It's mainly used to measure the patient's diopter, including sphere power, cylinder power, optical axis, pupil distance and corneal curvature, to provide reference datas for eyes' treating and eyeglasses choice. The measurement result can be displayed on screen or printed out on paper, and can also be transferred to auto phoropter (fit to RS232 interface)). If the auto phoropter can output data, this instrumentAR(K)7680 can directly print out the measured optometry data by auto photopter.

### Model No./Specifications

Item No.	Spec.(L x W x H) (mm x mm x mm)	Input Power (VA)	Display	Remarks
AR7680	750×400×630	60	TFT Color LCD	Wavefront Aberration(Manual)
ARK7680	750×400×630	60	TFT Color LCD	Wavefront Aberration Corneal Curvature(Manual)

### Refractometer Named

A R(K) X X 0 0 A/B



manual/auto  
universal model  
product serial number  
objective refractometer(K optional)

### Refractometer Division Description

The serial refractometers consist of optical system, mechanical transmission system, COMS image sensing system, microcomputer control system, and printer etc., are the professional instruments of providing reference data for glasses and eye diagnosis and treatment. According to measurement function, it's divided into refractive parameters measurement and refractive parameters measurement/corneal curvature measurement. According to measurement mode, it's divided into manual measurement and automatic measurement.

### DISCLAIMER

1. This manual has been carefully checked to insure the contents' accuracy and perfect during compiling, however, for possible errors or omissions contained herein.



- 2. The company reserves the right to make changes to this product or the specifications at any time without prior notice.
- 3. The company own the final interpretation to this manual.

**CONTENTS**

- 1. ELECTROMAGNETIC COMPATIBILITY GUIDE AND MANUFACTURER STATEMENT.....3
- 2. SAFETY PRECAUTIONS.....8
- 3. UNPACKING AND INSTALLATION .....10
- 4. FUNCTIONS OF THE MAJOR COMPONENTS.....11
- 5. MAIN TECHNICAL INDEXES .....13
- 6. ENVIRONMENT TERMS.....14
- 7. LCD SCREEN DISPLAY .....15
- 8. MENU .....16
- 9. MEASUREMENT .....23
- 10. COMMON TROUBLE SHOOTING .....26
- 11. PACKAGING, TRANSPORTATION, STORAGE .....27
- 12. ENVIRONMENTAL PROTECTION .....27
- 13. ACCESSORIES .....28

# 1. ELECTROMAGNETIC COMPATIBILITY GUIDE AND MANUFACTURER STATEMENT

This product is in compliance with the electromagnetic compatibility regulations in this manual. To ensure compliance with these regulations, the user needs to install and use the information provided in this manual. Such as the use of non - manufacturers to provide the cable may cause the increase or decrease in the immunity of the product launch.

## **Warning!**

1. The use of non - manufacturer supplied cables may cause an increase in the electromagnetic radiation of this product or decrease the immunity.
2. Portable or mobile radio frequency communication equipment should not be used closer to any part of the refractometer than the recommended isolation by distance, including the cable.
3. In addition to the transducer and cable in sale as spare parts of components from the original equipment or system manufacturer, the use of other accessories, transducers and cables may cause an increase in the device or system to launch or decrease in immunity.
4. The device or systems should not be close to or stacked up with other devices, and if you have to approach or stack, it should be observed to verify the normal operation of its use.
5. The other accessories, transducer or cable to be used together with the device and system, it may cause an increase in the device or system to launch or decrease in immunity.



## 1.1 Electromagnetic Emission Guide and Manufacturer Statement(Form1)

Guide and manufacturer's statement—Electromagnetic emission		
[ <b>Prototype ARK7680</b> ] expected to be used in the electromagnetic environment of the following requirements, buyers and users should ensure that it is used in this electromagnetic environment		
Launching Test	Conformity	Electromagnetic Environment—Guide
Radio frequency emission CISPR11	Group 1	[ <b>Prototype ARK7680</b> ] Radio frequency energy to be used for internal function only. Therefore, its RF emission very low, and the possibility of interference in the electronic device is very small.
Radio frequency emission CISPR11	Class B	[ <b>Prototype ARK7680</b> ] Applicable for all of the facilities in use, including the home and the direct connection of residential public low voltage power supply network.
Harmonic emission IEC61000-3-2	Not applicable	
Voltage fluctuation/Flicker emission IEC61000-3-3	Not applicable	

## 1.2 Electromagnetic Immunity Guide and Manufacturer Statement (Form2)

Guide and manufacturer's statement—Electromagnetic immunity			
[ <b>Prototype ARK7680</b> ] expected to be used in the electromagnetic environment of the following requirements, buyers and users should ensure that it is used in this electromagnetic environment			
Immunity Test	IEC60601 Test Level	Meet Level	Electromagnetic Environment—Guide
Electrostatic discharge IEC61000-4-2	±6kV contact discharge  ±8kV air discharge	±6kV contact discharge  ±8kV air discharge	The ground should be wood, concrete or ceramic tile, if the ground is covered with synthetic material, the relative humidity should be at least 30%

Electric fast transient pulse group IEC61000-4-4	±2kV power line ±1kV input/output line	±2kV power line	Network power supply should have a typical commercial or hospital environment in the use of quality
Surge IEC61000-4-5	±1kV line to line ±2kV line to ground	±1kV line to line ±2kV line to ground	Network power supply should have a typical commercial or hospital environment in the use of quality
Power input line voltage dips, short interruptions and voltage variations IEC61000-4-11	<5%U <sub>t</sub> , last 0.5 cycle (Above U <sub>t</sub> , >95% sag) 40% U <sub>t</sub> , last 5 cycle (Above U <sub>t</sub> , 60% sag) 70% U <sub>t</sub> , last 25 cycle (Above U <sub>t</sub> , 30% sag) <5% U <sub>t</sub> , last 5s (Above U <sub>t</sub> , >95% sag)	<5%U <sub>t</sub> , last 0.5 cycle (Above U <sub>t</sub> , >95% sag) 40% U <sub>t</sub> , last 5 cycle (Above U <sub>t</sub> , 60% sag) 70% U <sub>t</sub> , last 25 cycle (Above U <sub>t</sub> , 30% sag) <5% U <sub>t</sub> , last 5s (Above U <sub>t</sub> , >95% sag)	Network power supply should have a typical commercial or hospital environment in the use of quality. If the users need [Prototype ARK7680] to continuously run during power supply interruption, then it's recommended the [Prototype ARK7680] is powered by a constant power supply or battery
Power frequency magnetic field (50Hz) IEC61000-4-8	3A/m	3A/m	The power frequency magnetic field should have the characteristics of the power frequency magnetic level in a typical commercial or hospital environment
Note: U <sub>t</sub> refers to the AC network voltage before applying the test voltage.			



### 1.3 Electromagnetic Immunity Guide and Manufacturer Statement (Form3)

Guide and manufacturer's statement—Electromagnetic immunity			
[Prototype ARK7680] expected to be used in the electromagnetic environment of the following requirements, buyers and users should ensure that it is used in this electromagnetic environment			
Immunity Test	IEC60601 Test Level	Meet Level	Electromagnetic Environment—Guide
Radio frequency transmission IEC61000-4-6	3 V (effective value) 150 kHz ~ 80 MHz	3V (effective value)	Portable or mobile radio frequency communication equipment should not be used closer to any part of [Prototype ARK7680] refractometer than the recommended isolation by distance, including the cable. The distance should be calculated with the corresponding formula of the transmitter frequency. The recommended isolation distance: $d=1.2\sqrt{P}$ $d=1.2\sqrt{P}$ 80MHz~800MHz $d=2.3\sqrt{P}$ 800MHz~2.5GHz
Radio frequency radiation IEC61000-4-3	3 V/m 80 MHz ~ 2.5 GHz	3 V/m	In formula: P — Maximum output rated power of the transmitter provided by the manufacturer, unit for Watt(W) d—Recommended isolation distance, unit for meter(m). The electric field intensity of fixed radio frequency transmitter is determined by the investigation <sup>a</sup> of electromagnetic field, in each frequency range <sup>b</sup> should be lower than Meet Level. Interference may occur near the devices marked with the following items.

**Note 1:** at 80MHz and 800MHz frequency point, use the formula for higher frequency bands

**Note 2:** these guidelines may not be suitable for all cases, because the electromagnetic propagation is influenced by the absorption and reflection of buildings, objects and human bodies.

a.fixed transmitter, such as wireless(cellular/cordless) telephone and ground mobile radio base station, amateur radio, Am and FM radio and television broadcasting, etc. the electric field intensity can not be accurately predicted in theory. In order to evaluate the electromagnetic environment of a fixed RF transmitter, the survey of electromagnetic field should be considered. If the electric field intensity measured where [**Prototype ARK7680**] place is higher than above applicable RF Meet Level, [**Prototype ARK7680**] should be observed to verify whether it can work normally. If abnormal performances happen, the supplementary measures may be necessary, such as re-adjust the direction or position of[**Prototype ARK7680**]

b.in the entire frequency range of 150 kHz~80 MHz, the electric field intensity should be less than3V/m.

**1.4 The Recommended Isolation Distance Between Portable and Mobile Radio Frequency Communication Equipments and [Prototype ARK7680] (Form 4)**

The recommended isolation distance between portable and mobile radio frequency communication equipments and [**Prototype ARK7680**]

[**Prototype ARK7680**] expected to be used in the electromagnetic environment of the radio frequency radiation disturbance controlled. According to the maximum output rated power of communication equipment, the buyer or user may prevent the electromagnetic interference by maintaining a minimum distance to be recommended as following items between the portable and mobile radio frequency communication equipment(transmitter) and [**Prototype ARK7680**]

Maximum output rated power of transmitter: W	Isolation distance of different frequency of transmitter/m		
	150kHz~ 80MHz  $d=1.2\sqrt{P}$	80MHz~ 800MHz  $d=1.2\sqrt{P}$	800MHz~2.5GHz  $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23



To the maximum output rated power of transmitter that not listed in the above forms,  $d$  is recommended as isolation distance, unit for meter(m), the formula in the frequency column of the corresponding transmitter is available, here  $p$  is the maximum output rated power of transmitter provided by the manufacturer, unit for Watt(W).

**Note 1:** at 80MHz and 800MHz frequency point, use the formula for higher frequency bands

**Note 2:** these guidelines may not be suitable for all cases, because the electromagnetic propagation is influenced by the absorption and reflection of buildings, objects and human bodies.

## **2. SAFETY PRECAUTIONS**

### **2.1 Operation**

- 2.1.1 Don't optionally open and touch the inside parts of the instrument, it may cause an electric shock or the system may malfunction.
- 2.1.2 Please keep this instrument ground connection well to avoid possible injury to people or the instrument damaged.
- 2.1.3 Don't touch the screen(resistance touch-screen, contact and hold it for about 0.1 second) in too strong strength, it may damage the screen.
- 2.1.4 Don't put the instrument at the place of direct sunlight or too strong illumination, it may affect the measuring precision. It's strongly suggested to be used indoors or in darkroom.
- 2.1.5 Don't use the instrument in a hot, humid or dusty environment. Such environments cause bad influences to the instrument.
- 2.1.6 If you want to connect this instrument to other instrument, please follow our local agent's instructions.
- 2.1.7 In cold room, when temperature suddenly rise, dew maybe appear on the protection glass of measuring window or internal optical parts. In case this happen, it can be used till the dew disappear.
- 2.1.8 Keep the measuring window lens clean at all time. The dust and other substances may cause error in measuring or affect the measuring precision.
- 2.1.9 If you encounter any abnormal conditions, such as smoking or strange smells, turn off the instrument and pull out the power cord immediately. Contact the local experts/agent or original manufacturer to check and repair, you can use till the trouble is absolutely removed.
- 2.1.10 The use of materials that directly contact with the skin part: During operating the instrument, it should be used to separate the instrument from the patient's touch part with medical non-woven fabric(size for 8cm x 8cm), to avoid the direct contact with the surface of the instrument.

## **2.2 In Storage**

- 2.2.1 Don't store the instrument in a place where it may get wet or where poisonous gas or liquid is stored.
- 2.2.2 Be sure to store the instrument in a place away from direct sunlight and with the specified temperature and humidity.

## **2.3 In Transference**

- 2.3.1 During carrying the instrument, please take great care to avoid colliding and falling. Sudden or strong impact may damage the instrument or performances.
- 2.3.2 Before carrying, please turn off the machine and lock tightly the sliding body. During carrying, please catch the bottom tightly by two hands.

## **2.4 After Using**

- 2.4.1 If the instrument won't be used for a long time, disconnect the power cable from the wall-outlet. It may cause a fire.
- 2.4.2 When the instrument is not used, turn the power off and put the dust cover on. Keeping the machine in electricity supplying will reduce the use life of the instrument. If the instrument is not covered for a long time, dust may affect the measuring accuracy.

## **2.5 In Maintenance**

- 2.5.1 It's one high precision optical instrument and need to be calibrated regularly.
- 2.5.2 Please fill the lube to the sliding parts regularly at the experts' guide.
- 2.5.3 Be sure to replace the fuse after disconnecting the power cord from the power inlet and use the specified fuse for replacement. Otherwise, it may cause a fire.
- 2.5.4 In case the instrument breaks down, it must be checked and repaired by the specified experts who know this instrument very well, or contacting the local authorized agent or original manufacturer. Open and repair the instrument by oneself, the agent or manufacturer don't be in charge of the consequence.
- 2.5.5 This instrument for non sterile medical device. Daily cleaning and disinfection of device by end user. Please use a soft cloth or sponge, wet cloth or detergent to clean the device. Don't use alcohol, water, benzene and other organic compounds to clean the surface of the instrument, to avoid damage to the device. The measuring window is often cleaned by a soft cloth to remove dust to maintain the accuracy of the measurement.
- 2.5.6 Determination of disinfection method:  
According to the requirements of "environmental and object surface disinfection" in the hospital disinfection and sanitation standard of

WS310-2, the general components of the device are cleaned in time, the chin-rest and forehead rest and operation lever are demanded to be disinfected in middle level disinfection.

In accordance with the regulations of the WS/T 367-2012 medical institutions disinfection technical specifications, the chin-rest and forehead rest and operation lever are demanded to be disinfected by using alcohol disinfectant, and use 75% (volume ratio) ethanol solution to wipe the surface of the object.

### **3. UNPACKING AND INSTALLATION**

#### **3.1 Notices and Procedures of Taking out the Instrument**

Catching the bottom and chinrest frame separately by two hands, don't catch the screen or operation lever (Figure 1)



(Figure 1)

#### **3.2 Power Line Inlet and RS232 Interface (Figure2. 3)**

Connect the spare power line with the power supply socket (RS232\USB interface connection demanded, please contact the original manufacturer or local agent)



(Figure2)

Power Supply Socket: AC power inlet (fuse F5AL 250V inside)

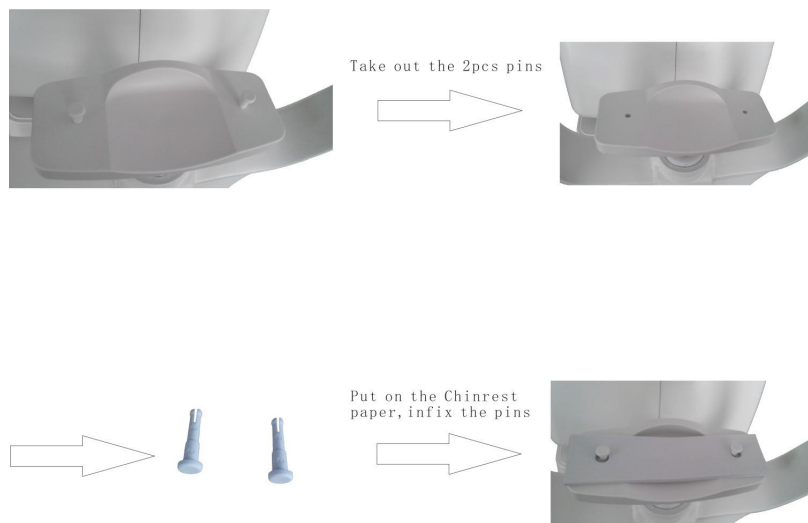


(Figure3)

Data Interface: RS232\USB interface to be connected with other equipments  
 (This refractometer and the automatic phoroptor serials connected should comply with the related electrical requirements in IEC60601-1-1-2000)

### 3.3 Chinrest Paper Installation

Use the specified chinrest paper (Figure 4)



(Figure 4)

### 4. FUNCTIONS OF THE MAJOR COMPONENTS Front(Figure 5)





(Figure 5)

LCD Screen: Monitor for measurement display

Height Adjustment Mark: The eyes' height position of the patients

Printer Cover: Press the cover to open or close

Measure Button: Performing the measurement by pressing after focusing

Joystick: Adjust the focus by moving it left/right, up/down, forward/backward

Stage Fixing Lever: Lock the sliding body

Power Switch/Socket: AC power on/off with indicator light / AC power inlet (fuse F5AL 250V inside)

Rubber Feet: Support and adjust the instrument horizontal

Chinrest Up/Down Button: Adjust the height of the chinrest

Data Interface: USB\RS232 interface to be connected with other equipments (This refractometer and the automatic phoropter serials connected should comply with the related electrical requirements in IEC60601-1-1-2000)

Back (Figure 6)



( Figure 6 )

Chinrest: The platform for placing the patients' chin

Forehead Rest: The place against the patients' forehead

Measuring Window: Imaging on the retina of the patients' eyes

## 5. MAIN TECHNICAL INDEXES

### 5.1 Measurement Performance Parameters

5.1.1 Corneal Vertical Distance(VD): 0.00mm、 12mm、 13.75mm、 15mm

5.1.2 SPH:  $-30.00 \text{ m}^{-1} \sim +25.00 \text{ m}^{-1}$  ( VD=12mm,  $0.01 \text{ m}^{-1}$ 、  $0.06 \text{ m}^{-1}$ 、  $0.12 \text{ m}^{-1}$ 、  $0.25 \text{ m}^{-1}$  unit ), deep myopia measurement available

5.1.3 CYL:  $0.00 \text{ m}^{-1} \sim \pm 10.00 \text{ m}^{-1}$  ( $0.25 \text{ m}^{-1}$  ,  $0.25 \text{ m}^{-1}$  unit)

5.1.4 Cylinder Form:  $-$ 、 $+$ 、 $\pm$

5.1.5 Axis(AX):  $1^{\circ} \sim 180^{\circ}$  ( $1^{\circ}$  unit)

5.1.6 Pupil Distance(PD): 10mm ~ 85mm(0.1mm unit)

5.1.7 Radius of Corneal Curvature: 5.0 ~ 10.0mm (0.01mm unit)

5.1.8 Corneal Power: 33.00 m<sup>-1</sup> ~ 67.00 m<sup>-1</sup> (in case that the corneal equivalent refractive power is 1.3375)

5.1.9 Corneal Astigmatism: 0.00 m<sup>-1</sup> ~ 15.00 m<sup>-1</sup> (0.06 m<sup>-1</sup>/0.12 m<sup>-1</sup>/0.25 m<sup>-1</sup> unit)

## **5.2 Other Performance Parameters**

5.2.1 8" TFT touch screen (angle adjustable)

5.2.2 Printer: 57mm thermal printer

5.2.3 Measuring Light Energy:  $< 30\mu\text{W}$  (prevent injury to eyes during measuring)

5.2.4 Measuring Time:  $< 0.5\text{s}$

5.2.5 Minimum 2.0mm pupil can be measured. The application of cloud and mist chart technology allows the patients' eyes to look at the internal targets in a natural and comfortable situation and make the measurement more accurate

5.2.6 Electrical Power: AC100 ~ 240V, 50/60Hz

5.2.7 Consumption: 60AV

5.2.8 N.W.: 17.25kg

5.2.9 G.W.: 22.5kg

5.2.10 Dimensions: L750mm×W400mm×H630mm

## **5.3 Protection Level**

5.3.1 Product Grade: Medical apparatus and instruments grade II

5.3.2 Electric Shock: Level I (ground)

5.3.3 Electric Shock Protection Class: Class B

## **5.4 Device Type**

5.4.1 Anti Electric Shock Type: Class I

5.4.2 Anti Electric Shock Degree: Applicable type B

5.4.3 Non AP device, non APG device

5.4.4 Running Mode: Continuous duty

## **6. ENVIRONMENT TERMS**

6.1 Temperature:  $10^{\circ}\text{C} \sim 30^{\circ}\text{C}$

6.2 Relative Humidity: (30~75) %RH

6.3 Atmospheric Pressure: 86kPa ~ 106kPa

6.4 Altitude:  $< 2000\text{m}$

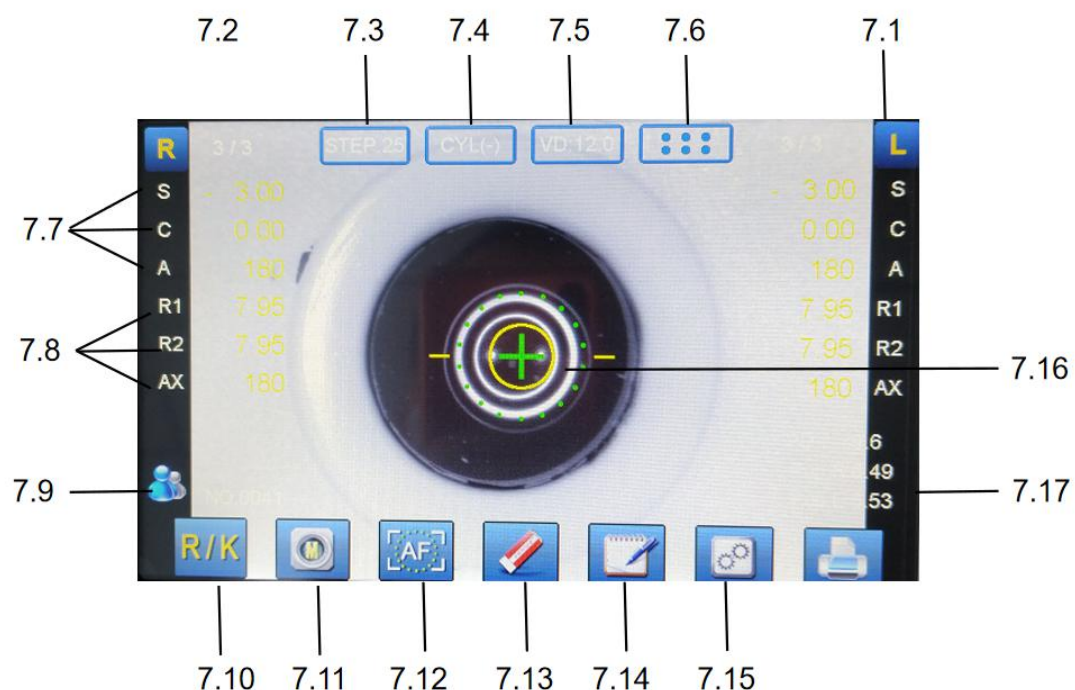
6.5 No strong vibration and corrosive gas around  
 6.6 No strong electromagnetic interference around

6.7 Brightness: <150Lx

6.8 The device should be placed at the specified instrument table that can rise and fall vertically

6.9 The device can't be used in the environment of flammable and anesthetic gas

## 7. LCD SCREEN DISPLAY (Figure 7)



(Figure 7)

7.1 L/R Sign: Flashing sign indicates the current measured eye

7.2 The number of power/corneal parameters measured

7.3 Step selection (shortcut key)

7.4 Astigmatism symbol selection (shortcut key)

7.5 VD selection (shortcut key)

7.6 Lattice display

7.7 Power display

7.8 Corneal value display

7.9 Adult//child mode selection

7.10 Measurement mode selection

7.11 Auto/manual measurement selection (partial model)

7.12 Auto/manual tracking and focusing selection (partial model)

7.13 Data clear key

- 7.14 Data record check
- 7.15 Menu set
- 7.16 Pupil alignment target
- 7.17 Left/right eye pupil diameter

## 8. MENU (Figure 8)

### 8.1 Measurement Mode Selection

Touch this key to pop up three measurement mode menu (as shown in Figure 10), the user can choose to touch any measurement mode menu under need (KER for Keratometry mode, R/K for RefracKeratometry mode, REF for Refractometry mode)



(Figure 8)

### 8.2 Auto/Manual Measurement Selection (partial model)

Touch this key to select auto measurement mode (A) or manual measurement mode (M)

### 8.3 Auto/Manual Tracking and Focusing Selection ((partial model))

Touch this key to select auto tracking and focusing mode (AF) or manual tracking and focusing mode (MF)

### 8.4 Data Clear Key

Touch this key to clear the measurement data

### 8.5 Data Record Check

Touch this key to check the measurement data (directly print out the data, the measurement data won't be recorded)( Figure 9)



DATA RECORD							
R				L			
	SPH	CYL	AX		SPH	CYL	AX
1	-3.00	0.00	180	1	-3.00	0.00	180
2	-3.00	0.00	180	2	-3.00	0.00	180
3	-3.00	0.00	180	3	-3.00	0.00	180
4				4			
5				5			
6				6			
7				7			
8				8			
9				9			
10				10			
AVG	-3.00	0.00	180	AVG	-3.00	0.00	180

( Figure 9)

Left/right eyes data can be recorded max.10 items separately. Touch REF to display the recorded refractometry data only, touch KER to display the recorded keratometry data only, touch CLEAR key to clear the recorded data, touch RETURN key to return to the measurement interface.

### 8.6 Menu Set

Touch menu set key to enter the subsidiary menu setting (Current selection for blue)

#### 8.6.1 Refractometry parameters setting (Figure 10)

VD: Distance between corneal and back top focus of lens, 0.0mm (contact lens), 12.0mm (Asian), 13.5mm (Middle East), 15.0mm (European)

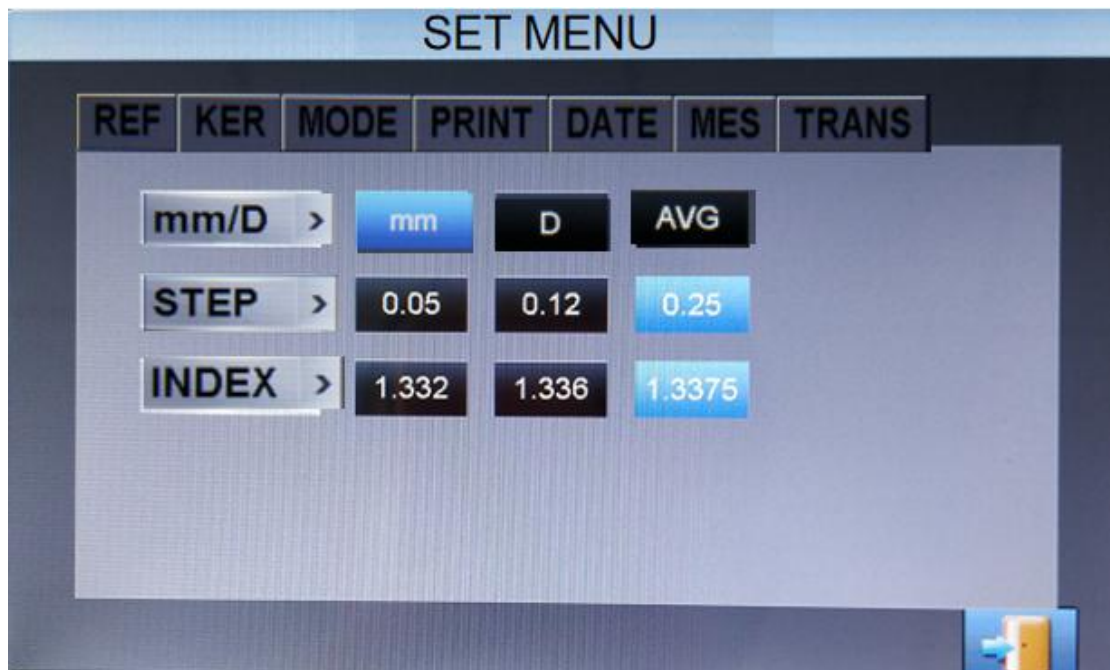
CYL: Astigmatism symbol selection,  $-$ 、 $+$ 、 $\pm$ (Mix)

STEP: Measurement data precision selection

FOGG: Visual guide target atomization function switch (position of guiding target atomization)

(Figure 10)

#### 8.6.2 Keratometry parameters setting (Figure 11)



(Figure 11)

MODE : Keratometry radius measurement (mm), keratometry power measurement (m-1) and average value display (AVG) optional

STEP: Keratometry power precision display

REFRACTIVE INDEX: Factory defaults to 1.3375

### 8.6.3 Mode setting (Figure 12)

(Figure 12)

MODE: Manual measurement mode and auto measurement mode optional (Auto

measurement icon for grey said this model without this feature)

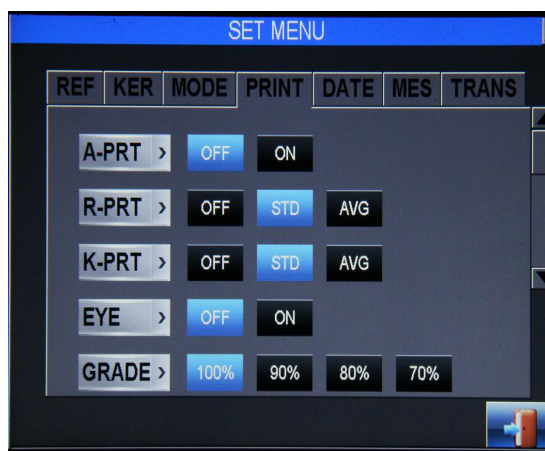
BEEP: Sound prompt when operating. If set off, operation will keep silent

INT-M: Measurement mode selection (same as the main interface function), default startup mode for each starting

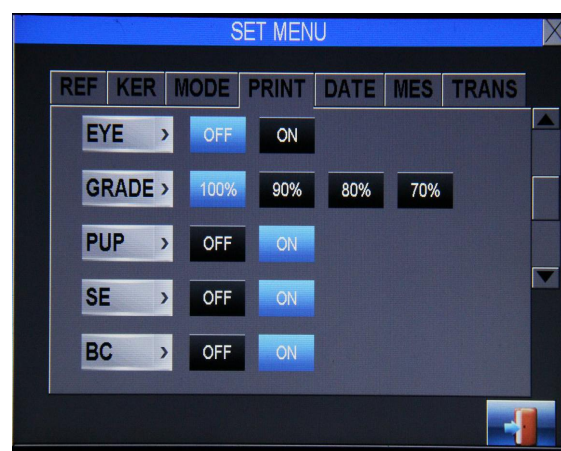
STAND BY: Instrument standby time setting (5 minutes, 10 minutes, 30 minutes and 60

minutes optical) (touch any key to wake up)

#### 8.6.4 Printing setting and printing paper replacement (Figure 13 14)



(Figure 13 )



(Figure 14)

AUTO: When ON selected, the measurement results will be printed out automatically after the both eyes measurement finished (in this case, the data is cleared automatically) When OFF selected, press the print key on panel to print out the measurement results.

REFRACTOMETRY: When OFF selected, the refractometry power won't be printed out. When STD selected, all refractometry power will be printed out. When AVG selected, only print the average value of the refractometry power.

KERATOMETRY: When OFF selected, the keratometry power won't be printed out. When STD selected, all keratometry power will be printed out. When AVG selected, only print the average value of the keratometry power.

EYE: When ON or OFF selected, the refractometry state diagram will be printed or not.

CONCENTRATION: Set the appropriate print concentration according to different thermal printing paper.

PUPIL: When ON or OFF selected, the pupil diameter will be printed or not.

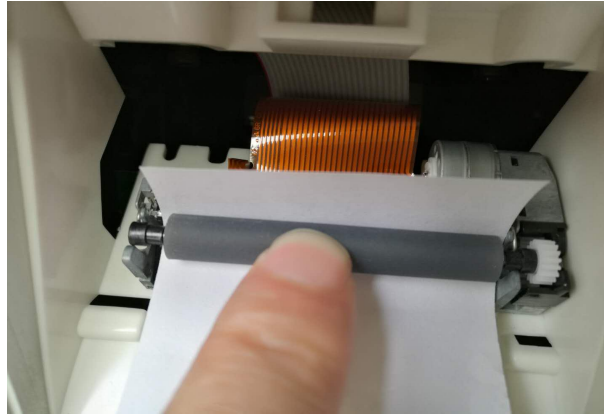
SE: When ON or OFF selected, SE data (the approximate value of cylinder power converted into sphere power) will be printed or not.

BC: When ON or OFF selected, BC(base curve of corneal contact lens) will be

printed or not.

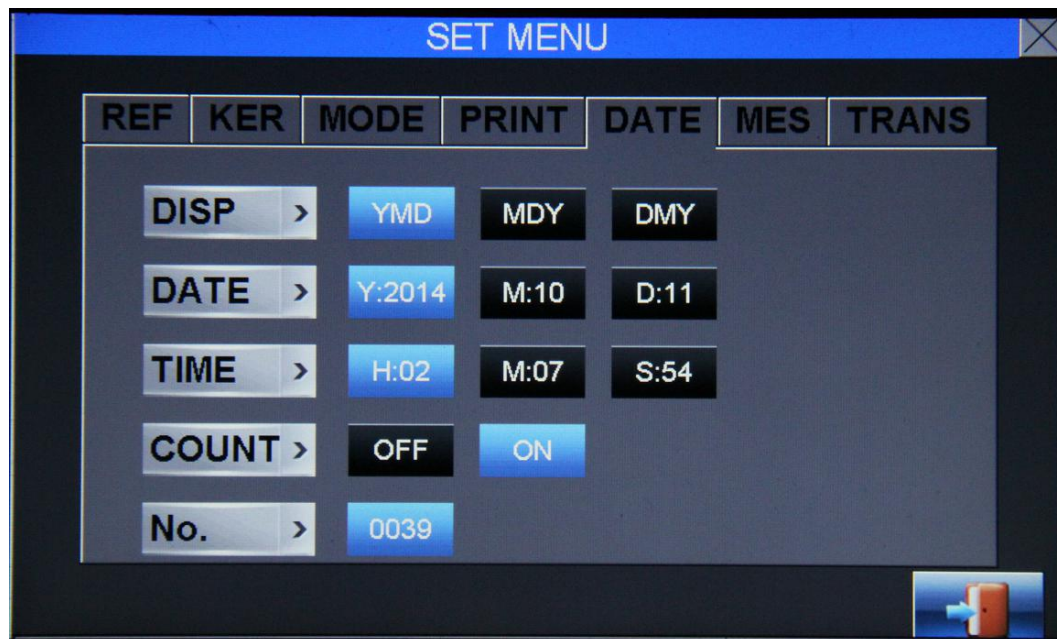
How to install the printing paper (Figure 15)

- 1.) Pull outwards the printer cover, open the cover
- 2.) Place the new printer paper in the box, keep the paper head upwards
- 3.) Draw the paper outwards and directly ride on the printer wheel
- 4.) Push the cover back and close the cover



(Figure 15)

#### 8.6.5 Data setting (Figure 16)



(Figure 16)

DISP: Date, month and year display mode

DATE: Edit or modify the exact time of date and month and year

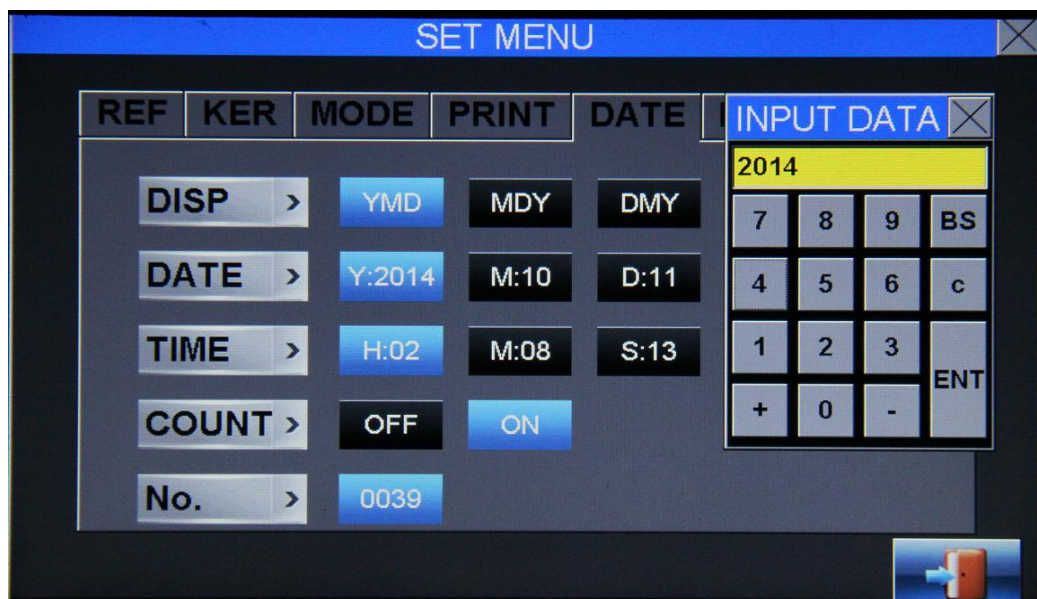
TIME: Edit or modify the exact time of second and minute and hour

COUNT: When ON or OFF selected, recording the number of patients in main interface will be refreshed or not

No.: Patient number setting, patient measuring number setting



Touch DATE, TIME and NUMBER options, enter the sub menu as shown below, select the appropriate number, press ENT key to confirm and preserve, press RETURN key to quit. Press BS key to delete one by one, press C key to clear all. (Figure17)



(Figure17)

#### 8.6.6 Printing message setting (Figure 18)

MSG1 for company name or product model number setting

MSG2 for company address or brand name setting. Users can edit this information freely according to the exact requires. After setting, press ENTER key to preserve and quit.



(Figure18)

Touch the yellow blank space to enter the message editing menu (Figure 19)





(Figure 19)

ENTER key for confirming and preserving  
 A/a for capital/small letter conversion  
 BS for deleting single letter  
 SPA key for space bar  
 CRL key for clearing all letters

8.6.7 Data transfer setting (Figure20)



(Figure20)

According to the requires of the connected devices, customers choose the corresponding baud rate, and open the auto option, the measurement data will be automatically transferred to the connected devices, meanwhile the refractometer data will be automatically cleared.

## 8.7 Shortcut Key

8.7.1 Step set: successively touch STEP key to quickly switch 0.01、0.06、0.12、0.25 steps

8.7.2 CYL axis set: successively touch CYL key to quickly switch —、+、±

8.7.3 VD set: successively touch VD key to quickly switch 0、12、13.5、15

8.7.4 Array display: touch array key to display the patient's fundus array distribution (indirect evaluation of fundus imaging quality). (Figure.21)



(Figure.21)

## 9. MEASUREMENT

Suitable crowd and contraindication

Target patients for adults and children, and crowd of eye power range ( $-30 \text{ m}^{-1}$  ~  $+25 \text{ m}^{-1}$ ). This product is not suitable for newborn eye measurement.

### 9.1 Preparations before Measurement

9.1.1 Place the device on the specified instrument table, loose the stage fixing lever and keep the device in free sliding state, adjust the four rubber feet to keep the device in horizontal.

9.1.2 Fix and install the specified chinrest paper and printing paper separately

9.1.3 Connect the spare power line to the instrument socket tightly (ensure the local voltage fit to the instrument specification)

9.1.4 Turn on the left side power switch (green indicator light show right in electricity connection), the instrument goes into self-check procedures. After self-check over, it automatically switches to main interface for measurement.

### 9.2 Notes for Operator and Patient

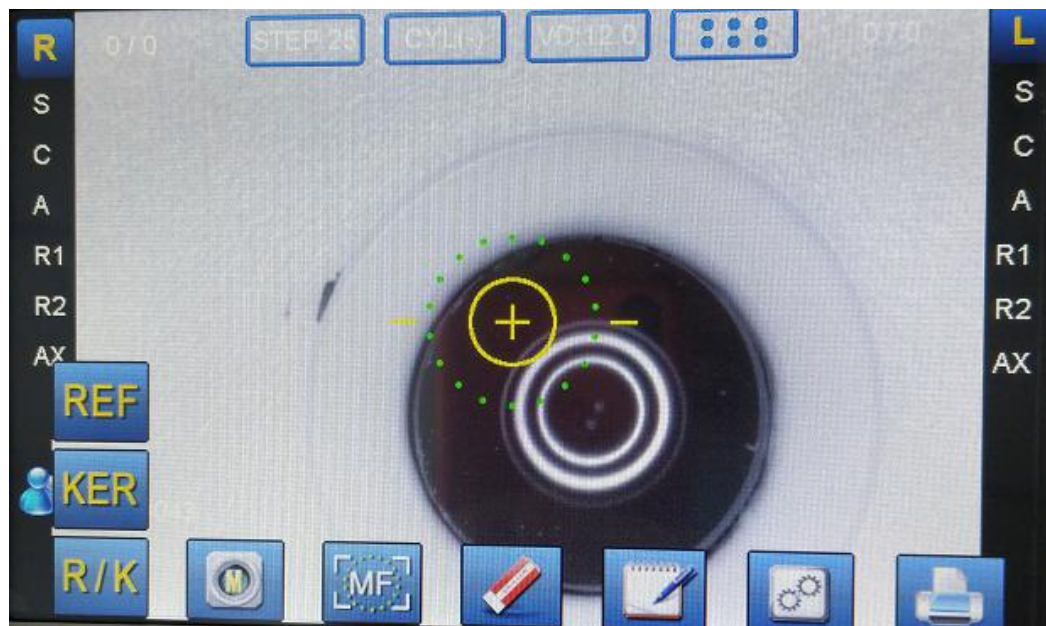
- 9.2.1 Adjust the chair height and screen angle in right position
- 9.2.2 Ensure the patient in comfortable and relaxed posture before measurement
- 9.2.3 By adjusting the instrument tabletop, keep the instrument height same to the patient natural sitting posture
- 9.2.4 Settle patient's chin touch the chinrest front and forehead touch the rubber forehead rest in level (keep face parallel with the measurement window)
- 9.2.5 By observing the patient eyes position and height adjustment mark, press the chinrest up/down key on panel to adjust the patient's eyes same height to the measurement window
- 9.2.6 By the operation lever, move the sliding body left and right to move the patient's eyes in the measurement range (if the distance of two sides asymmetrical, adjust it by fixing the patient's head deviation)

### 9.3 Measurement

The measurement alignment method of this device for pupil and center measurement cross target in coincidence

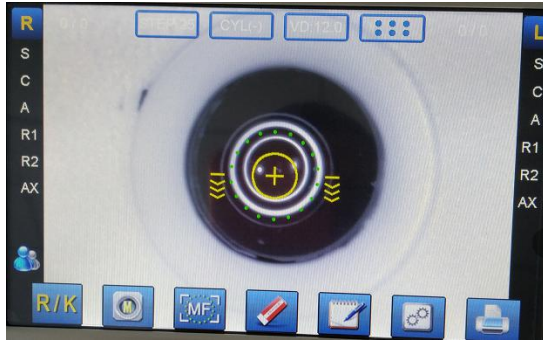
#### 9.3.1 Normal Measurement Mode

Holding the operation lever, quickly shift the sliding body to left side, keeping the measurement window roughly aligning with the patient's right eye socket (Figure.22)



(Figure.22)

Observing the patient's eye location on screen, rotate the operation lever (up and down adjustment), meanwhile swing the operation lever left and right, till the yellow cross-ring target aligning at the patient's corneal vertex, then shift the operation lever front and back, till the patient's eye is clearly focused in the center measurement socket (the accuracy of focusing can be confirmed by observing whether level between the two points of split focusing and cross-ring target) (Figure.23,24)



(Figure 23)



(Figure 24)

Prompt the patient to open eyes wide (eyelid and eyelash covering eyeball will affect the measurement accuracy), both eyes look right ahead.

Slightly adjust the operation lever, till the two points of slit focusing level with the cross-ring target, and yellow cross measurement target becomes thick and green, press the measurement button, when the measuring light flashing (the screen refreshed in black in moment), it shows the measurement over (the patient no need to see clearly the object-image during measuring, the measurement result same accuracy). The measurement result will be displayed on screen. (Figure.25) .



(Figure.25)

Shift the sliding body to right side, repeat the above steps, measure the patient's left eye.

Both eyes measurement over, pupil distance will be displayed automatically on the corresponding position. Choose whether or not to print the measurement results according to settings (auto printing or data output transmission over, the data on screen will be automatically cleared).

### 9.3.2 Child measurement mode



To measure children or the patients with pupil fibrillation, select child mode (Touch 7.9 key, the right small humanoid icon becomes green). (Figure 26)



(Figure.26)

### 9.3.3 Measurement error prompt

During measurement, if the patients found having eyelid ptosis, eyelash disturbance, cataract, microcoria, keratopathy, corneal vertex and pupil center noncoincidence, the error prompt will appear on screen when the instrument can't measure normally, please select the manual measurement mode or force measurement mode (long press the measurement button). (Figure 27 28).



(Figure 27)



(Figure 28)

## 10. COMMON TROUBLE SHOOTING

### 10.1 Power indicator light not work

Check and confirm whether the local power fits to the instrument, whether the power plug loose, or whether the fuse damaged (in case this happen, please replace the same specified fuse)

### 10.2 Chinrest not lift

Check whether the chinrest lift to limit position

### 10.3 Printer can't work regularly

Check whether the printing paper is finished (in case this happen, red indicator



light on panel will flash). Or whether the print setting is correct, and whether there is the measurement data (no data, not print)

#### **10.4 Sliding body not flexible**

Check whether the stage fixing lever placed at right position, or whether other sundries go into the slide slot

#### **10.5 Press measurement button, but no data appear**

Check whether the patient pupil smaller than 2mm, whether the eye position seriously incorrect, whether the cross measurement target aligns with the patient pupil (the target becomes thick and green), or whether the patient eyeground seriously diseased

#### **10.6 Measurement light not work**

When the measurement over, the measurement light will automatically turn off. Sway the sliding body, it will turn on automatically

#### **10.7 If other problems appear, please contact the local agent or original manufacturer**

- If the fault phenomenon listed in the common trouble shooting can't be resolved, please contact the original manufacturer or local agent to repair.
- Please provide us with the following information:
  - Instrument name and model number
  - Instrument serial number
  - Fault phenomenon (detailed as possible)

##### **(1.) Accessory maintenance limitation**

Providing maintenance accessories to maintain the instrument functions during the instrument lifetime

##### **(2.) Processing of instrument**

- To be disposed carelessly of the instrument and accessories will pollute the environment
- Please contact the professional waste disposal company or local dealer before disposing this instrument

### **11. PACKAGING, TRANSPORTATION, STORAGE**

Storage condition between -25°C and +40°C, transportation condition between -40°C and 70°C, relative humidity between 30% and 75%, air pressure between 86kpa and 106kpa

(1.) Packing list, certificate and manual are included in the packing box

(2.) The product packaging is not allowed to be shipped with flammable, explosive, corrosive products. Loading should be neat, stable and firm, super high and overweight is not allowed. In transit, rain and snow prevention, anti sun, anti impact, drop prevention should be noted carefully.

(3.) The product packaging should be stored in a room temperature, dry and well ventilated warehouse, and can't be stored with chemical agents, acid and alkali substances, and other harmful substances.

### **12. ENVIRONMENTAL PROTECTION**

The instruments that have be scrapped, should be strictly deposited in accordance with the requirements of local laws and regulations

### **13. ENCLOSURE ACCESSORIES**

Number	Specification	Quantity
1	User's Manual	1
2	Dustproof Cover	1
3	Lens Dustproof Piston	1
4	Model Eye	1
5	Power Line	1
6	Chinrest Paper	1
7	Cleaning Cloth	1
8	Printing Paper	1
9	Fuse	2
10	Chinrest Pin	2



## Technical Parameter

### SPECIFICATIONS:

- Sphere  
0.00~-19.00 Diopters, step: 0.25,0.5,1,3  
0.00~+16.75 Diopters, step: 0.25,0.5,1,3
- Cylinder:  
0.00~±8.75 Diopters, step: 0.25,0.5,1,3
- Cylinder Axis: 0° to 180° , step: 1° ,5°
- Prism form:  
Base up, base down, base in, base out
- Near distance:  
Mechanical converging with an optical axis at 30 to 40 in front of eye
- Binocular balance:  
Rotary prism, polarizing filter and R & G fliter
- Cross cylinder: ±0.25D
- PD: 50 to 80mm in 1 and 0.5mm step
- Retinoscope: +2.00D or +1.50D both sides
- Corneal alignment  
12 to 20mm by 2mm step
- Field of view 35°
- Power source: AC 110-120V/220-240V, 50/50Hz, 90VA
- Dimension: 350 (W) x300 (H) x80 (D) mm
- Net weight: 4kg
- Power supply: AC 110-120V or 220-240V 50/50Hz
- Horsepower: 60w



®  
**KF-ZD6000**  
**Auto-Phoropter**

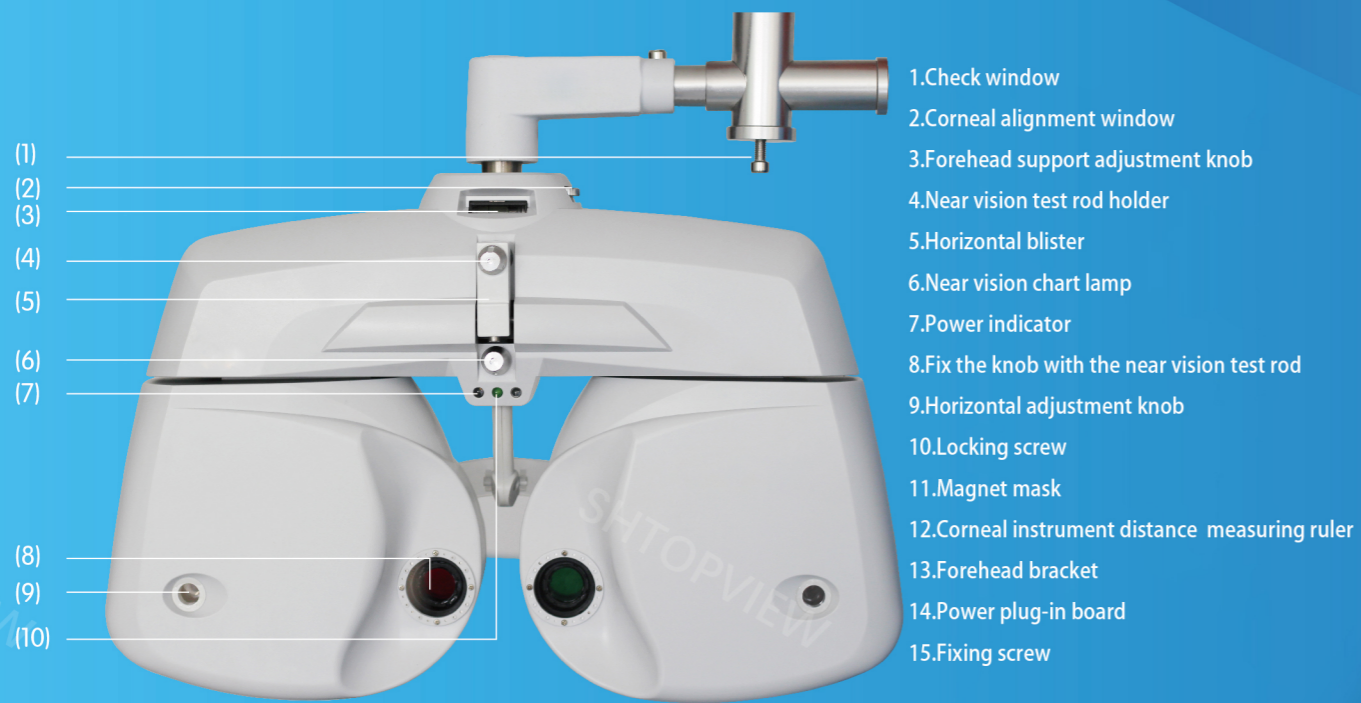




# KF-ZD6000

## Auto-Phoropter

Bluetooth wireless communication provides flexible operation space for optometrists  
 Simple operation interface provides efficient and convenient optometry experience  
 Innovative design, tablet control, designed for fashion stores  
 Support personalized programming, which is conducive to the unified optometry standard of chain stores



1. Check window
2. Corneal alignment window
3. Forehead support adjustment knob
4. Near vision test rod holder
5. Horizontal blister
6. Near vision chart lamp
7. Power indicator
8. Fix the knob with the near vision test rod
9. Horizontal adjustment knob
10. Locking screw
11. Magnet mask
12. Corneal instrument distance measuring ruler
13. Forehead bracket
14. Power plug-in board
15. Fixing screw



### Main interface function display



### Spherical mirror step adjustment



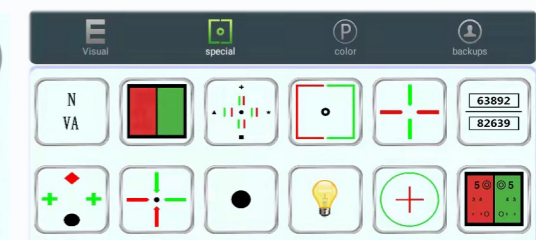
### Color weakness inspection area



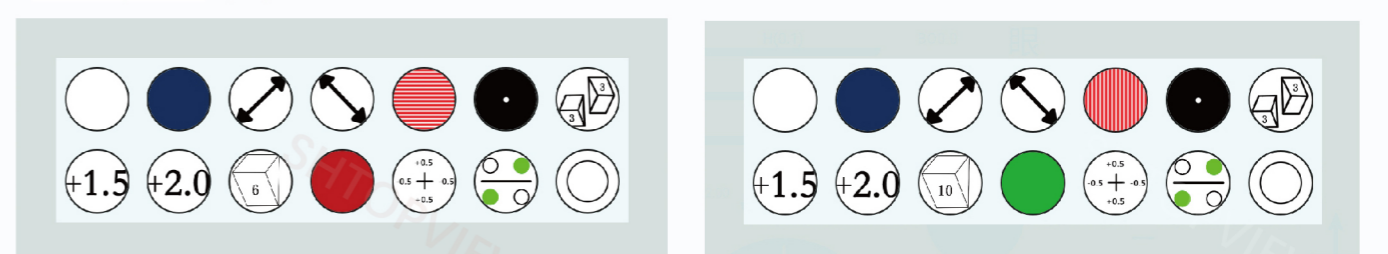
### Cross column mirror adjustment



### Functional visual display area



### Auxiliary lens display area



COMPUTERIZED VISION TESTER  
OPERATOR' S MANUAL

KF-ZD6000

## **Operation environment of optometer control software**

Function description of optometer control software optometer control software is a tablet control software based on Android system. It controls the optometry system to perform specified operations, interacts with customers, carries out optometry analysis and diagnosis, and finally generates optometry report and provides corresponding Glasses Prescription. Through the WiFi module, the optometer control software takes the tablet computer as the center, and forms the isolated units in the traditional optometry system, such as the operation end, the optical head, the computer optometer, the liquid crystal visual acuity chart and the prescription printer, into a WiFi LAN, which realizes the real-time data transmission and forms an organic whole. Through the way of WiFi communication, the more rapid and stable lens combination control of the optometer is realized, the accurate and rapid combination of spherical lens power, cylindrical lens power, axial position and prism power is realized, and the fast switching of special auxiliary lenses is realized: the optometry of the computer optometer is quickly read and loaded; Realize the sensitive and reliable control of LCD visual acuity chart: realize the reliable output of printing information of prescription printer. The optometrist control software provides a more comprehensive, convenient and powerful optometry and auxiliary system for optometrists. Through the touch operation of the tablet computer, the rapid optometry lens combination switching operation is realized: by providing a user-defined program editing system, some optometrists' optometry experience can be saved in the form of program steps, which greatly improves the optometry efficiency: by enriching and perfecting the operation of the liquid crystal visual acuity chart, the visual acuity chart can be directly switched to the specified state, The flexible control operation of LCD visual acuity chart is realized, and the user-defined visual acuity chart editing function is introduced to greatly improve the efficiency of optometry: the optometry results are completely saved and shared in real time by establishing a customer data database, so as to push the traditional optometry to the Internet data age. The optometer control software gives a new interpretation of the traditional optometry process, integrates the advanced mobile terminal into the modern optometry system, and integrates the ideas of optometrists' personality customization and the Internet data age, bringing a fast, fashionable and scientific optometry experience.

**Kingfisher manufacture CO,.LTD.**



## 1. Introduction

Computerized vision tester is used to subjective examination of visual acuity and refractive error of subject's eyes.

### 1.1 Classify

Model number: KF-ZD6000

Security category: I class Medical electrical equipment

### 1.2 Storage and transport environment conditions

a) temperature:  $-10^{\circ}\text{C}\sim 55^{\circ}\text{C}$

b) Air pressure:  $700\text{hpa}\sim 1060\text{hpa}$  (transport),  $500\text{hPa}\sim 1060\text{hPa}$  (storage)

c) Humidity:  $10\%\sim 85\%$

### 1.3 Working environment condition

a) temperature:  $10^{\circ}\text{C}\sim 40^{\circ}\text{C}$

b) Air pressure:  $800\text{hpa}\sim 1060\text{hpa}$

c) Humidity:  $10\%\sim 80\%$

### 1.4 Power adapter requirement

a) input: AC  $100\text{--}240\text{V}\sim 50\text{--}60\text{Hz}$

b) output: DC  $24\text{V}2.5\text{A}85\text{VA}$

## 2. Main performance index

### 2.1 Measurement range

a) Sphere:  $+16.75\text{D}\sim -19.00\text{D}$ ;

b) Cylinder:  $0\sim -6.00\text{D}$ ;

c) Axis:  $0\sim 180^{\circ}$  ;

d) Prism:  $0\Delta\sim 20\Delta$ ;

e) Prism base:  $0\sim 360^{\circ}$  ;

f) PD range:  $50\sim 80\text{mm}$ ;

### 2.2 Step

a) Sphere:  $0.25\text{D}/0.5\text{D}/1.0\text{D}/3.0\text{D}$ ;

b) Cylinder:  $0.25\text{D}$ ;

- c) Axis:  $1^\circ / 5^\circ$  ;
- d) Prism: 0.1cm/m;
- e) Prism base:  $1^\circ$  ;
- f) PD range: 0.5cm;

### 2.3 Tolerance

- a) The tolerance of sphere should accord with the requirement table 1.1

**Table 1.1 sphere tolerance**

item	Standard	tolerance	Tolerance $ s_1-s_2 $
球镜度 $\ddot{O}$ (D)	$0 \leq  \ddot{O}  \leq 3.00$	$\pm 0.06$	0.03
	$3.00 <  \ddot{O}  \leq 6.00$	$\pm 0.09$	
	$6.00 <  \ddot{O}  \leq 9.00$	$\pm 0.12$	
	$9.00 <  \ddot{O}  \leq 12.00$	$\pm 0.15$	
	$12.00 <  \ddot{O}  \leq 15.00$	$\pm 0.18$	
	$15.00 <  \ddot{O} $	$\pm 0.25$	

**Table 1.2 Astigmatic power tolerance**

Meridian direction  Maximum absolute  dioper	Astigmatic power nominal diopter				
	$\leq 0.50$	$>0.50 \sim 1.00$	$>1.00 \sim 3.00$	$>3.00 \sim 6.00$	$>6.00$
Tolerance D					
0.00~5.00	0.06	0.06	0.06	0.09	0.12
>5.00~10.00			0.09	0.12	0.18
>10.00~15.00		0.09	0.12	0.18	0.25
>15.00			0.12	0.18	0.25

Table 1.3 Cylinder axis and prism base tolerance

item	Nominal diopter (Absolute)	Tolerance
Cylinder axis	$>0D \sim 0.25D$	$\pm 5^\circ$
	$>0.25D \sim 1D$	$\pm 3^\circ$
	$>1D$	$\pm 2^\circ$
Prism base	$\leq 1\text{cm/m}$	$\pm 5^\circ$
	$>1\text{cm/m} \sim 10\text{cm/m}$	$\pm 3^\circ$
	$>10\text{cm/m}$	$\pm 2^\circ$
PD&VD (mm)	VD	$\pm 0.5$
	PD	$\pm 0.5$

Table 1.4 optical center tolerance of mechanical system of sphere and cylinder combinative optical system

Nominal diopter(Absolute)D	Tolerance (cm/m)
0.00	0.12
>0.00~6.00	0.25
>6.00~12.00	0.37
>12.00	0.50

## 2.1 Function introduction

2.1 The minimum aperture of all lenses of the optometer shall not be less than 16mm; For prisms of 6cm / M and above, the minimum luminous aperture can be reduced to 11mm.

2.1.2 There are mirror eye distance monitoring windows on both sides of the instrument of the comprehensive optometer. Through the mirror eye distance monitoring window, it can be observed that a dividing plate is engraved with a long line and three short lines, and the spacing between two adjacent lines is 2mm. The position of the anterior apex of human cornea should be on the long line of the dividing plate, which is the reference plane of the instrument of the comprehensive optometer.

2.1.3 The comprehensive optometer shall be equipped with a covering and splitting device, and each system shall be equipped with a Jackson cross column mirror;

2.1.4 There is no stray light interference or structural occlusion in

the observation optical path of the optometer.

2.1.5 The structure of lens cavity shall not affect the examination of patients' visual function;

2.1.6 When the lens and accessories are fixed in front of the observation hole, the instrument shall be aligned and centered.

2.1.7 The operation keys of the optometer shall be clearly marked. When pressing the keys, the instrument function or state shall change to normal.

2.1.8 When the optometer has WiFi function, the communication is effective at 10m.



## 3 Security considerations

### 3.1 Security identity

In this manual, the words used to indicate the degree or level of safety alarm are defined as follows:

**Warning:** indicates a potentially dangerous situation that, if not avoided, may result in death or serious injury

**Note:** it indicates a potential dangerous situation. If it cannot be avoided, it may lead to slight or medium injury or property loss. Under certain conditions, even if the situation is attention, it may lead to serious injury. Therefore, safety precautions must be strictly observed at all times

Safety precautions before use

#### **warning**

1. Make sure the optometer is fixed on the support arm of the
2. If the optometer drops or falls, it may cause personal injury or equipment failure.
3. Ensure that the power box is installed and placed vertically according to the method shown in Figure 1 in 1.2 classification in this manual.

#### **caution**

1. Safety precautions and operating procedures must be thoroughly understood before using the equipment

2. Unexpected use may lead to unexpected failure or adverse results.

3. The equipment shall not be exposed to rain, water or fog. Do not place containers containing liquid or gas on the top of the instrument.

4. The storage environment shall not be in dusty, hot, humid places or direct sunlight

5. Do not carry the equipment to another place alone, which may damage the back or slide the equipment

6. Install the equipment on a stable and horizontal table. If the equipment slips, it may cause injury or equipment damage Do not install equipment where there is water. Contact with liquid may cause electric shock or equipment failure

7. Please install the equipment in an environment that meets the following conditions. The following conditions must also be met in the use of the equipment.

a) temperature:  $10^{\circ}\text{C} \sim 40^{\circ}\text{C}$

b) Air pressure:  $800\text{hpa} \sim 1060\text{hpa}$

c) Humidity:  $10\% \sim 80\%$

Installation position: dust-free and clean dark light room

Place free from vibration and impact

8. Be sure to adjust the horizontal refractometer before use.

If the refractometer is not installed horizontally, it may affect the accuracy of the data. The level adjustment knob is used to calibrate the refractometer until the foam concentration is at the level.

9. Be sure to use sockets that meet the requirements of equipment voltage parameters. If the voltage is too high or too low, the equipment cannot operate normally, and the fault may cause fire

10. To avoid the risk of electric shock, the equipment must be connected to the power supply with protective grounding.

11. Do not overload the socket, which may cause fire

12. Fully insert the power plug into the socket.

13. Improper connection may cause fire.

14. Do not use any power cord other than equipment, which may cause failure or fire.

15. Do not place heavy objects on the power cord.

15. Damaged power cord may cause fire or electric shock.

16. When installing and operating the equipment, observe the following EMC instructions (electromagnetic compatibility):

It cannot be used together with other electronic equipment to avoid electromagnetic interference between equipment operation and other electronic equipment

It cannot be used in the same room with other equipment, including life support equipment, other equipment that has a significant impact on the patient's life and treatment results, and measuring or therapeutic instruments containing small current

It cannot be used simultaneously with the equipment of portable and mobile radio frequency communication systems, because the electromagnetic interference they emit may adversely affect the operation of the device.

Do not use cables and accessories not specified by the company, which may increase the electromagnetic wave emission of the equipment or system and reduce the anti electromagnetic interference ability of the device. If there is potential electromagnetic interference between the equipment and other equipment, shielding measures shall be taken or the installation position of the equipment shall be changed to reduce the possible interference

## Maintenance and inspection

Any repair and service of this instrument must be provided by personnel trained by Hangzhou Jingfei Optical Instrument Manufacturing Co., Ltd. Be able to operate correctly and maintain by experienced personnel or dealers. Removing the safety screw may cause the instrument to separate from the support arm and cause serious injury. Do not open the outer cover of the instrument or try to repair any internal parts. Any maintenance and service of the equipment must be carried out by experienced staff of Hangzhou Jingfei Optical Instrument Manufacturing Co., Ltd. or authorized distributors trained by Hangzhou Jingfei Optical Instrument Manufacturing Co., Ltd

The adjustment of the instrument must be carried out by the technical service personnel or other authorized personnel of Hangzhou Jingfei Optical Instrument Manufacturing Co., Ltd

The use and operation of the optometer must be in strict accordance with the instructions in the user's Guide. If it is not used in the way specified by Hangzhou Jingfei Optical Instrument Manufacturing Co., Ltd., the patient's safety and the normal operation of the instrument will not be guaranteed

Do not use solvent or strong cleaning solution on any part of the instrument, otherwise the instrument may be damaged

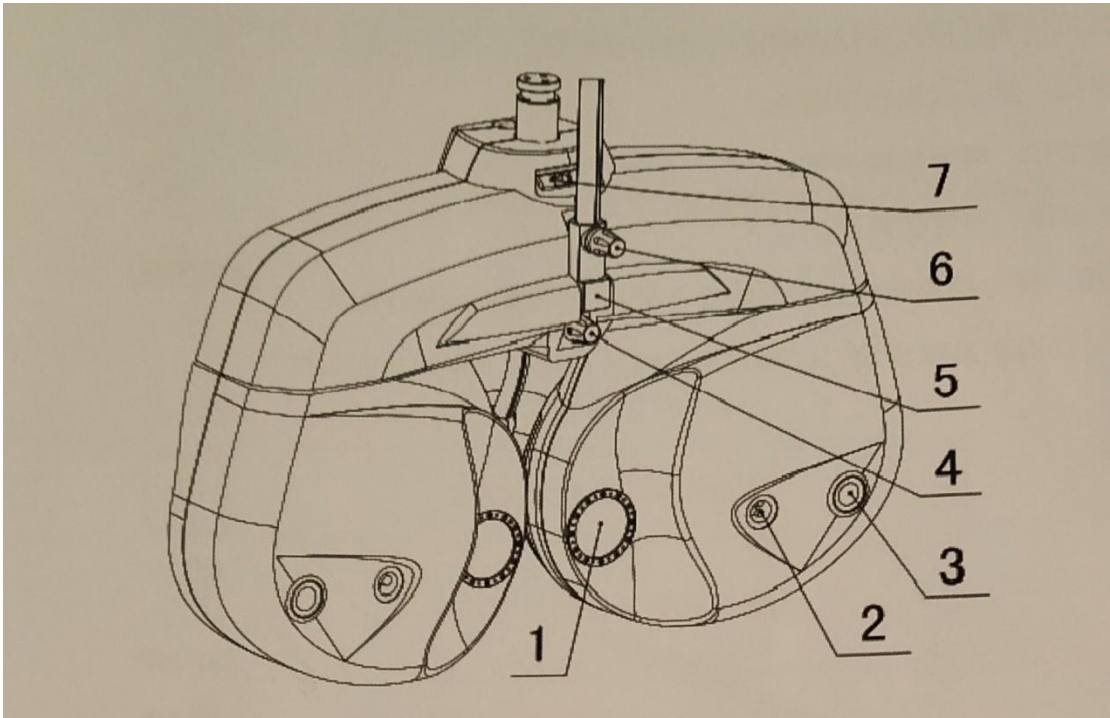
Do not use organic solvents such as paint thinner to clean the outside of the equipment, which can damage the surface of the equipment

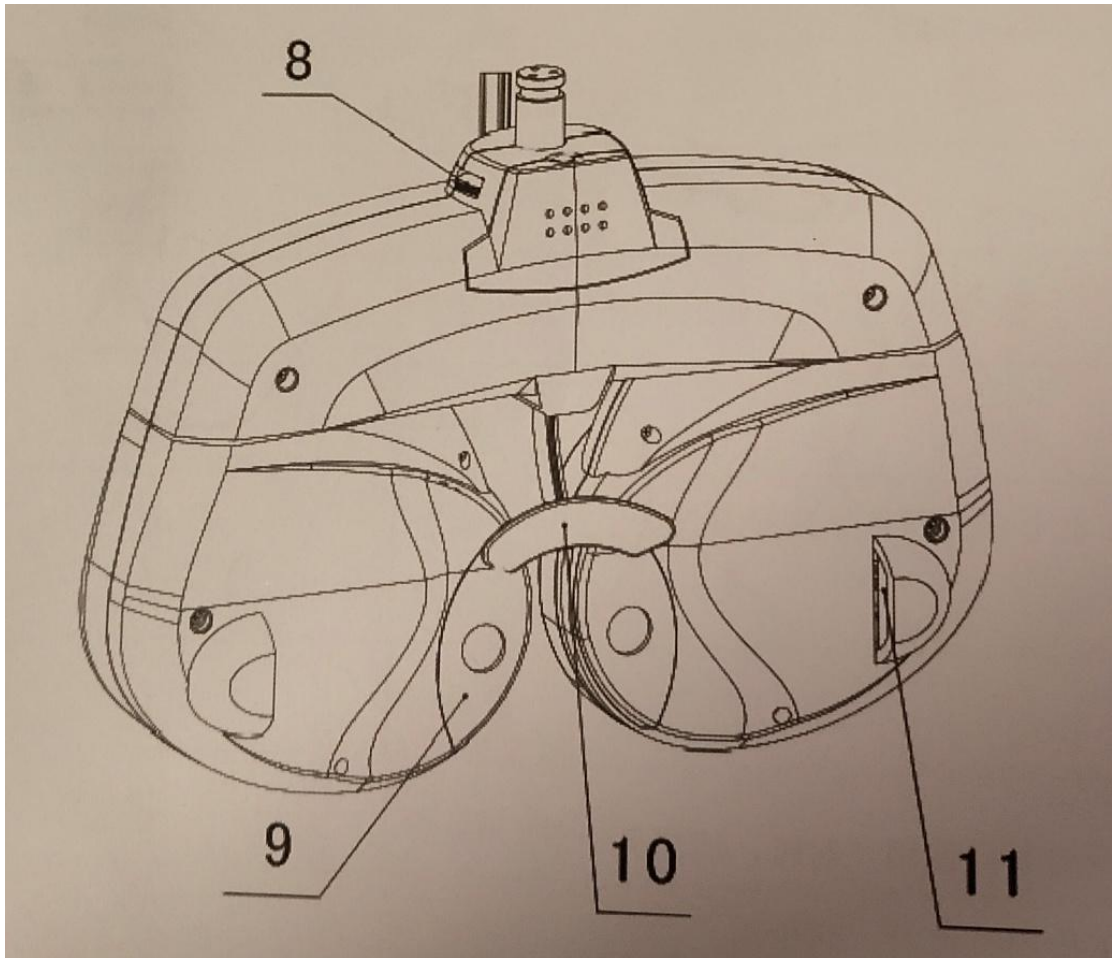
Do not immerse the optometer in liquid, otherwise it will cause damage to the instrument.

Avoid touching the optical components of the instrument to prevent performance degradation caused by fingerprints or oil stains on the lens group. Note: pixels may occasionally disappear or appear red, blue or green pixels on the screen. This does not mean that the LCD panel is broken: it is caused by the LCD screen in the production process.

## 4. Configuration

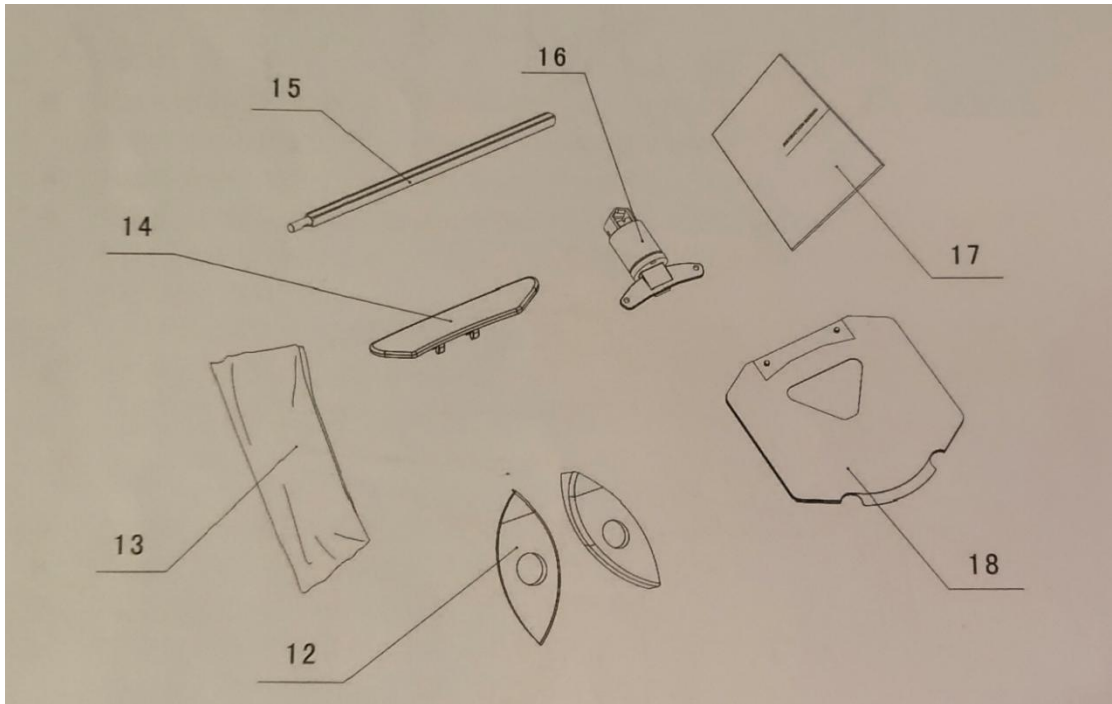
### 4.1 Refractor head con figuration





- (1) Examination window: The patient's eyes are observed through the window, and patient observe charts through the window.
- (2) Near vision illumination: Light up when bear vision testing, light off when far vision testing.
- (3) Corneal aligning windows: The position of patient's cornea can be observed through the window.
- (4) Forehead rest adjust knob: Moves the forehead rest forward and backward in order to adjust the VD.
- (5) Near-point rod holder: the near\_point rod is inserted and attached here.
- (6) Near\_point rod clamp screw.....Fix the near-point rod.
- (7) spirit level..... Used to confirm that the refractor head.
- (8) Leveling knob.....Adjust the level of the refractor head.
- (9) Forehead rest magnet.....Fix the face shield.
- (10) forehead rest .....The patient's forehead rests here when test.
- (11) Cornea alignment scale.....Measures the VD.
- (12) Face shield(2sets)..... Attached to the instrument to put the patient's face in place, use one while the other is being sterilized
- (13) Dust cover..... Covers and protects the instrument body from Dust and dirt during storage.





(14) Forehead rest (2 sets) .....The patient's forehead rests here.

Detachable by a touch use one while the other is being sterilized  
 (15) Near-point rod.....The card holder is attached at the near point examination

(16) Card holder.....The near-point card is attached

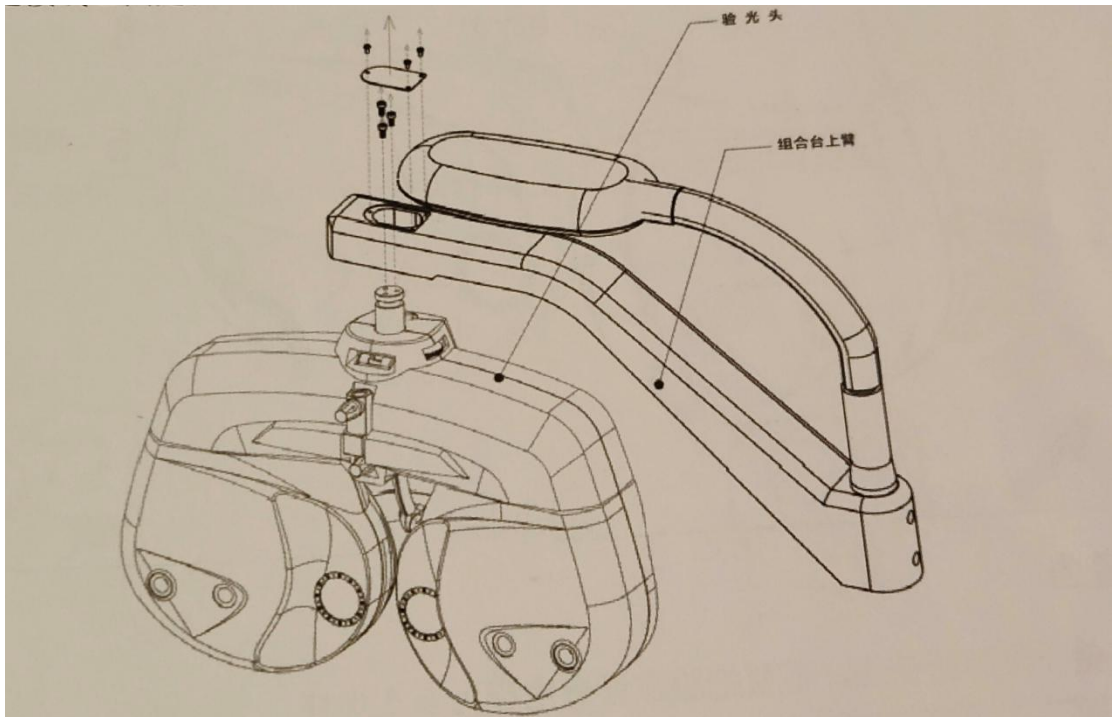
(17) Operator's manual.....Describes instructions about handling the instrument

(18) Near-point card.....Contains the near-point charts, for testing the near vision

(19) Dust cover.....used for dust prevention of instruments during storage

## 5. Ready use

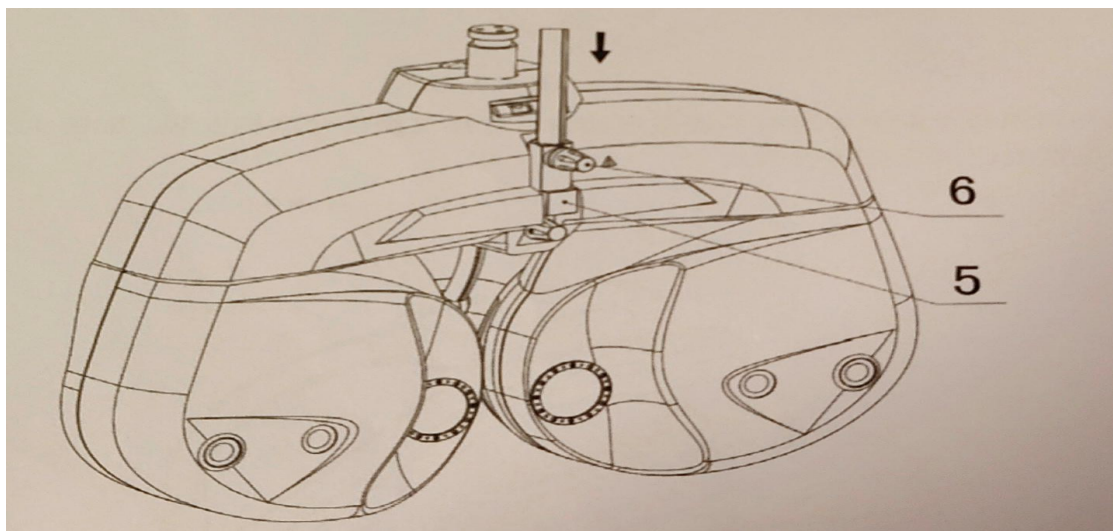
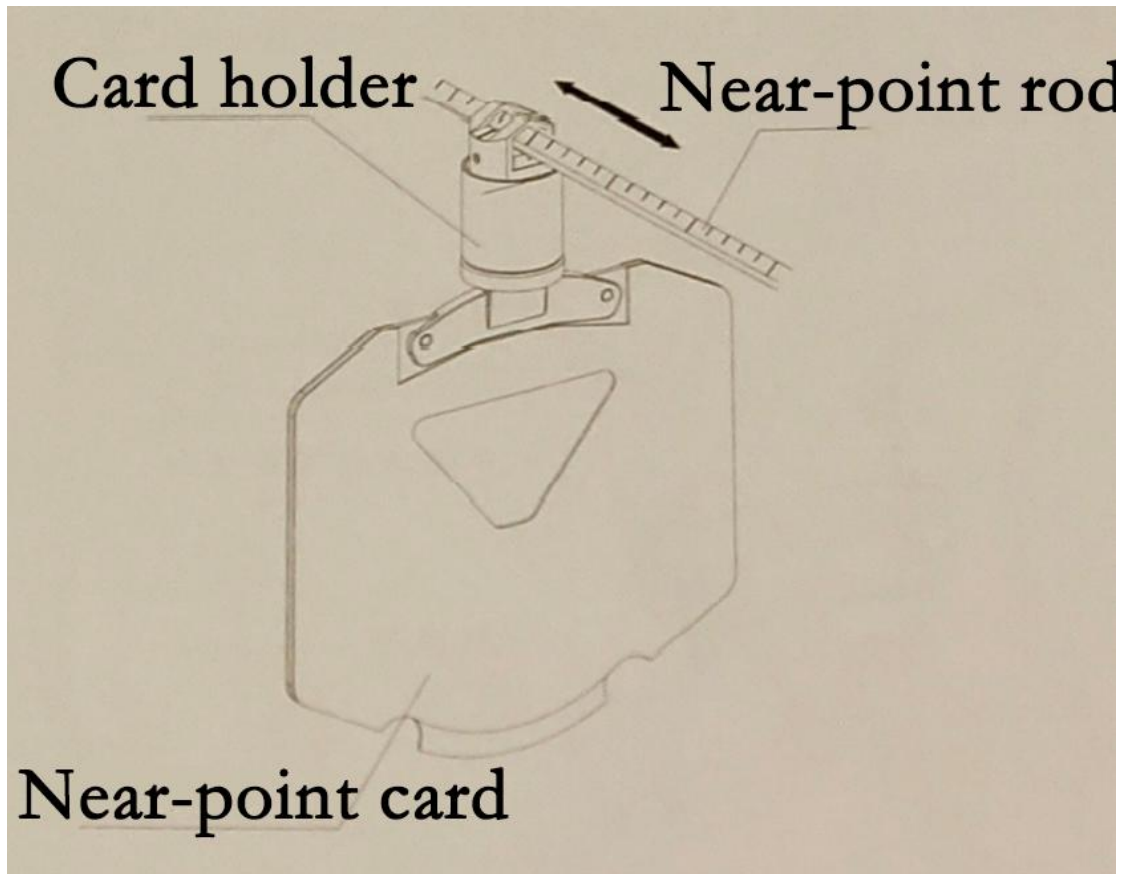
### 4.1 Setup connection of the device.



It shall be installed by professional personnel of the company or personnel trained and authorized by the company

It shall be used together with other supports or other combination tables, and the connectors provided by the company shall be equipped during installation. As shown in the figure, it is fixed on the support or other combined arms. After the main engine is connected, adjust the horizontal adjustment knob to adjust the main engine to maintain its level. The forehead support is facing the patient.

Installation of near vision chart



Before using the instrument, the supporting rod of the visual acuity chart, the clamp seat of the near visual acuity chart and the near visual acuity chart shall be installed first

Insert the near vision chart holder into the top of the support rod. The clamp seat shall be able to slide with the extension rod.

## Tablet application interface and function introduction

Main interface: operation program the main interface is divided into three parts: optometer operation and data display area, LCD visual acuity chart operation area and system status and menu area. The layout of the main interface and the distribution of the above three parts in the main interface are shown in the figure.



### Optometer operation and data display area

The optometer operation and data display area are shown in the figure below.

FAR    RESET    PRINT    SAVE    TIP    HELP

R I G H T	0.00	S(0.25)	0.00	L E F T
	0.00	C-(0.25)	0.00	
	180	A(1)	180	
	BI0.0	H(0.1)	BO0.0	
	BD0.0	V(0.1)	BU0.0	
	+0.00	ADD	+0.00	

R:32.00    PD:64.0    L:32.00

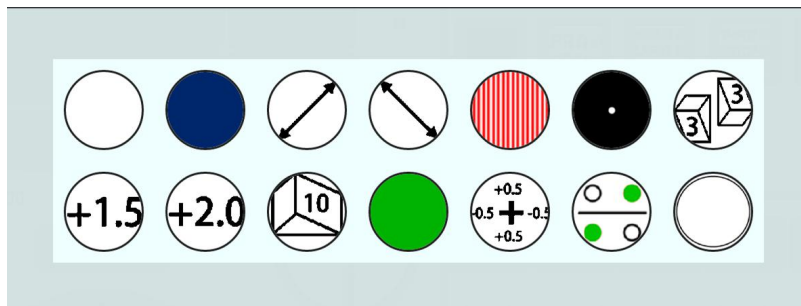
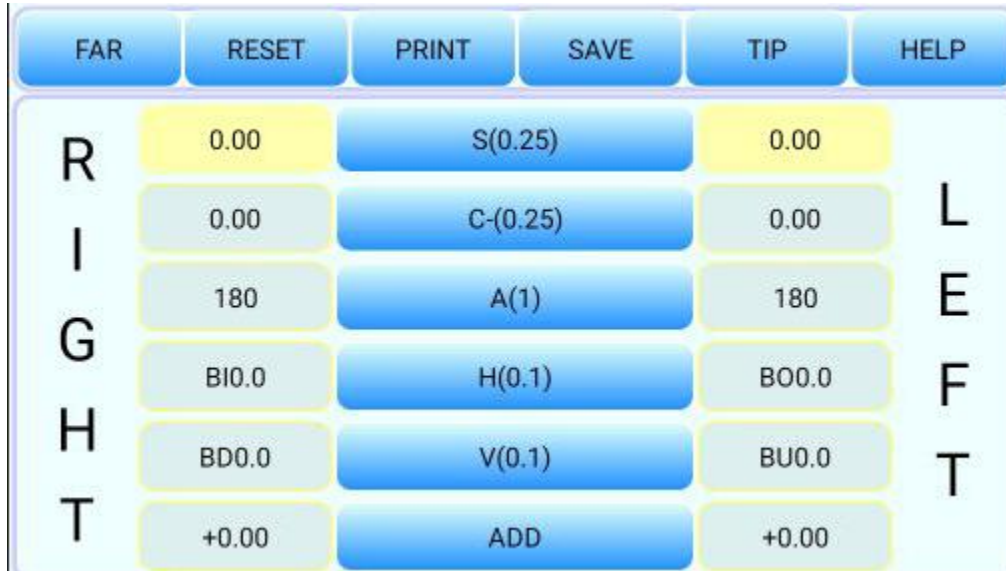
ADD    M1

SUB    M2

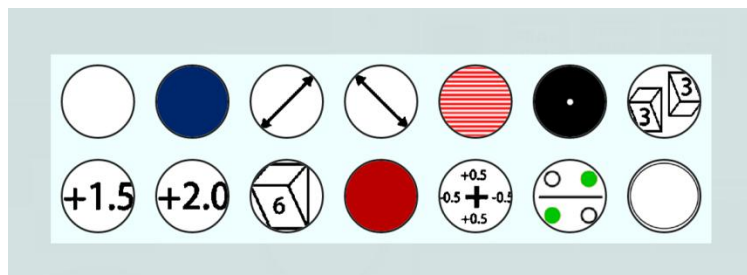
The data display area of the optometer mainly has two functions.

1. Display of lens parameters of optometer
2. Realize the selection of project status and parameters of refractometer

The detailed block of the optometer is shown in the figure below:

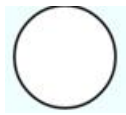


Left eye auxiliary lens selection interface



Right eye auxiliary lens selection interface

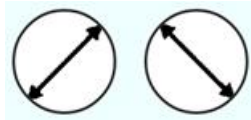




Open aperture



Shading plate



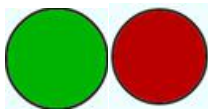
Linear polarizer



Vertical Markov rod



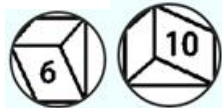
Horizontal Markov rod



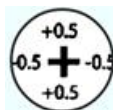
Left eye green filter right eye red filter



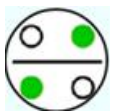
Pinhole plate



Left eye 10  $\Delta$  prism right eye 6  $\Delta$  prism



Fixed cross column lens



Crossed column mirror



Circular polarizer

Instrument operation

Fog inspection

1、 The spherical mirror degree of the right eye is manually set at a place + 3.00d higher than the approximate degree, because the

customer's current right eye degree is  $-1.00d$ , which becomes  $+ 2.00d$  after adding  $+ 3.00$

2、 At this time, the visual acuity value should be lower than 0.1. Manually project a visual acuity icon, and then gradually adjust the degree to reduce the spherical lens degree by 0.25D, from  $+ 200D$  to  $+ 1.76d$ , and then to  $+ 500$  until his visual acuity value is about 0.5.

3、 Call up the radiation vision chart radiation vision chart and ask the customer "do you have any lines that look particularly clear? If the customer answers "all look the same", it means that there is no astigmatism. After the measurement, if the customer answers "one line looks particularly clear", multiply  $30^\circ$  by the small number of the line that looks the most clear. This value is a negative correction value. For example, if the third line looks clear, it is  $3 \times 30^\circ = 90^\circ$

4、 Adjust the astigmatism axis, adjust the astigmatism, transfer from 0 to  $-0.25$ , and then adjust to  $-0.50$  until every line is clear.

5、 Change the ball mirror in gear 1 of 0.25D.

The customer has myopia, and the spherical lens degree is  $-1.75d$ . After general inspection, his degree is shown in the figure below.

## Accurately check the astigmatism axis position and degree

one Manually select the point group sight mark, and the cross cylindrical mirror is automatically applied to the right eye; Or cross the cylindrical lens from the auxiliary lens, with a single line of sight, or press M1 or M2 directly into the cross column mirror. Automatically jump to a, and first accurately measure the astigmatism axis position.

two Precise astigmatism axis position: press M1 or m2 to exchange both sides of the cross column mirror, so that the customer can distinguish which side to see more clearly under the payment request. If M1 is clearer, it is allowed to press the plus button above the button. If M2 is clearer, it is necessary to press the minus button above the button, and the equipment will automatically change the astigmatism axis position. After pressing, repeat the above steps by pressing M1 and M2 until they think that the clarity of both sides is almost the same, and then the accurate astigmatism can be obtained.

three Accurate astigmatism degree: after accurate astigmatism axis position, press C (-) to accurately calculate the astigmatism degree (keep the right cross column mirror state). Press M1 or m2 to change both sides of the cross column mirror, so that the customer can distinguish which side he sees more clearly. If M1 is clearer, press the plus button above the button. If M2 is clearer, press the minus button above the button, The device automatically changes the astigmatism. After pressing, repeat the above steps by pressing M1 and M2 until they think that the clarity of both sides is almost the

same, and then the accurate astigmatism can be obtained. When the astigmatism degree is changed, the equipment can automatically carry out ball column linkage, that is, the column mirror is changed to  $\pm 0.50dc$ , the ball mirror is automatically changed to  $\pm 0.25ds$ , and the result is:  $-0.50dc \times 100^\circ$

four After the accurate measurement of astigmatism axis position and astigmatism degree is completed, it will be removed automatically according to any visual acuity charts (0.25) cross cylindrical mirror

**Accurately measure whether there is any deviation in the sphericity**

(red and green test is used in this method. If the red and green test is not applicable to any customer, whether there is deviation can be



determined directly according to the visual acuity)

Project red and green icons and ask the customer which word in the red and green picture can be seen more clearly. The customer says that the green is slightly clearer, which means that myopia is over corrected, so the spherical mirror degree is increased, + 0.25D. Or press the Add button directly, and the equipment will automatically complete the increase, and then ask the customer. His answer in red is a little clearer, which means that myopia is not corrected, increase -0.25d, or press the decrease button directly, and the equipment will automatically complete the decrease. It indicates that the degree of the customer should be between -1.50d and -1.75d, and whether it is high or low should be selected according to the requirements and purpose of the customer's glasses. The screen displays.

# COT- vision chart projector

## Technical Specifications

Visual mark	33 options
Visual beacon selection speed	Average 0.3 seconds
Cover plate	1 open 5 vertical line 5 horizontal line 21 single letter
Filter	Red / Green
Projection distance	2.7m ~ 7.0 m(standard is 5m)
Projection magnification	30x (at 5m)
Projection size	φ252mm, 330mm (W) x 225mm (H) (at 5m)
Tilt angle	Ball joint (± 10 degrees)
Light bulb	6V 30W (halogen), 2000 hours service life, 6V 10W LED
Power Supply	AC100~120V 50/60Hz AC200~240V 50/60Hz
Power	50VA
Auto Power Off	After 5 minutes
Overall dimension	Host: 265 (H) x 230 (W) x 360 (d)mm Remote control: 20 (H) x 64 (W) x 195 (d)mm
Net weight	Main engine: 6.0kg; Remote control: 180g 1 polarized metal mesh (400mmx350mm)
Enclosure	2 spare fuses 2 No. 7 batteries
Purchase accessories	Platen frame, wall frame, vertical frame, zoom lens, screen angle fixing Kit
Interface	RS232



## *vision chart projector*



# **AUTO CHART PROJECTOR**



## **OPERATION HANDBOOK**





**CONTENTS**

<b>INTRODUCTION</b>	<b>1</b>
<b>PACKAGE CONTENTS</b>	<b>1</b>
<b>CLASSIFCATIONS</b>	<b>2</b>
<b>DESIGNATED SYMBOLS</b>	<b>2</b>
<b>SAFETY INSTRUCTIONS</b>	<b>3</b>
<b>INSTRUMENT COMPONENTS</b>	<b>4</b>
<b>INSTALLATION</b>	<b>5</b>
<b>FOCUSING</b>	<b>5</b>
<b>OPERATION INSTRUCTIONS</b>	<b>6</b>
<b>CHARTS DESCRIPTION</b>	<b>7</b>
<b>MAINTENANCE</b>	<b>8</b>
<b>BASIC TROUBLE SHOOTING</b>	<b>10</b>
<b>TRANSPORTATION</b>	<b>10</b>
<b>TECHNICAL SPECIFICATIONS</b>	<b>11</b>

## INTRODUCTION

Congratulations for purchasing of Auto Chart Projector.

In the area of subjective refraction, the Auto Chart Projector is best used for measuring visual acuity. It is fully recommended that you carefully read, understand and follow the steps in this manual in order to ensure safe operation, optimum performance and a longer service life from your new instrument. Please retain this manual for future reference.

## PACKAGE CONTENTS

Auto Chart Projector Auto Chart Projector and accessories were carefully checked and packed prior to the shipment. However, please check condition and contents upon delivery.

In addition to Auto Chart Projector, this shipment includes:

Polarized Metal Screen ( 400mm × 350mm )	1 PC
Power Cord	1 PC
Remote Control	1 PC
Spare fuses (2A,250V)	2 PCS
AAA type batteries	2 PCS

## CLASSIFICATIONS

### [ Classification under the provision of 93/42/EEC(MDD) ] Class I

Auto Chart Projector is classified into Class I system.

### [ Protection method against electric shock ] Class I

Auto Chart Projector is classified into Class I instrument.

Class I instrument in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution with the provision of the instrument to the protective earth conductor in fixed wiring of the installation in such a way that any accessible conductive parts cannot become live in the event of a failure of the basic insulation.

### [ Degree of protection against ingress of liquids ] IPX0

Auto Chart Projector is the ordinary instrument (enclosed instrument without protection against ingress of liquids).

Be careful not to splash water on the instrument.

### [ Degree of protection against flammability ]







Auto Chart Projector is classified as an equipment not suitable to be used in a Potentially flammable anesthetic mixture with air or with oxygen or nitrous oxide.

Do not use near flammable materials.

### [ Mode of operation ]

Continuous operation

## DESIGNATED SYMBOLS

	This symbol indicates that the degree of protection against Electric shock is for Type B Instrument.		This symbol on the main switch indicates that the power is ON.		This symbol on the main switch indicates that the power is OFF.
	This symbol indicates a fuse.		This symbol indicates a protective earth.		<b>CAUTION</b> This symbol indicates that important operating and maintenance instructions are included in this User's Guide.



# SAFETY INSTRUCTIONS

- **⚠ AT OPERATION**

Never disassemble or touch the inside of the instrument. This may result in an electric shock or instrument malfunction.

Never yank the power cord to disconnect from wall outlet but hold the plug while disconnecting. This can weaken the metal core of the cord and may result in a short circuit or an electric shock.

- **AT STORAGE**

Do not store the instrument in a place where it may get wet or where poisonous gas or liquid is stored.

Avoid storing the instrument in an area with excessive heat, humidity, or dust.

Recommended ranges:

Temperature range within	-10°C to 70°C
Relative humidity range within	30% to 85%
Atmospheric pressure range within	500 to 1060hPa

- **AT INSTALLATION**

Do not install the instrument near water. If water gets into the internal structure, there is the possibility of electrical Shock or instrument malfunction.

Install the instrument in a stable and level place where vibration or shock does not occur.

The instrument may not perform observation correctly or may malfunction.

Also, if the instrument is tripped over because of any accidental shock, it may result in possible injury.

- **⚠ AFTER USE**

If the instrument is not be used for a long time, disconnect the power cord from the wall outlet. Otherwise, it may cause a fire.

Remove batteries from the battery case of the remote controller when the remote controller will not be used for a long time.

- **AT DISPOSAL**

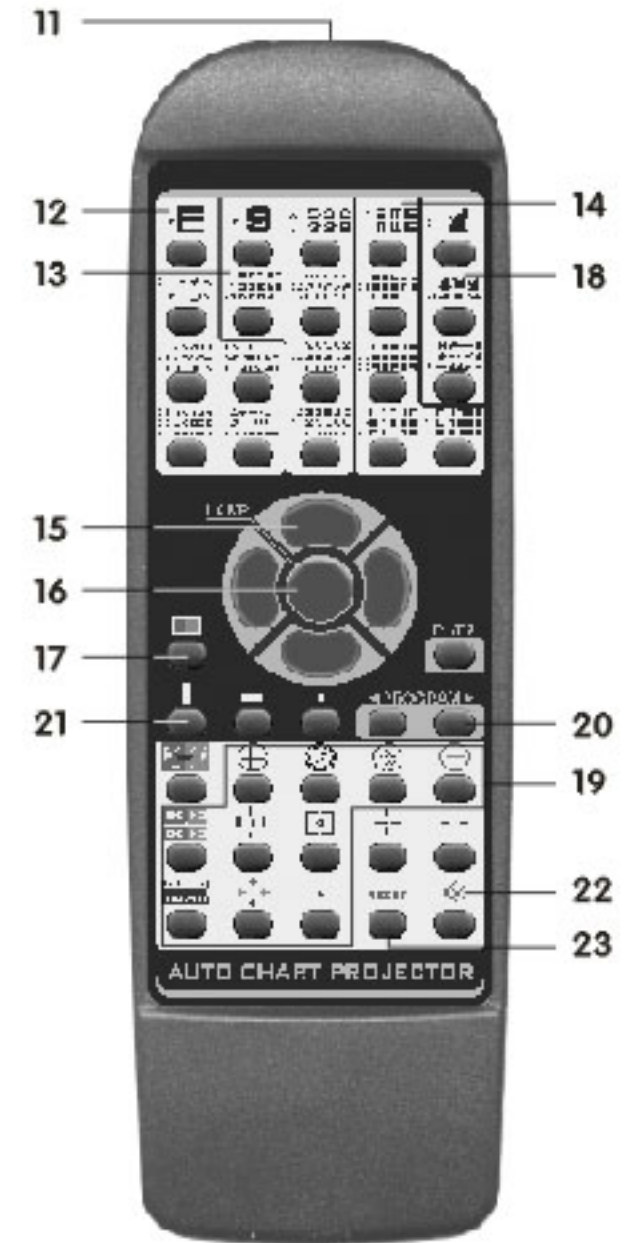
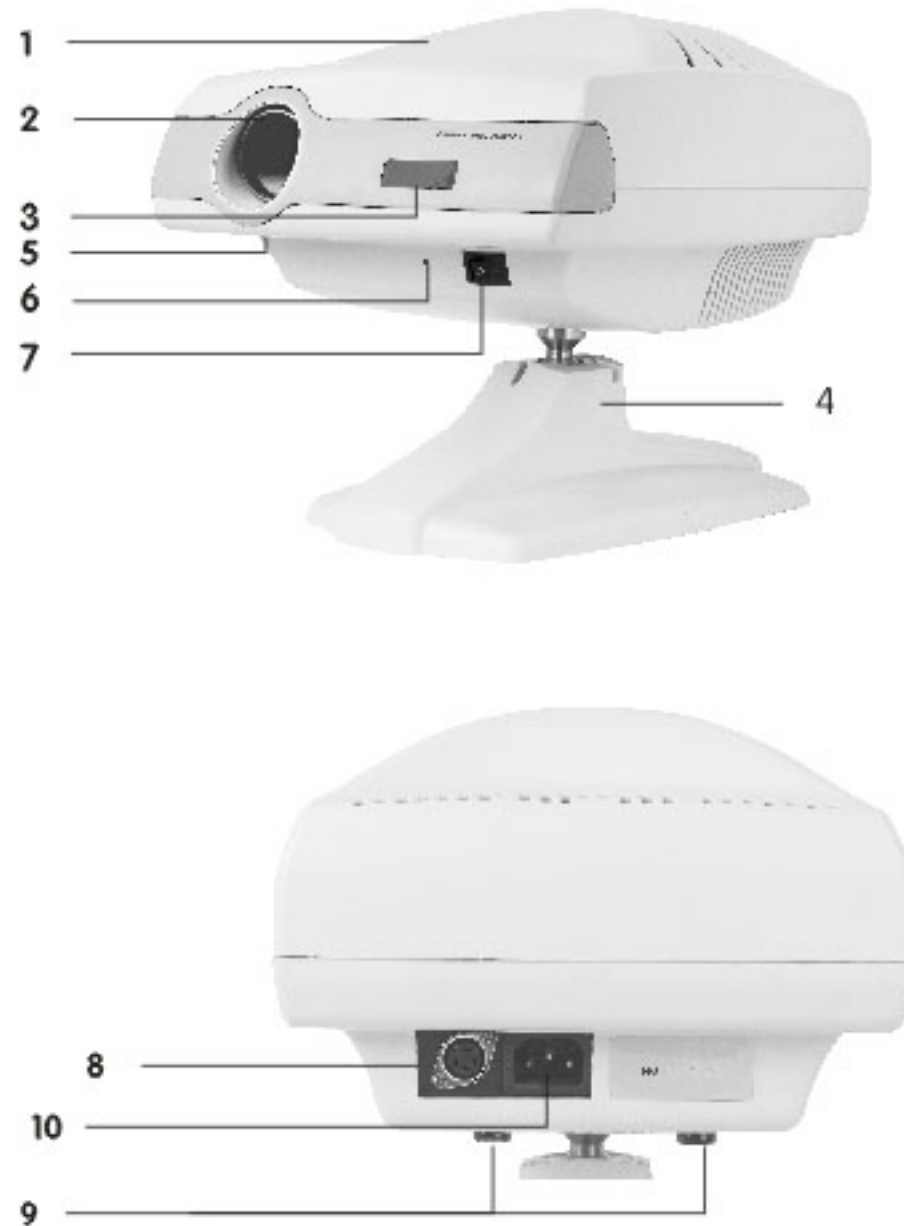
Follow local governing ordinances and recycling plans regarding disposal or recycling of device components.

Check the specified disposing method for the specific waste in advance, especially when disposing the batteries used in the remote controller.

When disposing packing materials, sort them by the materials and follow local governing ordinances and recycling plans.

# INSTRUMENT COMPONENTS

1. Upper Case
2. Projection Lens
3. Window for remote detection
4. Table stand
5. Focusing Wheel
6. Pilot Lamp
7. Power Switch
8. RS-232C Connector
9. Fuse Holders
10. Power Connector
11. Infrared ray transmitter
12. Alphabet chart buttons
13. Number chart buttons
14. Illiterate E chart buttons
15. Program buttons
16. Lamp ON/OFF button
17. Red / Green button
18. Children chart buttons
19. Vectograph chart buttons
20. Direction buttons
21. Vertical, horizontal, single letter Mask buttons
22. Buzzer
23. Reset



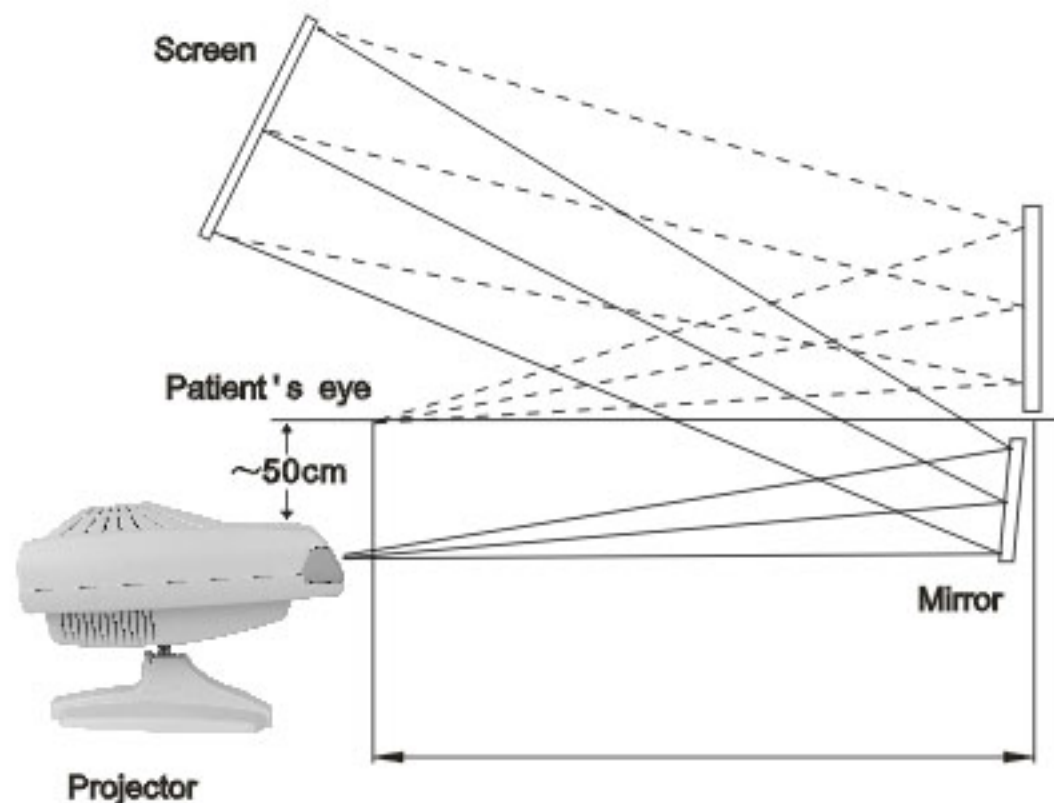


## INSTALLATION

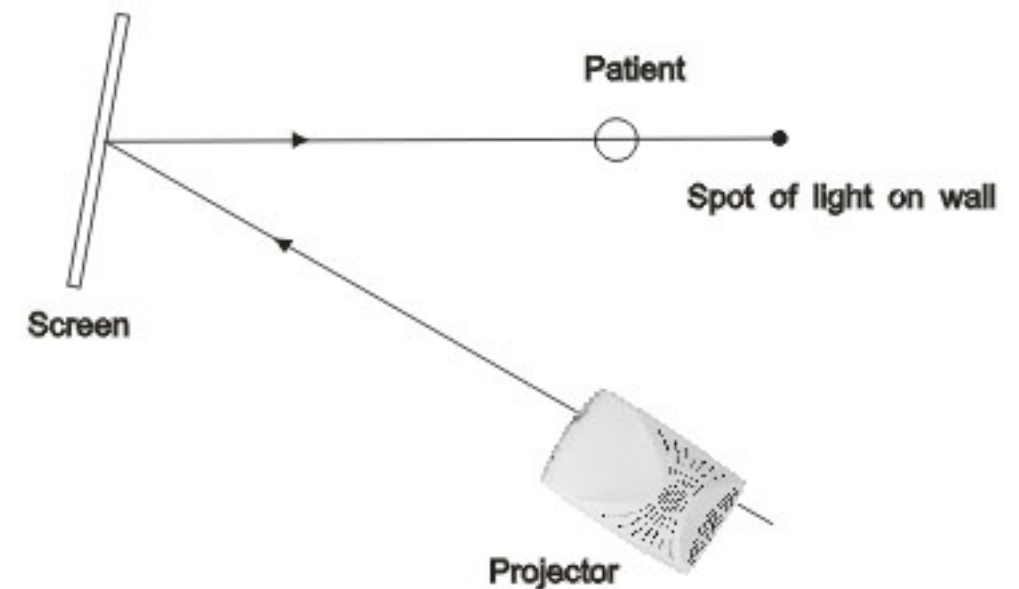
The Auto Chart Projector should be installed according to the following procedures:

- 1.If using a wall mount, it is best to locate a wall stud to support the weight of instrument.
- 2.Determine the refracting distance (from the patient's eye to the screen) and install the projection screen.
- 3.Position the instrument at the same distance from the screen to the patient within the range between 2m and 7m.

To obtain longer refracting distances in small rooms, a mirror or systems of mirrors can be used in this case, a high quality front surface mirror is required.



- 4.Check the three-dimensional alignment of the system. The instrument is optimized when the projection screen is angled to direct light to the patient's head. Place a mirror on the screen. The light should project where the patient's head would be.



## FOCUSING

To obtain the correct focus:

- 1.Measure the distance from the patient to the screen (refracting distance).
- 2.Turn the Auto Chart Projector on, and using the remote control, project the 0.05 "E" onto the screen.
- 3.If using a wall mount, it is best to locate a wall stud to support the weight of instrument.
- 4.Adjust the position of the instrument forward or backward for sizing.
- 5.Adjust for sharpness and clarity by turning the focusing wheel left or right as needed.

# OPERATING INSTRUCTIONS

















## 1. Turn the power switch of the instrument on.





The projection lamp light and the chart for 0.05 vision shall be viewed in 3 seconds.

## 2. Changing the chart


Press the appropriate chart button the remote controller on. The charts have 33 selections


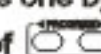


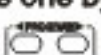

## 3. Isolating the visual acuity chart

- To use Vertical line masking : Press 
  - ▲To move the position right or left : Press  or 
  - ▲To move the position up or down : Press  or 
- To use Horizontal line masking : Press 
  - ▲To move the position right or left : Press  or 
  - ▲To move the position up or down : Press  or 
- To use Single letter masking : Press 
  - ▲To move the position right or left : Press  or 
  - ▲To move the position up or down : Press  or 
- To use Red/Green filter : Press 
- To release masking and filter : Press any chart button

	0.2
	0.3
	0.4
	0.2
	0.3
	0.4
	0.2
	0.3
	0.4
	0.2
	0.3
	0.4

## 4. Programmed operation

There are two programs for selection, which are Program "P1" and "P2" . Be sure to press  to turn off the lamp before program selection.

- To install Program "P1"
  - 1) Keep pressing the left button of  for 2-3 seconds and release the button upon hearing a beep sound;
  - 2) Press the charts needed to store one by one, with a limit of at most 30 charts;
  - 3) Keep pressing the right button of  for 2-3 seconds to store selected charts and release the button upon hearing a beep sound;
  - 4) Press  to turn on the lamp and exit programming.
- To install Program "P2"
  - 1) Keep pressing the right button of  for 2-3 seconds and release the button upon hearing a beep sound;
  - 2) Press the charts needed to store one by one, with a limit of at most 30 charts;
  - 3) Keep pressing the left button of  for 2-3 seconds to store selected charts and release the button upon hearing a beep sound;
- Programmed Operation
  - 1) press 

The first chart in the program will be viewed and the programmed operation started. ( Press the button once again to switch over between P1 and P2)
  - 2) Press the left of right button to change charts.

## 5.Reset


















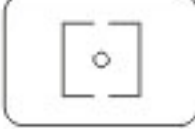

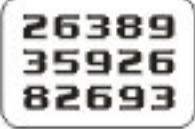
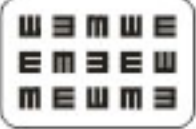










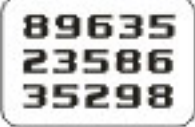
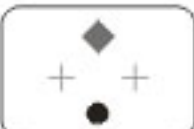
Press RESET button  to re-position charts to "0.05E".

## 6.Mute

Press the button  to switch over between mute and sound states.



## CHARTS DESCRIPTION

Letters	Number	Illiterate	Children	Schober	Phoria
 0.05	 0.05	 0.1 0.15	 0.1		
 0.1 0.15	 0.1 0.15	 0.2 0.3 0.4	 0.2 0.4	<b>Binocular Balance</b> 	<b>Phoria With Fixation</b> 
 0.2 0.3 0.4	 0.2 0.3 0.4	 0.5 0.6 0.7	 0.6 0.8 1.0	<b>Duochrome Balance</b> 	<b>Coincidence Vertical</b> 
 0.5 0.6 0.7	 0.5 0.6 0.7	 0.8 0.9 1.0	<b>Cross lines</b> 	<b>Cross Cylinder Dots</b> 	<b>Minute Stereo</b> 
 0.8 0.9 1.0	 0.8 0.9 1.0	 1.2 1.5 2.0	<b>Red/Green</b> 	<b>Astigmatic Clock Dial</b> 	<b>Fixation</b> 
 1.2 1.5 2.0	 1.2 1.5 2.0		<b>Worth For Dot</b> 		

# MAINTENANCE

⚠ Risk of electric shock. Always disconnect the power cord from the wall and the instrument Prior to performing any of the following procedures.

## ● Maintenance

There is no periodic or routine user maintenance required.

## ● Cleaning

There are no cleaning requirements other than regular office housekeeping, such as dusting.

### ▲Cleaning the main body

#### <Projection lens>

- 1) Blow dusts with a blower brush.
- 2) If it is not clean enough, wipe with lens cleaning paper.

#### <Cover and Screen>

- 1) Wipe with a dry and soft cloth.
- 2) If for some reason the instrument becomes soiled, wipe it with the damp lint-free cloth and mild detergent. Then, wipe off with a dry cloth to finish.

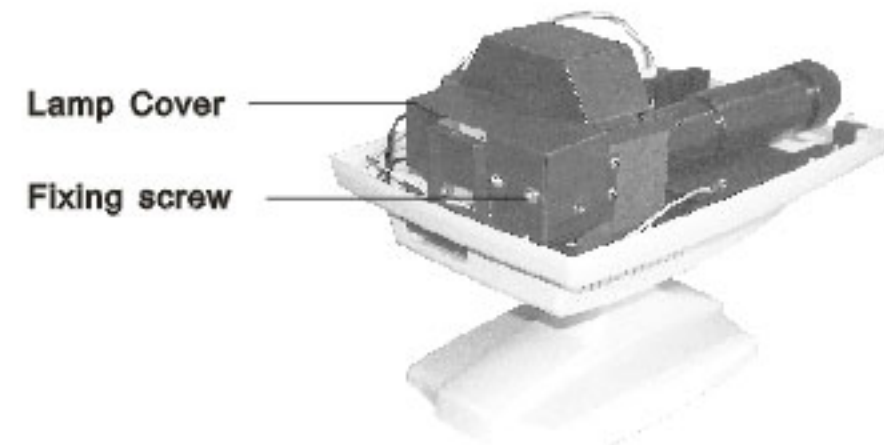
## ● Disassembling the upper case

- 1) Turn off the power and pull out the power cord.
- 2) Unfasten the screw in counterclockwise at the back side of case.
- 3) Disassemble the Upper Case by lifting it.
- 4) In case of reassembling, place the upper case on the main body and adjust the front position. Then, fasten the screw in clockwise.

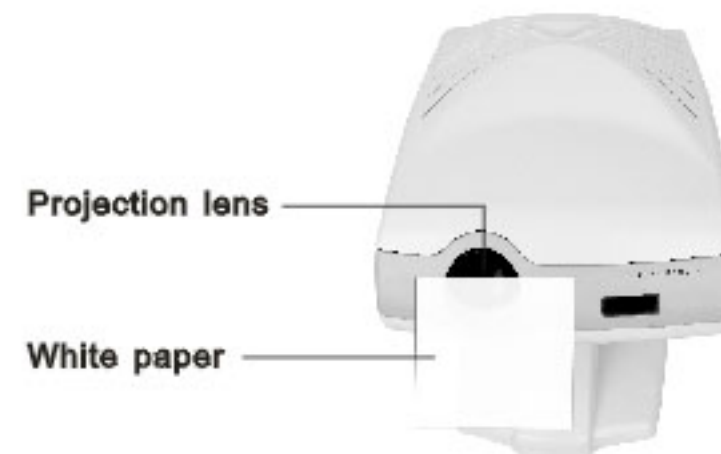
## ⚠ ● Replacement of lamp

The lamp may be HOT! Do not touch the Lamp directly and allow the sufficient amount of time to cool down the heat.

- 1) Unfasten the screw at the Lamp Cover.
- 2) Disassemble the Lamp Cover by lifting it and pull out the Lamp.

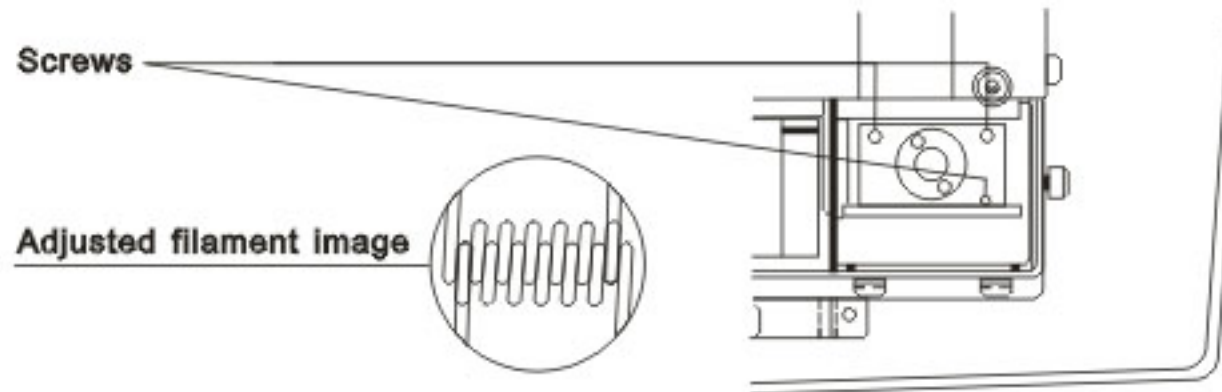


- 3) Place the new Lamp at the hole of Lamp Holder.
- 4) Turn on the power switch.
- 5) Place the white paper in front of the projection lens in order to project the filament image of lamp.



## MAINTENANCE

6) Adjust the filament image at the center of paper with the screw at the lamp plate. (Note: Do not look into the lamp directly)



7) Place the Lamp Cover and fasten the screw.

8) Turn the power switch off.

### ● Replacement of Fuses

- 1) Turn off the power switch and disconnect the power cord.
- 2) Push and turn the fuse holder a quarter counterclockwise with your finger and remove it.
- 3) Pull out the fuse from the fuse holder and check the condition.
- 4) Replace the fuse with the provided spare or equivalent as specified below.

VOLTAGE	FUSE
100V~120V	2A 120V; T2AL
200V~240V	2A 250V; T2AL

5) Simply return it with the fuse holder to the socket. Push and turn it a quarter clockwise to lock.



## BASIC TROUBLE SHOOTING

**Note:** Risk of electric shock. Always disconnect the power cord from the wall and the instrument prior to performing any of the following procedures.

- **If the instrument does not function at all:**

- 1) Check the facility power source.(Circuit Breakers)
- 2) Check the electrical connections.(Power Cord)
- 3) Check the main fuse located on the rear of the unit.

- **If the projector lamp dose not light:**

- 1) Check the main ON/OFF Switch.
- 2) Replace the lamp with the spare lamp.

⚠ The lamp may be HOT! Do not touch the Lamp directly and allow the sufficient amount of time to cool down the heat.

- **If the projector turns on but does not function:**

Check the batteries in the remote control.

## TRANSPORTATION

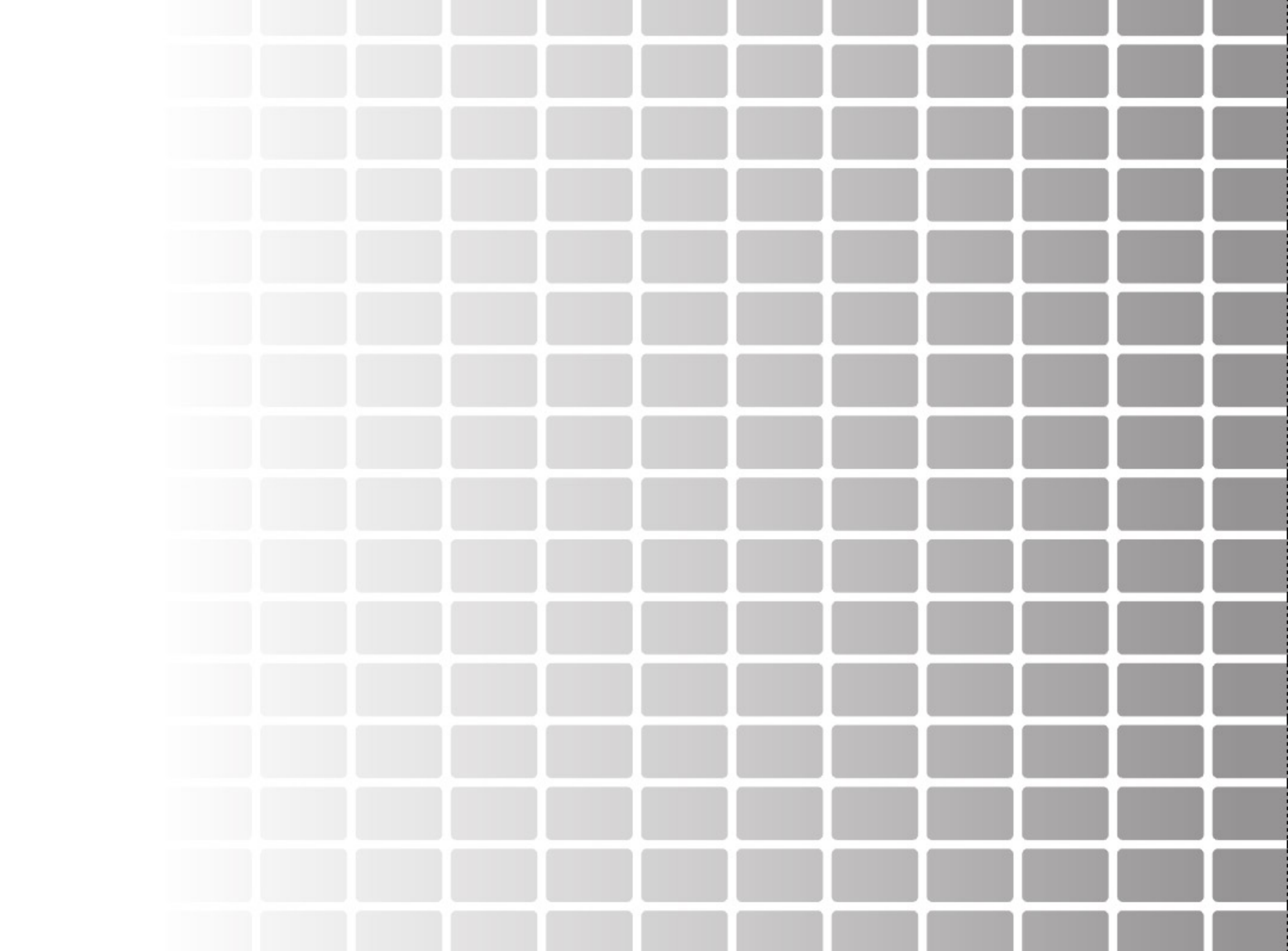
1. Make sure the instrument is disconnected from the power source.
2. If the instrument was installed on a custom mount, please remove the unit from the mount.
3. Pack the instrument in a sturdy carton with suitable packing materials.
4. After packing, do not hurl and impact cause of breakable goods.

Do not use this machine near by other machines or electric bulb (ex.Halogen lamp),It will improperly operate on the effect of electronic waves.



## TECHNICAL SPECIFICATIONS

<b>Chart</b>	33 Selections				
<b>Chart selection speed</b>	Average 0.3 sec.				
<b>Mask</b>	1 open	5 horizontal lines	5 vertical lines	21 single letters	
<b>Filter</b>	Red / Green				
<b>Projection distance</b>	2.7m ~ 7.0m ( 5m is standard )				
<b>Projection magnification</b>	30X ( at 5m )				
<b>Projection size</b>	φ 252mm and 330mm(W) × 225mm(H) (at 5m )				
<b>Tilt angle</b>	Ball joint ( ± 10 degree )				
<b>Lamp</b>	8V 5W LED/6V 20W (Halogen), 2,000 hrs lifetime				
<b>Power source</b>	AC 90-240V 50/60HZ				
<b>Power consumption</b>	50VA				
<b>Auto-OFF function</b>	after 5 minutes				
<b>Dimensions</b>	Main body: 265(H) × 230(W) × 360(D)mm Remote controller: 20(H) × 64(W) × 195(D)mm				
<b>Net weight</b>	Main body: 6.0 Kg		Remote controller: 180g		
<b>Accessories</b>	Polarized Metal Screen ( 400mm × 350mm )		1 PC		
	Spare fuses		2 PCS		
	AA A size battery		2 PCS		
<b>Optional accessories</b>	Table stand	wall bracket	floor stand	variable focus lens	screen angle fixing set
<b>Interface</b>	RS232				





**Fiscal Year 2022**

## **FDA Registration Confirmation**

**Manufacturer:** SHANGHAI TOP VIEW INDUSTRIAL CO.,LTD

**Address:** No.3388 GongHeXin Road,JingAn Shanghai , CN 200436

**US Agent:** Regrek LLC

**Address:** 19 Holly Cove Ln.,Dover, Delaware, 19901, UNITED STATES

**The facility registration and device listing information:**

**Registration Number:**3012707847 **Owner/Operator Number:** 10059986

**Device Listing#:** See annex

This attestation does not denote endorsement or approval of the attestation-holder's device or establishment by the U.S. Food and Drug Administration.

Pursuant to 21 CFR 807.39, "Registration of a device establishment or assignment of a registration number does not in any way denote approval of the establishment or its products. Any representation that creates an impression of official approval because of registration or possession of a registration number is misleading and constitutes misbranding." The U.S. Food and Drug Administration does not issue an attestation of registration, nor does the U.S. Food and Drug Administration recognize an attestation of registration.

  
Authorized Signature(s)

Signature:

Place: China/ Shanghai

Expiration Date: Dec. 31. 2021





# FDA Registration Confirmation

## ANNEX:

Listing No	Code	Device Name
D345115	HKO	Refractometer, ophthalmic (TPV800 handheld refractor; TPV series auto refractometer)
D345116	HKN	Refractor, manual, non-powered, including phoropter (phoropter)
D345117	HKZ	Sterilizer, tonometer (TPV500 tonometer)
D345118	PJZ	Camera, ophthalmic, general-use (Hand-held Fundus Camera; TPV series Digital Fundus Camera)
D345119	PUE	Biomicroscope, slit-lamp, AC-powered, exempt (TPV series slit lamp)
D345120	HRJ	Table, instrument, powered, ophthalmic (Ophthalmic unit)
D345121	HLM	Instrument, measuring, lens, ac-powered (TPV series lens meter)
D345122	HPA	Frame, trial, ophthalmic (trial frame)
D345123	HPC	Set, lens, trial, ophthalmic (trial lens set)
D345124	HOX	Chart, visual acuity (visual charter)
D345125	HPT	Perimeter, automatic, ac-powered (perimeter)
D345341	HOS	Projector, ophthalmic (projector charter)
D345342	HLH	Pupillometer, manual (pupillometer)
D345343	HRM	MICROSCOPE, OPERATING & ACCESSORIES, AC-POWERED, OPHTHALMIC (operating microscope)



D345344	KZA	DEVICE, VEIN LOCATION, LIQUID CRYSTAL (vein finder)
D366893	HLJ	Ophthalmoscope, battery-powered (ophthalmoscope retinoscope)
D366894	MDM	INSTRUMENT, MANUAL, SURGICAL, GENERAL USE (ophthalmic surgical instrument)
D366895	MMQ	Topographer, corneal, ac-powered (cornealtopographer)

END OF THE ANNEX

 CEO  
Authorized Signature(s)

Signature:

Place: China/ Shanghai

Expiration Date: Dec. 31. 2021



# Alibaba.com verified Supplier



## Assessment Report

*Presented to*

**Shanghai Top View Industrial Co., Ltd.**

**上海拓扑威实业有限公司**

Gold Supplier & Assessed Company Relationship:	<input checked="" type="checkbox"/> Self-owned <input type="checkbox"/> Wholly Owned <input type="checkbox"/> Shareholder/Partner <input type="checkbox"/> Cooperation Partner
Company Address	Room 906, Yongding Plaza, No. 3388, Gonghe New Road, Jingan District, Shanghai, China
City / Country:	Shanghai / China
Consigner of Assessment:	Alibaba
Gold Supplier Member ID:	shtopview
Gold Supplier Company Name:	Shanghai Top View Industrial Co., Ltd.
Contact Person:	Mr. Tao Shangguan
Phone Number:	0086-21-61178155
Fax Number:	N/A
Email:	info@shtopview.com
Website Address (URL):	<a href="https://shtopview.en.alibaba.com">https://shtopview.en.alibaba.com</a>

*Service Provided by Intertek*

*Report No.: 22069995\_T*







Alibaba.com Verified Supplier  
Assessment Report

Report No.: 22069995\_T

Report Number:	22069995_T	Assessment Type	Trading Assessment
Date of Assessment:	31/Aug./2021	Report Date:	31/Aug./2021
Assessor's Name:	Zad Zhang	Validity Period:	01/Sep./2021 - 31/Aug./2022
Reviewed By:	Mack Long	Online Verification:	<a href="https://www.intertek.com.cn/ASVService/Home/IndexCN">https://www.intertek.com.cn/ASVService/Home/IndexCN</a>

**Important Notes:**

**Intertek's Disclaimer:**

This report reflects our findings for the particularly concerned company on the date of our service only. This report does not discharge or release the factory/sellers/suppliers from their commercial, legal or contractual obligations with buyers in respect of products provided by the factory/sellers/suppliers. Any reader other than the party for whom this report has been specifically issued is hereby informed that the general conditions of service of contain liability limitation provisions.

**Alibaba.com's Disclaimer:**

This report has been independently prepared by a third party verification agency. The report is provided on an "AS IS" and "AS AVAILABLE" basis. The information contained in the report may change without notice and no obligation is assumed to update the information after publication. Alibaba (including its affiliates) is not involved in the preparation of the report. Publishing of the report by no means that Alibaba endorses or recommends the report. Therefore, Alibaba cannot be held responsible for any inaccuracy or omission in the report.

To the maximum extent permitted by law, Alibaba expressly disclaims any warranty, expressed or implied, in regard to the report, including any implied warranty of merchantability, fitness for a particular purpose or non-infringement. Your use of or reliance on this report will be at your own discretion and risk. To the maximum extent permitted by law, in no event shall Alibaba be liable for any party for any direct, indirect, punitive, incidental, special or consequential damage costs, expenses, legal fees or losses or any damages whatsoever arising out of or in any way connected with any use of the report even if advised of the possibility of such damages.

Report No:	22069995_T	Report date:	31/Aug./2021	Assessed By	Zad Zhang	
CONFIDENTIAL		All Rights Reserved			Page No:	2 of 25



## Contents

<b>Section 1: Company Overview.....</b>	<b>5</b>
1.1 Legal Validity.....	5
<b>Section 2: Human Resources .....</b>	<b>6</b>
2.1 Company Chart.....	6
2.2 Employee Headcount .....	6
2.3 Management.....	6
<b>Section 3: Current Export Situation .....</b>	<b>7</b>
<b>Section 4: Export Business Capacity.....</b>	<b>9</b>
4.1 Market Distribution (Previous 12 Months) .....	9
4.2 Main Clients.....	10
<b>Section 5: Quality Assurance .....</b>	<b>11</b>
5.1.1 Quality Management System Certification .....	11
5.1.2 Product Certification .....	11
5.2 Supplier Management .....	11
5.3 After Sales Service .....	12
5.4 Overseas After Sales Service.....	12
<b>Section 6: R &amp; D Capacity .....</b>	<b>13</b>
6.1 Current Situation .....	13
6.2 R&D Real Case Description.....	14
6.3 Design Process.....	15
6.4 Design Devices .....	15
<b>Section 7: Company Development / Expansion Plans .....</b>	<b>16</b>
<b>Section 8: Certification &amp; Photos .....</b>	<b>17</b>
<b>Section 9: Company and Product Samples .....</b>	<b>19</b>
<b>Section 10: Competitive Advantages .....</b>	<b>21</b>
10.1 Product Group Capacity .....	21

Report No:	22069995_T	Report date:	31/Aug./2021	Assessed By	Zad Zhang	
CONFIDENTIAL		All Rights Reserved			Page No:	3 of 25



10.2 Real Case for Lower MOQ & Lead Time .....21

10.3 Real Case for Large Contract .....22

10.4 Overseas after-sales service capacity.....22

10.5 After-sales service capacity .....22

**Section 11: Service Capabilities .....24**

11.1 Experience with Large-scale Procurement Contracts .....24

11.2 Overseas Showroom .....24

11.3 Offline Trade Show .....24

**Section 12: Supply Chain Capability .....25**

12.1 Centralized Procurement .....25

12.2 Overseas Warehouse .....25

Report No:	22069995_T	Report date:	31/Aug./2021	Assessed By	Zad Zhang	
CONFIDENTIAL		All Rights Reserved			Page No:	4 of 25



## Section 1: Company Overview

Company Overview			
<b>1.1 Legal Validity</b>			
Does the company have a valid business license?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Business License Number:	9131011506602810 2F
Year Established:	18/Apr./2013	Validity Period:	18/Apr./2013- 17/Apr./2033
Export Experience:	8 Years	Industry Experience:	8 Years
Registered Address:	Room 150, Building 3, No. 2558, Zhouzhu Road, Pudong New Area, Shanghai, China		
Company Address:	Room 906, Yongding Plaza, No. 3388, Gonghe New Road, Jingan District, Shanghai, China		
Is It Listed Company?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Company Stock Code:	N/A
Annual review conducted by the Industrial & Commercial Bureau?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Reviewed By:	Market Supervision Administration Bureau of Pudong New Area, Shanghai
Registered Capital:	RMB 2,000,000		
Corporate Representative:	Mr. Tao Shangguan		
Industry:	Optical Instrument		
Business Type:	<input type="checkbox"/> Manufacturer <input checked="" type="checkbox"/> Trading Company <input type="checkbox"/> Manufacturer & Trading Company		
Type of Ownership:	<input checked="" type="checkbox"/> Private Owner <input type="checkbox"/> Public Company <input type="checkbox"/> Joint Venture <input type="checkbox"/> Stated Owned <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Other		
Products /Service:	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer		
<b>1.2 Company Building Information</b>			
Certification Type: <input type="checkbox"/> Land Certification <input type="checkbox"/> Real Estate Certification <input checked="" type="checkbox"/> Lease Agreement <input type="checkbox"/> Factory Officer Claimed			
Total Building Size:	<u>326</u>	m2	
Office Size:	<u>326</u>	m2	



## Section 2: Human Resources

Human Resources				
2.1 Company Chart				
<pre>graph TD; GM[GM] --- Marketing[Marketing Dept.]; GM --- Sales[Sales Dept.]; GM --- Finance[Finance Dept.]; GM --- Admin[Admin Dept.];</pre>				
2.2 Employee Headcount				
Department Name	Full Time Employee(s)	Part-Time Employee(s)	Total	
GM	1	0	1	
Marketing Dept.	4	0	4	
Sales Dept.	8	0	8	
Finance Dept.	1	0	1	
Admin Dept.	1	0	1	
<b>Total Number:</b>	15	0	15	
2.3 Management				
Department	Name	Title	Education	Year(s) in Current Company
Confidential	Confidential	Confidential	Confidential	Confidential



### Section 3: Current Export Situation

Current Export Situation							
There are <u>8</u> foreign trading employee(s) in the company.							
Working Experience	Headcount	Accepted Language	Listening & Speaking	Reading & Writing			
Over 30 Years	0	English	Yes	Yes			
21-30Years	0	N/A	N/A	N/A			
11-20 Years	0	N/A	N/A	N/A			
6-10 Years	0	N/A	N/A	N/A			
2-5 Years	8	N/A	N/A	N/A			
Less than 2 years	0	N/A	N/A	N/A			
Does the company have a valid export license?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Export License Registration No.:			01314518				
Total Revenue (Previous Year, USD):			Confidential				
Total Export Revenue (Previous Year, USD):			c				
Estimated Export Revenue (Current Year, USD):			Confidential				
Trade Agents Employed Overseas:			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Nearest Port:			Shanghai Port				
Accepted Payment Terms			<input checked="" type="checkbox"/> FOB <input checked="" type="checkbox"/> CIF <input checked="" type="checkbox"/> EXW <input checked="" type="checkbox"/> CFR				
Accepted Payment Type:			<input checked="" type="checkbox"/> L/C <input checked="" type="checkbox"/> T/T <input checked="" type="checkbox"/> Credit Card <input checked="" type="checkbox"/> Cash <input checked="" type="checkbox"/> West Union <input checked="" type="checkbox"/> Money Gram <input checked="" type="checkbox"/> Paypal <input checked="" type="checkbox"/> Moneybookers				
Average lead time from product order confirmation to production delivery (products exiting the factory):							
Product Category	Num	Unit					
Auto Lens Meter	3	Days					
Slit Lamp	3	Days					
3D Auto Lens Edger	3	Days					
Rebound Tonometer	3	Days					
Auto Refractometer	3	Days					
Average Sampling Time							
Product Category	Lead Time						
Auto Lens Meter	3 Days						
Slit Lamp	3 Days						
3D Auto Lens Edger	3 Days						





Alibaba.com Verified Supplier  
Assessment Report

Report No.: 22069995\_T

Rebound Tonometer	3 Days
Auto Refractometer	3 Days
The Shortest Sampling Time	
Product Category	Shortest Lead Time
Auto Lens Meter	3 Days
Slit Lamp	3 Days
3D Auto Lens Edger	3 Days
Rebound Tonometer	3 Days
Auto Refractometer	3 Days



## Section 4: Export Business Capacity

Export Business Capacity			
4.1 Market Distribution (Previous 12 Months)			
Market	Main Product(s)	Revenue (USD)	Total Revenue (%)
North America	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5
South America	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	50
Eastern Europe	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	2
Southeast Asia	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5
Africa	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5
Oceania	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	2
Mid East	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5
Eastern Asia	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5
Western Europe	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	10
Central America	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	2



Northern Europe	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	2
Southern Europe	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	2
South Asia	Auto Lens Meter, Slit Lamp, 3D Auto Lens Edger, Rebound Tonometer, Auto Refractometer	Confidential	5

**4.2 Main Clients**

Client Name	Main Product(s)	Total Revenue (%)
Confidential	Confidential	Confidential



## Section 5: Quality Assurance

Quality Assurance						
5.1.1 Quality Management System Certification						
Certification	Certified By	Certificate No.	Business Scope	Validity Date		
N/A	N/A	N/A	N/A	N/A		
5.1.2 Product Certification						
Certification	Certified By	Certificate No.	Product Name & Model No.	Validity Date		
N/A	N/A	N/A	N/A	N/A		
5.2 Supplier Management						
Item	Content	Observations /Comments				
5.2.1	Does the company have a supplier assessment procedure?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
5.2.2	Does the company have an updated list of approved suppliers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
5.2.3	Has the company established and implemented a standard procedure for purchasing contract review and approval?	<input checked="" type="checkbox"/> Yes, with written standard procedures <input type="checkbox"/> Yes, with written procedure but lack of consistent standard <input type="checkbox"/> No				
5.2.4	Does the company keep its supplier assessment reports?	<input checked="" type="checkbox"/> Yes, assessment reports are available for more than 3 years <input type="checkbox"/> Yes, assessment reports are available for the last 1-3 years <input type="checkbox"/> Yes, assessment reports are available for the previous 12 months <input type="checkbox"/> No				
5.2.5	Are the company's purchasing documents sufficient to ensure product safety control and their customers' requirements?	<input checked="" type="checkbox"/> Yes, the purchasing document includes all the information required <input type="checkbox"/> Yes, however the purchasing document includes incomplete information <input type="checkbox"/> No				
5.2.6	Is there a procedure to conduct random product inspections after final packaging?	<input checked="" type="checkbox"/> Yes, with clear standard and written inspection records <input type="checkbox"/> Yes, with inspection records but no procedures <input type="checkbox"/> Yes, with procedures but no inspection records <input type="checkbox"/> No, inspections are not necessary				
Report No:	22069995_T	Report date:	31/Aug./2021	Assessed By	Zad Zhang	
CONFIDENTIAL		All Rights Reserved			Page No:	11 of 25



5.3 After Sales Service		
Item	Content	Observations /Comments
5.3.1	Is customer feedback, including complaints, clearly recorded and maintained?	<input checked="" type="checkbox"/> Yes, with a standard feedback form and records <input type="checkbox"/> Yes, with a standard feedback form but no records <input type="checkbox"/> Yes, with records but no standard feedback form <input type="checkbox"/> No
5.3.2	Are there any clear procedures for handling customer complaints?	<input checked="" type="checkbox"/> Yes, with clear procedures and written records <input type="checkbox"/> Yes, with clear procedures but no written records <input type="checkbox"/> Yes, with written records but no clear procedures <input type="checkbox"/> No
5.3.3	Is there a closed-loop corrective action system in place?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5.3.4	Can finished/package products be traced by lot identification to the appropriate raw material test reports?	<input checked="" type="checkbox"/> Yes, with procedures to trace raw materials <input type="checkbox"/> Yes, main raw material can be traced <input type="checkbox"/> No, only the production date can be traced <input type="checkbox"/> No
5.3.5	Is there a product alert and recall procedure?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5.3.6	Do you have a complete after sales service capability?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5.4 Overseas After Sales Service		
5.4.1	Is it possible to provide expatriate engineer services?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5.4.2	If possible provide expatriate engineer, what kind of onsite after-sales services are included?	<input checked="" type="checkbox"/> Debugging <input checked="" type="checkbox"/> Maintain <input checked="" type="checkbox"/> Repair <input type="checkbox"/> Other





## Section 6: R & D Capacity

R&D Capacity				
<b>6.1 Current Situation</b>				
There is <u>0</u> R&D engineer(s) in the company.				
Education Level	Headcount		Work Experience	Headcount
Doctorate	0		Over 30 Years	0
Post-Graduate	0		21-30 Years	0
Graduate	0		11-20 Years	0
Junior College	0		6-10 Years	0
Technical School	0		2-5 Years	0
High School	0		Less than 2 years	0
<b>Patent Situation</b>				
Patent No.	The Name of the Patent		The Patent Type	Available Date
N/A	N/A		N/A	N/A
<b>Brand Situation</b>				
Registration/ap plication No.	Brand Name	For Approval to Use Goods	Validity Date	Ref.
27928760	Refer to Photo	Category: 9	14/Nov./2018-13/Nov./2028	Photo in Section 8 (Trademark Photos)
<b>The Average Time For New Products Launched</b>				
Product Category		Num	Unit	
N/A		N/A	N/A	
<b>The Shortest Time For A New Item Launched</b>				
Product Category		Num	Unit	
N/A		N/A	N/A	
Does the company provide ODM service for others?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Are there relevant design input/output, review, and verification documents available for the assessment company?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Based on inspection, are R & D employees equipped with adequate specialized equipment?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, please list all key equipment used:		N/A		



Do R& D employees use any specific software for designing new products?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If yes, please list the main software used:	N/A	
Please list all certifications and/or qualifications of the R & D department:	N/A	
Has the company established standard design procedures for new products?	<input type="checkbox"/> Yes, with clear written instructions <input type="checkbox"/> Yes, without written instructions <input checked="" type="checkbox"/> No	
Have the designed products been internal verified or validated?	<input type="checkbox"/> Yes, with clear written records <input type="checkbox"/> Yes, only part written records <input type="checkbox"/> Yes, without written records <input checked="" type="checkbox"/> No	
Have the designed products been tested by a third-party inspection body?	<input type="checkbox"/> Yes, all designed products have been tested <input type="checkbox"/> Yes, only part of designed products have been tested <input checked="" type="checkbox"/> No	
Are the designed products confirmed by the customers?	<input type="checkbox"/> Yes, all designed products have been confirmed <input type="checkbox"/> Yes, part of designed products have been confirmed according to client's requirements <input checked="" type="checkbox"/> No	
Does the company has qualification requirements for designers?	<input type="checkbox"/> Yes, with written job description <input type="checkbox"/> Yes, without written job description <input type="checkbox"/> No, but at least two years design experience is needed <input checked="" type="checkbox"/> No	
Are the designers' qualifications recognized by the company?	<input type="checkbox"/> Yes, with written records <input type="checkbox"/> Yes, without written records <input checked="" type="checkbox"/> No	
What level of design services are provided?	<input checked="" type="checkbox"/> Only add logo/change color/material <input type="checkbox"/> Sample processing <input type="checkbox"/> Graphic processing <input type="checkbox"/> Create an entirely new product	
<b>New Products Launched quantity for each year</b>		
Product Category	Num	Unit
N/A	N/A	N/A
<b>6.2 R&amp;D Real Case Description</b>		
Customer's Name	N/A	



<b>Customer's Location</b>	N/A	
<b>Customer's Industry:</b>	N/A	
<b>Order's Requirement Description:</b>	N/A	
<b>6.3 Design Process</b>		
<b>Process 1</b>	<b>Process 2</b>	<b>Process 3</b>
N/A	N/A	N/A
Description: N/A	Description: N/A	Description: N/A
<b>6.4 Design Devices</b>		
<b>Device 1</b>	<b>Device 2</b>	<b>Device 3</b>
N/A	N/A	N/A



## Section 7: Company Development / Expansion Plans

Company Development / Expansion Plans		
Item	Company Development Action	Timeframe
1	The organization is going to develop more markets.	1 Year



## Section 8: Certification & Photos

### Certification & Photos

#### Certification & Photos -- Business License (Original)



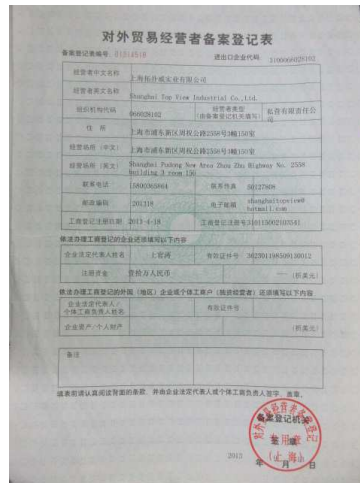
#### Certification & Photos -- Business License (Duplicate) with Certificate / Records of Annual Inspection



#### Certification & Photos -- Permit for Opening Bank Account



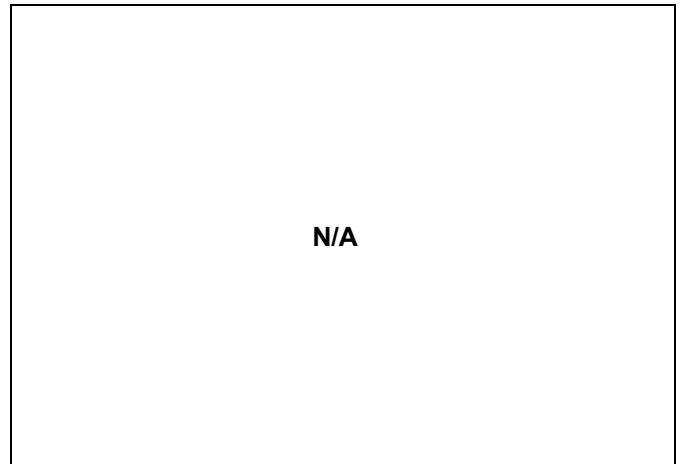
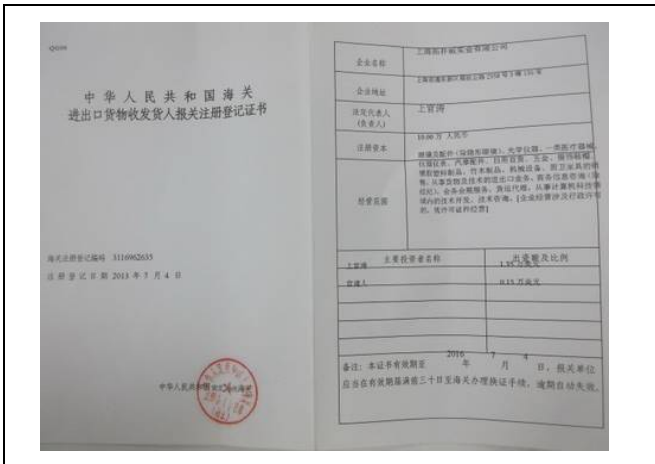
#### Certification & Photos -- Import and Export Enterprise Registration



#### Certification & Photos -- Custom Clearance Registration Form

#### Certification & Photos -- N/A





Patent Photos

Certification & Photos -N/A

Certification & Photos -N/A

N/A

N/A

Product Certification Photos

Certification & Photos --

Certification & Photos --

N/A

N/A

Quality Management System Certification Photos

Certification & Photos --

Certification & Photos --

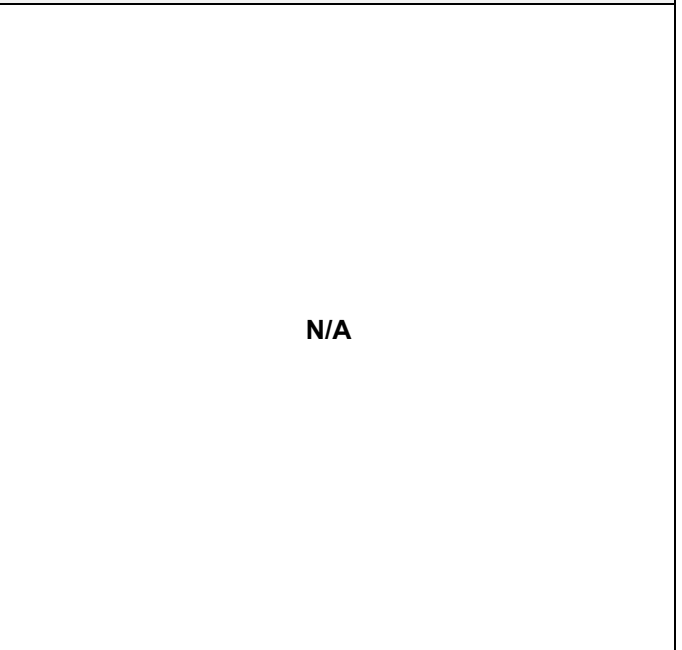
N/A

N/A





Trademark Photos

Certification & Photos -- Tardemark

Certification & Photos -- N/A



## Section 9: Company and Product Samples

Company and Product Samples	
<p><b>Company Gate</b></p>	<p><b>Office</b></p>
	
<p><b>Product Sample- Auto Lens Meter</b></p>	<p><b>Product Sample- Slit Lamp</b></p>
	
<p><b>Product Sample-3D Auto Lens Edger</b></p>	<p><b>Product Sample- Rebound Tonometer</b></p>



Product Sample- Auto Refractometer



N/A



N/A



## Section 10: Competitive Advantages

10.1 Product Group Capacity		
10.1.1 Products Sold (Within 12 Months)		
Products Name	Quantity	Revenue (USD)
Auto Lens Meter	400 Sets	Confidential
Slit Lamp	150 Sets	Confidential
3D Auto Lens Edger	70 Sets	Confidential
Rebound Tonometer	300 Sets	Confidential
Auto Refractometer	500 Sets	Confidential
10.1.2 Suppliers Cooperated With (Within 12 Months)		
No. of cooperation suppliers (total)	Confidential	
No. of suppliers (which cooperated over 2 times)	Confidential	
No. of provinces which cooperation suppliers belong to	Confidential	
Would the company like to provide design solution service for integration project?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, these projects include	According to client requirement	
Would the company like to provide a total solution for purchasing?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Part, _____ <input type="checkbox"/> No	
If yes, please describe it	According to client requirement	
10.1.3 Real Case Description:		
Customer Name	Confidential	
Customer Country	Confidential	
Customer Region	Confidential	
Products Category	Confidential	
Order Value (USD)	Confidential	
Order Processing Process	Confidential	
Customer's Feedback	Confidential	
10.2 Real Case for Lower MOQ & Lead Time		
Products Name	MOQ (In the last 12 Months)	Shortest Lead Time
Auto Lens Meter	Confidential	Confidential
Slit Lamp	Confidential	Confidential
3D Auto Lens Edger	Confidential	Confidential
Rebound Tonometer	Confidential	Confidential



Auto Refractometer	Confidential	Confidential
<b>MOQ (In the last 12months)</b>	<input checked="" type="checkbox"/> Less than 10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 50-100 <input type="checkbox"/> 100-300 <input type="checkbox"/> More than 300	

**10.3 Real Case for Large Contract**

Products Name	Order (In the past 12 Months)	Shortest Lead Time
Auto Lens Meter	Confidential	Confidential
Slit Lamp	Confidential	Confidential
3D Auto Lens Edger	Confidential	Confidential
Rebound Tonometer	Confidential	Confidential
Auto Refractometer	Confidential	Confidential

**10.4 Overseas after-sales service capacity**

If yes, what onsite after-sales services are included	N/A
Equipment -installation, maintenance and other services	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Technical advice	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Personnel training	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other:	N/A
Average response time:	
Num	Unit
N/A	N/A

**10.5 After-sales service capacity**

Average Guarantee Time		
Product Category	Num	Unit
Auto Lens Meter	1	Year
Slit Lamp	1	Year
3D Auto Lens Edger	1	Year
Rebound Tonometer	1	Year
Auto Refractometer	1	Year
The Longest Guarantee Time		
Product Category	Num	Unit
Auto Lens Meter	1	Year
Slit Lamp	1	Year
3D Auto Lens Edger	1	Year





Alibaba.com Verified Supplier  
Assessment Report

Report No.: 22069995\_T

Rebound Tonometer	1	Year
Auto Refractometer	1	Year
Does the company accept small order?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



## Section 11: Service Capabilities

11.1 Experience with Large-scale Procurement Contracts		
Have you had a procurement contract with a Fortune 500 company?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Do you have an overseas onsite service center?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The country/region of your overseas service center	N/A	
11.2 Overseas Showroom		
Do you have an overseas showroom?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Country/Region	N/A	
11.3 Offline Trade Show		
Have you participated in offline trade shows?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Tradeshow name	CHINA (SHANGHAI) INTERNATIONAL OPTICS FAIR	Official images from the trade show
Date attended	11/Feb./2020	Confidential
Host Country/Region	Other                      China	



## Section 12: Supply Chain Capability

12.1 Centralized Procurement	
In the past 12 months, have you sold products from at least three sub-categories?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
12.2 Overseas Warehouse	
Do you have an overseas warehouse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Country/Region	N/A

-- End of Report --