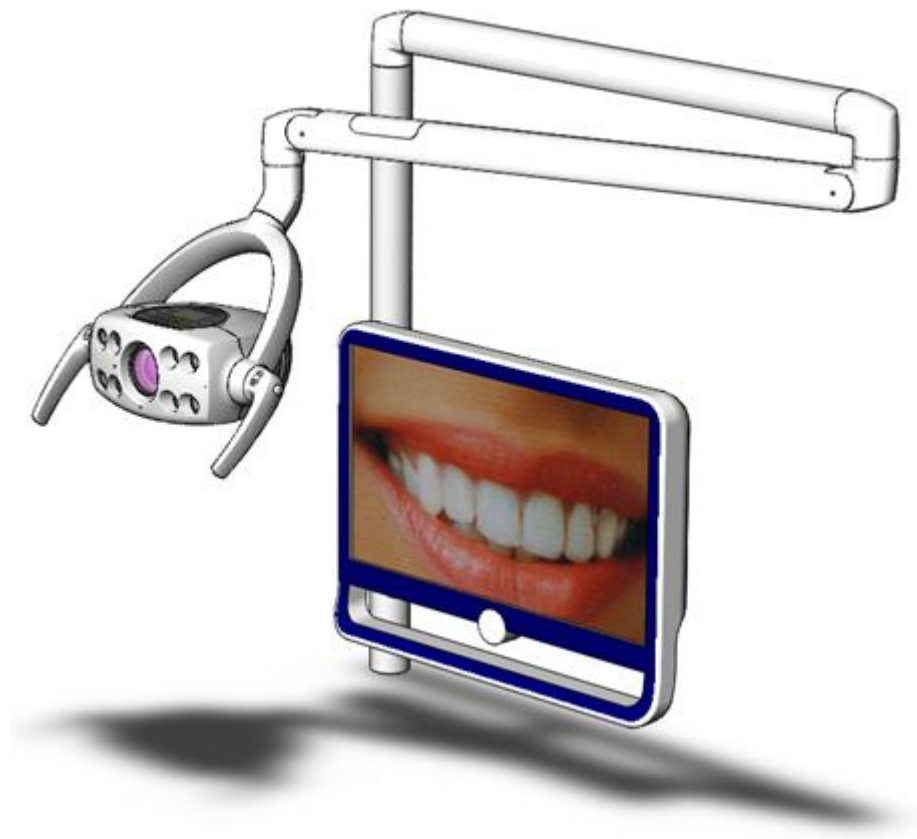


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# TR-COL02

## Manual Instructions



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## **Forward**

The Operation Manual includes brief introduction, installation and adjustment, configuration, installation method and maintenance.

Prohibit the unauthorized reproduction or reprint articles picked to build the mirror. If held in violation of legal liability. If this manual page fault or missing , please contact the us or local dealer for exchange.

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## Dear Customer:

- Thank you for your choice.
- Please read the Introduction carefully before using the product and store it safely for your consulting.
- Please follow operating rules, maintain the product regularly and correctly.
- Please connect with the local dealer or the company for the equipment trouble. We promise good after-sale service and help.
- We follow strategy of sustainable development, so we will preserve the right for perfecting all our products no making any announcement in advance.
- Please learn the symbol meaning and introduction



CAUTION: The wrong operation may cause injury. Please do operation after reading caution mark carefully.



NOTE: learn the instruction and operation detail is required.



TOOL: tool is required for taking apart the equipment.

- Operate the equipment after reading marks and instruction carefully.

### ■ CAUTION MARK



1

1. Keep as indicated by the arrow



2

2. Protect against shocks



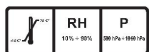
3

3. Protect against humidity



4

4. Do not use hooks



5

5. The required storage conditions are indicated:

-temperature from  $-10^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ ,

-relative humidity from 10 to 90% (No cold coagulation condition),

-atmospheric pressure from 500 to 1060hPa.

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# I Brief Introduction

## 1 Summarize

The Micro Vision system is one of the best choices for dental teaching and treatment.

The Micro Vision system could be fixed on dental simulator system and other kind of teaching site.

The body attaches demonstration head, LED Light, control system, Mobile cart (including computer host) (optional), monitor (keyboard support optional), etc. The Micro Vision system could collect real time high resolution image.

The Micro Vision system is professional designed and be convenient operated.

It could be fixed on dental simulator system for teaching and show detail of teacher's operating process.

## 2 TR-COL02 STATMENT

In order to make sure you can use our product smoothly, we state;

- 1) accord with standard GB9706-21 ISO6061.
- 2) accord with standard GB11239-2005.
- 3) Turn off the power after off duty.
- 4) Read product introduction carefully before installation.

## 3 Transportation, Protection and Conservation

- 1) Time for transportation and conservation couldn't pass 15 weeks

A. Ambient Temperature:  $-20^{\circ}\text{C}$ --- $+50^{\circ}\text{C}$

B. Relative temperature: 10%--100%( include cold coagulation condition)

C. Atmosphere range: 500 hpa -----1060 hpa

- 2) Environment Protection

### A. Package clearance

Package of the equipment is environmental protected and be recycled 100%

----- Paper Carton

----- Polyvinyl airbag

----- Polyvinyl air membrane

**B.** Please send all the packing and waste material to the authorized collecting site.

**C.** Others

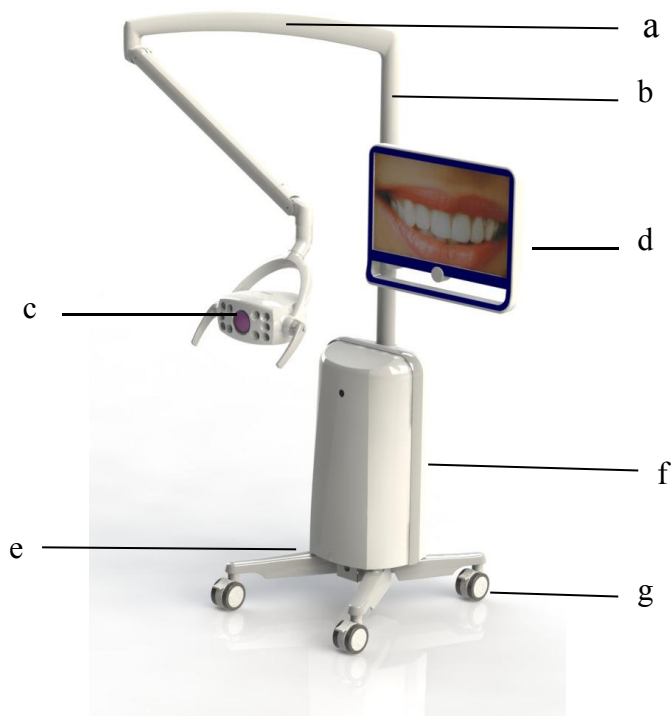
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## 4 Work Condition

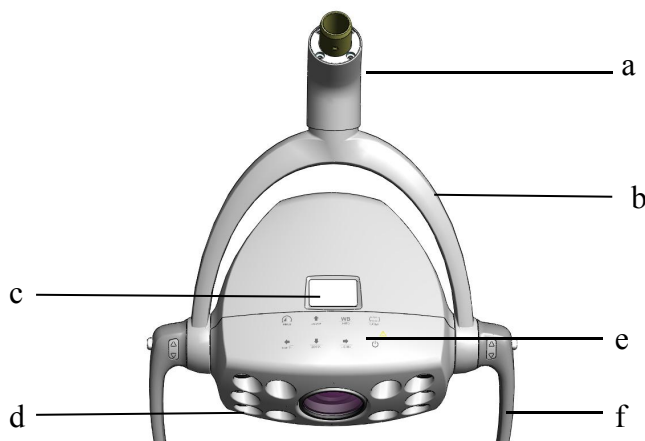
- 1) Power Supply: AC12~18V/DC12~24V±10%
- 2) Input Power: max:15W
- 3) Temperature: 0~40°C, no cold coagulation condition.
- 4) humidity: ≤85%(no cold coagulation condition)

## 5 picture and component

- 1) picture:



- a) large arm
- b) stand pipe
- c) head
- d) LCD player
- e) baseboard
- f) PC
- g) trundle



- a) cantilever elbow
- b) cantilever
- c) Viewing Screen
- d) LED key lighting
- e) Control Panel
- f) handle

## 6 Main Technical Parameter

GB11239-2005 Operation Microscope

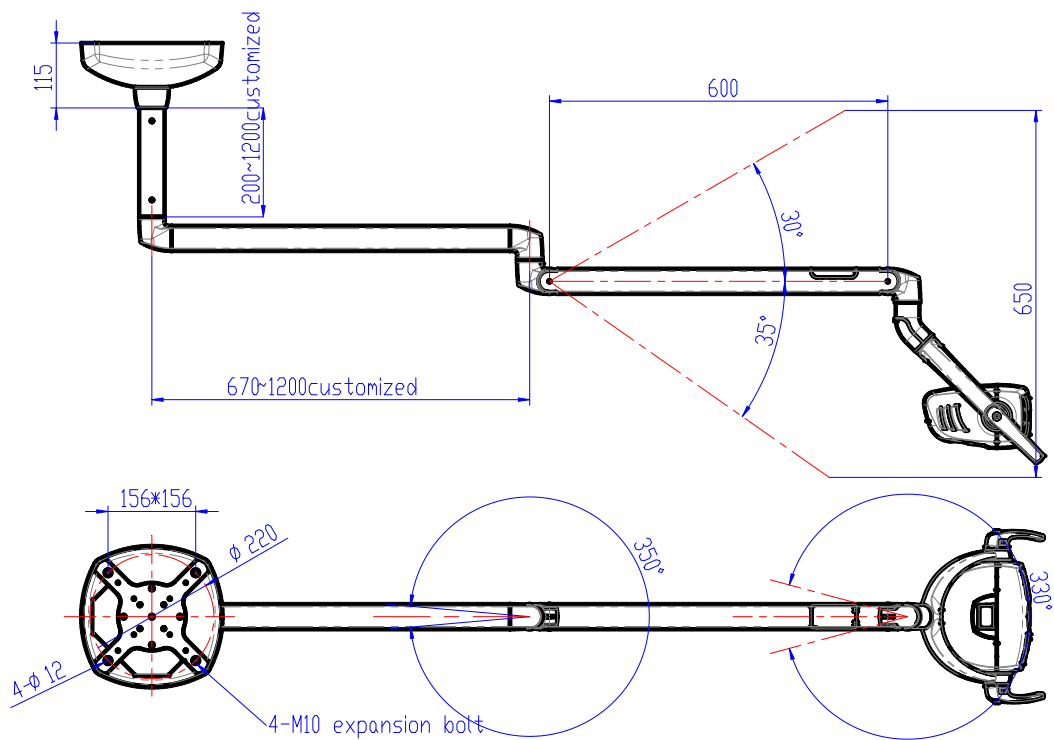
Protection against electric shock: class I, type B, intermittent duty.

Main technical parameter - sheet2、 sheet3, picture1-2、 picture 1-3:

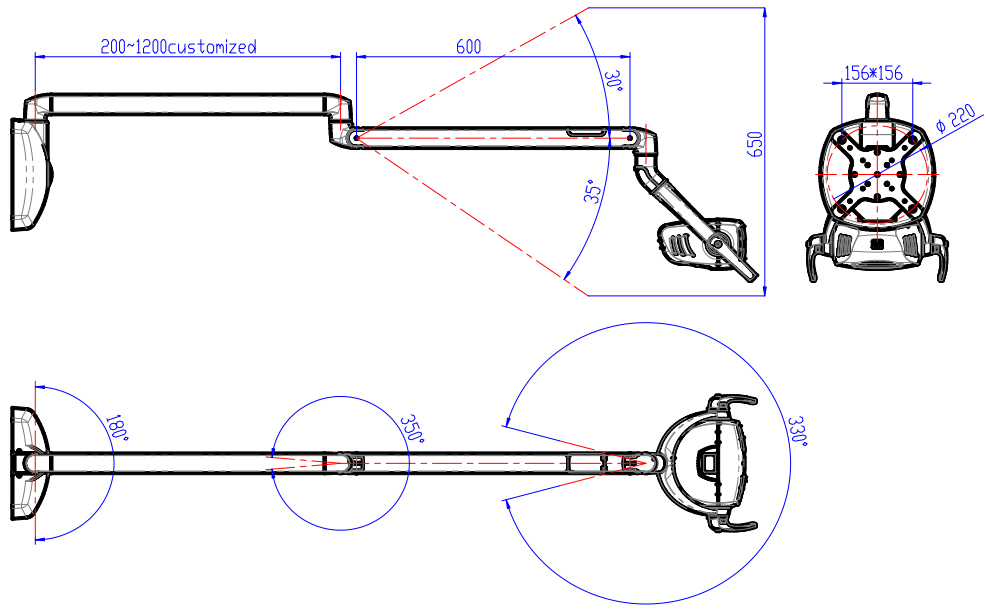
### Sheet 2: Electrical Parameter

Voltage	AC200~240V
Frequency	50/60HZ(DC)
Current	Max 1.2A
Controlled current	5V

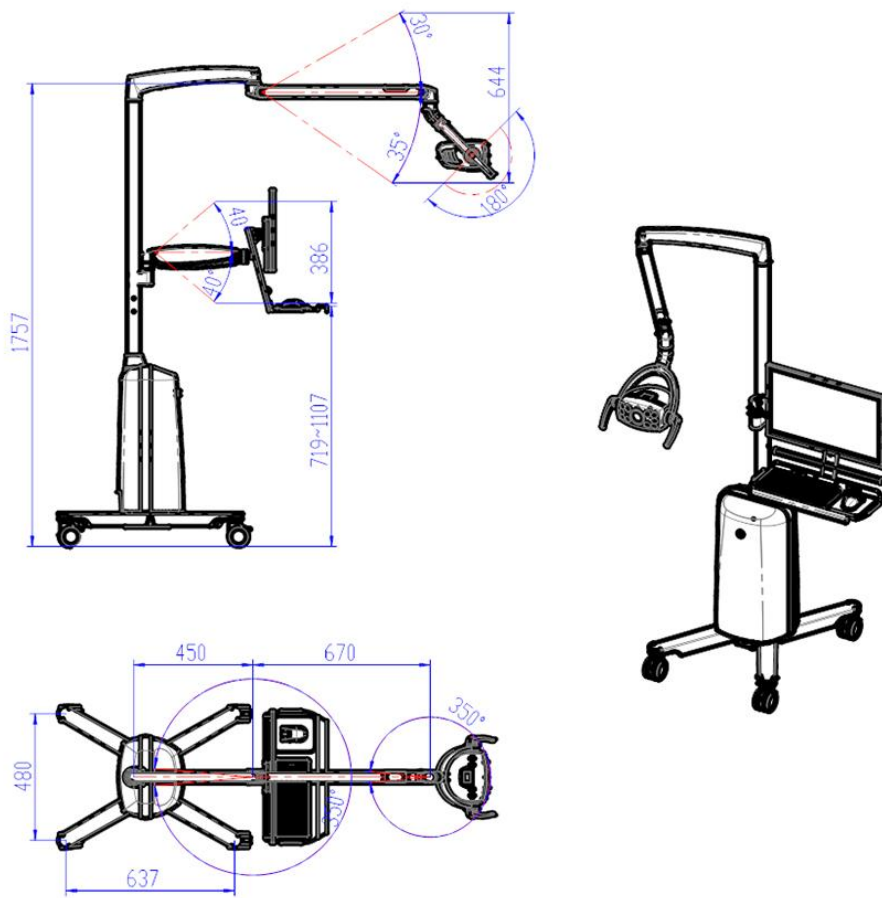
Pic 1-3:



Condole Type



Wall-Mounted Type



Mobile Type

**Sheet 3: Instrument Parameter**

Large arm	670mm (customizability)	Camera rotation angle	350°
Cross arm	670mm	Camera pitch angle	180°
Height adjust range of cross arm	700mm (customizability)		

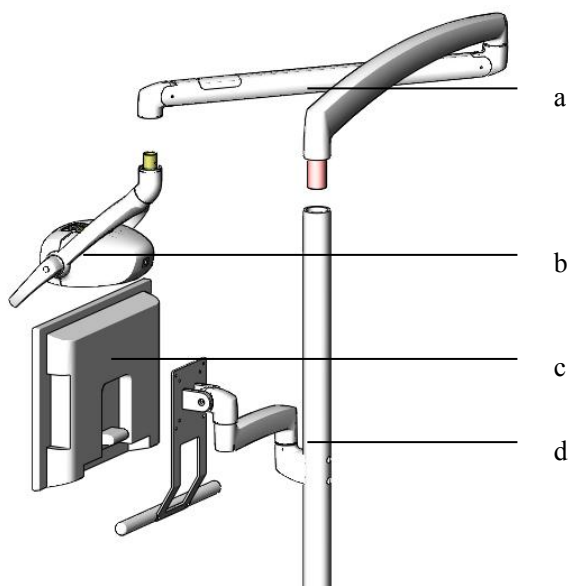
## II Installation and commissioning

### 1 Installation Condition

- 1) When install system, hold enough room to ensure moving camera head flexibly.
- 2) Installation shaft size is  $\Phi 35 \pm 0.05 \text{mm}$ . (customizability)
- 3) Electric source parts refer to sheet 2.

### 2 Installation procedures

- 1) Open the packing cartons. (waste should be collected)
- 2) Equipment installation



- 1.As shown in Figure mounted components
  - 2.Pull the connecting wiring through the relevant hole
  - 3.Install the fixed screw
- a) cross arm
  - b) Head
  - c) LCD player
  - d) Stand pipe and support arm of screen



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### 3) Installation of the wirings and plug

Collect all connecting wirings through distributing box when they come from the hole, like below pic:

- a) Power source of the displayer (AC200~240V)
- b) VGA of the displayer (D-SUB15)
- c) Nose Color Difference line (HDMI)
- d) head wirings (DC12V2A)

### 4) Wiring layout sheet

category	description	type	signal	voltage	power	Connection	remark
Camera head	Power line	Two-core	Camera head power supply	DC12V	15W	Camera head power supply power line	
	HDMI line	coaxial	HDMI output	1V75Ω		HDMI plug	
LCD player	Power line	Three-core	LCD player power supply	AC110/220V	75W	LCD player power line	
	HDMI line	Two-core	HDMI signal			Connet the LCD player	

### 5) Installed

Check the rotation flexibility of the joints when installed. Make sure there is no twining, warping. Make sure the installation of joints is firm.

## 3 Caution

- 1) Gently pull the button.
- 2) Power supply is AC200~240V, frequency 50/60Hz, power consumption ≤300W.

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### III Operating Instruction

#### 1. Parts of the machine type

TR-COL02 is mainly made up of camera, large /cross arm, displayer support and the HD collection card. The structure is divided into four versions: Mobile Type, Machine-Mounted Type, Wall-Mounted Type and Condole Type.



Mobile Type



Machine-Mounted Type



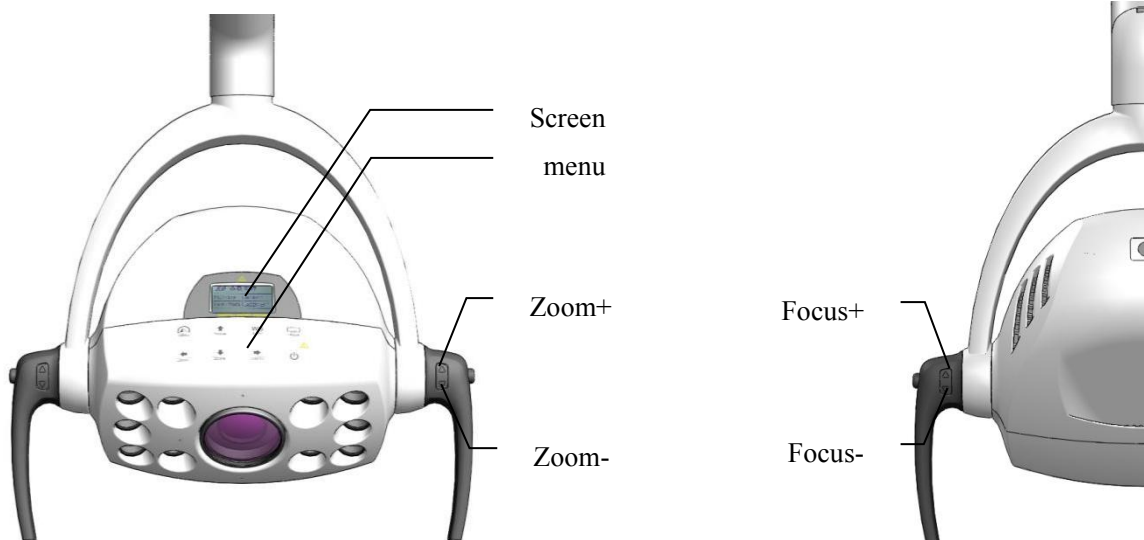
Wall-Mounted Type



Condole Type

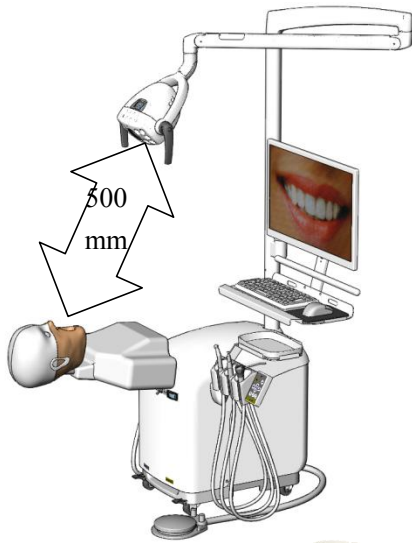
#### 2. Control board of the head and the handle

Main functions are shown on the control board. Functions as below:



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### 3. Operating Instruction



1) The most reasonable distance between the camera head and mouth is  $700\text{mm}\pm 50\text{mm}$ , we can see the best picture and video.



2) The head is designed three degree of freedom. It could be moved to any angle and the handle could be revolved  $180^\circ$ , these will be easier for operator to operate and observe.



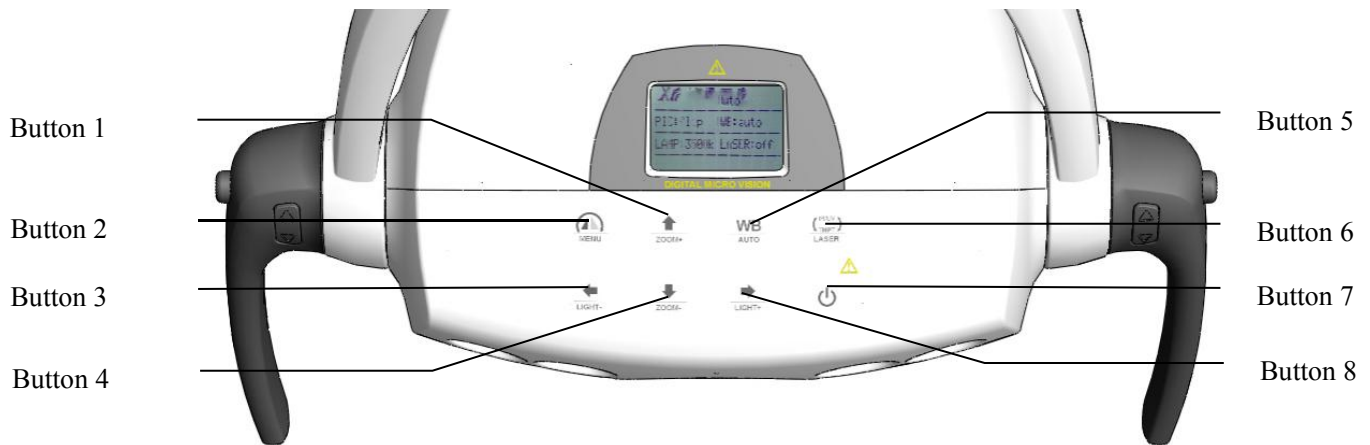
3) Lighting is divided into two parts: key lighting and auxiliary lighting (or laser positioning). The key lighting is white LED source, and auxiliary lighting is red/orange LED or UV (optional laser positioning).

Key lighting is used to provide sufficient illumination for operation or camera range. In auxiliary lighting, red light can improve the color rendering index of the main lighting and provide convenience for color comparison. Ultraviolet LED lighting can be used to observe bioluminescence reactions. Its wavelength is 395nm and belongs to the UVA spectrum, which is harmless to human body. Laser positioning makes it easier for the operator to find the shooting point.

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## 4. Main control panel operation instructions

Turn on the main power supply. Hold down the power switch on the lower left of the control panel.



a.Button 1: Zoom+, enlarge image

b.Button 2: Short press image rotation: normal image → adjust image rotation 180° → left and right mirror (cycle switching), long press to enter the system menu, enter the password to adjust the internal parameters

c.Button 3: Long press for adjusting the LED light to brighten. Short press for adjusting the camera interior light to brighten.

d.Button 4: Zoom-, diminish image

e.Button 5: Adjust the white balance of the image, long press to switch manual/automatic white balance, short press to trigger one key white balance.

f.Button 6: Switch between 3000K, 4000K, 5000K color temperature and auxiliary lighting cycle, long press to turn on the cross laser (20 seconds later off).

g.Button 7: Long press to turn off the machine. Short press to turn off the LED light.

h.Button 8: Long press for adjusting the LED light to dark. Short press for adjusting the camera interior light to dark.

i.Handle button, handle front button: zoom + and zoom -, reverse button: focus + and focus -; The default state is auto focus. Press the reverse focus button to switch to manual focus. At this time, press the zoom button to switch back to auto focus.

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**Note: the above function keys don't use excessive force press, have prevent key damage.**

## **V Maintenance**

### **1 Maintenance of observer system**

Maintenance of appearance

A. This product is a precision optical instrument, please use the neutral cleaner.

B. Lens part please use the special cleaning cloth and wipe glass cloth.

Microscopic head

After using please shut off the main power and computer power.