



# IKEDA

CLASSICS FROM INNOVATION

## User Manual

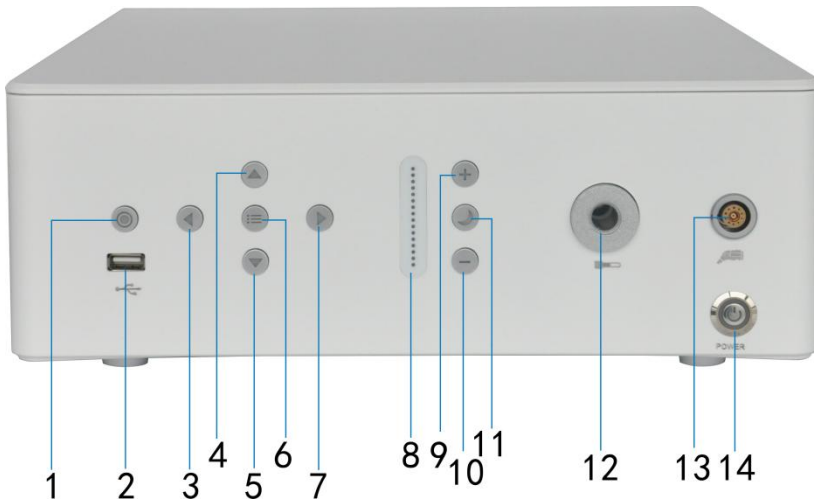
**YKD-9001 (E) HD Endoscope Camera**



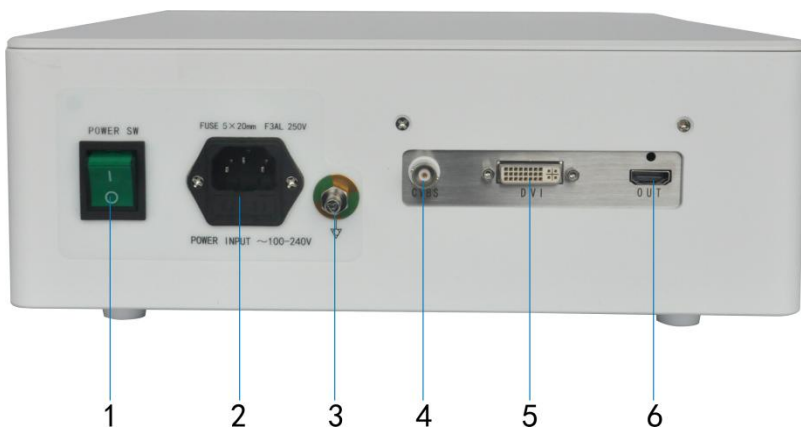
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## 1. Functions of Video processor

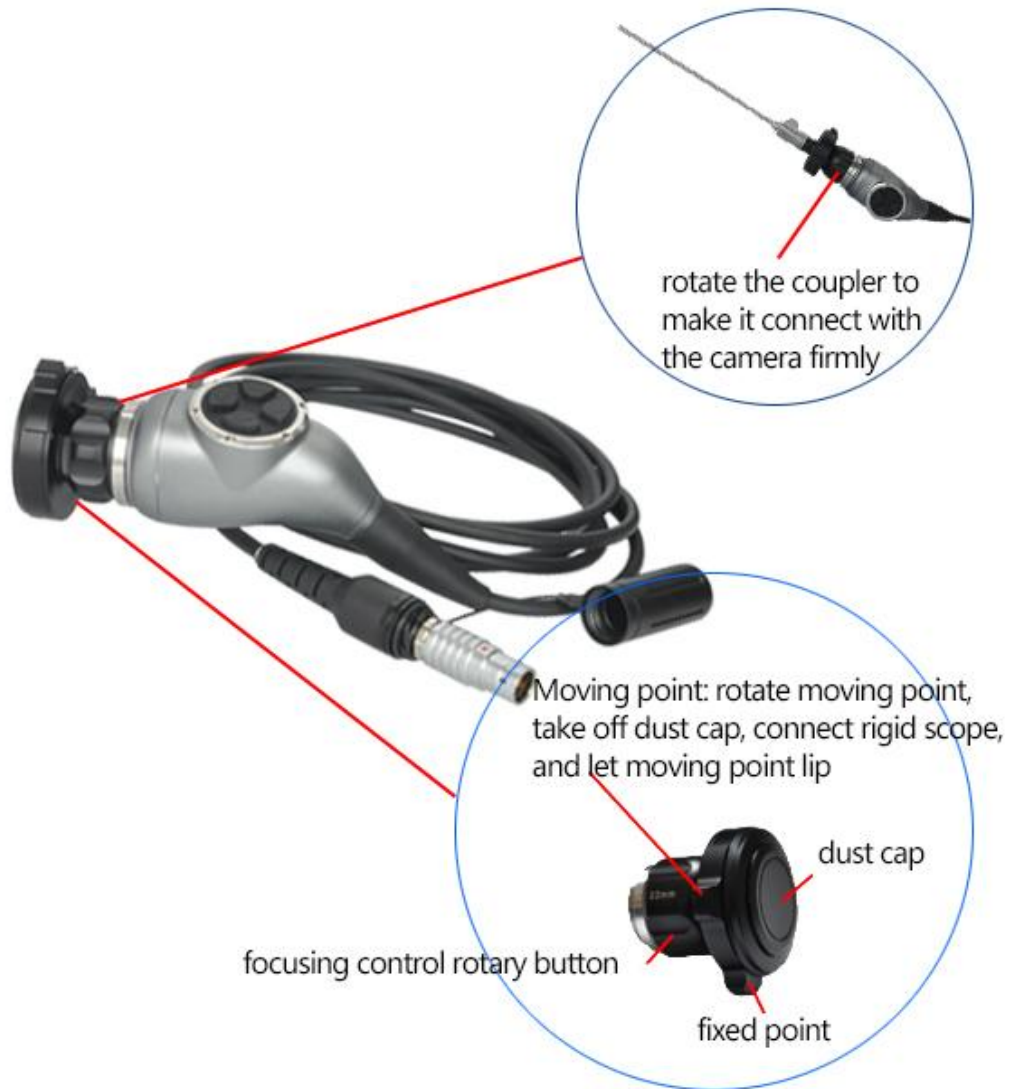


- |                                  |                                |
|----------------------------------|--------------------------------|
| <b>1. Video Recording</b>        | <b>2. USB interface</b>        |
| <b>3. Left</b>                   | <b>4. Up</b>                   |
| <b>5. Down</b>                   | <b>6. Menu</b>                 |
| <b>7. Right</b>                  | <b>8. luminance</b>            |
| <b>9. luminance +</b>            | <b>10. luminance -</b>         |
| <b>11. Light sleep model</b>     | <b>12. LED light interface</b> |
| <b>13. Camera head interface</b> | <b>14. Power switch</b>        |



- |                            |                             |
|----------------------------|-----------------------------|
| <b>1. Power switch</b>     | <b>2. Power input</b>       |
| <b>3. Earthing Rod</b>     | <b>4. CVBS Video Output</b> |
| <b>5. DVI Video Output</b> | <b>6. HDMI Video Output</b> |

## 2. Installation for Reference






### 3. HD Image Capture and Video Recording

#### (1) Image Capture

1. Insert the USB flash drive into the USB port in the side of machine
2. Press **【F】** button (Image capture button) on the camera head when you need image capture
3. Meanwhile, the **【Capture Indicator Light】** lighting on the operation panel
4. The image is saved into the USB flash drive, and the **【Capture Indicator Light】** key is darkened

#### (2) Video Recording

1. Insert the USB flash drive into the USB port in the front panel of machine
2. Press **【】** button (below call **【Recording】** button) on the operation panel when you need record
3. Meanwhile, the **【Capture Indicator Light】** lighting besides the USB port.
4. The **【Capture Indicator Light】** button keep lighting, when the video is being captured.
5. Press the **【Recording】** button again, the video capture finished
6. The **【Capture Indicator Light】** flickers 3 times, the video is being saved.
7. The video is saved into the USB flash drive, and the **【Capture Indicator Light】** key is darkened.

#### 4. Two modes for Flexible fiber scopes and Rigid scopes

##### (1) Factory default is rigid scope mode

The connection of device has been finished, the factory default is rigid scope mode.

##### (2) Switching to Flexible fiber scope mode

Please press up key for 3-4 seconds, it will occur the below interface, when show OK, it changes to the mode for flexible fiber scopes.



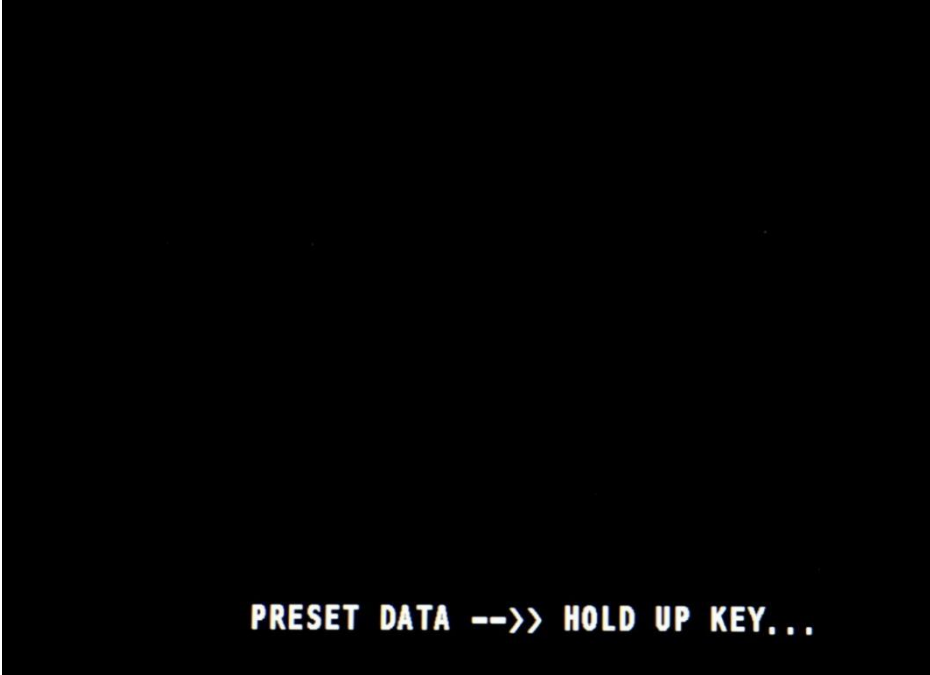
PRESET DATA -->> HOLD UP KEY...



PRESET DATA -->> OK

**(3) Flexible fiber scope mode switching to Rigid scope mode**

If you want to return the mode for rigid scopes, please press up key button 3-4 seconds again, then it will occur the below interface, so now it is mode for rigid scopes.



PRESET DATA -->> HOLD UP KEY...



PRESET DATA -->> RECOV

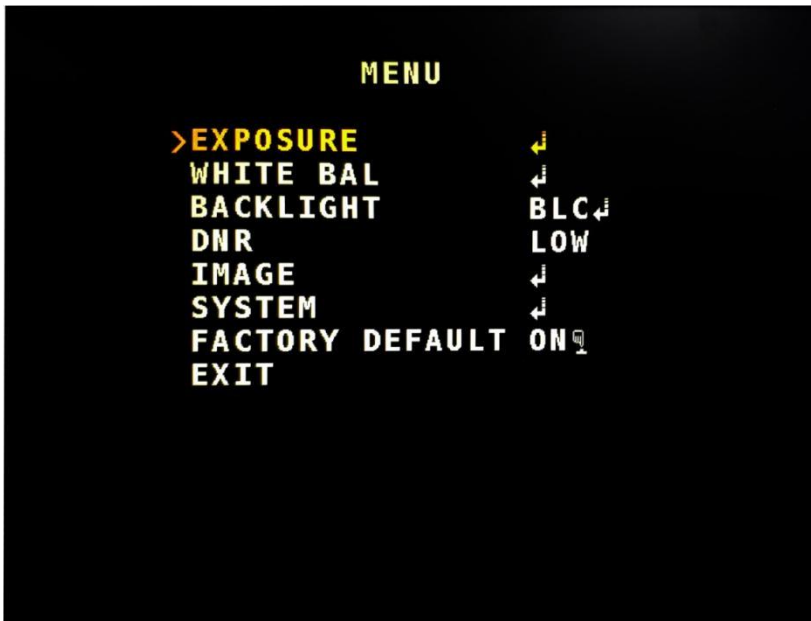
Please notice the device is with memory function for mode, if you keep the mode of flexible scopes, when you starting up the device next time, it will still keep this mode, please check this mode carefully.

## 5. Main Technical Data of Camera

Camera menu technical data adjustment: (Mode for rigid endoscope)

The connection of device has been finished, press the (Camera MENU) key on front panel, enter into setup interface.

### 1) Main interface of camera menu



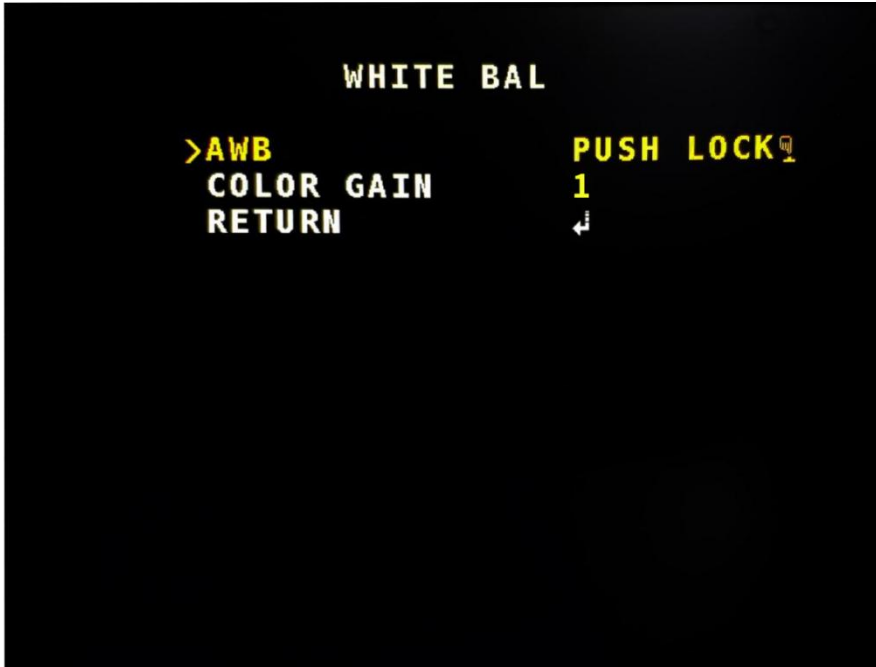
### 2) Exposure data setting:

The parameter adjustment of Brightness and AGC in Exposure: Brightness is 8, AGC is 3, pls take this as the standard. As per brightness requirement of different clinical operation, customer could adjust the brightness value a little.



3) White Balance data setting:

The parameter adjustment of Color gain in White balance: AWB is Push lock, Color gain is 2, pls take this as the standard. As per the blood gain in clinical operation, customer could adjust the Color gain value a little.



4) Image data setting:

The parameter adjustment of Sharpness and Gamma in Image: Suggest the Sharpness is 15, Gamma is 0.65.



5)BLC (Backlight Compensation) data setting:



6)System data setting:

The parameter adjustment in System: Frame rate is 1080\_60P, pls take this as the standard.



## 6. Notes:

### 1. Power on.

- 1) Please check camera and accessories according to packing list, and carefully read user manual.
- 2) Please connect camera head wire with camera interface and fix it.
- 3) Please connect light cable with LED light interface.
- 4) Please insert power cable into “AC in”.
- 5) After checking correct connection, please connect the power.
- 6) Please turn on the power, make the switch to “—”, power indicator light is lit.
- 7) After the image showed normally, see images by adjusting the buttons on panel.

### 2. Instructions

- 1) Please turn the coupler, make image clear by adjusting focus, if the image is not clear.
- 2) Please make sure there is no loose in power plug, power could be turned on after good connection.
- 3) Please put the camera in appropriate position, in order to avoid the device falling and being damaged.
- 4) Please keep camera away from strong interference equipment.

### 3. Notes for instructions:

- 1) Please make sure light cable not twisting, in order to avoid damaging light cable, affecting transmission of light.
- 2) Please keep time interval for 2 to 3 seconds between two boot.
- 3) Under power on situation, please do not move or shake the machine, do not connection at random or dismantle any parts of the machine.
- 4) Please put and use the machine in clean and ventilated indoor, avoid putting it together with chemical, electromagnetism, strong electric field electric appliance etc.
- 5) Machine surface is easy to absorb dust due to electrostatic interaction, when clean it, please turn off the power first, and use soft absorbent cotton, avoiding scratching surface.
- 6) Please clean the machine with soft absorbent cotton and ethyl alcohol if there is dust on camera lens.
- 7) Please avoid frequent switching power, which is easy to damage power. Turn off the power if do not use machine, unplug power cable and cover it up. If unused for a long time, please clean it, put it into box, and turn on and operate it regularly (generally, turn it on and operate every month)
- 8) Replacement of accessories, such as fuse, can only choose F2.00AL by us.  
If endoscopy has functional fault, prohibit open the machine, please contact with supplier for maintenance in time.
- 9) If the temperature of machine surface is over 41℃, please stop to use and continue to use after cooling, avoiding scald.
- 10) When replacing LED light source, please be sure to replace it by professionals, prohibit non-professional operation, can only choose HT-M80W-001 by us, input AC220V 50Hz, output power  $\leq$  80VA.
- 11) Before usage, should match suitable light filter, avoiding high-energy radiation light hurting eyes.
- 12) Installation and commissioning of the machine can only operate by medical technician who has formal training and operation qualification

- 13) The microcomputer can be only used for this system, can not be used for other machine, otherwise the instrument of the damage is not in the range of the our warranty.
- 14) Machine is packed with carton or wooden case, please avoid being affected damp, collision and extrusion, it can transport by air, highway and railway.
- 15) Please check if the endoscope camera and accessories cause safety hazard before using every time, such as surface rough, sharp edges or protrusions.
- 16) Supplier could provide circuit diagram, instrument components list, figures and correction details to help qualified technician maintain the machine according to user requirements, supplier appoints serviceable accessories and documents.

## 7. Failure analysis and elimination

### 1. Checking

- 1) Check whether the power supply is normal, machine power is connected and inserted into power plug.
- 2) Check whether all connectors are normal.

### 2. Elimination

Fault phenomenon	Reason analysis	Elimination methods
No images in display area	<ol style="list-style-type: none"> <li>1. Check whether the power is good connection.</li> <li>2. Check is the camera is good connected with light source.</li> </ol>	Re-connect power, and open the switch.
power indicator light is not light	Check power plug and fuse	
There is strong reflect light on object.	Adjust LED light, weaken facula.	

## **8. Recommended methods of disinfection and sterilization of equipment and accessories:**

- 1) Ethylene oxide (ETO) sterilization: temperature 55°C, humidity 60% ± 20%, gas concentration 600mg ± 30mg/L, time 120 minutes, ventilation time 12 hours/50°C.
- 2) Sterilization by low temperature plasma method: hydrogen peroxide and low temperature plasma act in coordination for 75 minutes, low temperature (10-60°C).
- 3) To disinfect accessories such as optical cable and camera heads, 75% alcohol cloth can be used to wipe and disinfect 2 times, or a disposable sterile plastic sleeve can be used for isolation and disinfection purposes, but the contact area still needs to be wiped and disinfected with alcohol.

It is forbidden to be sterilized in autoclave or liquid immersion sterilization , and frequent replacement of sterilization methods is not recommended.