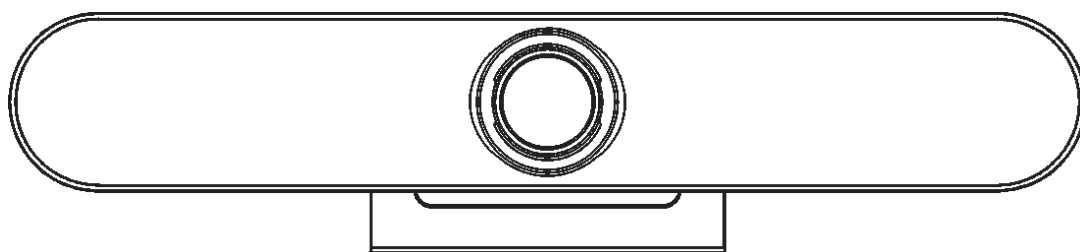




USER MANUAL

4K Ultra HD Camera

TV-MU650X



Please read this user manual in detail before use.

Safety Instructions

➤ Transport with care

During transportation, storage and installation, it is necessary to prevent damage to the product caused by heavy pressure, severe vibration and soaking.

➤ Install with care

This product should be placed on a stable table or other level surfaces. The housing is made of organic materials, and should not be in contact with various liquids, gases or solid substances that may cause corrosion.

➤ Do not disassemble

This product has no user-repairable parts, and the damage caused by the user's self-disassembly is not covered by the warranty.



注意 Electromagnetic fields at certain frequencies may affect the image of this unit!

➤ Agreement

Due to the continuous update of the appearance and function of this product, please refer to the actual product for details. The final interpretation right of this user manual belongs to the manufacturer.

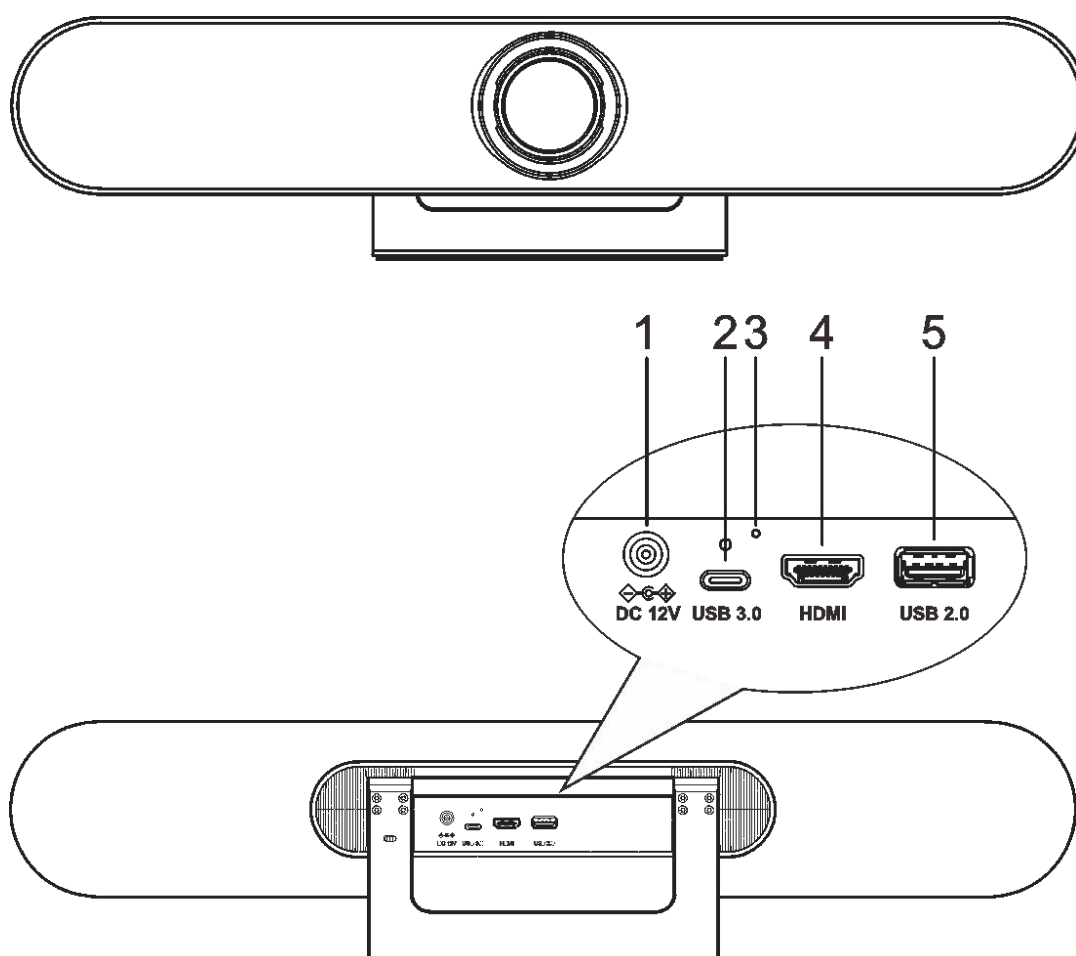
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1.Product Description

The design of integrated 4K ultra HD camera, beamforming microphone, and full-range speaker is specially designed for small and medium conference rooms, especially micro-collaboration spaces with 4 to 6 people, helping enterprises to rediscover the potential of their internal small and micro meeting spaces, making it possible to save rental costs while running meetings more efficiently.

2.Appearance and Interface



NO.	Description	NO.	Description
1	DC 12V power interface	4	HDMI interface
2	USB 3.0 interface	5	USB 2.0 interface
3	Reset button	-	-

3.Feature

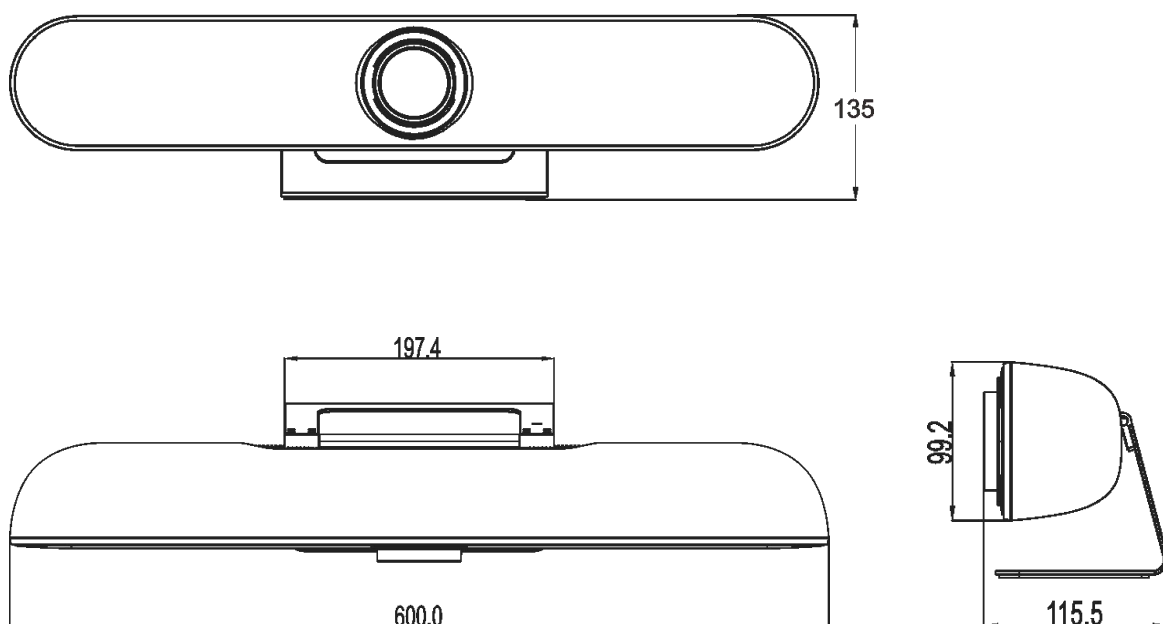
- (1) Adopt a 1/2.5-inch, 8.51 million-pixel high-quality UHD CMOS sensor, providing 4K(3840x2160)@30fps ultra HD images; backward compatible with 1080P, 720P and other resolutions.
- (2) 121° wide field of view (110° horizontal field of view), 5x zoom, optical lens customized for conference venues, built-in motorized PTZ (with a $\pm 15^\circ$ motion for pan and tilt).
- (3) The built-in beamforming microphone supports a pickup distance of 6 meters. The low-distortion lateral beamforming algorithm can guide the microphone directly to the speaker, realizing better sound quality.
- (4) Built-in audio 3A algorithm (AEC/AGC/ANS), full-duplex dialogue, can meet the communication needs of different space structures. No matter sitting at the conference table or standing next to the table, they can talk comfortably and clearly.
- (5) Built-in intelligent analysis algorithm, identify the position with sound, automatically select the participants, automatically track the speaker and switch the display to make the speaker is always clearly on the screen.
- (6) Support flexible installation options such as desktop, wall mount, TV/display mount, making it easier to install and deploy in crowded conference rooms.

4.Specification

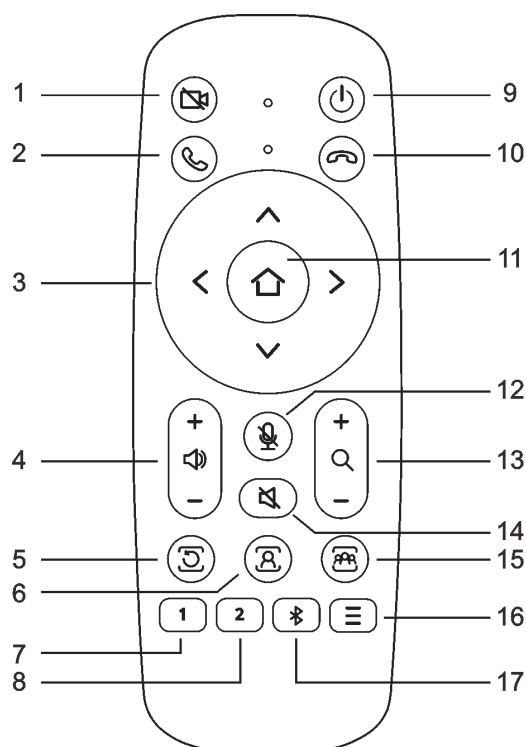
Model	TV-MU650X
Video resolution	4K@30fps, 1080P@30fps, 720P@60/30fps, etc.
Sensor	1/2.5 inches, CMOS, effective pixels: 8.51 million
Optical lens	121°(DFOV), 110°(HFOV), 5x zoom, pan/tilt $\pm 15^\circ$
PTZ	Mechanical PTZ (MPT) + Electronic PTZ (EPTZ)
Digital noise reduction	2D&3D digital noise reduction
SNR	$\geq 55\text{dB}$
BLC	Support
Full range speaker	96dB SPL at 0.5m

Microphone array	Beamforming microphone, pickup distance 6 meters
Extended MIC	Support (optional)
Connection Type	USB 3.0, backward compatible with USB2.0
Color space/compression	MJPEG/YUY2
USB audio	32K sampling rate, support UAC1.0
USB video protocol	UVC 1.1
UVC PTZ control	Support
USB interface	1 × USB3.0, Type C; 1 × USB2.0, Type A
Wireless communication	Bluetooth data communication (Bluetooth 5.0)
Installation method	Support desktop installation, wall mount, TV mount, etc.
Standard cable	USB cable
Security protection	Anti-theft lock jack
Power supply	DC 12V, 2A (MAX)
Working temperature	0℃~40℃
Storage temperature	-40℃~60℃
Dimension (L×W×H)	600×117×135mm
Net weight	2.5Kg

5.Installation Dimension



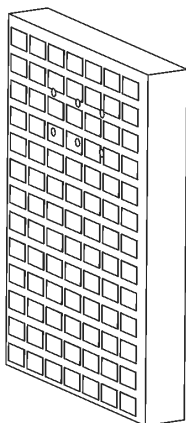
6.Remote Control



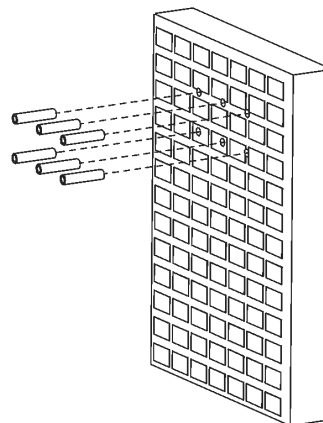
NO.	Name	Description
1	Camera off	Press to turn off the camera, and press again to restore the camera
2	Call	Answer the call
3	Camera control	Press it and the camera moves following the arrow to adjust the image display; press [OK] to return to the middle position
4	Volume	Volume up +; volume down -
5	Exit tracking	Press it and the camera will automatically exit tracking mode
6	Speaker tracking	Press it and the camera will voice-track the speaker
7	Preset 1	Long press to set preset 1, short press to recall preset 1
8	Preset 2	Long press to set preset 2, short press to recall preset 2
9	Standby	Long press to standby, short press to return to normal
10	Hang up	Hang up the call
11	OK	Confirm the current selection
12	Microphone mute	Turn on/off the microphone
13	Zoom	Zoom in [+]; zoom out [-]
14	Speaker mute	Turn on/off the speaker
15	Participant tracking	Press it and the camera will automatically track the participants
16	Menu	Press to enter or exit the OSD menu
17	Bluetooth	Turn on/off the bluetooth function

7.Installation and Connection

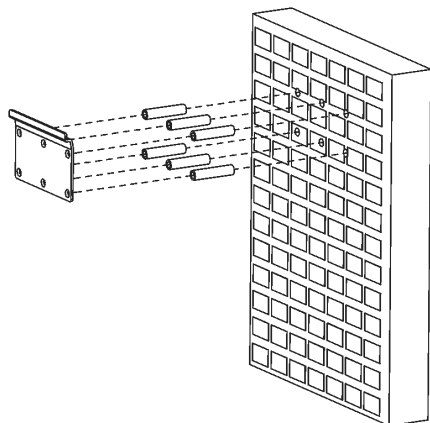
1 Drill holes in the wall



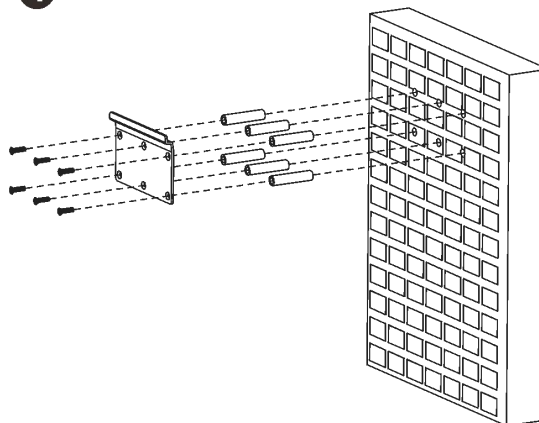
2 Install expansion screws



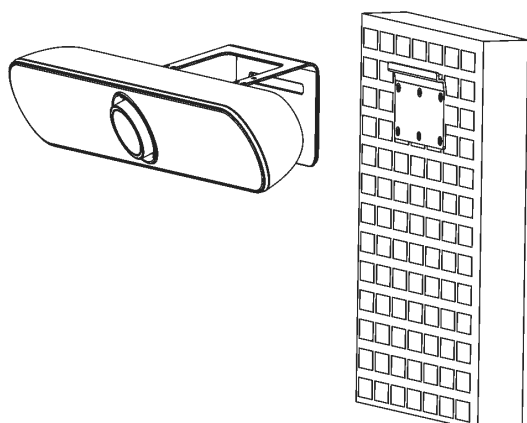
3 Install the bracket



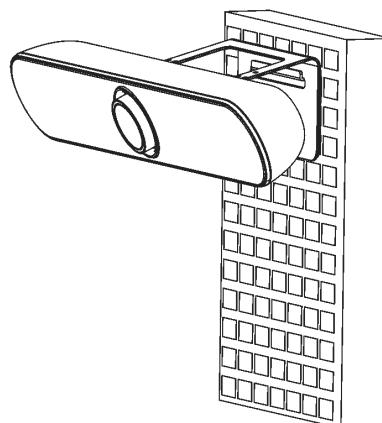
4 Secure with screws

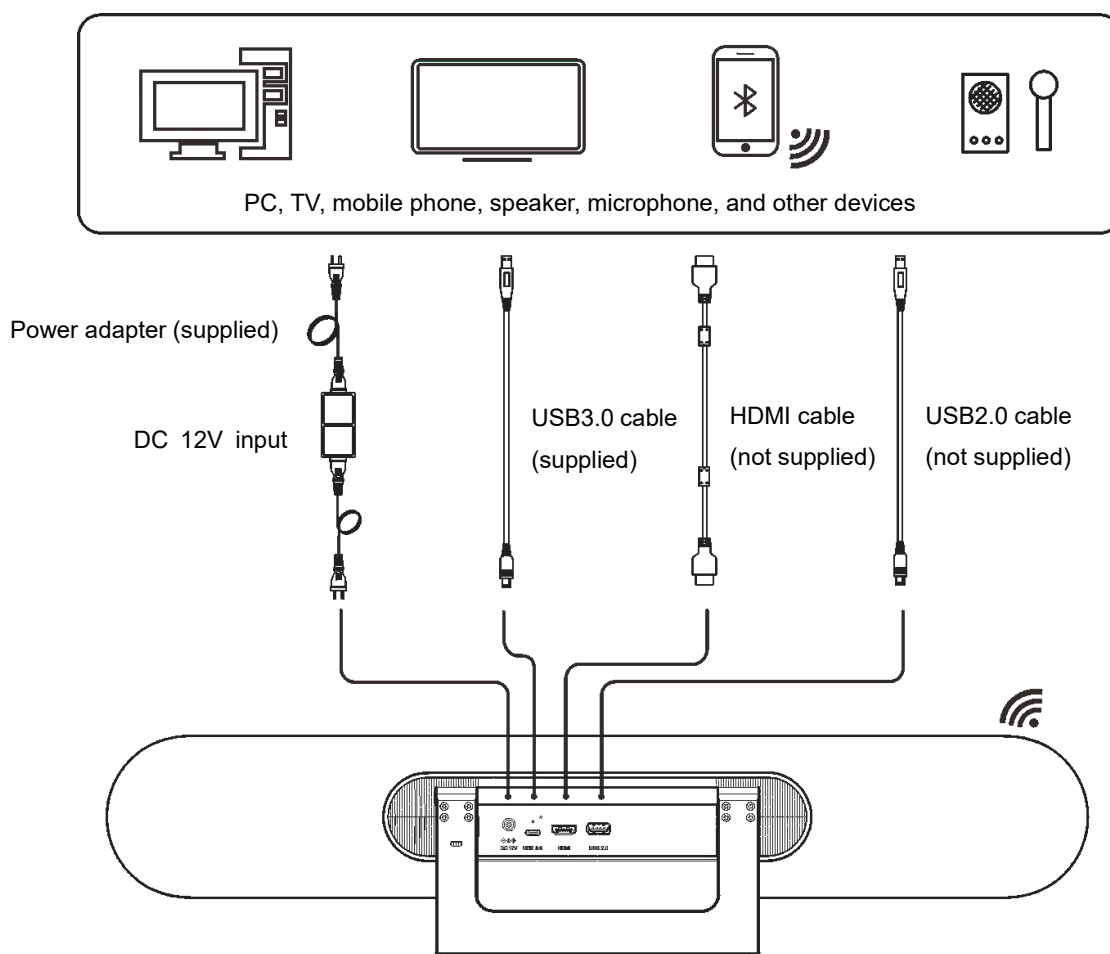


5 Install the device



6 Wall mounting effect





8.Remote Control Pairing

Note: When the remote control leaves the factory, it has been paired with the device, and it can be used normally without any special operation. Unless the remote control is abnormal, the remote control is confused, the remote control is lost, etc. and the remote control needs to be re-paired, the following operation steps are applicable to avoid re-pairing.

- Step 1** Connect the camera to the power supply, wait until the initialization of the camera is completed, and the camera can work normally.
- Step 2** Clear the paired state of the remote control: Press the menu button + OK button at the same time, keep pressing until the indicator light of the remote control turns steady red, and then release the button to successfully clear the paired status of the remote control.
- Step 3** Trigger the camera to enter the remote control pairing mode: Use the card pin to poke the recovery hole of the camera, that is, press the camera reset button. When entering the pairing mode normally, the camera LED light will turn to the remote control pairing mode, and the LED light will switch to the blue marquee effect.

(Note: Each time you enter the pairing mode, there is only 15S operation time, and the pairing

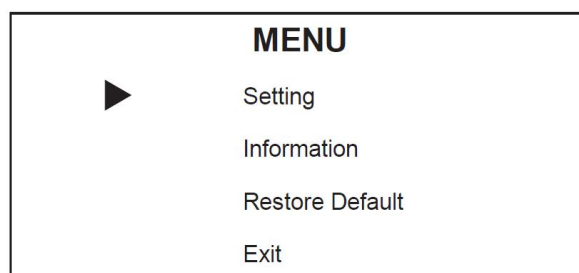
mode will be automatically exited after the timeout. At this time, the LED is not a blue marquee effect. If you want to pair again, you need to press the reset button again, and the camera can enter the remote control pairing mode again.)

Step 4 Start pairing: Take out the remote control to be paired, long press the menu button of the remote control, and wait for the pairing to be completed. When the pairing is done, the LED light of the camera will flash blue. At this time, the camera can be operated normally using the remote control. If the pairing fails, please repeat steps 2, 3, and 4 until the pairing is successful.

9.GUI Settings

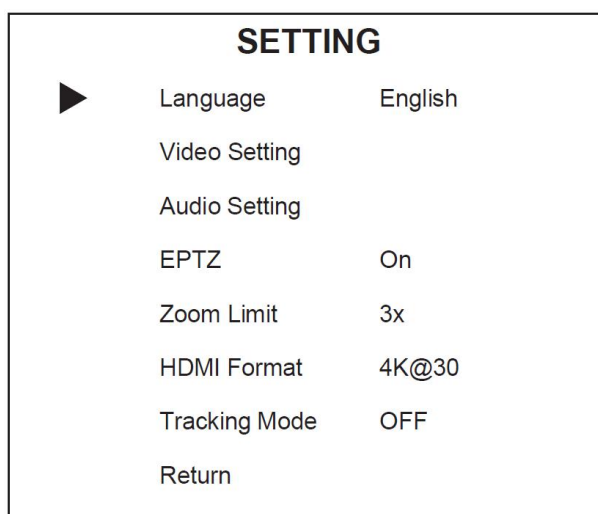
9.1 Menu

Press **【Menu】** under normal image, the screen will display the menu, and you can scroll the arrow cursor to point to the selected item.



9.2 Settings

Move the cursor to "Settings" in the main menu, press [OK] to enter the setting page, as shown in the figure below.



Language: Chinese, English & French.

Video settings: 2D noise reduction, 3D noise reduction, WDR enable, Horizontal flip, OSD mirroring.

Audio settings: 3A enable, Microphone equalizer.

Electronic PTZ: On, Off.

Zoom limit: 1.5x, 2x, 3x, 4x, 5x.

HDMI video format: 1080P@60, 1080P@50, 1080P@30, 4K@30.

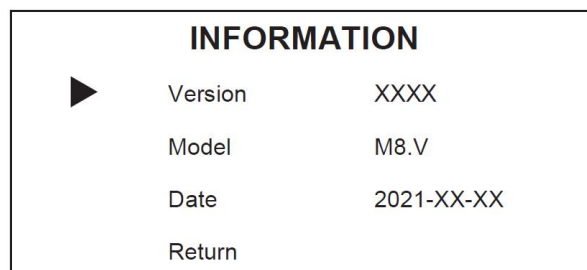
Tracking mode: Off, Participant Tracking, Speaker Tracking.

Tracking effect: Smooth switching, Instant switching (used only when the tracking mode is in "Participant Tracking" or "Speaker Tracking").

Tracking speed: Slow, Normal, Fast (Used only when the tracking mode is in "Participant Tracking" or "Speaker Tracking").

9.3 Info

Move the cursor to "Info" in the main menu, press [OK] to enter the information page, as shown in the figure below.



9.4 Factory reset

Move the cursor to "Factory reset" in the main menu, press [OK] to enter the factory reset page, as shown in the figure below.



Factory reset: Confirm whether to restore factory settings: Yes, No.



NOTE

GUI menu and parameter information are subject to change without notice.

10.Maintenance and Troubleshooting

Camera maintenance

- If the camera is not used for a long time, please turn off the power switch after use.
- When cleaning the camera case, use a soft cloth or tissue paper.
- When cleaning the camera lens, use a dry soft cloth. If the dirt is not easy to remove, please use a neutral detergent to wipe gently. Do not use strong or highly corrosive cleaning agents to avoid scratches on the lens and affect the image effect.

Do not use it in the following environments

- Do not use the camera to shoot particularly bright objects such as sunlight and lights.
- Do not operate the camera in an environment with unstable lighting conditions, otherwise the image will flicker.
- Do not use the camera around facilities such as TV stations or radio stations.

Troubleshooting

When the camera lens is at the maximum magnification, the image is jittery:

- 1) Check whether the camera is installed in a secure position.
- 2) Check for vibrating machinery or objects next to the camera.

11.Declaration of Toxic and Hazardous Substances

Name	Toxic and Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CrVI)	Polybrominated Biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Metal	x	O	O	O	O	O
Plastic	O	O	O	O	O	O
Glass	x	O	O	O	O	O
Circuit board	x	O	O	O	O	O
Power supply	x	O	O	O	O	O
Accessories	x	O	O	O	O	O

This form is prepared according to the provisions of SJ/T 11364.

O: Indicates that the content of the highly hazardous substance in the highly homogeneous material of the part is under the limit requirement specified in GB/T 26572.

x: Indicates that the content of the highly hazardous substance in at least one homogeneous material of the part exceeds the limit requirement specified in GB/T 26572, and there is no mature alternative at present.

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