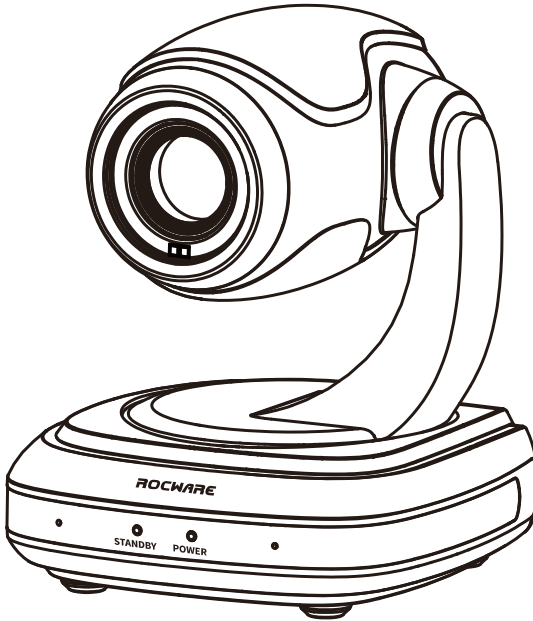


# ROCWARE

## RC310 1080P Video PTZ Camera



### User Manual English (V2.0)

## Copyright

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## Notice

Product specifications and information which were referred to in this document are for reference only. We may change, delete, or update any content at any time and without prior notice.

## FCC NOTICE (Class A)



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



Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

## Class A ITE

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:



Warning

Operating this equipment in a residential environment may cause radio interference.

## European Community Compliance Statement (Class A)



This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

### 1 Safety Precautions

- During the installation and operation, all electrical safety regulations of the country and region of use must be strictly observed.
- Please use the power adapter that comes standard with this product.
- Do not connect multiple devices to the same power adapter (exceeding capacity of the adapter may generate excessive heat or cause fire).
- Do not rotate the camera by hand, otherwise it may cause mechanical failure.
- When installing this product on a wall or ceiling, make sure the device securely and there are no obstacles within the rotation range; Do not power on until all installations are completed.
- To avoid heat build-up, please keep smooth ventilation around the device.

- If the device smokes, smells, or makes noises, please turn off the power and unplug the power cord immediately, then contact the dealer in time.
- This device is not waterproof, please keep the device dry.
- This product has no user serviceable parts, damage caused by disassembly by the user is not covered by the warranty.



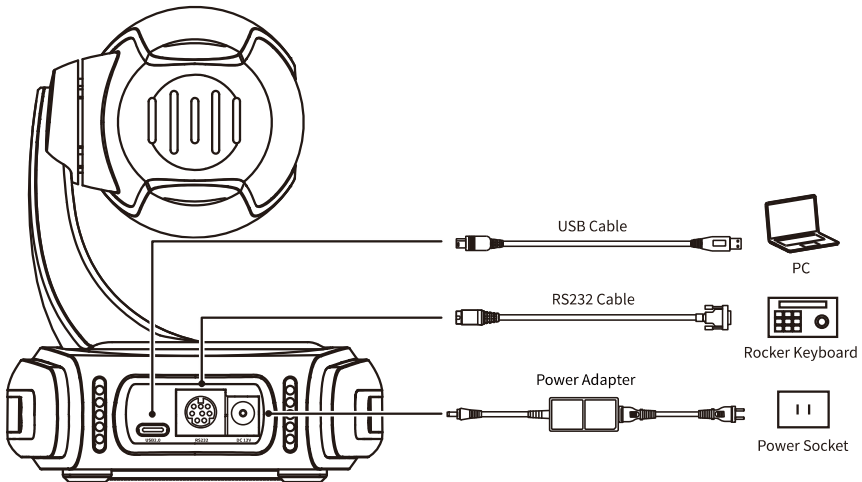
Electromagnetic field at specific frequencies may affect the image quality.

### 2 Packing List

Name	Quantity
Camera	1
Remote Control	1
USB Cable	1
User Manual	1

### 3 Quick Start

1) Please check connections are correct before starting.



- 2) After powered on, the camera starts to initialize, right up to the limit position, and then both horizontal and vertical go to the middle position. The initialization is completed when the motor stops running.

## 4 About Product

### 4.1 Features

- **Full Function USB Interface**

Full function USB interface, support encoding output, support UVC 1.1 protocol.

- **Excellent Compatibility**

Support mainstream video conferencing software on the market

- **Full HD Image Sensor**

High-quality 1/2.9-inch HD CMOS sensor with 2.07 million effective pixels for high-quality images.

- **90° Wide-angle-lens+16x Digital Zoom**

90° high-quality ultra-wide-angle lens, support 3x optical zoom and 16x digital zoom (the maximum horizontal FOV is 76.7° when LDC is on).

- **ToF**

Built-in ToF sensor, can realize fast focusing of different object distances.

- **AI Tracking and Auto Framing**

Built-in image recognition and tracking algorithm can realize humanoid tracking and 3 people automatic frame selection.

- **Low Illumination**

The new CMOS image sensor with ultra-high SNR can effectively reduce the image noise under low illumination. The application of 2D and 3D noise reduction algorithm greatly reduces the image noise even under the condition of ultra-low illumination and keeps the picture clean and clear.

- **Remote Control**

The camera can be controlled remotely through the RS232 and USB port.

- **Two Power Supply Modes**

Simultaneously support DC 12V power adapter and USB 5V power supply.

### 4.2 Product Specifications

Camera	
Sensor	1/2.9-inch, CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens	3x, f=3.41mm~10.33mm, F1.66~F3.03
Digital Zoom	16x
Minimum Illumination	0.5 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, Indoor, Outdoor, One Push, Manual, VAR
Backlight Compensation	Support
Digital Noise Reduction	2D&3D Digital Noise Reduction
Horizontal FOV	90°~30.7°
Vertical FOV	52°~18.4°
Pan Angle	±170°
Tilt Angle	-30°~+90°
Pan Speed	2.7°~35.7°/s
Tilt Speed	2.7°~31.5°/s
Image Flip	Support
Preset Position	255 (Serial Port)
USB Features	
Operate System	Windows/8/10/11, Mac OS X, Linux, Android
Color System/Compression	MJPEG/YUY2
Video Format	<ul style="list-style-type: none"> <li>● YUY2 (ISOC): 640 x 480P30 (max.)</li> <li>● MJPEG: 1920 x 1080P30 (max.)</li> </ul>
USB Protocol	UVC 1.1
UVC PTZ	Support
Interfaces	
USB Interface	1 x USB2.0: Type-C

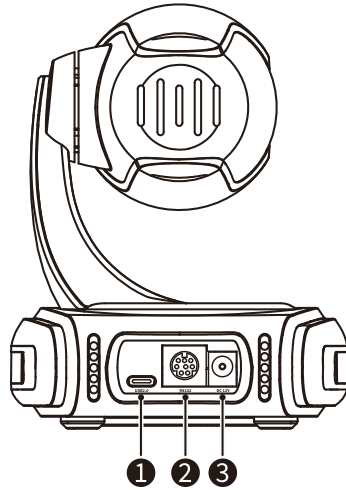
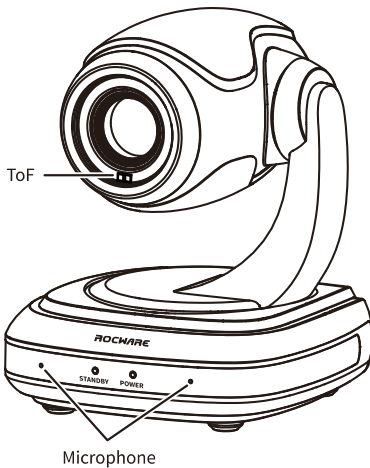
Communication Interface	1 x RS232: 8pin Min DIN, Max. Distance: 30m, Protocol: VISCA/Pelco-D/ Pelco-P
Power Interface	JEITA type (DC 12V) /USB Type-C (USB 5V)

General Specifications	
Input Voltage	DC 12V/USB 5V
Input Current	12V 1.0A (max.)/ 5V 1.5A (max.)
Operating Temperature	0°C~40°C
Storage Temperature	-40°C~60°C
Power Consumption	12W (max.)
Dimension (mm)	107.9 x 114.3 x 136.5
Net Weight	About 0.5Kg



Note  
Product specifications are subject to change without notice.

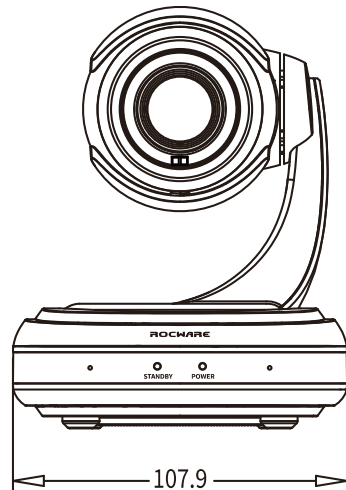
### 4.3 Appearance and Interfaces

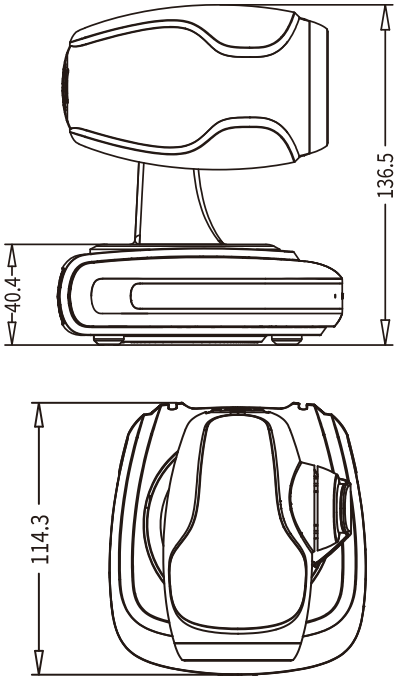


No.	Name
1	USB2.0 Interface
2	RS232 Interface
3	DC 12V Interface

### 4.4 Dimension

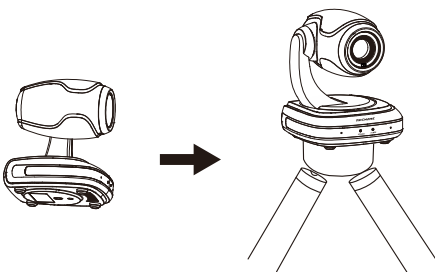
Unit: mm





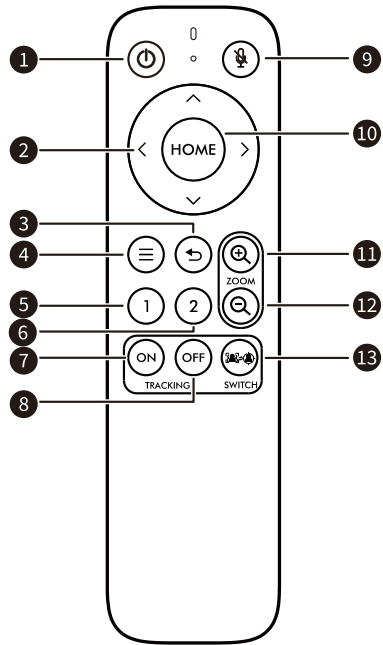
### 4.5 Installation

This camera can be placed on horizontal desktop or installed on the tripod as below:



The above installation diagram is for reference only, please refer to the actual product for the installation accessories.

### 4.6 Remote Control



Key Description	
<b>1. ⏻ (Power) Key</b>	Press to turn On/Off the device.
<b>2. Up/Down/Left/Right Keys</b>	Control PTZ directions, move cursors and adjust menu parameters.
<b>3. ↶ (Return) Key</b>	Press to return to the previous menu.
<b>4. Menu Key</b>	Enter/exit OSD menu.
<b>5. Preset 1</b>	Preset position 1: Long press 5s to set preset; Short press to recall preset.
<b>6. Preset 2</b>	Preset position 2: Long press 5s to set preset; Short press to recall preset.
<b>7. ON</b>	TRACKING ON: After the Single Tracking, Voice Tracking or Auto Framing function turned off, press [ON] key to turn on the last disabled tracking mode.

**8. OFF**

TRACKING OFF: When enabled tracking function, press [OFF] key to turn off the Single Tracking, Voice Tracking or Auto Framing function.

**9. Mute Key**

Turn On/Off microphone (restart automatically to take effect).

**10. HOME Key**

Confirm selection or press to turn PTZ back to the middle position.

**11. ZOOM + Key**

Zoom in camera lens (non-effect when enabled the tracking function).

**12. ZOOM - Key**

After zooming in, press this key to zoom out the camera lens.

**13. SWITCH Key**

Press repeatedly to select and enable the Single Tracking/Voice Tracking/Auto Framing function (before enable the Voice Tracking function, you need to set the "Audio Enable" to off in setting menu).

**5 GUI Settings**

**5.1 MENU**

Press [MENU] key to display the main menu on the screen. Use the arrow key to move the cursor to desired item and press the [HOME] key to confirm to enter the corresponding sub-menu.

<b>MENU</b>	
▶	Exposure
	Color
	Image
	P/T/Z
	Noise Reduction
	Setup
	Communication Setup
	Information
	Restore Default
	[HOME] Enter
	[MENU] Exit

**5.2 EXPOSURE**

When in main menu page, move the cursor to [Exposure] and press [HOME] key to confirm to enter the Exposure page as below.

<b>EXPOSURE</b>	
▶	Mode                      Auto
	ExpCompMode          On
	ExpComp                -1
	Gain Limit              2
	Meter                    Average
	Backlight               Off
	DRC                      1
	Anti-Flicker            50Hz
▲▼ Select Item	
◀▶ Change Value	
[MENU] Exit	

**Mode:** Auto, Manual, SAE.

**ExpCompMode** (Exposure Compensation Mode): On, Off (Effective only in Auto mode).

**ExpComp** (Exposure Compensation Value): -7~7 (Effective only in ExpCompMode On).

**Gain Limit:** 0~15 (Effective in Auto, SAE mode).

**Meter:** Average, Center, Bottom, Top (Effective in Auto, SAE mode).

**Backlight:** On, Off (Effective only in Auto mode).

**Anti-Flicker:** Off, 50Hz, 60Hz (Effective only in Auto mode).

**Shutter:** 1/30, 1/50, 1/60, 1/100, 1/125, 1/200, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (Effective in Manual, SAE mode).

**Gain:** 0~31 (Effective only in Manual mode).

**DRC:** 0~8.

**5.3 COLOR**

When in main menu page, move the cursor to [Color] and press [HOME] key to confirm to enter the Color page as below.

COLOR		
▶	WB Mode	Auto
	AWB Sens	Middle
	RG Tuning	2
	BG Tuning	1
	Saturation	120%
	Hue	7
▲▼ Select Item		
◀▶ Change Value		
[MENU] Exit		

**WB-Mode** (White Balance Mode): Auto, Indoor, Outdoor, One Push, Manual, VAR.

**AWB Sens** (The White Balance Sensitivity): Low, Middle, High (Effective in Auto, One Push mode).

**RG** (Red Gain): 0~255 (Effective in Manual mode).

**BG** (Blue Gain): 0~255 (Effective in Manual mode).

**RG Tuning** (Red Gain Tuning): -10~10 (Effective in Auto, One Push, VAR mode).

**BG Tuning** (Blue Gain Tuning): -10~10 (Effective in Auto, One Push, VAR mode).

**Saturation**: 60%~200%.

**Hue**: 0~14.

**Color Temp**: 2500K~8500K (Effective only in VAR mode).

### 5.4 IMAGE

When in main menu page, move the cursor to [Image] and press [HOME] key to confirm to enter the Image page as below.

IMAGE		
▶	Luminance	45
	Contrast	50
	Sharpness	16
	B&W-Mode	Off
	Flip-H	Off
	Flip-V	Off
	Gamma	Default
	Image Style	Default
	LDC	6
▲▼ Select Item		
◀▶ Change Value		
[MENU] Exit		

**Luminance**: 0~99.

**Contrast**: 0~99.

**Sharpness**: 0~99.

**B&W-Mode**: On, Off.

**Flip-H**: On, Off.

**Flip-V**: On, Off.

**Gamma**: Ext, Default, 0.45, 0.5, 0.56, 0.63.

**Image Style**: Default, Norm, Clarity, Bright, Soft.

**LDC**: Off, 1~8.

### 5.5 P/T/Z

When in main menu page, move the cursor to [P/T/Z] and press [HOME] key to confirm to enter the P/T/Z page as below.

P/T/Z		
▶	ToF Focus	On
	D-Zoom Limit	x4
	AF-Sense	High
	AF-Zone	Front
	Speed By Zoom	On
	Display Info	On
	Call Preset Speed	18
	Pre Zoom Speed	5
▲▼ Select Item		
◀▶ Change Value		
[MENU] Exit		

**ToF Focus**: On, Off.

**D-Zoom Limit**: On, x2, x4, x8, x16.

**AF-Sense**: Low, Normal, High.

**AF-Zone**: Front, Top, Middle, Bottom.

**SpeedByZoom** (Depth of Field Ratio): On, Off.

**Display Info**: On, Off.

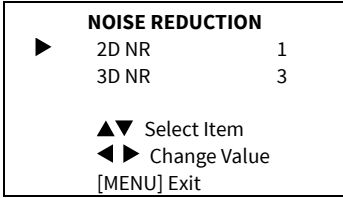
**Call Preset Speed**: 0~24.

**Pre Zoom Speed**: 0~7.

### 5.6 NOISE REDUCTION

When in main menu page, move the cursor to [Noise Reduction] and press [HOME] key to confirm to enter the Noise Reduction page as below.



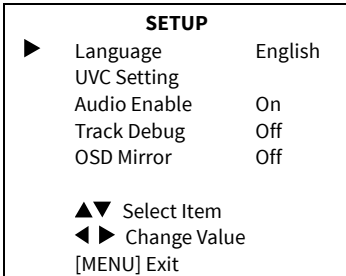


**2D NR** (2D Noise Reduction): Auto, Off, 1~5.

**3D NR**: (3D Noise Reduction): Auto, Off, 1~8.

### 5.7 SETUP

When in main menu page, move the cursor to [Setup] and press [HOME] key to confirm to enter the Setup page as below.



**Language**: English, Chinese.

**UVC Setting**: Press HOME key to confirm to enter to the UVC setting page to select turn on/off H264 Enable, NV 12 Enable and Bulk Enable (restart automatically to take effect).

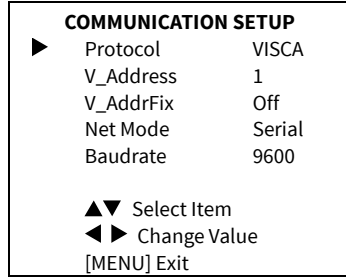
**Audio Enable**: On, Off (restart automatically to take effect).

**Track Debug**: On, Off.

**OSD Mirror**: On, Off.

### 5.8 COMMUNICATION SETUP

When in main menu page, move the cursor to [Communication Setup] and press [HOME] key to confirm to enter the Communication setup page as below.



**Protocol**: VISCA, PELCO-D, PELCO-P.

**V\_Address**: 1~7 (Effective only in VISCA protocol).

**V\_AddrFix**: On, Off (When set to On, the 88 30 01 FF command does not work. Effective only in VISCA protocol).

**P\_D\_Address**: 0~254 (Effective only in PELCO-D protocol).

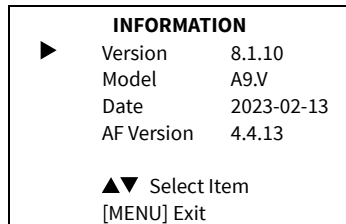
**P\_P\_Address**: 0~31 (Effective only in PELCO-P protocol).

**Net Mode**: Serial, Paral (Effective only in VISCA protocol).

**Baudrate**: 2400, 4800, 9600, 19200, 38400.

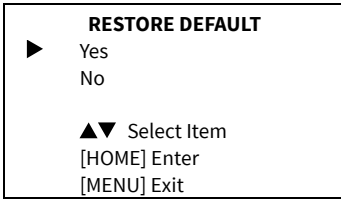
### 5.9 INFORMATION

When in main menu page, move the cursor to [Information] and press [HOME] key to confirm to check the product information.



### 5.10 RESTORE DEFAULT

When in main menu page, move the cursor to [Restore Default] and press [HOME] key to confirm to enter the Restore Default page as below.



**Restore:** Yes, No.



Notice

When selected “Yes” and confirm with [HOME] key, all parameters will restore to default, include the IR Remote address and VISICA address.



Note

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

## 6 Troubleshooting

### Camera Restart Automatically or Cannot be Identified by the USB of Main Device

- Camera restart continually while powered by USB separately

Connect the camera to the USB3.0 interface of main device. If the fault persists, it needs to be powered with another power adapter.

- Camera restart automatically after operating PTZ or lens zooming while powered by USB separately

Connect the camera to the USB3.0 interface of main device. If the fault persists, it needs to be powered with another power adapter.

- Camera cannot be identified by the USB of main device

Use the supplied USB cable and connect the camera to the USB3.0 interface of main device. If the fault persists, it needs to be powered with another power adapter.

### Image

- The monitor shows no image
  - 1) Ensure that the camera power supply is connected, the voltage is in normal, and the power indicator is always on.
  - 2) Turn off the power switch to check that the camera is self-testing.
  - 3) Ensure that the cable of video platform and TV in correct connection.
- Image jitters after the camera is properly connected
  - 1) Ensure that the camera installation position is stable.
  - 2) Check that any vibrating machinery or object near the camera.

### Control

- Remote control does not work
  - 1) Check and replace with new batteries.
  - 2) Ensure that the camera working mode is correct.
  - 3) Ensure that the address key of remote control can match the camera.
  - 4) Ensure there are no objects near the ToF sensor that reflect to the infrared receiving tube and interfere with the signal reception of remote control.
- Serial port cannot control
  - 1) Ensure that the protocol, address and bit rate of the camera are consistent.
  - 2) Ensure that the control cable is properly connected.

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