



# ConteralP<sup>®</sup> Fisheye

## Installation Manual

12MP

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AV12CPD-236

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## About Our Warranty

### Global (3 Year) Limited Warranty

ARECONT VISION COSTAR warrants to Purchaser a "Limited Warranty" that (a) each Product shall be free from material defects in material and workmanship for a period of thirty-six (36) months from the date of shipment, the "Warranty Period"; (b) during the Warranty Period, the Product will materially conform with the specification in the applicable documentation; (c) all "Licensed Programs" accompanying the Product will materially conform with applicable specifications.

# Camera Overview

## ConteralP<sup>®</sup> Fisheye Megapixel Cameras

The ConteralP Fisheye provides an all in one solution for wide area video surveillance. The 12 mega pixel (MP) resolutions provide optimum performance. The housing is an outdoor rated IP66 and IK-10 impact resistant dome enclosure. The ConteralP Fisheye can replace multiple fixed or PTZ cameras by recording an entire 360 degree field of view. With proper placement, blind spots can be eliminated. With the ability to zoom into multiple regions of interests, the return on investment can be easily measured. The ConteralP Fisheye combines a day / night mechanical IR cut filter with an integrated lens which provides excellent image quality regardless of the time of day. For clear color images in low light conditions, NightView offers strong low light sensitivity for capturing details in extremely low lit scenes, this is further enhanced by the integrated LED illumination.

Arecont Vision<sup>®</sup> was the first to bring H.264 to the mainstream market and recently developed SNAPstream<sup>™</sup> (Smart Noise Adaptation and Processing) technology for reducing bandwidth without impacting image quality. Today we are proud to offer our next generation H.265 with SNAPstream+<sup>™</sup> smart codec, capable of delivering high quality video while saving over 50% of the data rate to reduce or prevent strain on the network.

The microSDXC slot supports up to 256GB of storage capacity for convenient onboard storage. The camera can be powered via Power over Ethernet (PoE) using IEEE 802.3af standards or 12V DC. The ConteralP Fisheye is ONVIF Profile S, G and T compliant.



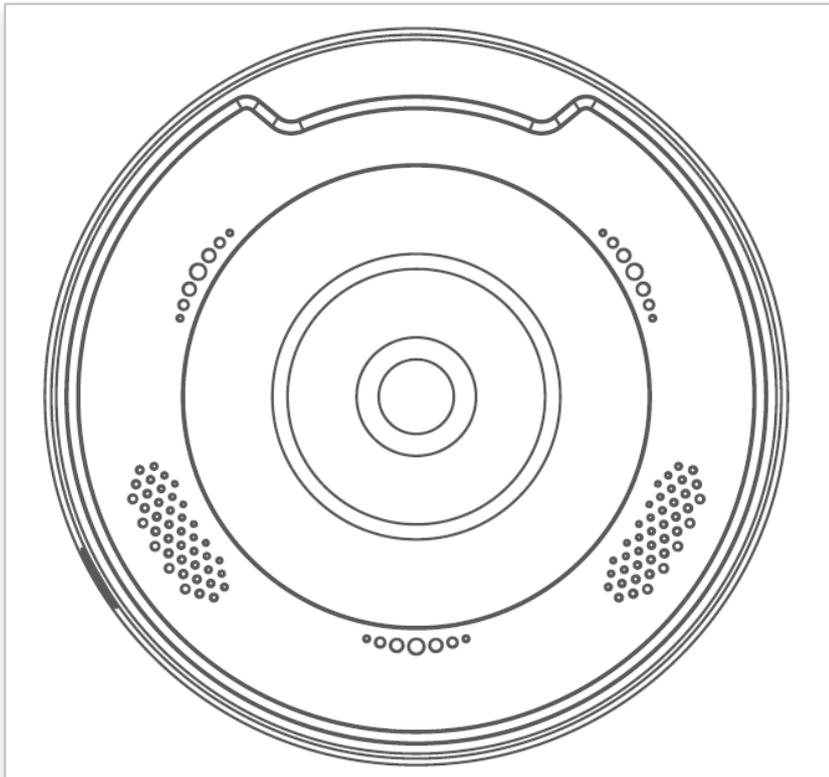
### **CAUTION!**

1. Do not attempt to service a damaged unit yourself. Refer all servicing to qualified service personnel.
  2. Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application.
  3. Always use hardware e.g. screws, anchors, bolts, locking nuts etc. which are compatible with mounting surface and of sufficient length and construction to insure a secure mount.
-

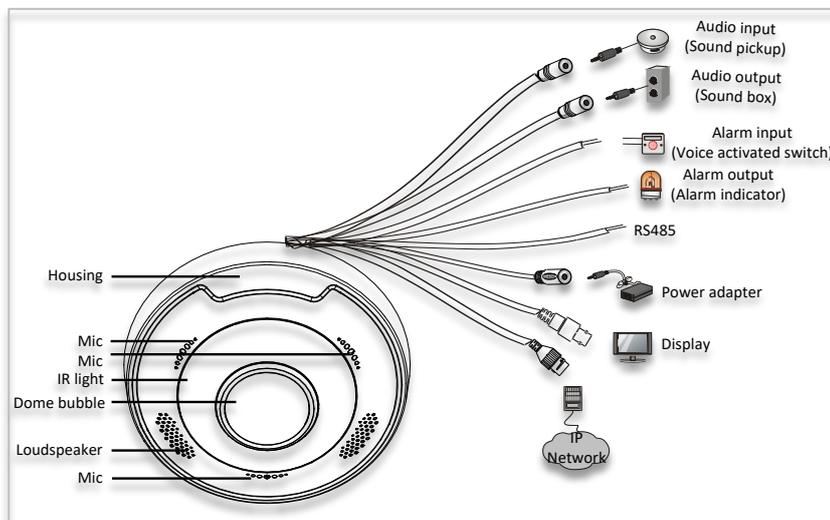
# Package Contents

Description	QTY
AV12CPD-236 camera	1
Quick Start Guide/ Mounting Template	1
Accessory Pack	2

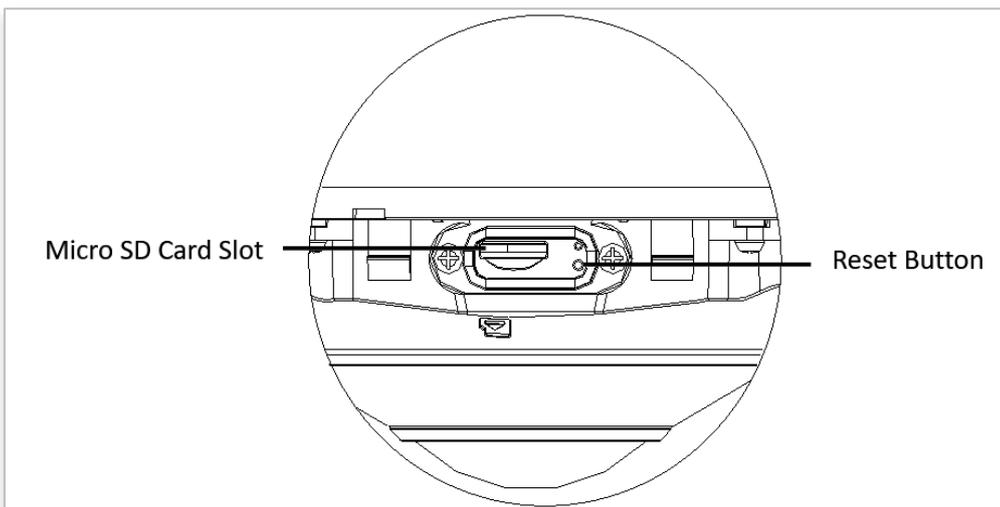
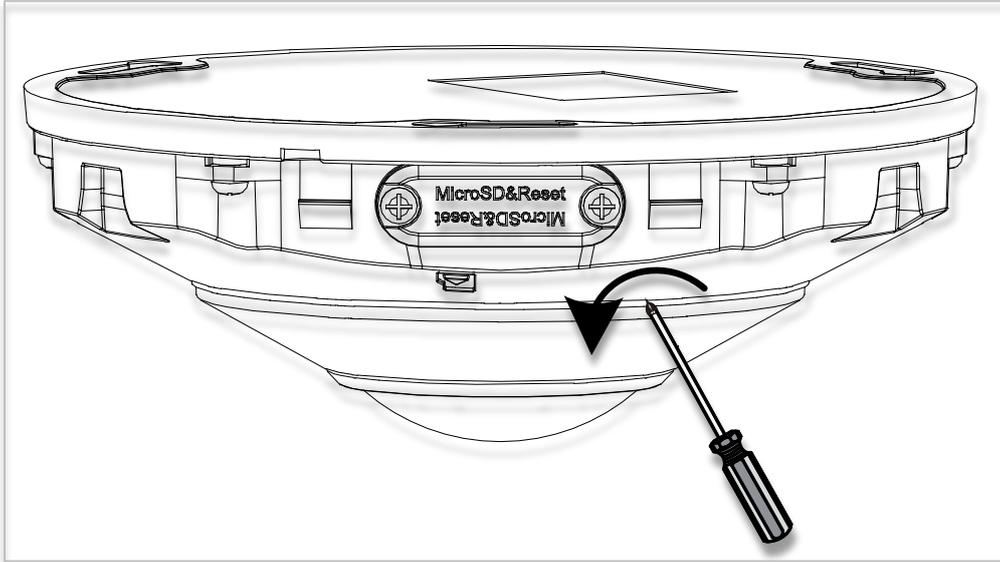
- AV12CPD-236



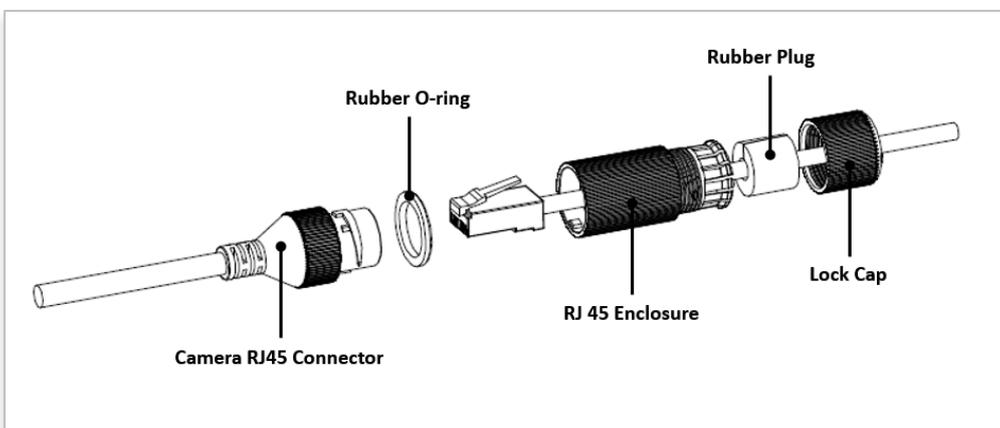
- Cable Connection



- Micro SD Card Slot and Reset Button



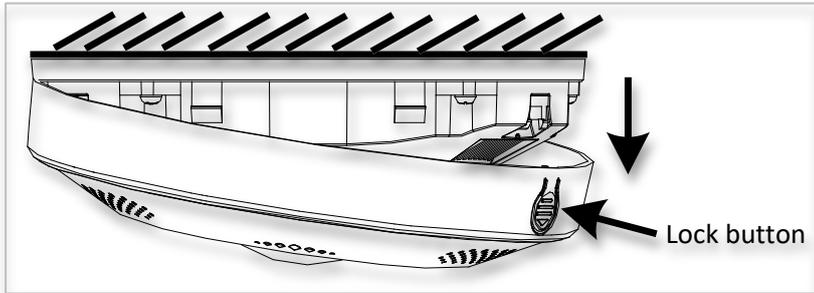
- Waterproof Cable



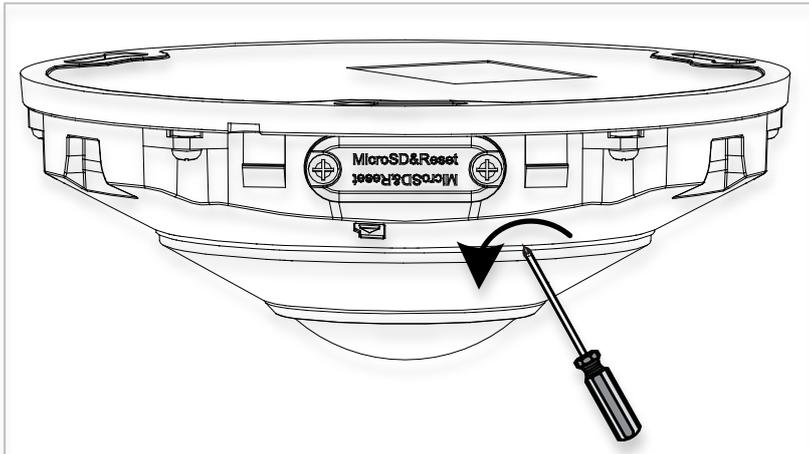
# Installation

## Surface Mount

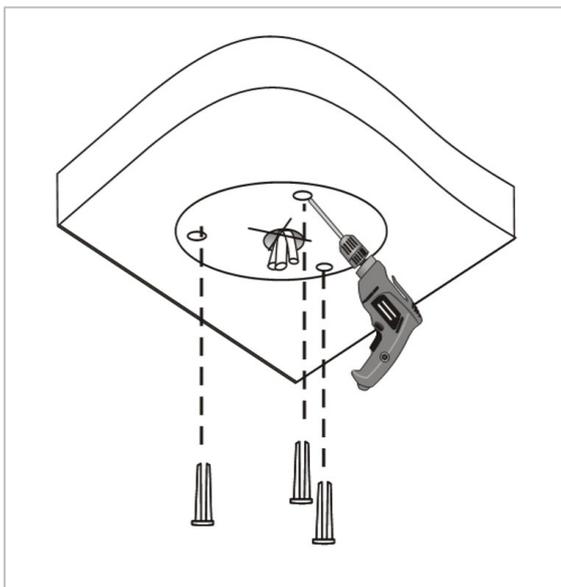
1. Determine a secure location to mount the camera.
2. Press the lock button and remove the dome cover as shown in the figure below.



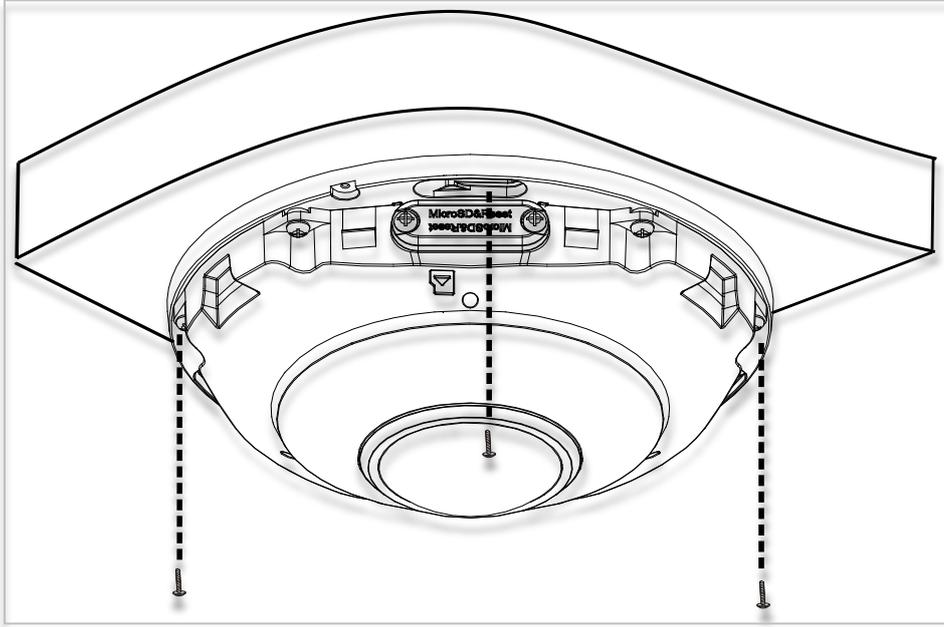
3. Optional: Remove the cover plate shown below and insert a micro SD card.



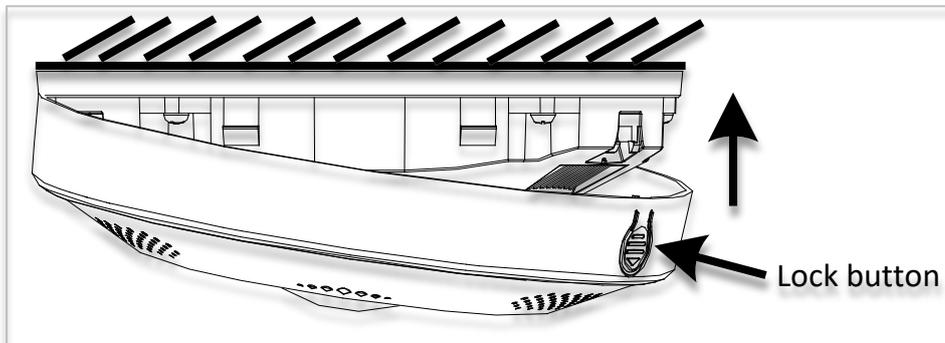
4. Use the provided template, anchors and screws to prepare the installation surface.



5. Connect all necessary cables.
6. Mount the camera using the provided screws.



7. Reattach the dome cover.



8. To configure the camera, reference the camera discovery, set-up and configuration section.



**CAUTION!**

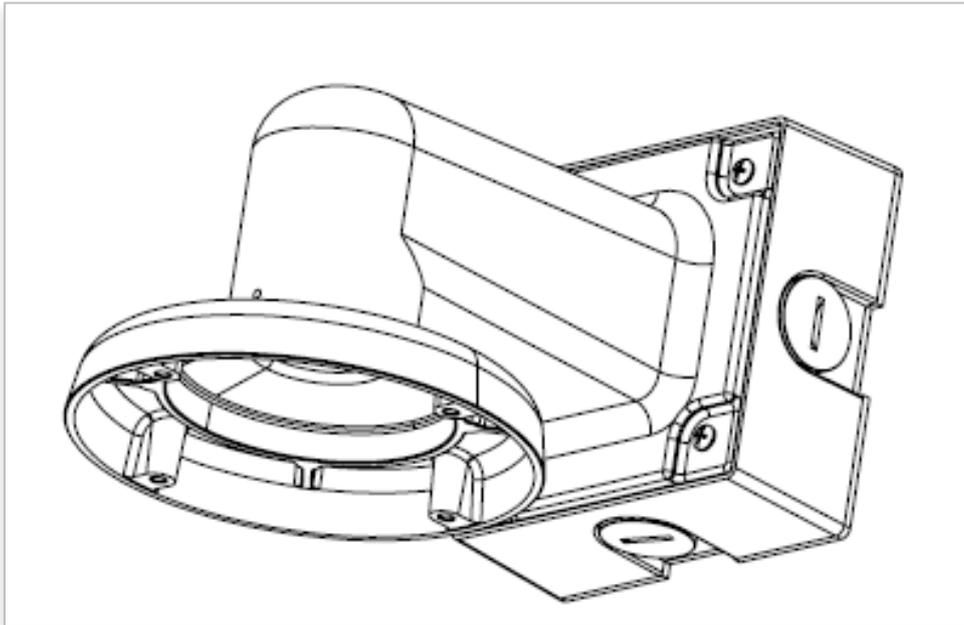
The captive screws must be used to properly secure the dome cover and camera housing. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly sealed and not folded. Failure to do so may result in water and dust ingress. Water damage from improper installation is not covered by the warranty!

## Wall Mount

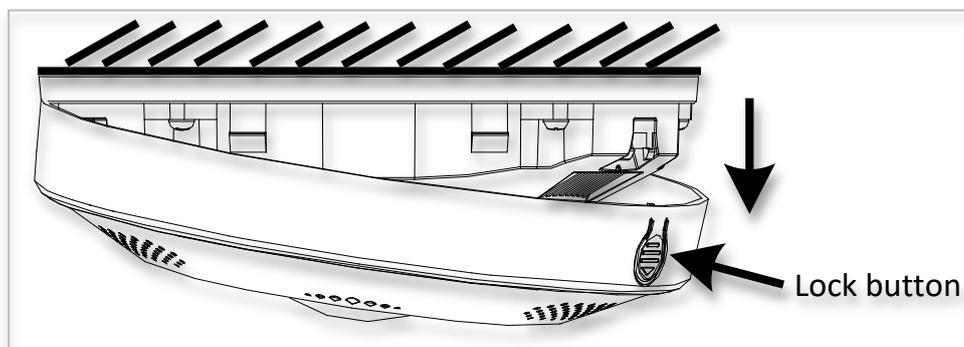
For proper installation the AV-WMJB-W and CF-CAP-W are required (sold separately). The wall mount should be mounted to hard surfaces only (i.e. wood, metal, and concrete).

1. Use the provided template, anchors and screws to prepare the installation surface.
2. Thread the CF-CAP-W onto the AV-WMJB-W.

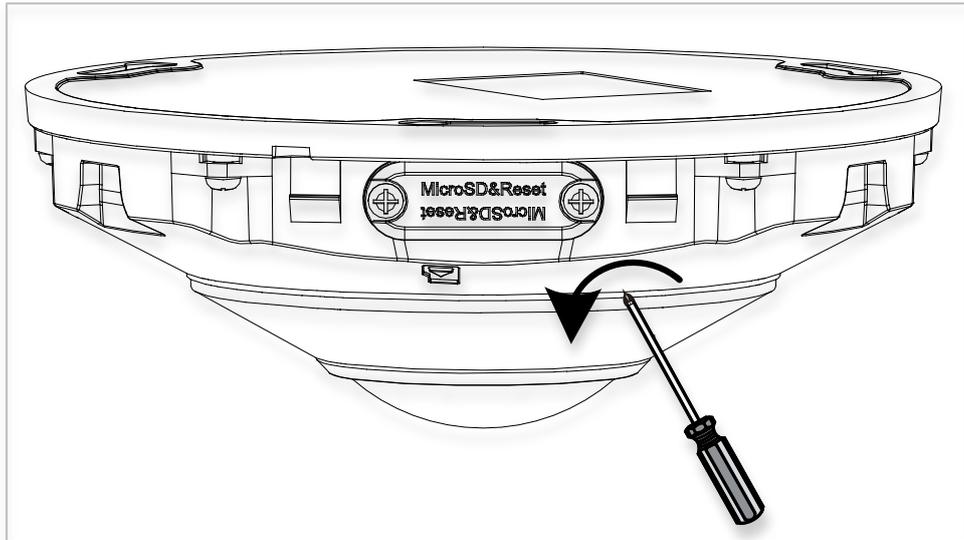
*NOTE: The thread size for Top shield, pendant pole and mount is 1.5" NPT.*



3. Attach the wall mount to the surface using the provided screws or use suitable hardware for the mounting surface.
4. Run all necessary cables through the wall mount. Ensure the gasket is sealed properly.
5. Press the lock button and remove the dome cover as shown in the figure below.



6. Optional: Remove the cover plate shown below and insert a Micro SD card.



7. Connect all necessary cables.
8. Install the camera into the CF-CAP-W with the (3) supplied screws.
9. Reattach the dome cover.
10. To configure the camera, see Camera Discovery, Setup and Configuration on page 18.



**CAUTION!**

The captive screws must be used to properly secure the dome cover and camera housing. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly sealed and not folded. Failure to do so may result in water and dust ingress. Water damage from improper installation is not covered by the warranty!

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## Pendant Mount

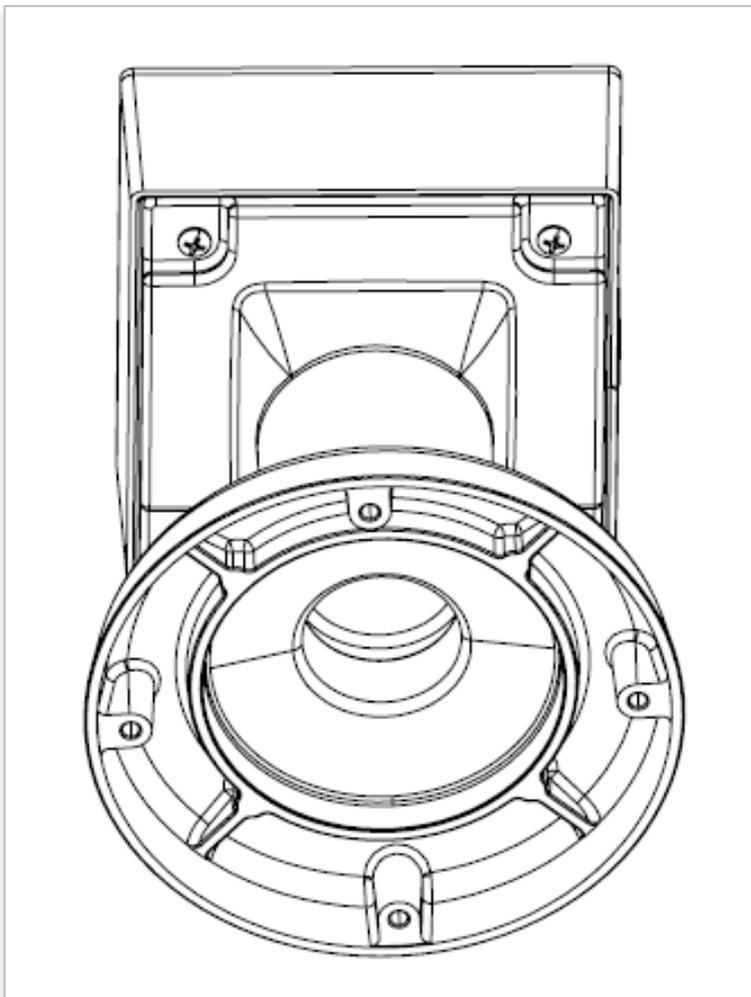
For proper installation the AV-PMJB-W and CF-CAP-W are required (sold separately). The pendant mount should be mounted to hard surfaces only (i.e. wood, metal, and concrete).

1. Use the provided template, anchors and screws to prepare the installation surface.
2. Thread the CF-CAP-W, pendant pole and AV-PMJB-W together.

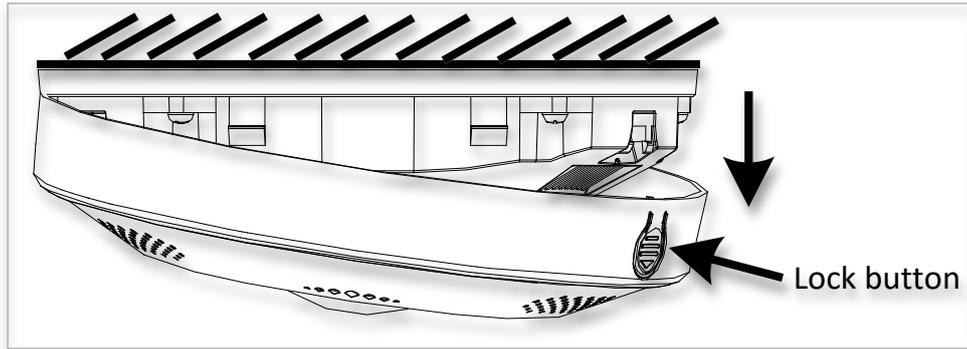


### **NOTE!**

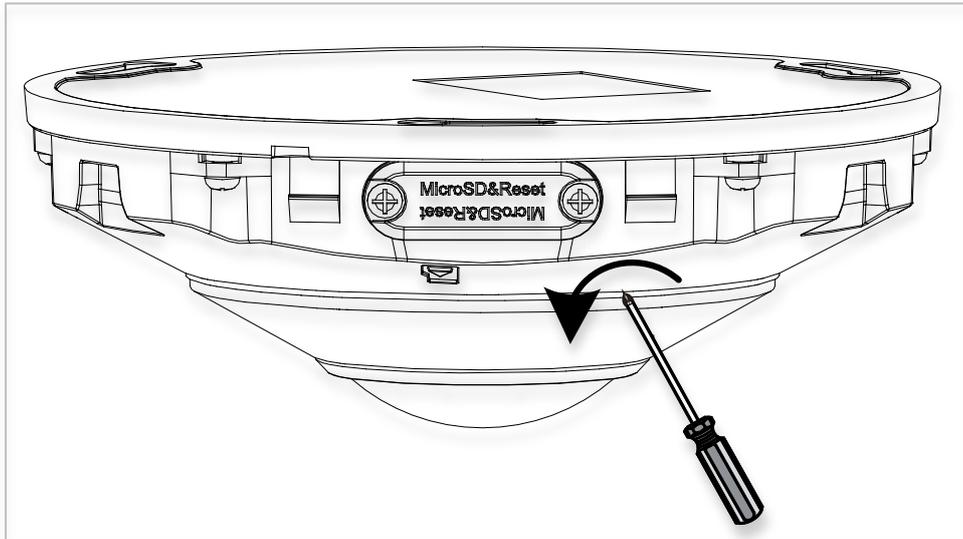
*The thread size for Top shield, pendant pole and mount is 1.5" NPT.*



3. Attach the pendant mount to the surface using the 4 wood screws or use suitable hardware for the mounting surface.
4. Run all necessary cables through the pendant mount. Ensure the gasket is sealed properly.
5. Press the lock button and remove the dome cover as shown in the figure below.



6. Optional: Remove the cover plate shown below and insert a Micro SD card.



7. Connect all necessary cables.
8. Install the camera into the CF-CAP-W with the (3) supplied screws.
9. Reattach the dome cover.
10. To configure the camera, see Camera Discovery, Setup and Configuration on page 18.



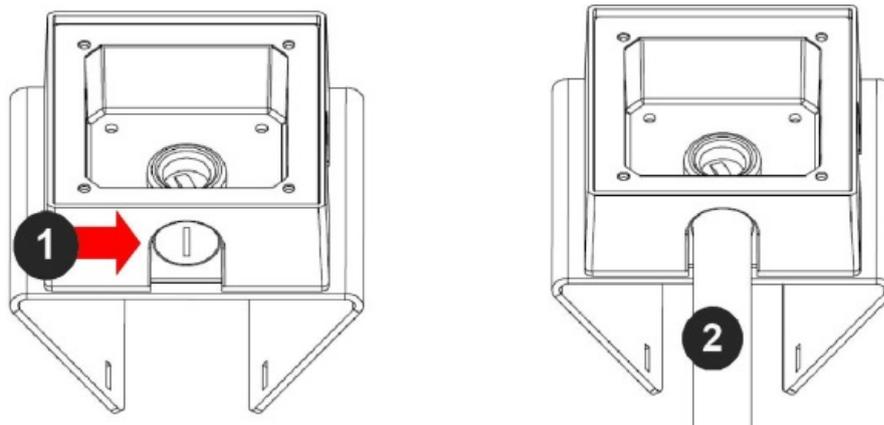
**CAUTION!**

The captive screws must be used to properly secure the dome cover and camera housing. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly sealed and not folded. Failure to do so may result in water and dust ingress. Water damage from improper installation is not covered by the warranty!

## Pole Mount

For proper installation the AV-WMJB-W, AV-PMA-W and CF-CAP-W are required (sold separately). The pole mount should be mounted to hard surfaces only (i.e. wood, metal, and concrete).

1. Using the provided template, anchors and screws to prepare the installation surface.
2. Connect the wall mount cap and wall mount.
3. Attach the Junction Box Adapter to the Pole Mount Adapter.
4. Remove the conduit plug on the junction box adapter and connect  $\frac{3}{4}$ " NPT conduit to the junction box adapter.



Reference #	Description
1	Remove conduit plug
2	Connect $\frac{3}{4}$ " NPT conduit to junction box adapter (ensure use of water seal tape).



### NOTE!

Use silicon and / or thread seal tape between the conduit pipe and junction box adapter.

5. Run the Ethernet cable and outside power cable (if necessary) through the Junction Box Adapter. Ensure the gasket is seated properly.

6. Attach the Wall Mount Adapter (AV-WMJB-W) to the Pole Mount Adapter (AV-PMA-W).
7. Use the supplied two Steel Straps to attach the Pole Mount Adapter to the pole and tighten the compression screws.
8. To attach the camera to the Wall Mount Adapter (AV-WMJB-W), reference the Installation and Wall Mount section.
9. To configure the camera, reference the camera discovery, set-up and configuration section.



**CAUTION!**

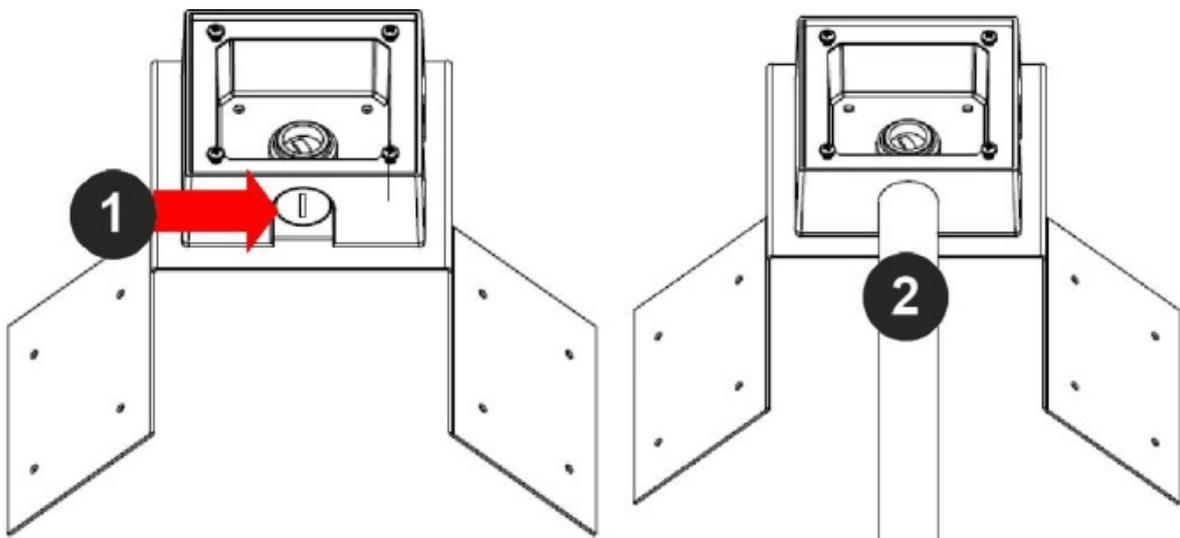
The captive screws must be used to properly secure the dome cover and camera housing. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly seated and not folded. Failure to do so may result in water and dust ingress. Water damage from improper installation is not covered by the warranty!

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## Corner Mount

For a corner mount installation, the AV-WMJB-W wall mount, AV-CRMA-W corner mount, and CF-CAP-W mount cap are required (sold separately). A corner mount should only be attached onto hard corner surfaces including wood, plastic, metal, and concrete.

1. Using the Mounting template, prepare the mounting provisions for the camera installation.
2. Connect the wall mount cap and wall mount.
3. Attach the Junction Box Adapter to the Corner Mount Adapter.
4. Remove the conduit plug on the junction box adapter and connect  $\frac{3}{4}$ " NPT conduit to the junction box adapter.



Reference #	Description
1	Remove conduit plug
2	Connect $\frac{3}{4}$ " NPT conduit to junction box adapter (ensure use of water seal tape)



**NOTE!** Use silicon or water pipe seal tape to make sure no water leakage between conduit pipe and junction box adapter.

5. Run the Ethernet cable and outside power cable (if necessary) through the Junction Box Adapter. Ensure the gasket is seated properly.
6. Attach the Wall Mount Adapter (AV-WMJB-W) to the Corner Mount Adapter (AV-CRMA-W).
7. Using the screws provided (or other hardware), attach the Corner Mount Adapter to an exterior 90 degree corner wall.
8. To attach the camera to the Wall Mount Adapter (AV-WMJB-W), reference the Installation and Wall Mount section.
9. To configure the camera, reference the camera discovery, set-up and configuration section.



**CAUTION!**

The captive screws must be used to properly secure the dome cover and camera housing. Failure to use the captive fastener may result in serious injury. When mounting the dome cover to the camera housing, ensure that the gasket is properly seated and not folded. Failure to do so may result in water and dust ingress. Water damage from improper installation is not covered by the warranty!

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# Camera Power Up



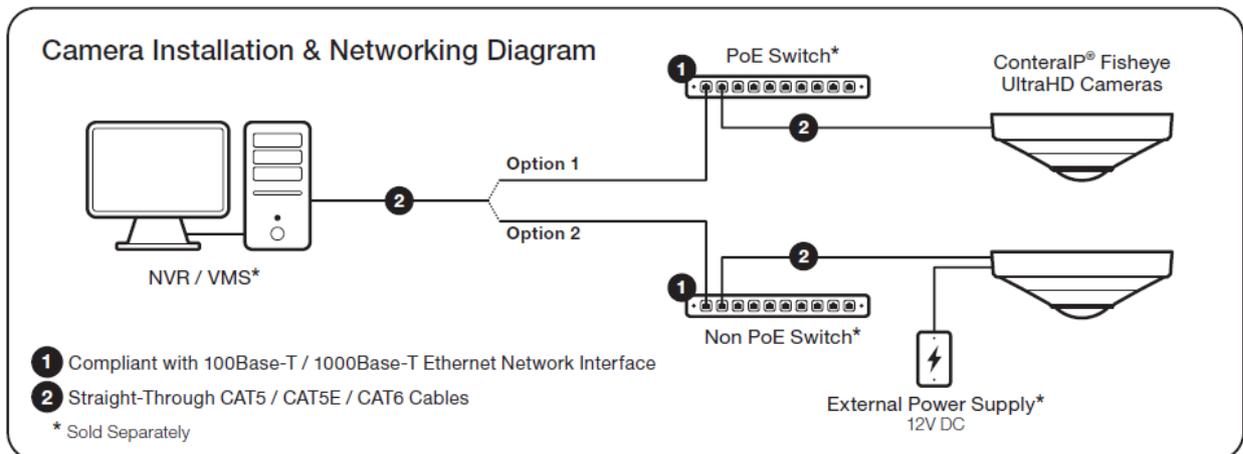
**CAUTION!**

This product should be installed by a qualified service technician in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local code. Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application.

**CAUTION!**

Make the connections inside a watertight compartment. Isolate unused power wires individually. After connections are made, ensure that the watertight compartment is tightly closed and cables and conduits are properly sealed to prevent ingress of water.

1. Power the camera.
  - There are two options to power the camera:
    - a. Connect the camera to a 100/1000Mbps PoE switch using Ethernet cabling.
    - b. Power the camera via 12VDC.
2. Connect the PoE switch to your computer's network port using an Ethernet cable.



LED	Status	Description
Green	Quick Flashing	Link has been established
	Slow Flashing	Normal operation
None	None	No Connection

## Alarm I/O Functions

Connect the Alarm In (DI) connector to the alarm input sensor, and connect Alarm Out (DO) connector to the alarm output signal. To avoid any damaged, please follow the specification of the part as below:

Alarm In (Wet Contact)	Alarm Out (Wet Contact)			
	DC		AC	
V sense	V sense	I sense	V sense	I sense
5V	30V	1A (max)	125V	0.3A (max)

## Reset to Factory Default

There are 2 methods to factory default the camera.

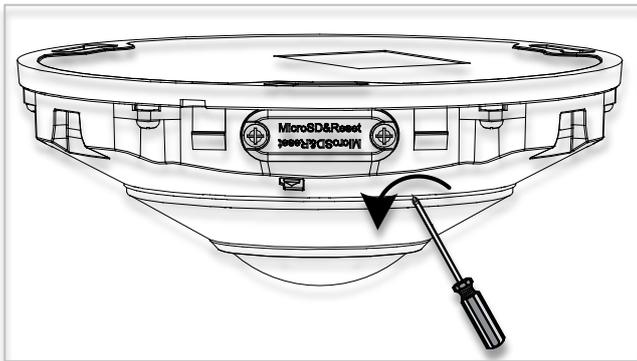
- Reset button



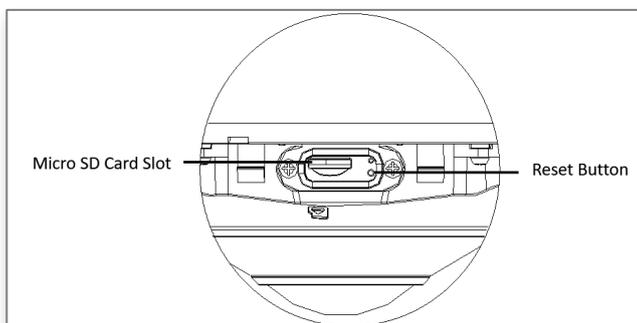
### NOTE!

*The reset button only works within ten minutes of the camera startup.*

1. Remove the cover plate.



2. Press and hold the reset button for 15 seconds.



- Camera Web Interface

1. Access the camera web interface (Default IP is 192.168.1.13)
2. Login with (admin / AVCostar)
3. Click Setup > System > Maintenance > Default.

# Camera Discovery, Setup, and Configuration

**NOTE!**



Use AV IP Utility

(<http://www.arecontvisoin.com/software.php>) to locate the camera on the network.

All configuration must be performed from the camera web interface.

Disable 3rd stream in the camera web page if you are using ConteraVMS. Refer to Dewarping in Video Management Software (VMS) on Page 80.

## Camera Discovery

**NOTE!**



If there is no DHCP server on the network the default IP address is 192.168.1.13

Default username: admin

Default password: AVCostar

1. Launch AV IP Utility.



2. When the program launches, it will perform an automatic discovery and display all cameras found.

Mac	IP	Model	FW Version	HW Version	IPN	Status
00:1A:07:17:10:E9	10.10.45.18	AV12376R5	65212.00	16809 / 6100	0002 012E	Accessible
00:1A:07:18:B4:E1	10.10.45.13	AV02CLB-100	35109	01/016D	180700343	Accessible
E4-F1-4C:16:86:1D	10.10.45.11	AV12CPD-236	37100	Unknown	2102351B2E3198000023	Go to web page

3. Double click on the IP address of the camera you wish to configure or manually launch a web browser and type in the IP address.



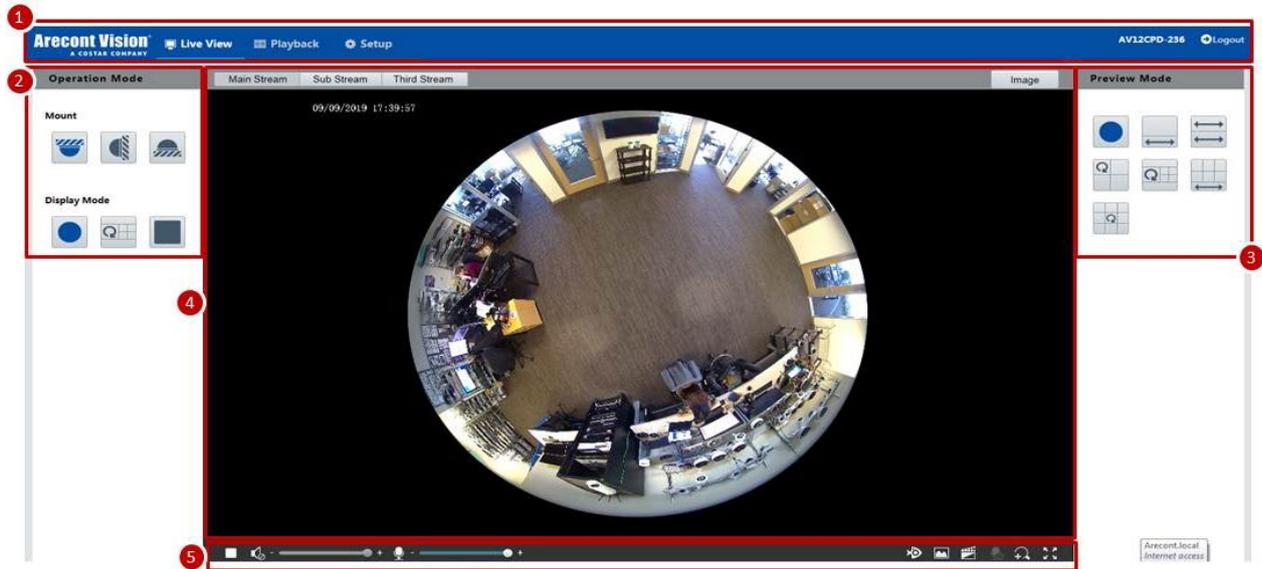
**Note!**



Internet Explorer must be used if live streaming is required due to an ActiveX plugin needing to be installed.

## Introduction to the Web Interface

By default, the live view window is displayed when you are logged in to the Web interface. The following shows an example.



No.	Description
1	Menu
2	Operation Mode: Mount / Display Mode
3	Preview Mode
4	Live view window
5	Live view toolbar

## Common

### Basic Info

You can view the current status of your camera.

1. Click **Setup > Common > Basic Info**.

**Basic Info**

Basic Info	
Model	AV12CPD-236
Firmware Version	37100
Hardware Version	A
Boot Version	V2.1
Serial No.	210235C2ND317C000135
Network	10.10.70.19/255.255.255.0/10.10.70.254

Status	
System Time	2019/9/9 20:48:35
Operation Time	14 Day(s) 4 Hour(s) 2 Minute(s)

**Common Configuration**

-  Ethernet
-  Time
-  OSD
-  User

2. Click **Refresh** for the latest status information.

3. View the device information.



#### **NOTE!**

You may view device model, firmware version, on the basic info page.

## Local Settings

Set local parameters for your PC.



**Note!**

The local parameters may vary with models. Please see the actual Web interface for details.

1. Select **Setup > Common > Local Settings**.

**Local Settings**

---

**Video**

Processing Mode:

Protocol:

---

**Audio**

Encoding Format:

---

**Recording and Snapshot**

Recording:

Subsection Time (min):  [1-60]

When Storage Full:  Overwrite Recording  Stop Recording

Total Capacity(GB):  [1-1024]

Local Recording:

Files Folder:

2. Modify the settings as required. The following table describes some major parameters.

Parameter		Description
Video	<b>Processing Mode</b> 3 Options	Real-Time Priority: Recommended if the network is in good condition. Fluency Priority: Recommended if you want short time lag for live video. Ultra-low Latency: Recommended if you want the minimum time lag for live video.
	<b>Protocol</b> 2 Options	Set the protocol used to transmit media streams to be decoded by the PC. TCP UDP
Audio	<b>Encoding Format</b>	G.711U supports 8K sampling rate only.
Record and Snapshot	<b>Recording</b>	Subsection By Time: Duration of recorded video for each recording file on the computer. For example, 2 minutes. Subsection By Size: Size of each recording file stored on the computer. For example, 5M.
	<b>When Storage Full</b>	Overwrite Recording: When the assigned storage space on the computer is used up, the camera deletes the existing recording files to make room for the new recording file. Stop Recording: When the assigned storage space on the computer is full, recording stops automatically.

3. Click **Save**.

## Network Configuration

### Ethernet

Modify communication settings such as the IP address for the camera so that the camera can communicate with other devices.



#### NOTE!

- After you have changed the IP address, you need to use the new IP address to log in.
- The configurations of DNS (Domain Name System) server are applicable when the device is accessed by domain name.

### Static Address

1. Click **Setup > Network > Network**.
2. Select **Static** from the **Obtain IP Address** drop-down list.

#### Ethernet

Obtain IP Address	Static
IP Address	192.168.1.13
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
<b>IPv6</b>	
IPv6 Mode	Manual
IPv6 Address	
Prefix Length	64
Default Gateway	
MTU	1500
Port Type	FE Port
Operating Mode	Auto-negotiation

3. Enter the **IP Address**, **subnet mask**, and **default gateway** address. Make sure that the IP address of the camera is unique in the network.
4. Click **Save**.

## PPPoE

If the camera is connected to the network through Point to Point over Ethernet (PPPoE), you need to select PPPoE as the IP obtainment mode.

1. Click **Setup > Network > Network**.

**Ethernet**

Obtain IP Address **PPPoE** ▼

Username

Password

**IPv6**

IPv6 Mode  ▼

IPv6 Address

Prefix Length

Default Gateway

Port Type  ▼

Operating Mode  ▼

2. Select **PPPoE** from the **Obtain IP Address** drop-down list.
3. Enter the **username** and **password** provided by your internet Service Provider (ISP).
4. Click **Save**.

## DHCP

The Dynamic Host Configuration Protocol (DHCP) is enabled by default when the camera is delivered. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server.

To manually configure DHCP, follow the steps below:

1. Click **Setup > Network > Network**.

## Ethernet

Obtain IP Address

**IPv6**

IPv6 Mode

IPv6 Address

Prefix Length

Default Gateway

MTU

Port Type

Operating Mode

2. Select **DHCP** from the **Obtain IP Address** drop-down list.
3. Click **Save**.

## IPv6 Address Configuration

1. Click **Setup > Network > Network**.

## Ethernet

Obtain IP Address

**IPv6**

IPv6 Mode

IPv6 Address

Prefix Length

Default Gateway

2. By default the **IPv6 mode** is set to **Manual**.
3. Enter the **IPv6 address**, set the **prefix length** and **default gateway**. The IP address must be unique on the network.
4. Click **Save**.

## DNS

1. Click **Setup > Network > DNS**.

**DNS**

Preferred DNS Server

Alternate DNS Server

2. Set DNS server addresses.
3. Click **Save**.

## Port

1. Click Setup > Network > Port.
2. Go to **Port** tab.

**Port** **Port Mapping**

HTTP Port

HTTPS Port

RTSP Port

**Note:** Modifying the RTSP port number will cause the device to restart.

3. Configure relevant port numbers, manually type into HTTP Port, HTTPS Port, and RTSP Port.
4. Click **Save**.

## Port Mapping

1. Click **Setup > Network > Port**. Go to **Port Mapping** tab.

**Port** **Port Mapping**

Port Mapping  On  Off

Mapping Type

Port Type	External Port	External IP Address	Status
HTTP Port	<input type="text" value="80"/>	0.0.0.0	Inactive
RTSP Port	<input type="text" value="554"/>	0.0.0.0	Inactive
Server Port	<input type="text" value="81"/>	0.0.0.0	Inactive
HTTPS Port	<input type="text" value="443"/>	0.0.0.0	Inactive

2. Enable **Port Mapping** and select mapping type. If **Manual** is selected, then external ports must be configured (external IP is obtained automatically by the camera). If the configured port is occupied, then the **Status** will show Inactive and a new port must be selected.
3. Click **Save**.

## DDNS

1. Click **Setup > Network > DDNS**.

**DDNS**

DDNS Service  On  Off

DDNS Type DynDNS  
NO-IP  
EZDDNS

Server Address

Domain Name

Username

Password

Confirm

2. Enable **DDNS Service**.
3. Select a DDNS type: DynDNS, NO-IP, or EZDDNS.
4. Complete other settings including Server Address, Domain name, Username and Password.
5. Click **Save**.

## E-Mail

After the configuration of E-mail, when alarms are triggered, you will be able to send messages to the specified E-mail address.

1. Click **Setup > Network > E-mail**.

**E-mail**

**Sender**

Name

Address

SMTP Server

SMTP Port

TLS/SSL  On  Off

Snapshot Interval(s)   Attach Image

Server Authentication  On  Off

Username

Password

**Recipient**

Name1

Address1

Name2

Address2

Name3

Address3



On the SNMPv2 setting page, Read-Only Community Name is used for two-way authentication between a camera and the central server. The default name is public, and you may change it as needed. If you change the Read-Only Community Name, you should change it into the same one on the central server, or the two-way authentication will not be completed.

**SNMP**

SNMP Type

Read Community

## 802.1x

802.1x provides authentication to devices (e.g., cameras) trying to connect to a network. Only the authenticated devices can connect the network. This enhances security.

Click **Setup** > **Network** > **802.1x**.

**802.1x**

802.1x  On  Off

Protocol

EAPOL Version

Username

Password

Confirm

1. Select **On** and then complete other settings.
2. Click **Save**.

## QoS

Quality of Service (QoS) is used to manage data traffic on the network.

1. Click **Setup** > **Network** > **QoS**.

**QoS**

Audio & Video	<input type="text" value="46"/>
Alarm Report	<input type="text" value="0"/>
Configuration Manage...	<input type="text" value="0"/>
FTP	<input type="text" value="4"/>

Parameter	Description
Audio & Video	Enter an integer in the range of 0-63.
Alarm Report	Enter an integer in the range of 0-63.
Configuration Management	Enter an integer in the range of 0-63.
FTP	Enter an integer in the range of 0-63.

2. Click **Save**.

## Video and Audio

### Video

You can set video parameters that your camera supports and view the current status of BNC output. If available, you may also enable sub-stream and third stream as required.



#### NOTE!

After enabling the sub or third stream, modify the parameters as required. The parameters for the sub and third stream have the same meanings as that for the main stream.

1. Click **Setup > Video & Audio > Video**.

**Video**

Capture Mode 12MP@15

Fisheye
4PTZ
Panorama

**Main Stream**

Video Compression H.264

Resolution 12MP

Frame Rate(fps) 15

Bit Rate(Kbps) 5120 [128~16384]

Bitrate Type CBR

Image Quality 
Bit Rate
Quality

I Frame Interval 30 [5 ~ 250]

GOP IP

Smoothing 
Clear
Smooth

SVC 
 On  Off

SNAPstream+ Off

**Sub Stream**

Video Compression H.264

Resolution 2000\*1500

Frame Rate(fps) 15

Bit Rate(Kbps) 2560 [128~16384]

Bitrate Type CBR

Image Quality 
Bit Rate
Quality

I Frame Interval 30 [5 ~ 250]

GOP IP

Smoothing 
Clear
Smooth

SVC 
 On  Off

SNAPstream+ Off

**Third Stream**

Video Compression H.264

Resolution CIF

Frame Rate(fps) 15

Bit Rate(Kbps) 128 [128~16384]

Bitrate Type VBR

Image Quality 
Bit Rate
Quality

I Frame Interval 30 [5 ~ 250]

GOP IP

Smoothing 
Clear
Smooth

SVC 
 On  Off

**BNC Output**

Mode PAL

2. Modify the settings as required. The following table describes some major parameters.

Parameter	Description
Video Compression	<p>Three options: H.265, H.264 and MJPEG.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Image Quality cannot be set when Video Compression is set to H.265 or H.264. When set to MJPEG, only three frame rates are available: 1, 3 and 5; and Bit Rate, I Frame Interval, Smoothing and cannot be set.</li> <li>The bit rate changes to the default when you change the setting between H.264 and H.265. The default bit rate for H.264; H.265 is half of Video Compression that for H.264.</li> </ul>
Frame Rate (fps)	<p>Frame rate for encoding images. Unit: FPS (frame per second).</p> <p><b>Note:</b></p> <p>To ensure image quality, note that the frame rate should not be greater than the reciprocal of shutter speed.</p>
Bitrate Type	<ul style="list-style-type: none"> <li><b>CBR:</b> Constant Bit Rate, which means that the camera transmits data at a constant data rate.</li> <li><b>VBR:</b> Variable Bit Rate, which means that the camera adjusts the bit rate dynamically according to image quality.</li> </ul>
Image Quality	<p>When <b>Encoding Mode</b> is <b>VBR</b>, you can move the slider to adjust quality level for images. Moving the slider toward <b>Bit Rate</b> decreases the bit rate and may affect image quality. Moving the slider toward <b>Quality</b> increases the bit rate and improves image quality.</p>
I Frame Interval	<p>Interval at which an I frame is encoded. Normally, a shorter I frame interval offers better image quality but consumes more bandwidth.</p>
GOP	<p>Group of Pictures in MPEG video encoding. This parameter specifies the order in which intra-frames (I frame) and inter-frames are arranged. This parameter cannot be adjusted.</p>
Smoothing	<p>Set the extent of smoothing. Choosing <b>Clear</b> means disabling <b>Smoothing</b>. Moving the slider toward <b>Smooth</b> increases the level of smoothing but will affect image quality.</p> <p><b>Note:</b></p> <p>In a poor network environment, you can enable smoothing to get more fluent video.</p>
SVC	<p>SVC (Scalable Video Coding) can reduce storage without compromising playback quality.</p>
SNAPstream+	<p>Enables the SNAPstream+ feature on camera. This feature utilizes both Smart GOP and Smart ROI to reduce bitrate without impacting the image quality. Smart GOP sets GOP to automatically increase when no moving objects are detected. Smart ROI will increase the bitrate of moving objects and make them clearer.</p>
BNC Output	<p>BNC output supports NTSC and PAL.</p>

3. Click **Save**.

## Snapshot

1. Click **Setup > Video & Audio > Snapshot**.

**Snapshot**

Snapshot  On  Off

Resolution

Most Large(KB)

**Scheduled Snapshot**

Snapshot Interval

Number to Snapshot

Snapshot Mode  Schedule  Repeat

No.	Snapshot Time	+

2. Select **On**, and then set resolution, most large and schedule as needed. Some parameters are described in the table below.

Parameter	Description
Snapshot Interval	Interval between two snapshots. For example, with Snapshot Interval set to 1 and Number of Snapshot set to 2, the camera will take 2 snapshots (take one first and then take another after 1 second).
Number to Snapshot	Currently 1, 2, and 3 snapshots are allowed.
Snapshot Mode	<b>Schedule:</b> You need to set a snapshot time, e.g., 19:12:00, which means the camera takes a snapshot at 19:12:00. <b>Repeat:</b> Allows you to set an interval(unit: sec). For example, according to the settings shown in the figure above, 60 seconds must elapse before the camera takes another two snapshots.

3. Click **Save**.

## Audio

1. Click **Setup > Video & Audio > Audio**.

**Audio**

---

**Audio Input**

Audio Input  On  Off

Access Mode  ▼

Input Gain  [0~255]

Audio Compression  ▼

Sampling Rate(KHz)  ▼

Noise Suppression  On  Off

Channel 1  ▼  Enable

Channel 2  ▼  Enable

---

**Audio Output**

Audio Output  ▼

2. Modify the settings as required. The following table describes some major parameters.

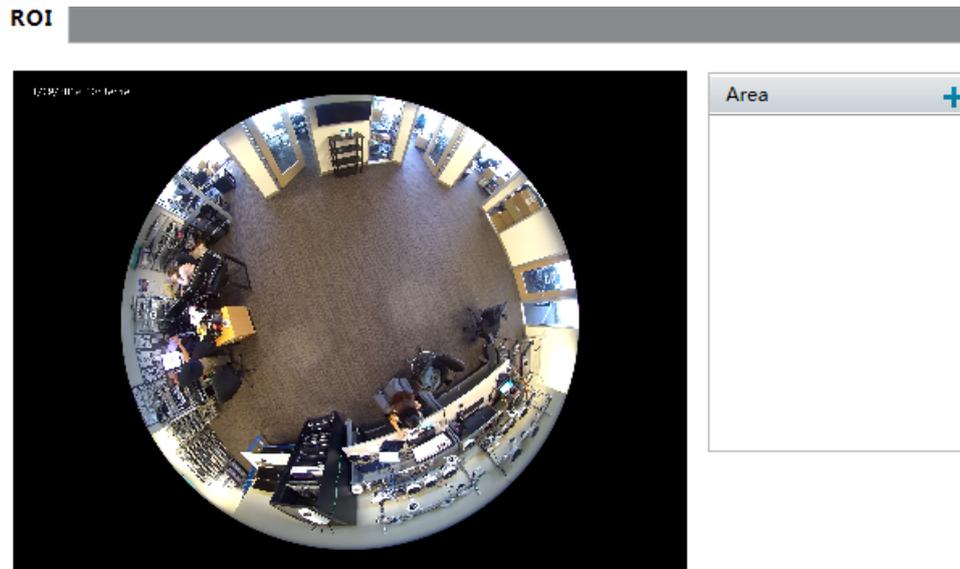
Parameter	Description
Audio Input	No audio data will be encoded when <b>Off</b> is selected. <b>Note:</b> It is recommended to select <b>Off</b> if you do not need audio. This can improve device performance to some extent.
Access Mode	Only Line/Mic.
Audio Compression	Two options: G.711U and G.711A. G.711U and G.711A support 8K sampling rate only.
Input Gain	Audio signal amplification for sampling. The greater the gain, the greater amplification.
Noise Suppression	Used to reduce noise in images. To enable noise suppression, select <b>On</b> .
Channel	Select Mic or Line for each channel, and then select <b>Enable</b> .
Audio Output	Select Speaker or Line from the dropdown menu.

3. Click **Save**.

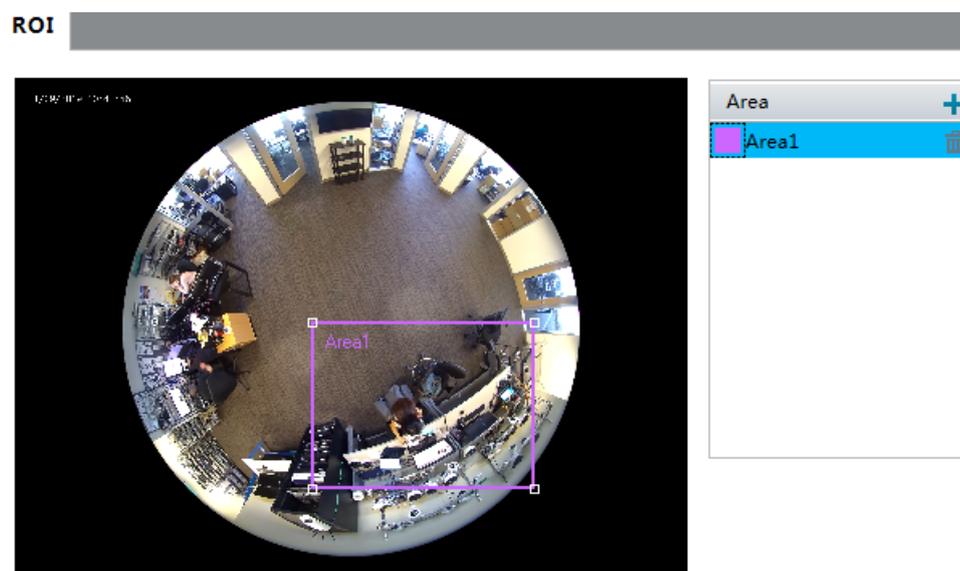
## ROI

When Region of Interest (ROI) is enabled, the system ensures image quality for ROI first if the bit rate is insufficient.

1. Click **Setup > Video & Audio > ROI**.



2. Click **+**, and then drag the mouse to cover the intended part of the images. To delete, select the area and then click **🗑**.



## Media Stream

You can display the established media streams from a camera. You may also set the camera to transmits code streams by the UDP or TCP protocol to a specified IP address and port number.



### NOTE!

*The settings take effect after the camera is restarted.*

1. Click **Setup > Video & Audio > Media Stream** tab.

Media Stream		RTSP Multicast Address			
Stream Profile	Protocol	Destination IP	Destination...	Persistent	
Sub Stream	TCP	10.10.70.30	65291	Disable	<div style="border: 2px solid red; padding: 2px; display: inline-block;"> <span style="color: blue; font-weight: bold;">+</span>  <span style="color: gray;">🗑️</span> </div>

Click +, select a stream type, and then set the IP address and port number of the unicast or multicast group for the decoding device that receives audio and video streams from the camera.

If you want the device to establish the media stream that has been configured before automatically after the restart, select **Enable** for **Persistent**.

2. To delete a stream, click 🗑️.

## RTSP Multicast Address

After an RTSP multicast address is configured, the third-party player can request the RTSP multicast media stream from the camera through the RTP protocol.

1. Click **Setup > Video & Audio > Media Stream > RTSP Multicast Address** tab.

Media Stream		RTSP Multicast Address	
<b>Panorama Stream</b>			
Multicast Address	<input type="text" value="0.0.0.0"/>		
Port	<input type="text" value="0"/>		
<b>Sub Stream</b>			
Multicast Address	<input type="text" value="0.0.0.0"/>		
Port	<input type="text" value="0"/>		

2. Set the multicast address (224.0.0.0 to 239.255.255.255) and port number (0 to 65535).
3. Click **Save**.

## Image Image



### NOTE!

Clicking **Default** will restore all the default image settings.

#### Image



#### Scenes

Enable Auto Switching

Default

#### Image Enhancement

Brightness  128

Saturation  128

Contrast  128

Sharpness  128

2D Noise Reduction  128

3D Noise Reduction  128

Image Rotation  ▼

#### Exposure

#### Smart Illumination

#### White Balance

#### Advanced

## Setting the Scenes

Set image parameters to achieve the desired image effects based on live video in different scenes.

1. Click **Setup > Image > Image**.

The scene management page for some models is displayed as follows, you can select the desired scene in the drop-down list.

The scene management page of some models is displayed as follows, you can take the following steps to configure the scene.

#### Scenes

No.	Current	Scene Name	Auto Switching	Setup
1	<input checked="" type="radio"/>	<Indoor> ▼	<input type="checkbox"/>	Default Scene
2	<input type="radio"/>	<Indoor> ▼	<input type="checkbox"/>	
3	<input type="radio"/>	<Indoor> ▼	<input type="checkbox"/>	
4	<input type="radio"/>	<Indoor> ▼	<input type="checkbox"/>	
5	<input type="radio"/>	<Indoor> ▼	<input type="checkbox"/>	

2. Click **Scenes**.

3. Select a scene, and then set scene switching parameters. The following table describes some major parameters.

Column	Description
Current	<p>Indicates the scene that is being used.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Select an option button to switch to the scene and display the corresponding image parameters for the scene.</li> <li>• The camera switches the current scene automatically when <b>Enable Auto Switching</b> is selected.</li> </ul>
Scene Name	<p>Name of the current scene. When you select a scene, the corresponding image parameters are displayed. You can adjust image settings according to actual needs.</p> <ul style="list-style-type: none"> <li>• Indoor: recommended for indoor scenes.</li> <li>• Custom: set a scene name as needed.</li> </ul>
Auto Switching	<p>Indicates whether to add a scene to the auto-switching list.</p> <p><b>Note:</b></p> <p>If <b>Auto Switching</b> is selected, the system switches to a scene automatically when the condition for switching to the scene is met. By default the auto-switching list includes the default scene.</p>
Setup	<p>Click  to set conditions for auto-switching, including schedule and illumination. It means that auto-switching is triggered only when illumination during the set time period meet the set conditions. A condition is invalid if both the start and end values are set to 0.</p>

4. Select a scene and then click  to set it as the default scene.

---

#### NOTE!



- *If Auto Switching is enabled (scene settings will be unavailable), the device will switch between the set scenes. If not, the device will stay at the current scene. The device will stay at default scenes unless the non-default scenes are triggered.*
  - *If multiple non-default scenes are triggered, then the device will switch to the scene with the minimum number (starts from 1 to 5).*
-

## Image Enhancement

5. Click **Setup** > **Image** > **Image** and then click **Image Enhancement**.

The screenshot shows the 'Image Enhancement' settings panel. It contains the following controls:

- Brightness:** Slider set to 128
- Saturation:** Slider set to 128
- Contrast:** Slider set to 128
- Sharpness:** Slider set to 128
- 2D Noise Reduction:** Slider set to 128
- 3D Noise Reduction:** Slider set to 128
- Image Rotation:** Dropdown menu set to 'Normal'

6. Use the sliders to change the settings. You may also enter values directly. The following table describes some major parameters.

Item	Description
Brightness	Set the degree of brightness of images. Low and High Brightness
Saturation	The amount of a hue contained in a color. Low and High Saturation
Contrast	Set the degree of difference between the blackest pixel and the whitest pixel. Low and High Contrast
Sharpness	Contrast of boundaries of objects in an image. Low and High Sharpness
2D Noise Reduction	Reduce the noise of images. The function may cause image blurring.
3D Noise Reduction	Reduce the noise of images. The function may cause motion blur (or ghosting in some applications).
Image Rotation	Rotation of the image. <ul style="list-style-type: none"> <li>• Normal</li> <li>• Flip Vertical</li> <li>• Flip Horizontal</li> <li>• 180°</li> </ul>

7. To restore default settings in this area, click **Default**.

## Exposure



### NOTE!

The default settings are scene-adaptive. Use default settings unless modification is necessary.

1. Click **Setup > Image > Image** and then click **Exposure**.

2. Set the parameters as required. The following table describes some major parameters.

Parameter	Description
Exposure Mode	<p>Select the correct exposure mode to achieve the desired exposure effect.</p> <ul style="list-style-type: none"> <li>• Automatic: The camera automatically adjusts exposure according to the environment.</li> <li>• Custom: The user sets exposure as needed.</li> <li>• Indoor 50Hz: Reduce stripes by limiting shutter frequency.</li> <li>• Indoor 60Hz: Reduce stripes by limiting shutter frequency.</li> <li>• Manual: Finetune image quality by setting shutter, gain and iris manually.</li> <li>• Low Motion Blur: Control the minimum shutter to reduce motion blur in faces captured in motion.</li> </ul>
Shutter (s)	<p>Shutter is used to control the light that comes into the lens. A fast shutter speed is ideal for scenes in quick motion. A slow shutter speed is ideal for scenes that change slowly.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• You can set a shutter speed when <b>Exposure Mode</b> is set to <b>Manual</b> or <b>Shutter Priority</b>.</li> <li>• If <b>Slow Shutter</b> is set to <b>Off</b>, the reciprocal of the shutter speed must be greater than the frame rate.</li> </ul>

Parameter	Description
Gain (dB)	Control image signals so that the camera outputs standard video signals according to the light condition. <b>Note:</b> You can set this parameter only when <b>Exposure Mode</b> is set to <b>Manual</b> or <b>Gain Priority</b> .
Slow Shutter	Improves image brightness in low light conditions. <b>Note:</b> You can set this parameter only when <b>Exposure Mode</b> is not set to <b>Shutter Priority</b> and when <b>Image Stabilizer</b> is disabled.
Slowest Shutter	Set the slowest shutter speed that the camera can use during exposure. <b>Note:</b> You can set this parameter only when <b>Slow Shutter</b> is set to <b>On</b> .
Compensation	Adjust the compensation value as required to achieve the desired effects. <b>Note:</b> You can set this parameter only when <b>Exposure Mode</b> is not set to <b>Manual</b> .
Metering Control	Set the way the camera measures the intensity of light. Center-Weighted Average Metering: Measure light mainly in the central part of images. Evaluative Metering: Measure light in the customized area of images. Spot Metering: Measure light distributed in the customized area of image.  <b>Note:</b> You can set this parameter only when <b>Exposure Mode</b> is not set to <b>Manual</b> .
Day/Night Mode	Automatic: The camera outputs the optimum images according to the light condition. In this mode, the camera can switch between night mode and day mode automatically. Night: The camera provides high-quality black and white images using the existing light Day: The camera provides high-quality color images using the existing light.
Day/Night Sensitivity	Light threshold for switching between day mode and night mode. A higher sensitivity means that the camera is more sensitive to the change of light and becomes more easily to switch between day mode and night mode. <b>Note:</b> You can set this parameter only when <b>Day/Night Mode</b> is set to <b>Automatic</b> .
Day/Night Switching(s)	Set the length of time before the camera switches between day mode and night mode after the conditions for switching are met. <b>Note:</b> You can set this parameter only when <b>Day/Night Mode</b> is set to <b>Automatic</b> .
WDR	Enable WDR to distinguish the bright and dark areas in the same image. <b>Note:</b> You can set this parameter only when <b>Exposure Mode</b> is neither <b>Customize</b> nor <b>Manual</b> and when <b>Image Stabilizer</b> is disabled.
WDR Level	After enabling the WDR function, you can improve the image by adjusting the WDR level. <b>Note:</b> Use level 7 or higher when there is a high contrast between the bright and dark

Parameter	Description
	areas of the scene. In the case of low contrast, it is recommended to disable WDR or use level 1-6.
Suppress WDR Stripes	When enabled, the camera can automatically adjust slow shutter frequency according to the frequency of light to minimize stripes that may appear in images.
WDR Open/Close Sensitivity	Adjust WDR Open/Close Sensitivity according to the frequency of light at the environment.

- To restore the default settings, click **Default**.

## Smart Illumination



### NOTE!

*This function may vary with models. Please see actual Web interface for details.*

- Click **Setup > Image > Image** and then click **Smart Illumination**.

**Smart Illumination**

Smart Illumination  On  Off

Lighting Type

Control Mode

Near-illumination Level

Far-illumination Level

- Select the correct IR control mode and set the parameters. The following table describes some major parameters.

Parameter	Description
Lighting Type	<b>Infrared:</b> The camera uses infrared light illumination. When <b>Control Mode</b> is set to <b>Manual</b> , camera can set illumination level from 0~1000.
Control Mode	<b>Global Mode:</b> The camera adjusts IR illumination and exposure to achieve balanced image effects. Some areas might be overexposed if you select this option. This option is recommended if monitored range and image brightness are your first priority. <b>Overexposure Restrain:</b> The camera adjusts IR illumination and exposure to

	<p>avoid regional overexposure. Some areas might be dark if you select this option. This option is recommended if clarity of the central part of the image and overexposure control are your first priority.</p> <p><b>Manual:</b> This mode allows you to manually control the intensity of IR illumination.</p>
Illumination Level	<p>Set the intensity level of the IR light. The greater the value, the higher the intensity. 0 means that the IR light is turned off.</p> <p><b>Near-illumination Level:</b> You are recommended to set this parameter first for a wide-angle scene.</p> <p><b>Far-illumination Level:</b> You are recommended to set this parameter first if the scene requires a telephoto view.</p> <p><b>Note:</b> You can set this parameter only when <b>Control Mode</b> is set to <b>Manual</b>.</p>

3. To restore the default settings, click **Default**.

### White Balance

White balance is the process of offsetting unnatural color cast in images under different color temperatures so as to output images that best suit human eyes.

1. Click **Setup > Image > Image** and then click **White Balance**.



Select a white balance mode as required. The following table describes some major parameters.

Parameter	Description
White Balance	<p>Adjust the red or blue offset of the image:</p> <p>Auto/Auto2: The camera adjusts the red and blue offset automatically according to the light condition (the color tends to be blue). If the images are still unnaturally red or blue in Auto mode, please try Auto2.</p> <p>Outdoor: Suitable for outdoor environment with a relatively greater color temperature range.</p> <p>Fine Tune: Allow you to adjust the red and blue offset manually.</p> <p>Sodium Lamp: The camera adjusts red and blue offset automatically according to the light condition (the color tends to be red).</p> <p>Locked: Lock the current color temperature without change.</p>
Red Offset	<p>Adjust the red offset manually.</p> <p><b>Note:</b> You can set this parameter only when <b>White Balance</b> is set to <b>Fine Tune</b>.</p>
Blue Offset	<p>Adjust the blue offset manually.</p> <p><b>Note:</b> You can set this parameter only when <b>White Balance</b> is set to <b>Fine Tune</b>.</p>

- To restore the default settings, click **Default**.

### Advanced

Use the defog function to adjust the clarity of images captured in fog or haze conditions.

- Click **Setup > Image > Image** and then click **Advanced**.



### NOTE!

You can set this parameter only when WDR is turned off.

- Enable the defog function and then select a level for the scene. Level 9 achieves the maximum defog effects, and level 1 achieves the minimum.
- To restore the default settings, click **Default**.

### OSD Setting

On Screen Display (OSD) is the text displayed on the screen with video images and may include time and other customized contents.

- Click **Setup > Image > OSD**.

The OSD interface of some models is displayed as follow.

Live View

Enable	No.	Overlay OSD Content	X-Axis	Y-Axis
<input checked="" type="checkbox"/>	1	<Date & Time>	2	3
<input type="checkbox"/>	2		75	3
<input type="checkbox"/>	3		2	75
<input type="checkbox"/>	4		0	0
<input type="checkbox"/>	5		0	0
<input type="checkbox"/>	6		0	0
<input type="checkbox"/>	7		0	0
<input type="checkbox"/>	8		0	0

**Display Style**

Effect: Background

Font Size: Medium

Font Color: #0000-1

Min. Margin: None

Date Format: dd/MM/yyyy

Time Format: HH:mm:ss

dd=Day; dddd=Day of the week; M=Month; y=Year  
h/H=12/24 Hour; tt=A.M. or P.M.; mm=Minute; ss=Second

Select the position and content of the OSD.

- Position: Click the desired box in the **Live View** area. After the cursor shape is changed, click and hold the button to move the box to the desired position. To set the position precisely, use the X and Y coordinates under **Overlay Area**.

- Overlay OSD Content: The drop-down list provides **Custom, Date & Time, Serial Port, Time, Date, Scroll OSD, Picture Overlay, and Network Port.**
- After you have set the position and OSD content, the **✓** symbol appears in the **Status** column, which means that the OSD is set successfully. You may set multiple lines of contents for each area and use **^** and **v** to adjust the sequence of display.
- After you have completed the settings, a message appears to indicate the successful settings.

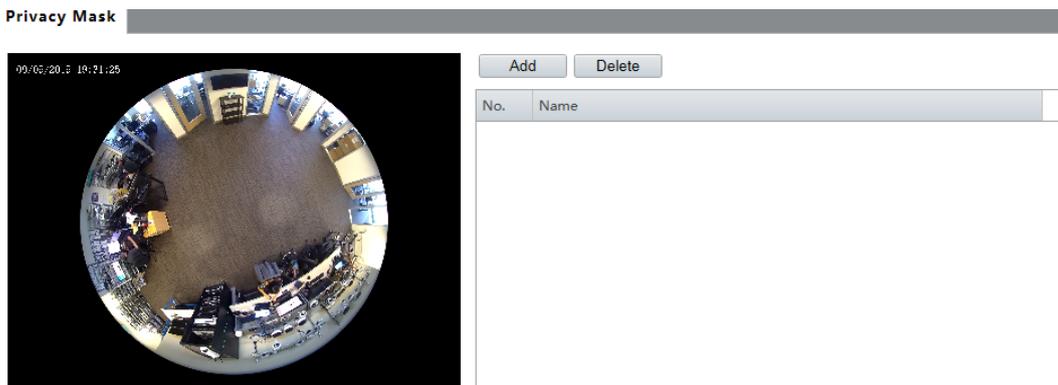
The following shows an example time OSD.



## Privacy Mask

On certain occasions, you may need to set a mask area on the camera image to protect privacy.

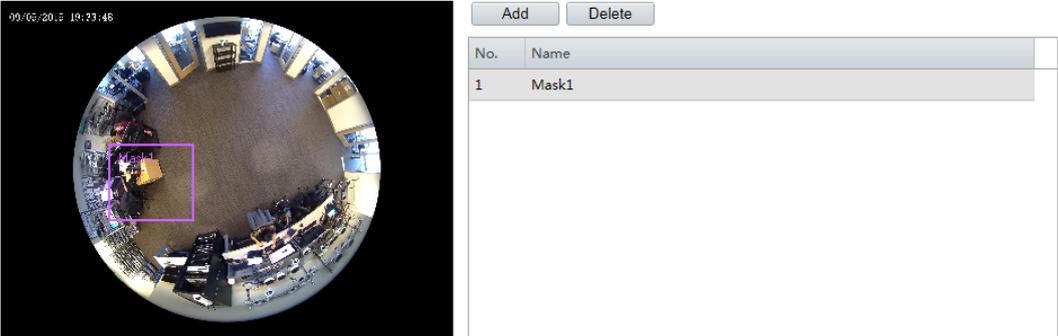
1. Click **Setup > Image > Privacy Mask.**



2. Click **“Add”** to add a privacy mask, and click **“Delete”** to delete a mask.

- To mask a position: Click the box (with **Mask** displayed on it) to activate the mask. After the cursor shape has changed, drag the box to the intended position.
- To mask an area: Use the mouse to draw a box on the area you want to mask.

**Privacy Mask**



No.	Name
1	Mask1

- When privacy mask is configured, the intended area is blocked. The following shows an example.



## Event Settings

### Common Alarm

Click **Setup > Events > Common Alarm**.

The menu of the page on the top is displayed as follows.



### Configuring Motion Detection Alarm

Motion detection detects the object motion in a specified rectangular area during a period. You need to set a detection area, sensitivity of detection, object size, and history for the camera to decide whether to report a motion detection alarm when it detects motion.



#### NOTE!

- This function is not supported by some models. Please see the actual model for details.
- The alarm triggered actions may vary with models. Please see the actual Web interface for details.

### Area Detection

1. Click **Setup > Events > Common Alarm > Motion Detection** tab.
2. Set **Detection Mode** to **Area**.

**Motion Detection** | Tampering Alarm | Audio Detection | Alarm Input | Alarm Output

Detection Mode: **Area**

Area1

Sensitivity: Low  High

Object Size: Small  Large

**Alarm Parameters**

Suppress Alarm(s):

Clear Alarm(s):

**Trigger Actions**

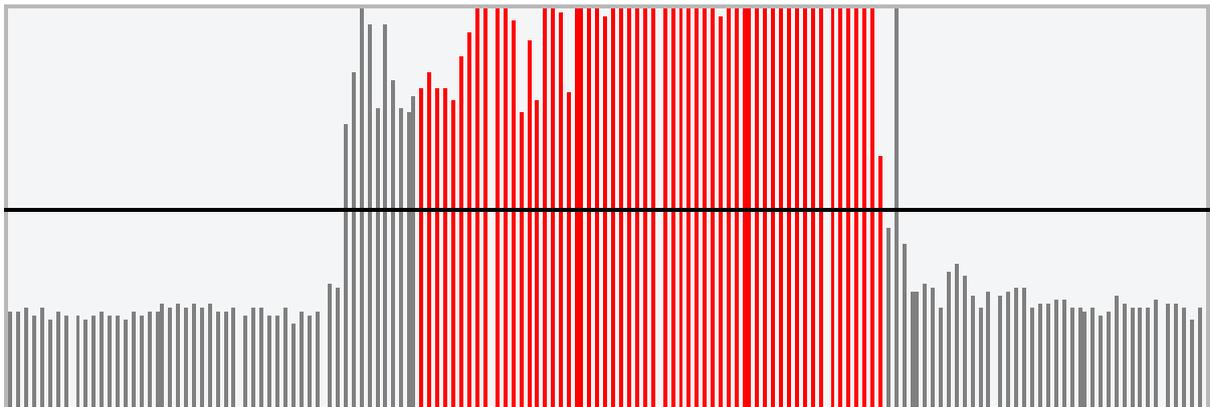
Alarm Output    Recording    Upload to FTP    Trigger E-mail

**Enable Plan**

Armed    Unarmed  

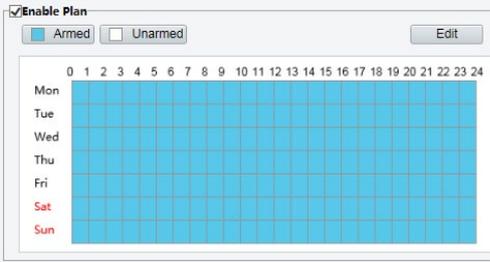
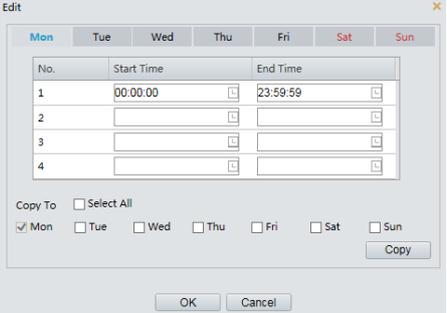
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon	Active																								
Tue	Active																								
Wed	Active																								
Thu	Active																								
Fri	Active																								
Sat	Active																								
Sun	Active																								

3. In the **Detection Area** area, click  to add a new detection area. To delete a detection area, click .
4. Click and drag the mouse to set a detection area.
5. Set the detection sensitivity, object size, and history for the camera to decide whether to report a motion detection alarm.
  - Moving the slider to the right increases detection sensitivity. When the extent of motion within the detection area exceeds the set object size, the camera reports an alarm.
  - Object size specifies the minimum ratio of the object's size to the size of the total detection area before an alarm will be reported. That is to say, to detect motion of tiny objects, you need to draw a small box (detection area) in the actual motion area accordingly.
  - Motion detection results are shown in real time. The red lines represent the raised motion detection alarms. The longer a line, the greater the extent of motion. The denser the lines, the greater the frequency of motion.



6. Set the alarm parameters.
  - **Suppress Alarm(s):** After an alarm is triggered, the same alarm will not be reported within the set time.
  - **Clear Alarm(s):** After an alarm is triggered,
    - If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.
    - If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.
7. Set actions to be triggered by motion detection alarm and the plan.
 

The following table describes the major alarm-triggered actions and how to set a plan.

Item	Description															
Alarm Output 1	<p>Select the check box. This setting is the alarm output interface linked to motion detection alarm.</p> <p><b>Note:</b> When an alarm is reported, the camera triggers alarm output so as to trigger actions by a third-party device.</p>															
Upload to FTP	<p>With <b>Upload to FTP</b> selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered.</p> <p><b>Note:</b> Make sure you have completed <b>Error! Reference source not found.</b> and <b>Snapshot</b> before using this function.</p>															
Recording	<p>With <b>Recording</b> selected, the camera will automatically record video when an alarm is triggered.</p> <p><b>Note:</b> Please set <b>Post-Record(s)</b> on the <b>Storage</b> page first. <b>Post-Record(s)</b> specifies how long recording continues after the end of an alarm.</p>															
Trigger E-mail	<p>With <b>Trigger E-mail</b> selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered.</p> <p><b>Note:</b> Make sure you have completed <b>Error! Reference source not found.</b> before using this function.</p>															
Enable Plan	<p>Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click <b>Edit</b> to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only. You can select from Monday to Sunday and set four periods for each day.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="384 1178 874 1440">  <p>Enable Plan</p> <p><input checked="" type="checkbox"/> Armed <input type="checkbox"/> Unarmed <span style="float: right;">Edit</span></p> <p>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</p> <p>Mon Tue Wed Thu Fri Sat Sun</p> </div> <div data-bbox="959 1178 1406 1491">  <p>Edit</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Start Time</th> <th>End Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>00:00:00</td> <td>23:59:59</td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> </tr> </tbody> </table> <p>Copy To <input type="checkbox"/> Select All  <input checked="" type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Sun <span style="float: right;">Copy</span></p> <p style="text-align: center;">OK Cancel</p> </div> </div> <p style="text-align: center;">Drag the mouse to draw a plan <span style="margin-left: 200px;">Edit time periods in the table</span></p> <p><b>Note:</b> Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking <b>Copy</b> and <b>Paste</b>.</p>	No.	Start Time	End Time	1	00:00:00	23:59:59	2			3			4		
No.	Start Time	End Time														
1	00:00:00	23:59:59														
2																
3																
4																

8. Click **Save**.

## Grid Detection

1. Click Setup > Events > Motion Detection tab.
2. Set Detection Mode to Grid.

The screenshot shows the 'Motion Detection' configuration page. The 'Detection Mode' is set to 'Grid'. The 'Sensitivity' is adjustable from Low to High. The 'Alarm Parameters' section includes 'Suppress Alarm(s)' (15) and 'Clear Alarm(s)' (5). The 'Trigger Actions' section has 'Alarm Output' checked. The 'Enable Plan' section has 'Armed' selected. A calendar grid shows the plan is active for all days of the week. A 'Save' button is at the bottom.

3. Detection area(s) can be irregular on the grid.
4. Set detection sensitivity for the camera to decide whether to report a motion detection alarm.
5. Set **Alarm parameters**.
  - Suppress Alarm(s): After an alarm is triggered, the same alarm will not be reported within the set time.
  - Clear Alarm(s): After an alarm is triggered,

If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.

If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.
6. Set actions to be triggered by motion detection alarm and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in [Area Detection](#) in **Error! Reference source not found.**
7. Click **Save**.



## Configuring Tampering Alarm

Configure tampering alarm so that the camera reports a tampering alarm when the lens is blocked for a certain length of time.

1. Click **Setup** > **Events** > **Common Alarm** > **Tampering Alarm** tab.
2. Select **On** for **Tampering Alarm**.

**Motion Detection** **Tampering Alarm** **Audio Detection** **Alarm Input** **Alarm Output**

Tampering Alarm  On  Off

Sensitivity  50

Duration(s)

**Trigger Actions**

Alarm Output  Recording  Upload to FTP  Trigger E-mail

**Enable Plan**

Armed  Unarmed

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon	Armed																								
Tue	Armed																								
Wed	Armed																								
Thu	Armed																								
Fri	Armed																								
Sat	Armed																								
Sun	Armed																								

3. Set detection sensitivity and duration for the camera to decide whether to report a tampering alarm.
4. Set actions to be triggered by tampering alarms and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in **Error! Reference source not found.**
5. Click **Save**.

## Configuring Audio Detection Alarm

The camera can detect input audio signals for exceptions. When the rise or fall of volume exceeds the set limit, or when the input volume reaches the threshold, the camera reports an alarm and triggers the set actions. Make sure that an audio input device is correctly connected to the camera and audio input is turned on in [Configuring Alarm Input](#).

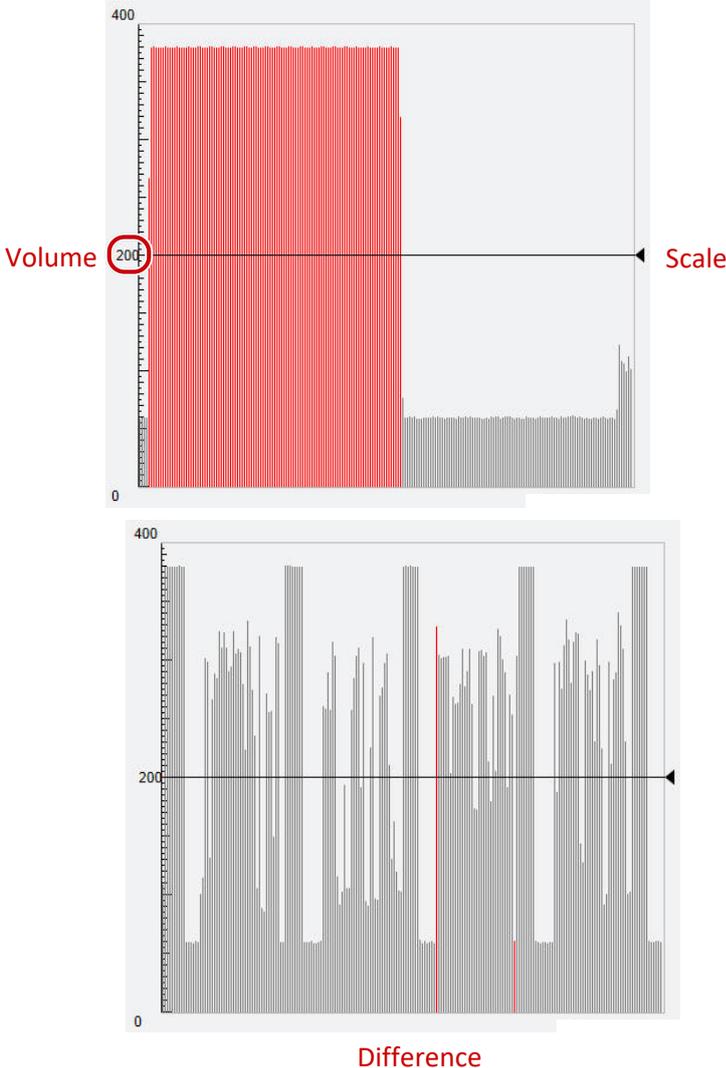
1. Click **Setup > Events > Common Alarm > Audio Detection** tab.

The screenshot shows the 'Audio Detection' configuration page. At the top, there are tabs for 'Motion Detection', 'Tampering Alarm', 'Audio Detection', 'Alarm Input', and 'Alarm Output'. The 'Audio Detection' tab is active. On the left is a graph with a vertical axis from 0 to 400 and a horizontal line at 200. On the right, the 'Audio Detection' section has a radio button for 'On' selected and 'Off' unselected. The 'Detection Type' is set to 'Sudden Rise' and the 'Difference' is set to '100'. Below this are 'Trigger Actions' with checkboxes for 'Alarm Output', 'Recording', 'Upload to FTP', and 'Trigger E-mail'. The 'Enable Plan' section has a checked 'Enable Plan' checkbox, 'Armed' and 'Unarmed' radio buttons, and an 'Edit' button. A calendar grid shows days of the week (Mon-Sun) and hours (0-24), with most cells highlighted in blue.

2. Select **Enable** for **Audio Detection**, select a detection type and set the difference or threshold. To disable audio detection, clear the **Enable** check box.

The following table describes some major parameters.

Parameter	Description
Detection Type	<ul style="list-style-type: none"> <li>• Sudden Rise: An alarm is reported when the rise of volume exceeds the difference.</li> <li>• Sudden Falls: An alarm is reported when the fall of volume exceeds the difference.</li> <li>• Sudden Change: An alarm is reported when the rise or fall of volume exceeds the difference.</li> <li>• Threshold: An alarm is reported when the volume exceeds a threshold.</li> </ul>
Difference	<ul style="list-style-type: none"> <li>• Threshold: After a volume is set as the threshold, an alarm is reported when the threshold is exceeded.</li> <li>• Difference: the difference between two volumes. When the rise or fall of volume exceeds the difference, an alarm is reported.</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The scale in the audio detection area is used to measure sound volume.</li> </ul>

Parameter	Description
	<ul style="list-style-type: none"> <li>Audio detection results are shown in real time. The red part indicates the reported audio detection alarms.</li> </ul>  <p>The image contains two vertically stacked audio waveform graphs. The top graph has a y-axis labeled 'Volume' ranging from 0 to 400. A red-shaded area covers the initial portion of the waveform, indicating an audio detection alarm. A horizontal line is drawn at the 200 volume level, with an arrow pointing to the right labeled 'Scale'. The bottom graph has a y-axis ranging from 0 to 400. It shows a grey waveform with several peaks. A vertical red line is drawn at approximately the 200 volume level, with an arrow pointing to the right labeled 'Difference'.</p>

3. Set the alarm-triggered actions and arming schedule as required. For the detailed steps, see the descriptions of alarm-triggered actions in **Error! Reference source not found.**
4. Click **Save**.

## Configuring Alarm Input

The camera can receive alarm information from a third-party device. To use this function, you need to configure the following information for alarm input first: port, alarm name, alarm type (normally open or normally closed) and alarm reporting time.

1. Click **Setup > Events > Common Alarm > Alarm Input** tab.
2. Select alarm and set the alarm name.
3. Select **N.O.** or **N.C.** according to the type of the third-party alarm input device. For example, if the third-party alarm input device is normally open, you need to select **N.O.** here, so that the camera can receive alarm information from the third-party alarm input device.

Motion Detection
Tampering Alarm
Audio Detection
Alarm Input
Alarm Output

Select Alarm Alarm Input 1 ▼

Alarm Name 1

Alarm ID

Alarm Type N.O.  
N.C.

Alarm Input  On  Off

---

**Trigger Actions**

Alarm Output     Recording     Upload to FTP     Trigger E-mail

---

**Enable Plan**

Armed     Unarmed    Edit

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon																									
Tue																									
Wed																									
Thu																									
Fri																									
Sat																									
Sun																									

4. Set actions to be triggered by an input alarm and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in **Error! Reference source not found.**
5. Click **Save**.

## Configuring Alarm Output

After alarm output is triggered by a alarm, the camera can output alarm information to the third-party device if alarm output is set correctly to Normally Open or Normally Closed. The alarm output duration is configurable.

- Click **Setup > Events > Common Alarm > Alarm Output** tab.

**Motion Detection** **Tampering Alarm** **Audio Detection** **Alarm Input** **Alarm Output**

Select Alarm:  ▼

Alarm Name:  × 1 to 20 characters allowed.

Default Status:  ▼

Delay(s):

Relay Mode:  ▼

**Enable Plan**

**Armed**  **Unarmed**

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon																									
Tue																									
Wed																									
Thu																									
Fri																									
Sat																									
Sun																									

- Select the alarm and set the alarm name.
- Set the status to **N.O.** (default setting) and set the alarm duration.
- Set actions to be triggered by an input alarm and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in **Error! Reference source not found.**
- Click **Save**.



### CAUTION!

Strictly follow the sequence when powering on the devices to avoid damaging camera components:

- Check that the alarm type is set to Normally Open (default setting), and that the camera and the alarm output device are powered off.
- After completing the connection, power on the camera first and then power on the alarm output device.

## Storage Settings

### Setting SD Card Storage

SD card storage is used to save video data and snapshots to the memory card directly. SD card storage is recommended when the camera is running in stand-alone mode. The card slot is compatible with a Micro SD card up to 256GB.

### Manual storage

The camera records live video repeatedly if manual storage is enabled.

1. Click **Setup > Storage > Storage**.

**Storage**

Storage Medium    Enable

Storage Medium Status: No card

Total Capacity 0 MB, Free Space 0 MB.

**Allocate Capacity**

Video(MB)  (The remaining capacity is used for image storage.)

Common Snapshot(MB)

**Video Storage Info**

Storage Policy  Manual Storage  Planned Storage  Off

Post-Record(s)

2. Start SD card storage and modify the settings as required. The following table describes some major parameters.

Parameter	Description
Storage Medium	Storage resource type. <b>Note:</b> <ul style="list-style-type: none"> <li>• To format the memory card, disable the storage function for the card first. Then Click <b>Format</b> and then click <b>OK</b> to confirm the operation. The system will restart when the format is completed.</li> <li>• Information about the total and free space is displayed.</li> </ul>
Data Overwrite Policy	Overwrite: If there is no free space in the memory card, new data will overwrite the existing data repeatedly. Stop: If there is no free space in the memory card, new data will not be saved to the memory card.
Post-Record(s)	For alarm-triggered recording, length of time that recording continues after the end of the alarm.

3. Click **Save**.

## FTP

All snapshots (except face detection) are saved through the general FTP service. After the configuration of FTP, you will be able to upload snapshots from network cameras to the specified FTP server.

### General

- Click **Setup > Storage > FTP**. Go to **General** tab.

**General**

---

**Server Parameters**

Server IP	<input type="text" value="192.168.0.150"/>	Upload Images	<input type="checkbox"/>
Port No.	<input type="text" value="21"/>	Overwrite Storage	<input type="checkbox"/>
Username	<input type="text"/>	Overwrite At(image)	<input type="text" value="1000"/>
Password	<input type="password"/>	<input type="button" value="Test"/>	

---

**Snapshot Image**

Save To  
Root Directory  \\  \\  \\

File Name[Photo No.]-[Date-YYYY]-[Date-MM]-[Time-Hour]-[Time-Min].jpg  
Separator -

No.	Naming Element
1	<input type="text" value="Photo No."/> <input type="button" value="v"/>
2	<input type="text" value="Date-YYYY"/> <input type="button" value="v"/>
3	<input type="text" value="Date-MM"/> <input type="button" value="v"/>
4	<input type="text" value="Time-Hour"/> <input type="button" value="v"/>
5	<input type="text" value="Time-Min"/> <input type="button" value="v"/>

---

**Note:** Overwrite will take place in the current directory.

- Set the IP address and port for the FTP server, username and password used to upload images to the FTP server, select **Upload Images**, **Overwrite Storage** and set **Overwrite At** (threshold for overwriting images). Some camera models support FTP test. You may test FTP after completing FTP settings correctly.
- Set the path for saving **Snapshot Image** on the FTP server and the file name format. For example, set path as Photo No.\\Date-YYY\\Date-MM\\Time-Hour\\Time-Min, and set file name as [Photo No.]-[Date-YYYY]-[Date-MM]-[Time-Hour]-[Time-Min].jpg
- Click **Save**.

## Security

### User

#### User Management

**User**

No.	Username	User Type
1	admin	Admin

There are two types of users in the system:

- Administrator: referred to as “admin” in this manual. The default name of the administrator is admin, which cannot be modified. Admin has full permission and can manage all users and devices. Only one admin user is allowed in the system.
- Common user: referred to as “user” in this manual. User only has permission to play live and recorded video. Up to 32 common users are allowed in the system.

You can add a user on the user management interface (under **Setup > Security > User**). After the user is added successfully, you can edit the password by typing anew password or delete the user by clearing the username.



#### **NOTE!**

- *Only admin can change passwords. Changing the username or password for a user when the user is still logged in will force the user to log out. The user must use the new username or password to log in.*
- *Only admin can add and delete users. Deleting a user when the user is still logged in will force the user to log out. A deleted user cannot log in.*

## Network Security

Set a secure channel for data transmission to ensure security.

1. Click **Setup > Network > Port**.

**Port** **Port Mapping**

HTTP Port	<input type="text" value="80"/>
HTTPS Port	<input type="text" value="443"/>
RTSP Port	<input type="text" value="554"/>

**Note:** Modifying the RTSP port number will cause the device to restart.

2. Enter the port number in the **HTTPS Port** text box.
3. Click **Save**.

## Setting HTTPS

1. Click **Setup > Security > Network Security > HTTPS**.

**HTTPS** **Authentication** **ARP Protection** **IP Address Filtering** **Access Policy**

HTTPS  On  Off

SSL Certificate

2. Select **On** for **HTTPS**. You may import a custom SSL certificate as needed.  
*Note: The camera accepts only the “SSL” certificate which combined RSA Client key and Certificate.*
3. Click **Save**.

Next time you log in, enter the address in *https://IP:HTTPS port number* format, for example, *https://192.168.1.13:443* to enter secure channel mode. If you use the default HTTPS port, enter *https://IP*.

## Authentication

RTSP (Real Time Streaming Protocol) is an application layer protocol. To transmit and control the audio and video, set RTSP authentication on the Web interface.

1. Click **Setup > Security > Network Security > Authentication**.

**HTTPS** **Authentication** **ARP Protection** **IP Address Filtering** **Access Policy**

RTSP Authentication

HTTP Authentication

2. Select an authentication mode and then click **Save**.

## APR Protection

This function protects a camera from ARP attacks. The gateway and the MAC address must be set properly before a PC can access the camera from another network; if an incorrect MAC is set, only PCs on the same LAN can access.

1. Click **Setup > Security > Network Security > ARP Protection**.

**HTTPS Authentication ARP Protection IP Address Filtering Access Policy**

ARP Protection  On  Off  
 Gateway   
 Gateway MAC Address

2. Select the check box to enable the ARP binding function and set the gateway MAC address.
3. Click **Save**.

## IP Address Filtering

Use IP address filtering to allow or forbid access from specified IP address(es).

1. Click **Setup > Security > Network Security > IP Address Filtering**.

**HTTPS Authentication ARP Protection IP Address Filtering Access Policy**

IP Address Filtering  On  Off  
 Filtering Mode    

No.	IP Address	
		+

2. Select **On** to enable IP address filtering.
3. Select a filtering mode, and then add IP address(es).
4. Click **Save**.



**NOTE!**

- If **Filtering Mode** is set to **Whitelist**, then only the added IP address(es) are allowed to access the camera. If **Filtering Mode** is set to **Deny Access**, then only the added IP address(es) are not allowed to access the camera.
- Up to 32 IP addresses are allowed. Each IP address can be added once only.
- The first byte of each IP address must be 1-223, and the fourth cannot be 0. For example, the following IP addresses are illegal and cannot be added: 0.0.0.0, 127.0.0.1, 255.255.255.255, 224.0.0.1.

## Access Policy



### NOTE!

*Enabling friendly password does not affect use. If you turn it off and log in with a weak password, a page will pop up, prompting you to change the password. There is no Cancel or Close button on this page. For example, "1234" is treated as weak.*

1. Click **Setup > Security > Network Security > Access Policy.**

**HTTPS** **Authentication** **ARP Protection** **IP Address Filtering** **Access Policy**

Friendly Password       On  Off

MAC Authentication       On  Off

2. Select **On** to enable friendly password and MAC Authentication.

3. Click **Save.**

## System Maintenance

### Time

You can use the following methods to adjust the system time of your device.

#### Manually Setting or Synchronizing the System Time

1. Click **Setup > Common > Time**, and then click the **Time** tab.

**Time** **DST**

Sync Mode: Sync with Latest Server Time

Time Zone: (UTC) London, Casablanca, Coordinated Universal Time

System Time: 2019-09-09 20:40:02 Sync with Computer Time

2. Select a synchronization mode.
3. Set the correct time zone and system time. You may also click **Sync with Computer Time** to synchronize the time settings of your camera with that of your PC.
4. Click **Save**.

#### Synchronizing with the NTP Server

1. Click **Setup > Common > Time**, and then click the **Time** tab.

**Time** **DST**

Sync Mode: Sync with NTP Server

Time Zone: (UTC) London, Casablanca, Coordinated Universal Time

System Time: 2019-09-09 20:40:50 Sync with Computer Time

**NTP Server**

NTP Server Address: 0.0.0.0

Port: 123

Update Interval(s): 600

2. Set **Sync Mode** to **Sync with NTP Server**, and then set the IP address and port of the NTP server and update interval.
3. Click **Save**. The camera will periodically synchronize time with the NTP server.

#### Setting the DST

Turn On DST to select a time range for Daylight Saving Time.

1. Click **Setup > Common > Time**, and then click the **DST** tab.

**Time** **DST**

**DST**

DST:  On  Off

Start Time: Apr First Sun 02 h

End Time: Oct Last Sun 02 h

DST Bias: 60mins

2. Select **On** for **DST**, set the start time, end time, and DST bias.
3. Click **Save**.

## Ports & Devices

The RS485 serial port is used for data exchange with the third-party device. Serial port settings on the camera should be consistent with that of the connected third-party device.

### Transparent channel

Use the RS485 serial port to achieve transparent data transmission with the third-party device. Transparent channel is mainly used to achieve transparent data transmission between two devices.



#### NOTE!

Make sure that you have set **Port Mode** to **Trans-Channel** for your camera.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.

**Serial Port** [REDACTED]

**RS485\_1**

Port Mode	Trans-Channel
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

**Enable Trans-Channel**

2. Select **Trans-Channel** from the **Port Mode** drop-down list.
3. Select **Enable** for **Trans-Channel**.
4. Enter the destination IP address and port number (IP address and port number that the transparent channel connects to).
5. Click **Save**.

## OSD

To display information from the third-party device on the OSD, you need to select OSD as the port mode.

The camera receives information from the third-party device through the RS485 serial port, translates the received information, and then displays it on the OSD.



**NOTE!**

To enable the camera to correctly translate information received from the third-party device, make sure that the information sent by the third-party device through the serial port complies with the data format specified by our company. For more details, contact your dealer.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.

**Serial Port**

**RS485 1**

Port Mode	OSD
<input type="checkbox"/> Enable OSD Report	
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
<input type="checkbox"/> Enable Trans-Channel	

2. Select **OSD** from the **Port Mode** drop-down list. Select **Enable OSD Report** (so OSD data will be uploaded to the platform).
3. Click **Save**.

**ONVIF Transparent Channel**

Transmit data through the transparent channel (ONVIF) between the camera's RS485 port and a third-party device.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.

**Serial Port**

**RS485 1**

Port Mode	Trans-Channel via ONVIF
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
<input type="checkbox"/> Enable Trans-Channel	

2. Set **Port Mode** to **Select Trans-Channel via ONVIF**.
3. Click **Save**.

## Maintenance

### Software Upgrade

1. Click **Setup > System > Maintenance**.

**Maintenance**

---

**Software Upgrade**

Local Upgrade     Upgrade Boot Program

Cloud Upgrade

---

**Config Management**

Restore all settings to defaults without keeping current network and user settings.

Importing

Exporting

---

**Diagnosis Info**

Export Diagnosis Info

Collect Image Debugging Info

---

**Device Restart**

Restart device

**Note:**1. Software upgrade, device restart, restoration to defaults or configuration import will restart the device.  
2. Restarting the device will interrupt the connection to the device.

2. Under **Software Upgrade**, click **Browse** and select the correct upgrade file.
3. Click **Upgrade** and then confirm to start. The camera will restart automatically after the upgrade is completed. If you would like to perform boot program upgrade, select **Upgrade Boot Program**.
4. You may click **Detect** to check for new versions available to cloud upgrade.



#### NOTE!

- You must use the correct upgrade file for you camera. Otherwise, unexpected results may occur.
- The upgrade file is a ZIP file and must include all the necessary files.
- The boot program loads the operating system and then the system starts running. The upgrade boot program function is disabled by default, and only the camera will be upgraded to the latest version. If enabled, both the camera and the boot program are upgraded, and the operating system of the following new versions can be booted properly and the camera can be upgraded conveniently.
- Ensure that the power supply is normal during upgrade. The device will restart after the upgrade is completed.

## Restarting the System

1. Click **Setup > System > Maintenance**.

**Maintenance**

---

**Software Upgrade**

Local Upgrade     Upgrade Boot Program

Cloud Upgrade

---

**Config Management**

Restore all settings to defaults without keeping current network and user settings.

Importing

Exporting

---

**Diagnosis Info**

Export Diagnosis Info

Collect Image Debugging Info

---

**Device Restart**

Restart device

**Note:**1. Software upgrade, device restart, restoration to defaults or configuration import will restart the device.  
2. Restarting the device will interrupt the connection to the device.

2. Under **Device Restart**, click **Restart**. The device will restart after you confirm the operation.



### **CAUTION!**

Perform this operation with caution because restarting the system interrupts the ongoing service.

---

## Importing and Exporting System Configuration File

Export the current configurations of the camera and save them to the PC or an external storage medium. You can also quickly restore configurations by importing backup configurations stored on the PC or an external storage medium back to the camera.



### CAUTION!

- After you perform the Default operation, all settings are restored to factory defaults, except the following: login password of the system administrator, network settings, and system time.
- Make sure you import the correct configuration file for your camera. Otherwise, unexpected results may occur. The camera will restart when the configuration file is imported successfully.

### 1. Click **Setup > System > Maintenance**

**Maintenance**

**Software Upgrade**

Local Upgrade     Upgrade Boot Program

Cloud Upgrade

**Config Management**

Restore all settings to defaults without keeping current network and user settings.

Importing

Exporting

**Diagnosis Info**

Export Diagnosis Info

Collect Image Debugging Info

**Device Restart**

Restart device

**Note:**1. Software upgrade, device restart, restoration to defaults or configuration import will restart the device.  
2. Restarting the device will interrupt the connection to the device.

2. To import configurations that you have backed up, click **Browse** next to the **Import** button and select the configurations you want to import, and then click **Import**. The result will be displayed.
1. To export current system configurations, click **Browse** (next to the **Exporting** field), set the destination and then click **Export**.
2. To restore default configurations, click **Default** and then confirm the operation. The device will restart and restore the default configurations. Clicking **Default** with the check box selected will completely restore the device to factory default settings.

## Collecting Diagnosis Information

Diagnosis information includes logs and system configurations. You can export diagnosis information to your PC.

1. Click **Setup > System > Maintenance**.

**Maintenance**

---

**Software Upgrade**

Local Upgrade     Upgrade Boot Program

Cloud Upgrade

---

**Config Management**

Restore all settings to defaults without keeping current network and user settings.

Importing

Exporting

---

**Diagnosis Info**

Export Diagnosis Info

Collect Image Debugging Info

---

**Device Restart**

Restart device

---

**Note:**1. Software upgrade, device restart, restoration to defaults or configuration import will restart the device.  
2. Restarting the device will interrupt the connection to the device.

In the **Diagnosis Info** area, click **Browse** to set the destination and then click **Export**.



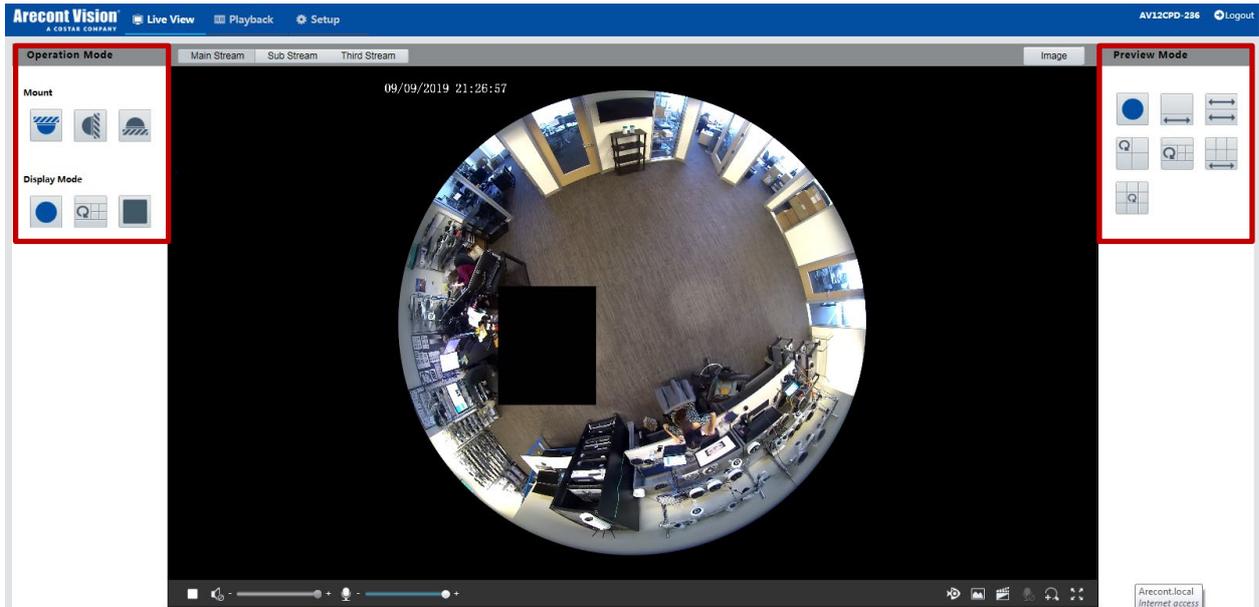
### NOTE!

- *Diagnosis information is exported to the local folder in form of a compressed file. You need to decompress the file using a tool such as WinRAR and then open the file using a text editor.*
- *By selecting **Collect Image Debugging Info**, you can display video with debugging information at the same time, which makes troubleshooting easier.*

## Fisheye Camera Parameter

To display video properly, you need to set fisheye parameters properly according to the actual mounting mode.

1. Click **Live View** > **Mount**. Select the mounting mode. The selected mounting mode must be consistent with the actual mounting mode.



2. Set the parameters. The following table describes some major parameters.

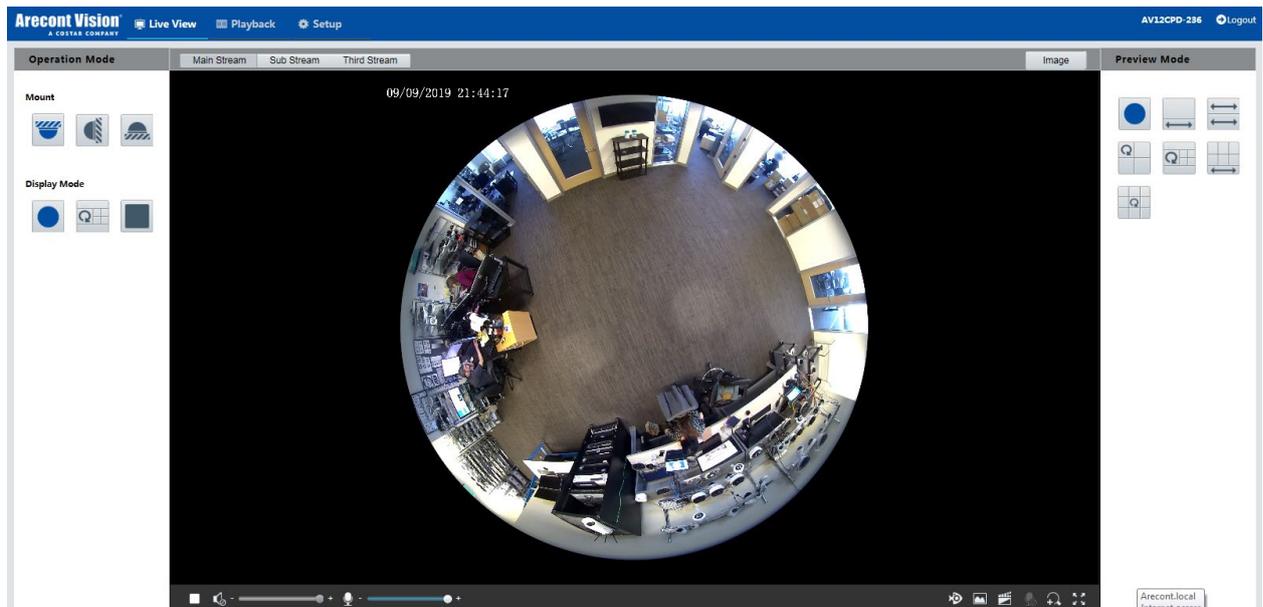
Parameter	Description
	<p>Eleven display modes:</p> <ul style="list-style-type: none"> <li>• Original Image</li> <li>• Fisheye+4PTZ</li> <li>• Panoramic</li> <li>• 360°Panoramic+1PTZ</li> </ul>
	
	
	

Parameter	Description
      	<ul style="list-style-type: none"> <li>• 180°Panoramic</li> <li>• Fisheye+3PTZ</li> <li>• 360°Panoramic+6PTZ</li> <li>• Fisheye+8PTZ</li> <li>• Panoramic+3PTZ</li> <li>• Panoramic+8PTZ</li> <li>• Panoramic+4PTZ</li> </ul>
  	<p>Three mounting modes:</p> <ul style="list-style-type: none"> <li>• Ceiling</li> <li>• Wall</li> <li>• Desktop</li> </ul> <p><b>Note:</b></p> <p>The selected mounting mode must be consistent with the actual mounting mode.</p>

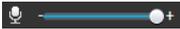
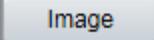
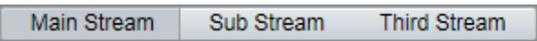
## Live View

Live view means playing live video (real-time audio and video) received from a camera in a window through the Web interface.

If you log in with the **Live View** check box selected, live video appears by default when you are logged in. You may double-click the window to enter or exit full screen mode.



## Live View Toolbar

Button	Description
	Play/stop live video.
	Adjust the output volume for the media player on the PC.
	Adjust the microphone volume on the PC during audio communication between the PC and the camera.
	Take a snapshot of the current image displayed on the PC, and save the image to the local folder only instead of SD card. <b>Note:</b> The path for saving snapshots are set in <b>System Configuration</b> .
	Start/stop local recording, and save the video to the local folder only instead of SD card. <b>Note:</b> The path for saving local recordings is set in <b>System Configuration</b> .
	Start/stop audio communication between the PC and the camera.
	Start/stop digital zoom. For more details, see <b>Error! Reference source not found..</b>
	Display in full screen mode.
	Click this button to open the image setting page.
	Select a live video stream that the camera supports: main stream, sub stream or third stream.

**Digital Zoom** Digital zoom allows you to get more details of certain part of images. Digital zoom enlarges an image with loss in image quality.



### NOTE!

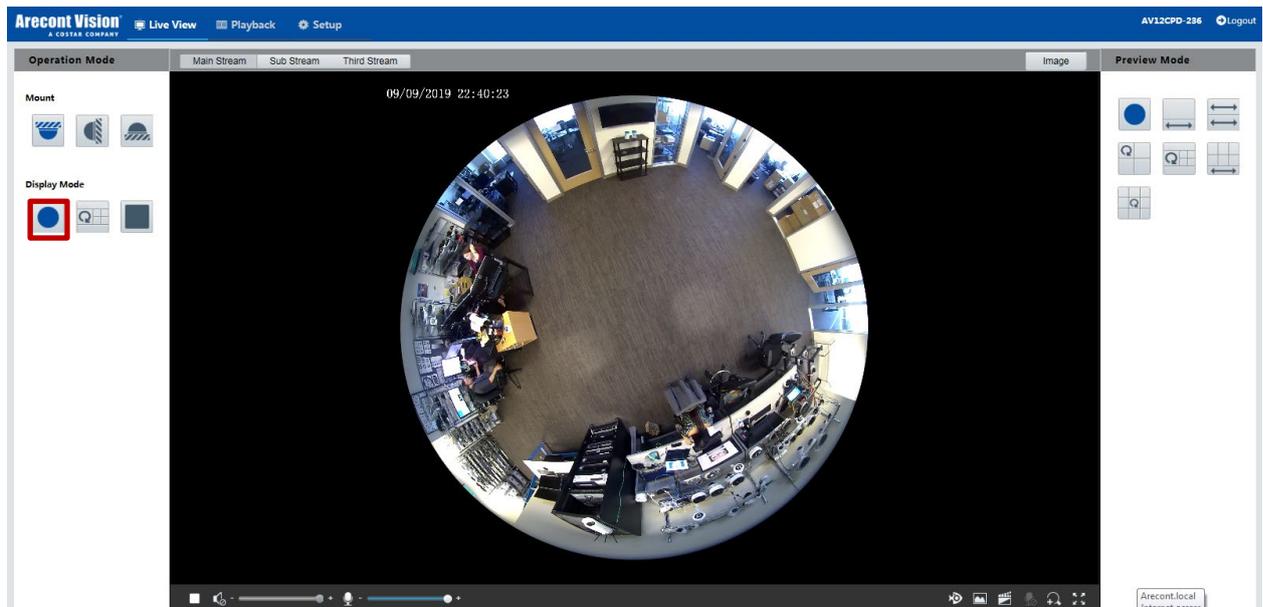
The supported live view operations may vary with camera model. For the operations that your camera supports, see the Web interface.

1. On the **Live View** page, click  on the toolbar.
2. Click and hold the mouse button, and then drag from top down (draw a rectangle) to specify an area. To restore the original image size and zoom in on other areas of the image, right-click the mouse.
3. To exit, click .

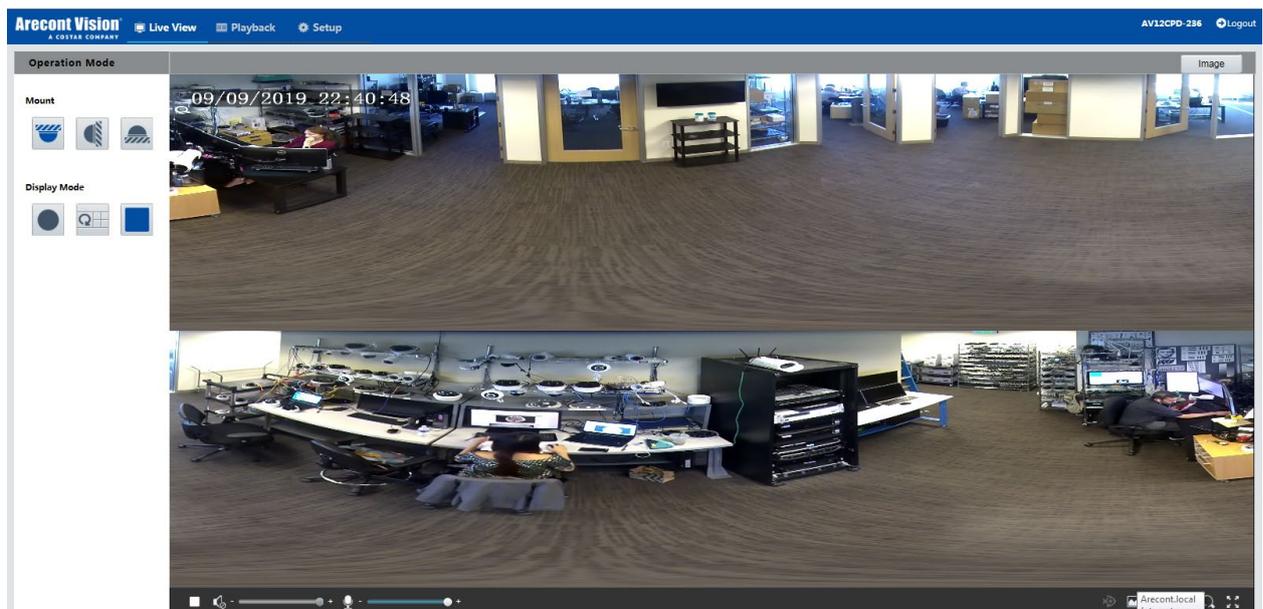
## Live View Display Mode

Display modes include three major types: Fisheye, PTZ, and Panoramic. In different mounting modes, images are displayed differently. The following takes ceiling mount as an example.

When Original Image is selected, fisheye images are displayed as follows.



When Panoramic is selected, dewarped panoramic images are displayed as follows.

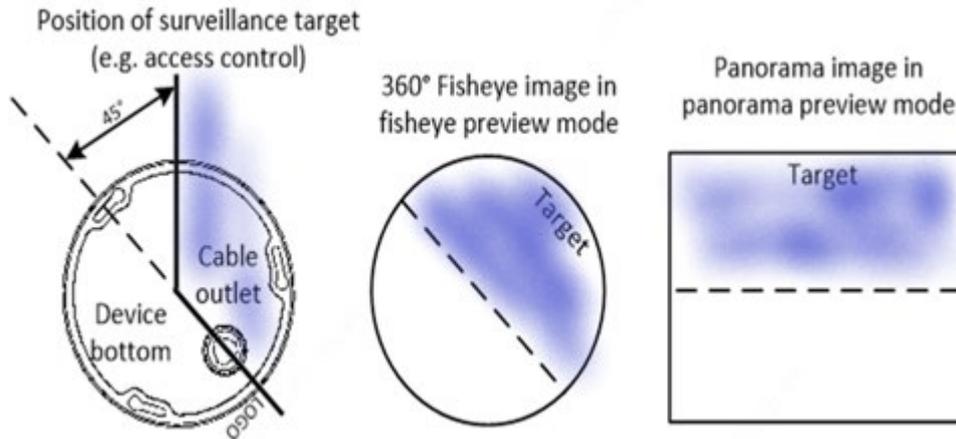




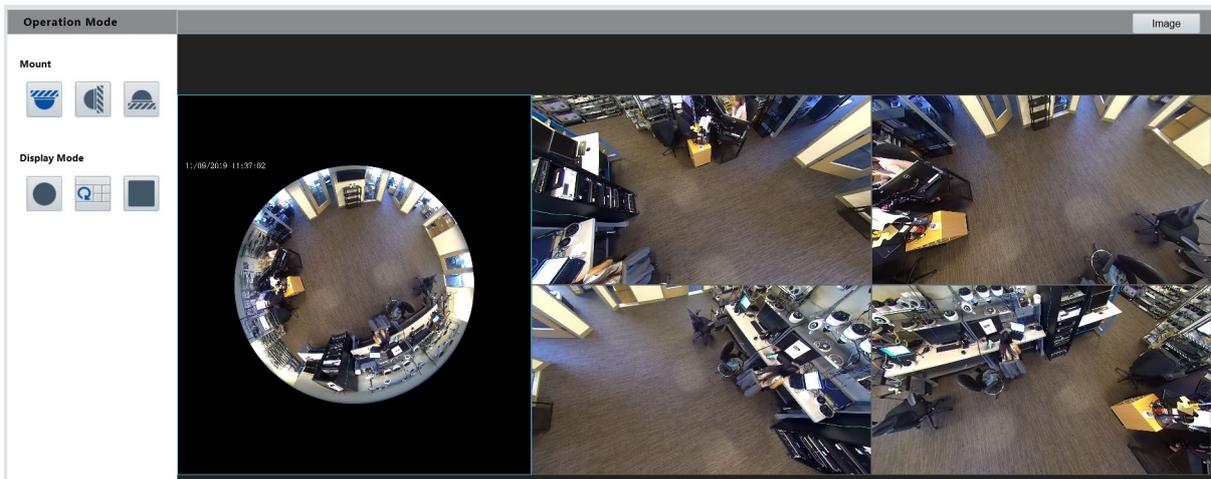
**NOTE!**

If the ceiling mount or desktop mount is adopted, the panorama image (two 180° images) is a dewarped image of the fisheye preview image (360° image). Please mount the camera with an appropriate angle of view according to the actual surveillance requirements.

For example, if the camera is installed on the ceiling, the surveillance target is displayed on the upper part of the panorama image when the intersection angle between the device cable outlet (logo) and the surveillance target in clockwise direction is 135°.



When Fisheye+4PTZ preview mode is selected from the list on the right, 4 local images are displayed, from left to right, from top to down, by default. You may perform PTZ control and zoom operations on each local image, as shown in the figure below.



# Video Playback and Download with SD Card Storage

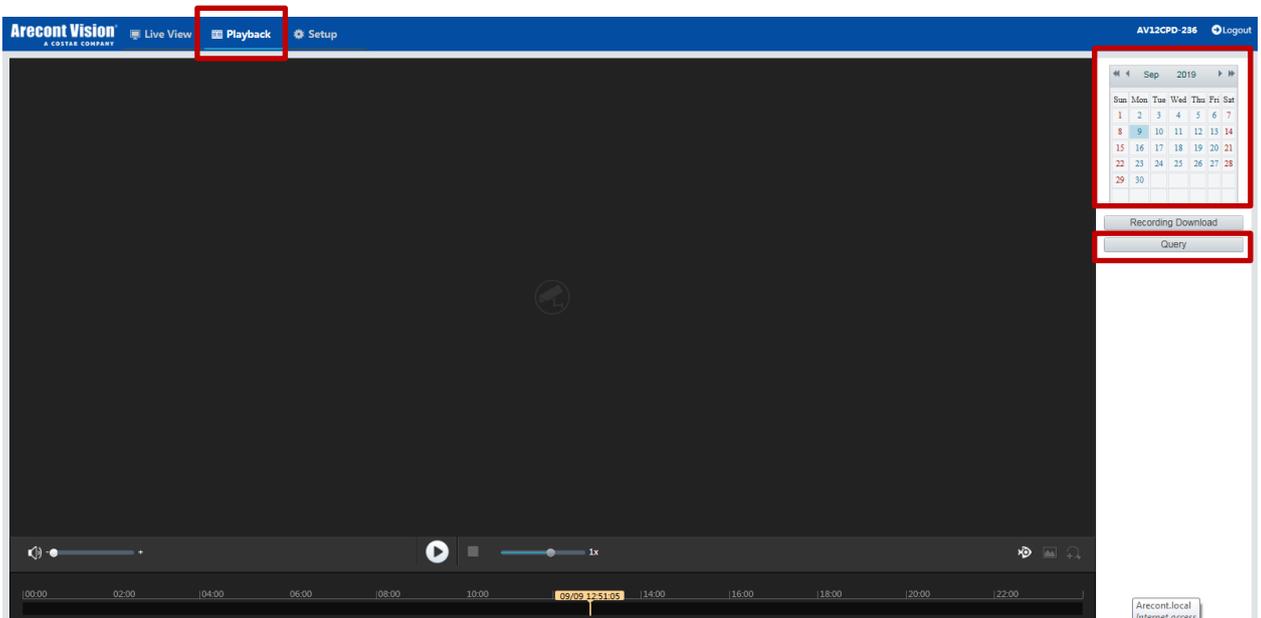
## NOTE!



- *SD card storage refers to recording video to the memory card of a frontend device (mostly a camera). Local recording refers to recording video to a local PC client.*
- *Before you play back video with edge storage, check that the camera has been installed with a memory card and storage has been configured.*

## Video Playback

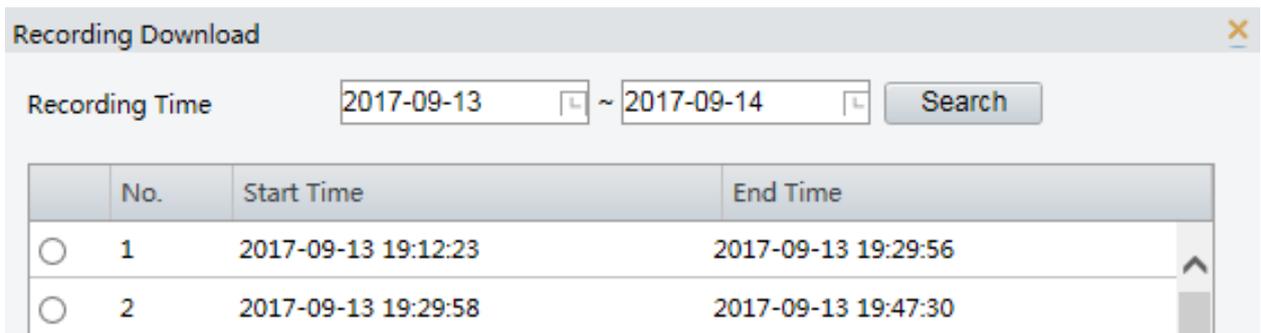
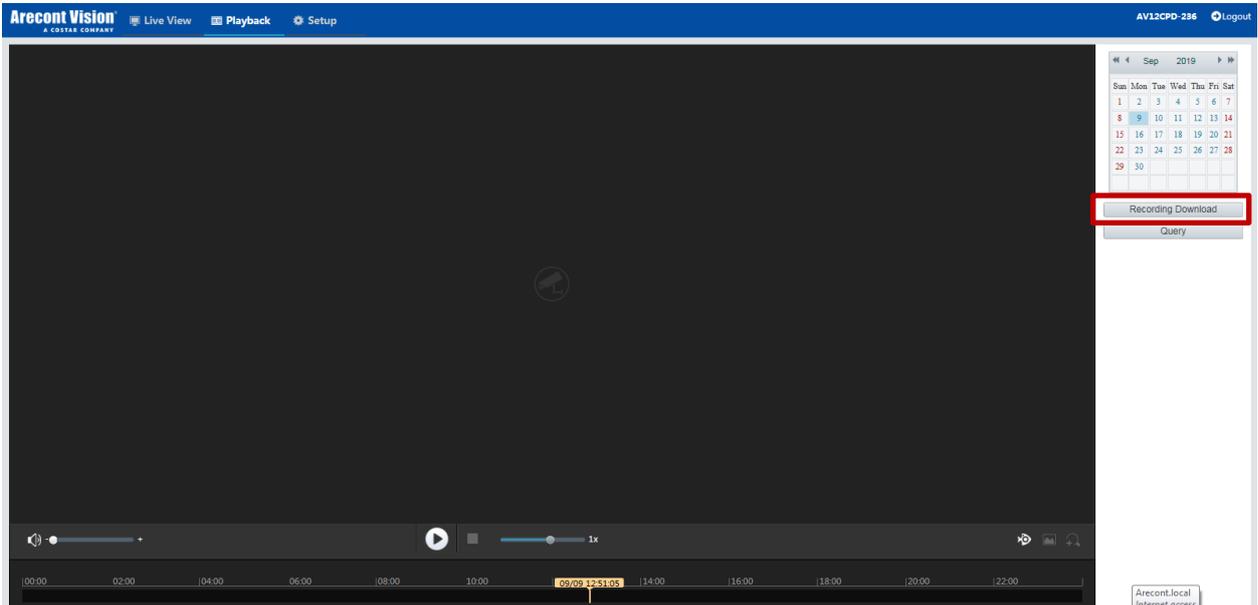
1. Click **Playback** on the home page.



2. Select the date from the calendar.
3. Click **Query**.
4. Under **Results**, double-click the time period to start playing the recording.

## Download

1. Click **Playback** on the home page.



2. Search for video within a specified period. The results will be shown in a list.
3. Select your video and click **Download**. The video will be downloaded to your
4. Local path from the memory card (local path can be changed in **Local Settings**).
5. Click **Open** to show the folder where the downloaded video is saved.

# Dewarping in Video Management Software (VMS)

Dewarping refers to a technology of converting a fisheye image into a “normal” video image without distortions caused by a fisheye lens. This will make video images more suitable to human eyes. ConteraIP Fisheye cameras support Built-in Dewarping when used with ConteraVMS and On-board Dewarping which can be used in a 3<sup>rd</sup> party VMS.

## Dewarping in ConteraVMS

1. Add ConteraIP Fisheye cameras to ConteraVMS. For more details, please refer to ConteraCMR Quick Installation Guide.
2. Click **Setup > Cameras**, and double click the ConteraIP Fisheye camera.
3. At **Live/ Recording** page, click **Edit** and disable **Stream 3**.

**AV12CPD-236 (2ec2c)**

General | **Live / Recording** | Image Settings | Motion | Fisheye | Audio

**Recording Options** [Connect Directly to Camera](#)

Motion 
  Continuous 
  Continuous + Motion 
  Live Only (No Recording)

Continuous Recording Stream: Medium - 2000 x 1500, 15FPS, 2560kbps

Motion/Event Recording Stream: High - 4000 x 3000, 15FPS, 5120kbps

Enable Minimum Retention: 
  
 Collect Motion Event Data:

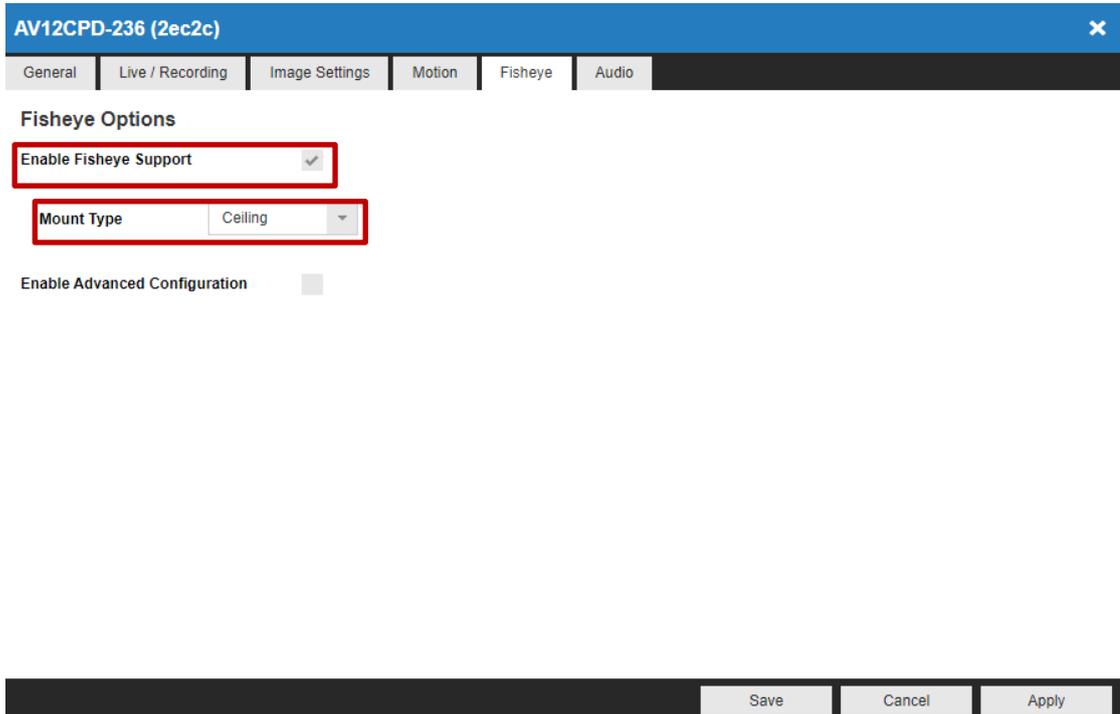
**Stream Configuration & Remote Viewing** [Learn More](#)

Live Remote Viewing	Stream	Frames Per Second	Resolution	Bitrate (kbps)	GOP Length
High Bandwidth	Stream 1	15	4000 x 3000	5120	30
Medium Bandwidth	Stream 2	15	2000 x 1500	2560	30
Low Bandwidth	Disabled				

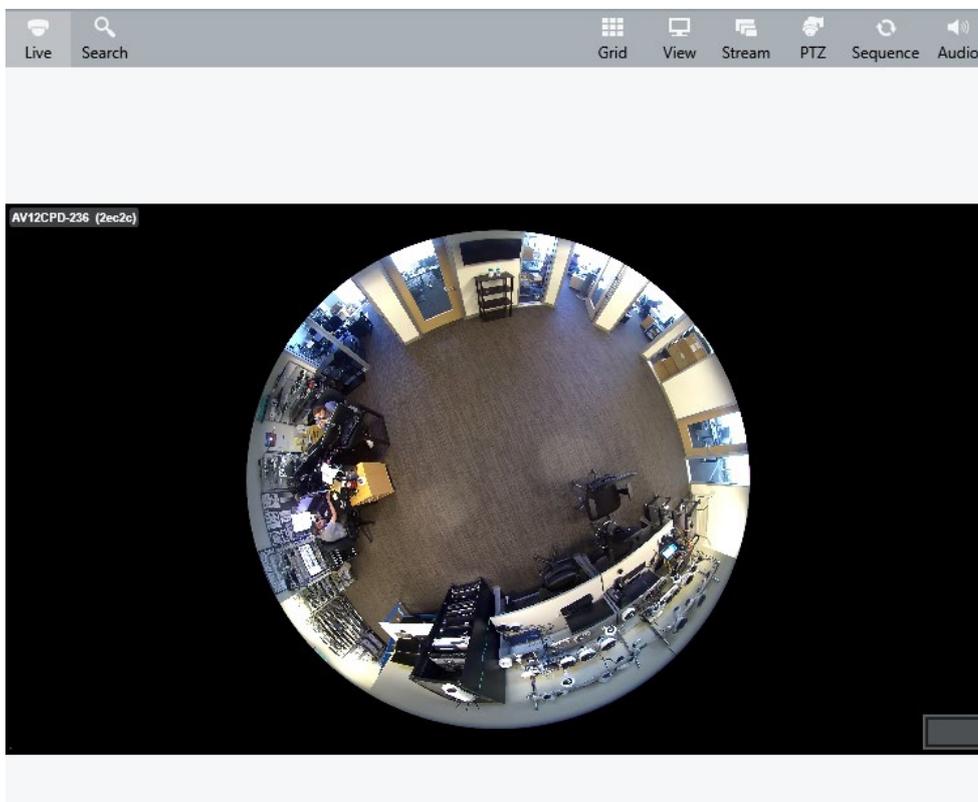
Save Cancel

4. Click **Save**.

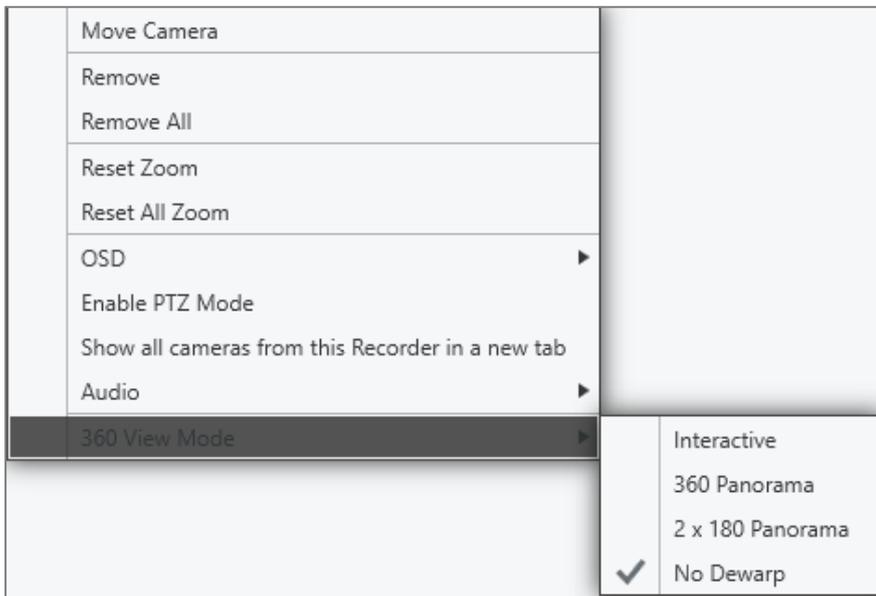
5. At **Fisheye** page, enable **Enable Fisheye Support** and select the corresponding Mount Type.



6. Click **Save**.
7. Open ConteraVMS(Thick Client only, version 2.0 or greater) and add the ConteraIP Fisheye camera to live display area.



8. Right click on the live video. You should see **360 View Mode** and options are **Interactive, 360 Panorama, 2x 180 Panorama, and No Dewarp.**



9. Select the desired dewarping mode.

## Dewarping in 3<sup>rd</sup> party VMS

If you would like to dewarp the fisheye image in 3<sup>rd</sup> party VMS, ConteraIP Fisheye cameras support On-board Dewarping to allow you use RTSP stream to get the dewarped videos directly. Please refer to the table as shown below to get the desired dewarped videos.

You can include username/password in the URL or not. It depends on the requirement of 3rd party VMS.

[rtsp://username:password@IP:port/media/video#](#)

or [rtsp://IP:port/media/video#](#)

*username: username of the camera account*

*password: password of the camera account*

*IP: IP address of the camera*

*Port: RTSP port of the camera*

**Note: you will need to select correct Display Mode to get the corresponding RTSP streams. Ex. If you would like to get panoramic stream, you must set the camera to Panoramic mode on the camera web interface.**

Stream	Display Mode	URL
Fisheye Main Stream	Fisheye	rtsp:// IP:port/media/video1
Fisheye Sub Stream	Fisheye, 4PTZ, Panorama	rtsp:// IP:port/media/video2
Fisheye Third Stream	Fisheye	rtsp:// IP:port/media/video3
Dewarping Area1 Stream	4PTZ	rtsp:// IP:port/media/video4
Dewarping Area2 Stream	4PTZ	rtsp:// IP:port/media/video5
Dewarping Area3 Stream	4PTZ	rtsp:// IP:port/media/video6
Dewarping Area4 Stream	4PTZ	rtsp:// IP:port/media/video7
Panoramic Stream	Panorama	rtsp:// IP:port/media/video8

