5MP Outdoor IR, IP Dome with AI-Based Smart Motion Detection ZN-VD5M212DLP

User Manual

Ver. 1.0 / 03.24.2021

Before connecting, operating or adjusting this product, read this instruction booklet carefully and completely

Contents

Overview

Important Safety Precautions

1) Read these instructions carefully.

2) Keep these instructions separately.

3) Heed all warnings.

4) Follow all the instructions.

5) Do not use this apparatus near water or in damp places.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.

9) Be careful not to step on UTP cable or twist it. Pay particular attention if the UTP cable is located near an electrical outlet.

10) Only use the attachments/accessories specified by manufacturer.

11) Only use the genuine accessories such as cart, stand, tripod, bracket, or table specified by manufacturer or sold with the apparatus.
    This apparatus may topple over when being carried in a handcart. Be careful not to be injured.

12) Unplug this apparatus during thunderstorms or when it is unused for long periods of time.

13) Contact the qualified service engineer if this apparatus needs to be repaired. Repair service is required when the apparatus has been damaged in any way or does not operate normally after damage to its power-supply cord or plug, liquid has been spilled on it, objects have fallen into the apparatus, or the apparatus has been exposed to rain or moisture.

Overview

Caution

Risk Group1
WARNING IR emitted from this product. Do not stare at operating lamp
Product tested against IEC62471

Warning

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
To prevent any injury, this apparatus must be securely attached to the wall/ceiling in accordance with the installation instructions.

1) Only use the standard PoE (Power over Ethernet) specified in the Specifications. If not using recommended PoE, the apparatus may be damaged by fire, electric shock, or other cause.

2) Install the camera stably and securely. Otherwise, the camera may fall down and cause human injury.

3) Do not put any electric conductor (such as screw driver, coin, metallic objects, etc.) or vessels containing water on the camera to prevent any human injury due to fire, electric shock or product falling over.

4) Install the apparatus in a clean, dry place without moisture, dust, soot, etc. Otherwise, it may cause fire or electric shock.

5) If any unusual smell or smoke comes out of the product, stop it. In this case, unplug the power cord immediately and contact your local service center to get appropriate technical support. If you go on using the apparatus without taking any action, fire or electric shock may arise.

6) If the apparatus malfunctions, contact your local service center. Do not disassemble or interfere with the apparatus.

7) Do not spray water directly onto the apparatus when cleaning. Otherwise, it may cause fire or electric shock.

8) Do not install where it is directly exposed to the cool air from an air-conditioner louver. Otherwise, condensation may form on the inside of the camera due to the temperature difference between the inside and the outside of the dome camera.

When installing the apparatus in a place with low temperature such as frozen storage, seal up the plumbing pipes with silicon to prevent cold air from penetrating the housing.
Otherwise, humid air infiltrates into the inner housing and condensation may form due to the temperature difference between the inside and the outside of the apparatus.

1) Do not drop any object on the apparatus or apply force to it. Do not install where it is subject to vibration or influence by electromagnetic interference.

2) Do not install in a place with high temperature (above 50°C), low temperature (below -20°C), or humid air. Otherwise, it may cause fire or electric shock.

3) When moving the installed apparatus, unplug the apparatus before moving or reinstalling it.

4) Unplug the power (PoE) cable from the camera during thunderstorms. Otherwise, it may cause fire or damage to the apparatus.

5) Do not install it near a heat source such as a radiator, or in direct sunlight. It may cause fire.

6) Install this apparatus where it is well ventilated.

7) Do not install this apparatus in a place where it faces extremely strong light such as direct sunlight. It may damage the image sensor.

8) Do not install this apparatus in a place where water leaks or splashes. Do not any put object containing water such as a pot on this apparatus.

9) Avoid damage to the main power plug.

10) When operating the apparatus outside, condensation may form due to the temperature difference between the inside and the outside of the apparatus. Check if the internal fan works normally before operating it outside.

11) Make sure that the LAN Ethernet cable does not extend to the outside of the building.

Before Installing

- The apparatus must be installed by a qualified engineer in accordance with relevant regulations.
- Appropriate protective devices must be fitted to prevent the network camera being damaged by a sudden voltage fluctuation when lightning flashes.
- Comply with every instruction for the safety of the network camera.
- Before cleaning, stop the network camera and unplug its power cable.
  Use only a soft and dry cloth. Do not use an abrasive.
- You must not repair the apparatus personally. Electric shock may be caused by high voltage electricity when opening/closing the cover.
 Contact the qualified service engineer if the apparatus needs to be repaired.

Overview

Overview

Product Features

This product is a network AI camera that supports the latest H.264, H.265 and MJPEG compression algorithms, and is suitable for high-performance video security systems.

This camera features IR LEDs for use in low light conditions (0 Lux) and filters that are interchangeable for day and night use, providing sharp and clear image quality at all times, regardless of day or night.
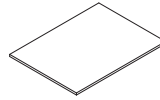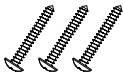
What's Included
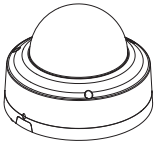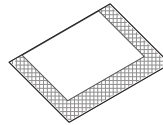

Camera
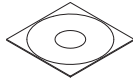
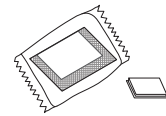Template Paper

Quick Guide

L Wrench

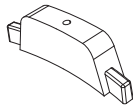Install Screw (3ea)

Anchor (3ea)

Silica Gel

Extra Silica Gel / Tape

RJ45 Connector

Rubber Case Bottom

Extra Silica Gel can be attached to the inside of the camera body using the included tape when the camera is installed in a humid place.

Overview

At a Glance

Item	Name	Description
❶	Control Button	Used to change format, restart the camera, and reset to factory default depending on its operating method. - To change analog format : Press and hold for less than 5 seconds. - To restart the camera : Press and hold for more than 5 seconds. - To reset to factory default : Press and hold for more than 10 seconds.
❷	Micro SD Card Slot	Allows a Micro SD card to be inserted.
❸	DC 12V / Audio / Alarm In/Out terminal	- Alarm In/Out terminal : Connect alarm in/out signal. - Audio In terminal : Connect to mic. - Audio Out terminal : Connect to speaker. * Alarm / Audio function depends on the model.
❹	Network	Used to connect the PoE cable between power supply and network.
❺	AC 24 V	Used to connect to a power cable.

Installation

Installing

Opening the top cover

To install the camera, open and separate the cover first.

1. Loosen screws by using the L Wrench supplied to remove the top cover.

2. Keep the separated dome cover safely for reassembling after the installation.
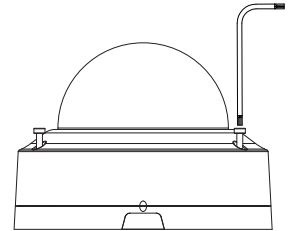
Installing on the ceiling

You can install the camera on the ceiling, and then adjust and fix its angle.

1. Attach the supplied template to the place where the camera will be installed, and drill through the installation hole.

  ✔ It must be installed in a place where it can bear the camera's weight.

2. Fix the camera main body onto the ceiling using the screws provided.

  ✔ It is recommended to inject silicon into the gap between the camera and the ceiling for secure waterproofing.
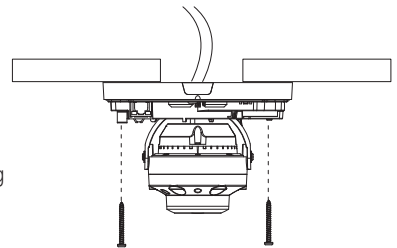
Installation

▌ Installing on a surface

You can install the camera on a wall, and then adjust and fix its angle.

1. Attach the supplied template to the place where the camera will be installed, and drill through the installation hole.

> ✔ It must be installed in a place where it can bear the camera's weight.

2. Fix the camera main body onto the wall using the screws provided.

> ✔ It is recommended to inject silicon into the gap between the camera and the wall for secure waterproofing.

> ❗ If necessary, attach extra silica gel packets to the inside of the product.
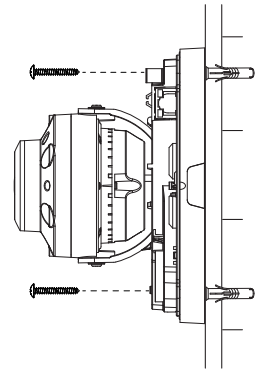
▌ Reassembling the Dome Cover

To protect the lens, the cover must be reassembled once installation is finished.

1. Adjust direction of the camera lens to the desired monitoring framing after fixing the camera onto the ceiling or wall.

2. Reassemble the Dome Cover and fasten the screws.
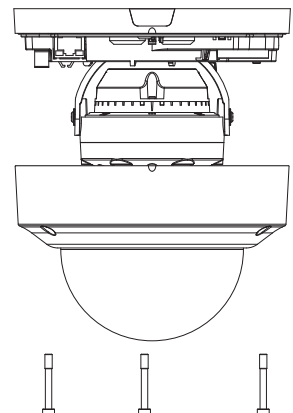
▌Adjusting angle

After installing your camera on a ceiling or wall, you can adjust the camera angle to allow the camera lens to capture the target site.

1. Install the camera on a ceiling or wall wherever you want.

2. Adjust the camera angle by moving left, right, up or down to focus on your target site.

PAN
TILT
ROTATE
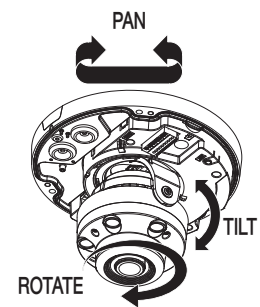
3. Reassemble the Dome Cover and fasten the screws.
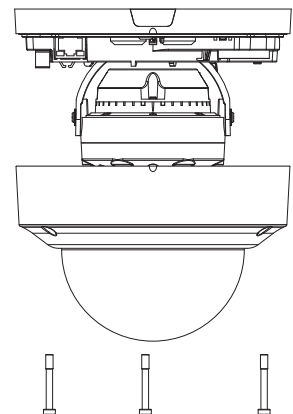
Installation

Connecting with power supply

Connect the PoE (Power Over Ethernet) cable between the power supply and the network port.

▐ If your network camera is installed as standalone setup, the power should be supplied by PoE Hub.

PoE Injector

PoE Hub
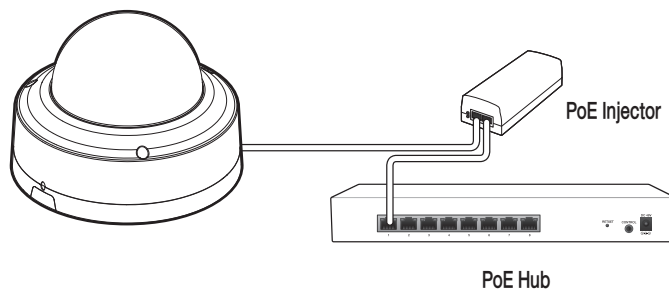
▌ Connecting to the network

To connect with a PC in local network

If you connect the network camera with a PC in the same network, you can perform monitoring and setting process by using the PC's Web Viewer.
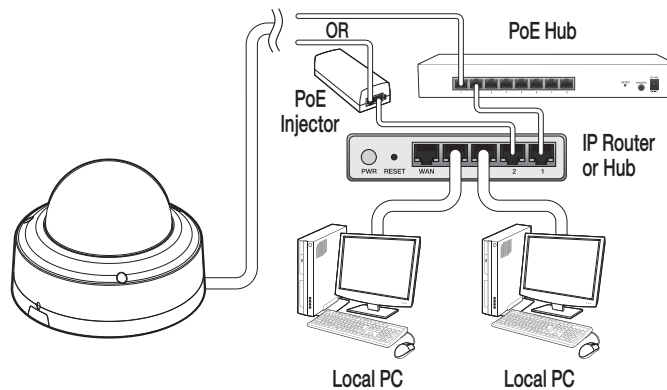
1. Connect the network port on the back panel with a router or hub.

2. Connect a local PC with a router or hub.

3. Enter the address in "**http://IP address:web service port**" format in address window of the web browser or dedicated software program at local PC.

   ✔ Ex : http://192.168.0.23:80 web service port is set as 80 by factory default. You can modify the port number in Network Setup screen.

4. Enter your ID and password to log in. You can watch the monitoring screen after login.

   🔳 You must register your login password when accessing for the first time.
   To change your password, refer to "**How to connect to the camera**". (page 15)

Installation

To connect with a PC in remote network

You can access the network camera from your PC through the internet.
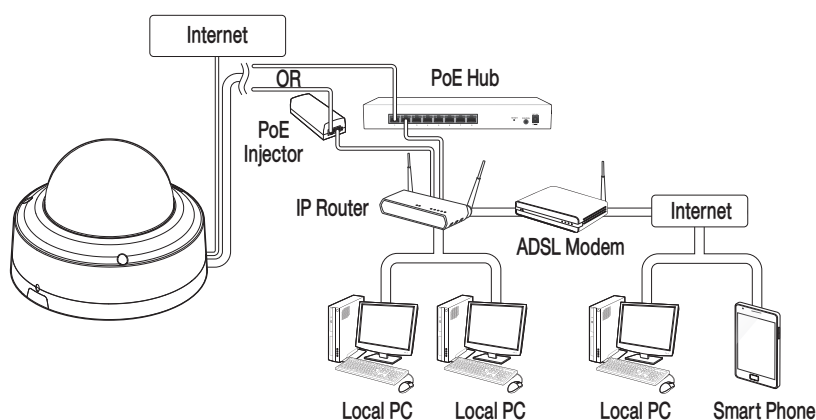
1. Connect router's network port directly with static IP LAN cable or with the ADSL modem.

2. If using a router, you should configure the port forwarding settings.

   ✔ You can get relevant support from your router manufacturer or qualified installation company for how to configure the port forwarding of your router.

   ✔ When connecting to a network camera from a PC through the Internet, enter a URL in the format of: "http://IP address:web service port".
   For more information, refer to "**Setup › Network**". (Page 31)

What is Web Viewer?

Before connecting

When using internet access, set the port number as 554 and 80 in your router port forwarding settings.
For more information about port forwarding settings, refer to the user manual of your router.

Minimum PC Specifications for Web Viewer

CPU	P4 3.0 or higher
RAM	512MB or higher
VGA	Geforce MX 400, Radeon 7500 or higher
VGA memory	64MB
Monitor	1280X1024
Browser	Internet Explorer, Firefox, Chrome, Smart Phone(iOS, Android)
IE version	IE8.0 or higher
Network	100Mbps
DIRECT X	V 7.0 or higher

How to connect to the camera

Since the network settings of your network camera are not configured by factory default, you cannot access to WebRA.
To configure your network, run the "**iDevice Manager**" to check the IP and access to your camera.

1. Press <**Search**> button to search for the network camera linked to your network.
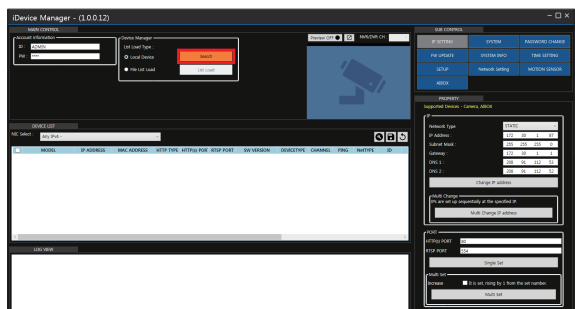
Web Viewer

2. The search results are displayed if finished. You can distinguish your network camera(s) by checking its model information. Click your desired apparatus whose network settings you want to configure in the list.
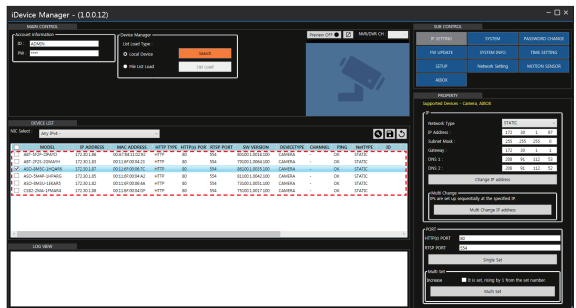
3. Select "**DHCP**" or "**STATIC**" from the IP section's <**Network Type**> that is on the right side of the screen. If selecting "**STATIC**", enter the values for IP Address, Subnet Mask, Gateway, and DNS information, and then press <**Change IP address**>.

✔ To use DHCP (Dynamic Host Configuration Protocol), your network camera must be connected to the corresponding device such as DHCP server (router). When connecting your PC with a network camera directly on a one-to-one basis, you cannot use DHCP and watch the video from the network camera which has been remotely connected via internet.
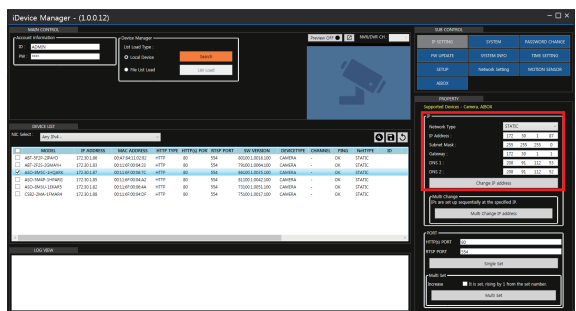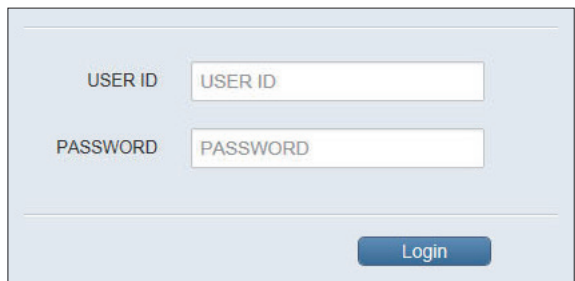
✔ Select the camera you want, then press <**Multi Change IP address**> button to change the camera's IP address. The IP address will be changed automatically in a row, with the existing IP address as a standard.

4. The list is automatically updated in a moment. Check if all the values look correct and finish the network environment settings.

✔ Press <**Preview ON**> button at the upper side of the screen to preview the live screen of the selected camera.
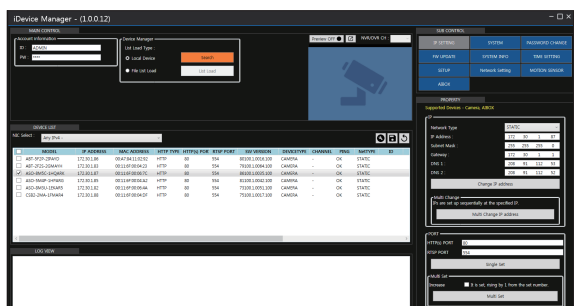
5. Security page (Internet Explorer) is displayed.

   ✔ Ex) The http://192.168.0.4:80 changes into http://192.168.0.4:80.

6. Click <**Continue to this website (not recommended).**>.

7. Enter your ID and password in the ID input window.

   ✓ Default User ID : ADMIN
      Password : 1234

USER ID	USER ID
PASSWORD	PASSWORD
	Login

8. You should run the activities after installing corresponding Active-X.

Control' from 'AHOPE Co., LTD.'.   What's the risk?   Install
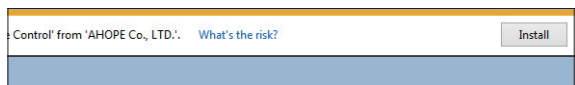
9. If Active-X failed to install, check the ActiveX option in IE Security menu.
   If the Active-X installation window does not appear in the top right area for a long time (longer than 1 minute), change the "**Internet Options**" settings. (page 18)

Internet Explorer - Security Warning

Do you want to install this software?

Name: WebViewer Control
Publisher: ahope ltd.

More options   Install   Don't Install

While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?
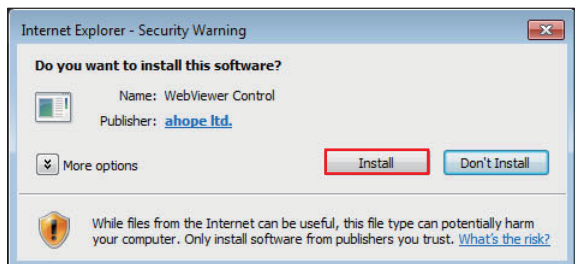
Web Viewer

10. "Control Panel > Internet Options > Security" menu, press [**Custom level...**] button.

11. Select all the ActiveX-related options as available.

   ✔ Ex : Download signed ActiveX controls, Download unsigned ActiveX controls….
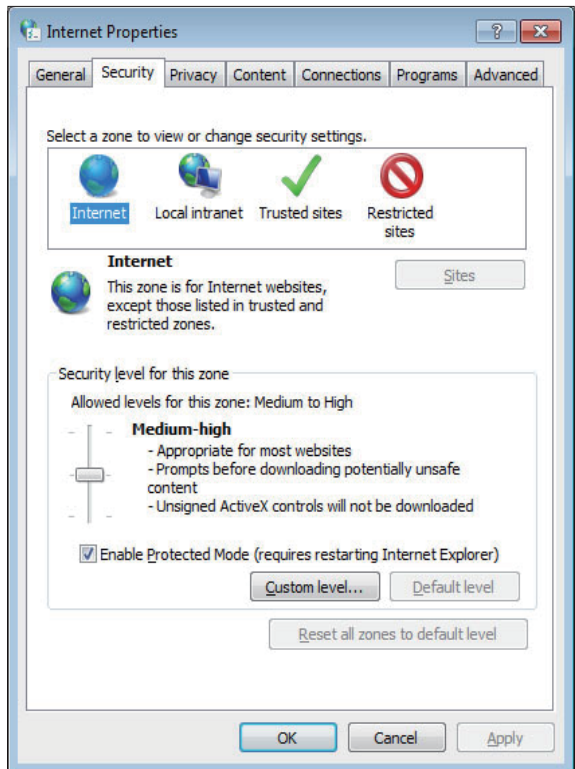
12. Finish the Security settings, and then press [**OK**] button.

   ✔ Check "Do not include local path when uploading files to the server".
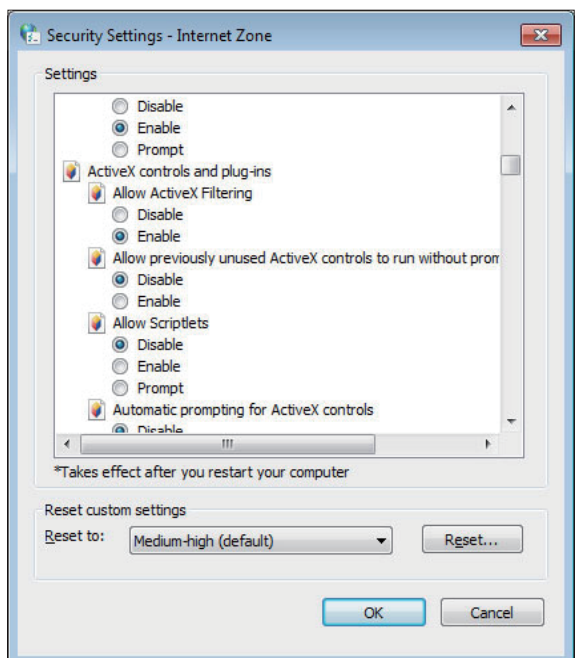
13. Click [**OK**] button to restart the IE.
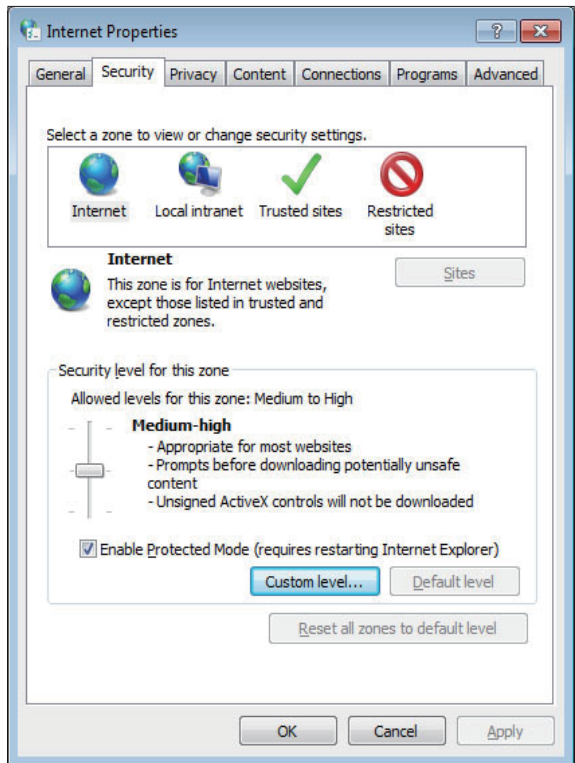
Web Viewer

Live

Learning the Live screen

Item	Name	Description
❶	MFZ setup	Move to the MFZ screen. Manually sets the zoom/focus of the lens.
❷	Stream Change	If selecting Dual Stream, the streams are shifted in the order of the 1st (the first stream) ◀▶ 2nd (the second stream).
❸	Full Screen	Displays the image in full screen.
❹	Multi Window	Plays the video in two screens.
❺	OSD	Display or hide the OSD menu on the screen.
❻	Freeze	Stops transmitting the image manually.
❼	Mute	Used to mute the sound.
❽	Duplex Audio	Delivers the sound to the camera by using a microphone connected to a PC.
❾	Snapshot	Saves current image as .jpg image file.
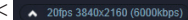
Item	Name	Description
❿	Print	Prints current screen.
⓫	Panic Record	Start the panic recording.
⓬	Alarm	Turns on if an event occurs. It does not turn on if no reaction to the event is yet defined. Click this to check the information of the event that occurred.
⓭	Stream Status	Click to display the network information.
⓮	Storage Information	Displays the storage information of the Micro SD Card.
⓯	Date/Time	Display the current time and date.
⓰	Event Status/ Information	Click to see the event status, network information, streaming session, storage status, and system status.
⓱	🏃	A motion is detected by the connected camera.

▌MFZ setup

Click the menu button at the left bottom of your live screen to go to the MFZ setting screen.
Move the Bar < ▭▭ > with your mouse to adjust the zoom/focus of your lens.

▌Stream Change

Since this camera supports the 'dual streaming' transmission, you can shift between the 1st stream and the 2nd stream by clicking the < ▲ 20fps 3840x2160 (6000kbps) >.

✔ You can shift between the streams only if the 2nd stream is set in "**Setup** > **Camera** > **Codec setup**". (page 23)

▌Full Screen

1. Click < ⬚ >.

2. Locate your mouse pointer over an image and then double-click to display in full screen.

3. If you want to go back, double-click your mouse button over the image.
You can go back by pressing the [**Esc**] key on your keyboard or right-clicking.

Web Viewer

Multi Window

Click the < > to display video in a small popup window instead of the default screen.

> ✔ In the small popup window, menu selection is not available.
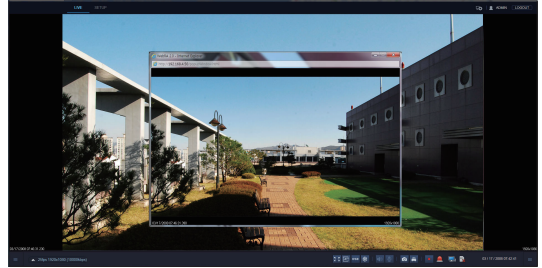
Snapshot

Click < > to save current image as .jpg file.

Event Status/Information

You can set Alarm In, Alarm Out, Motion, etc. in Event Status. The Information displays general information about your camera such as Network Information, Streaming Session, Storage Status, System Status, etc.

CAMERA

Codec Setup

1. Codec Setup

You can set various video functions for the camera depending on the field situation.
When finishing the setup process, click <**APPLY**> to apply.

- • Codec Setup
- ❯ Codec : This network camera can transmit videos in different resolutions and qualities simultaneously using different CODECs.
  - H264 : Video compression standard to transmit high quality video stream efficiently. H.264 is available in various networks and systems and allows the bit rate to be controlled according to adjusted bandwidth usage.
  - H265 : It can alternatively be used to provide substantially improved video quality at the same bit rate of H.264.
  - MJPEG : You can edit each frame freely even if it is already compressed and get high quality images when restoring. Though Motion JPEG uses a considerable amount of bandwidth, it provides excellent quality for each image.
- ❯ Size : You can change each network transmission resolution for your camera.
- ❯ Frame Rate(FPS) : You can set the frame (rate) for camera video.
- ✔ If network speed is fast enough, you can set Frame Rate as 30 fps to have more natural video.
- ❯ GOP Size : The faster the subject in video moves, the smaller the GOP Size should be. However, the slower the subject in video moves, the bigger the GOP Size should be.
- ❯ Bit-rate Control : You can select <**CBR**> or <**VBR**> or <**VBR+**>.
  - CBR (Constant Bit Rate): Used for encoding H.264/H265 video into a fixed Bit Rate.
  - VBR (Variable Bit Rate): Encoding Bit Rate will be varied from video to video. Normally, when the video is more dynamic, the Bit Rate will also go up.
  - VBR+: Has a higher compression rate than VBR. The effectiveness will be maximized if the video is less dynamic.
- ❯ Dynamic GOP : Using <**VBR+**>, you can set whether to use a dynamic GOP.
- ❯ Image Quality : Using <**VBR**> or <**VBR+**>, you can set the image quality.
- ❯ Bit-rate : You can set up the average size of the encoding video.
- ✔ Enter a value within a range of 512 Kbps ~ 15000 Kbps.
- ❯ Boost Quality : Works if Motion (Motion Detection) area has been set in network camera event and <**ON**> has been selected. When an event is triggered, camera's instant FPS/Bitrate/GOP value is changed into the specified Boost FPS/Bitrate/GOP value.
- ❯ Analog Format : Select <**NTSC**> or <**PAL**> and press <**APPLY**> button.
- ❯ Output Bandwidth Limit : You can select whether to limit bandwidth or not.
- ❯ MAX Bandwidth : Specifies the peak bandwidth.
  You can enter your desired value if selecting <**ON**> for Bandwidth Limit.
- ✔ Enter a value within a range of 1000 kbps~30000 kbps.
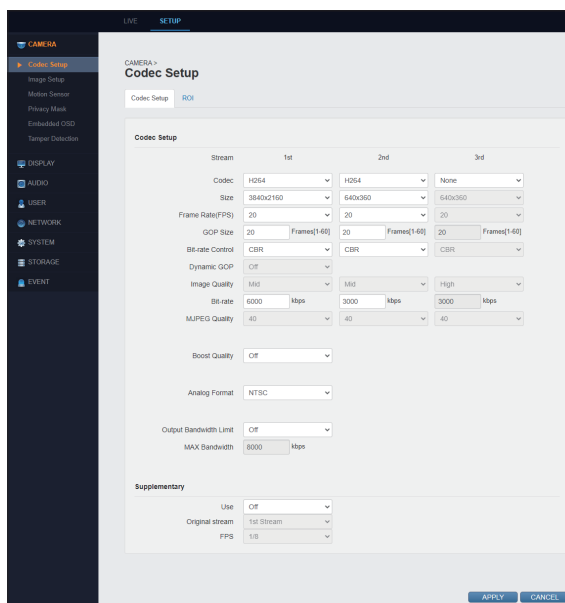
Web Viewer

- **Supplementary Use**

  ✔ You can set up the Frame Per Second reception rate differently for the 1st/2nd video streaming.

  ❯ Use : Sets whether to use Supplementary.
  ❯ Original stream : Sets the default video stream.
  ❯ FPS : You can set the frame rate of the camera image.

2. ROI Setup

You can encode the image such that the image quality of the ROI region (detected object) is improved and the image quality of the non-ROI region is decreased.
When finishing the setup process, click <**APPLY**> to apply.

  ❯ ROI Mode : Sets ROI operation mode.
  - Auto : Sets the ROI region automatically.
  - Manual : Sets the ROI region manually.
  ❯ Background Image Quality : Sets the quality of the background image.
  ❯ ROI : Sets ROI and non-ROI regions by clicking and dragging to define an area on the screen.
  - Area All : Sets the whole area shown on the screen as ROI/non-ROI.
  - Area 1 ~ Area 8 : Up to 8 areas can be set.
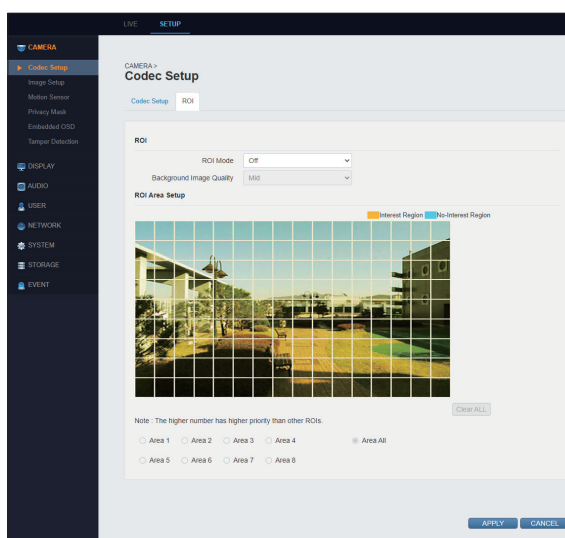
Image Setup

1. Image Setup

You can set the following items to make the installed camera have the best image optimized for its environment.
When finishing the setup process, click <**APPLY**> to apply.

- White Balance Control

  ❯ WB Mode : Automatically correct the color balance of your camera to make a natural-looking screen.
  - Manual : User adjusts 'White Balance' manually.
  - Auto : Camera adjusts 'White Balance' automatically.
  - Auto Wide : Camera adjusts 'Wide White Balance' automatically.

  ✔ Except for some special cases, <**Auto**> is generally recommended.
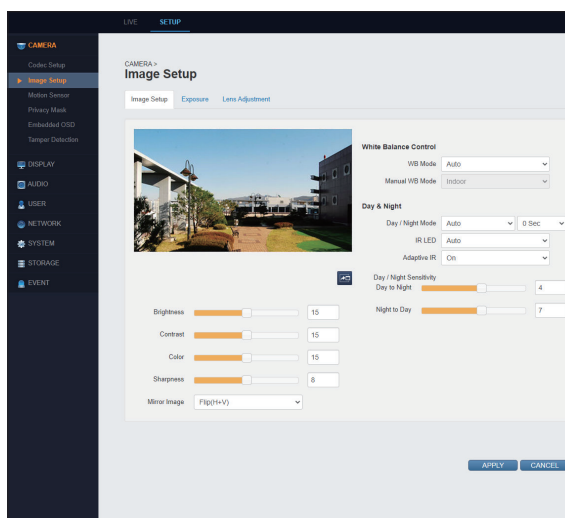
- Day & Night
  - › Day / Night Mode : Measures the illumination of camera to shift into color or black/white video and change its day/night filter depending on illumination condition.
    - Day : Displays video in color mode regardless of illumination and fixes its filter to day.
    - Night : Displays video in black/white mode regardless of illumination and fixes its filter to night.
    - Auto : Your camera measures the illumination and changes its settings automatically.
    - Schedule : Automatically switches between day and night mode according to the schedule.
  - ✔ <**Auto**>, <**0 sec**> is recommended in usual environment.
  - › IR LED : When it is set to <**AUTO**>, the IR LED will be turned on during the nighttime. If in the daytime, the LED will be turned off automatically.
  - › Adaptive IR : When it is set to <**On**>, the brightness of the IR will be altered due to the brightness of the environment.
  - › Day / Night Sensitivity : Adjust the sensitivity depending on the illuminance of day and night.
    - Day to Night : Sets the Sensitivity for Day to Night switching within the range of 0 through 7.
    - Night to Day : Sets the Sensitivity for Night to Day switching within the range of 3 through 10.
  - ✔ The value of Day to Night switching must be smaller than that of Night to Day by 3 or more steps.

- Image Property Control

  You can set the Sharpness, Brightness, Contrast, and Color for image.

  - ✔ The bigger the number is, the bigger the camera setting value is. Except for some special cases, default values are recommended.

  - › Mirror Image : You can flip captured image horizontally, vertically, or in all directions if required.
    - Horizontal : Flips the captured image horizontally (◄►).
    - Vertical : Flips the captured image vertically (▲▼).
    - Filp(H+V) : Flips the captured image horizontally (◄►) + vertically (▲▼).

2. EXPOSURE

- Exposure
  - › Exposure Mode : Select the exposure mode. After setting it up, click <**Calibration**> to apply the changes.
    - Manual : Controls camera's exposure manually. To compensate for small amount of light, adjust the "**AGC Gain, E-Shutter Speed**" to the values entered by user.
    - Auto : The camera controls every exposure. If selecting <**Auto**>, you cannot use some secondary menus (AGC Gain, E-Shutter Speed).
  - ✔ For your convenience, <**Auto**> is recommended for Exposure Mode.

  - ✔ When in Auto (Motion Priority) mode, camera has less motion blur than in Auto mode at normal brightness.
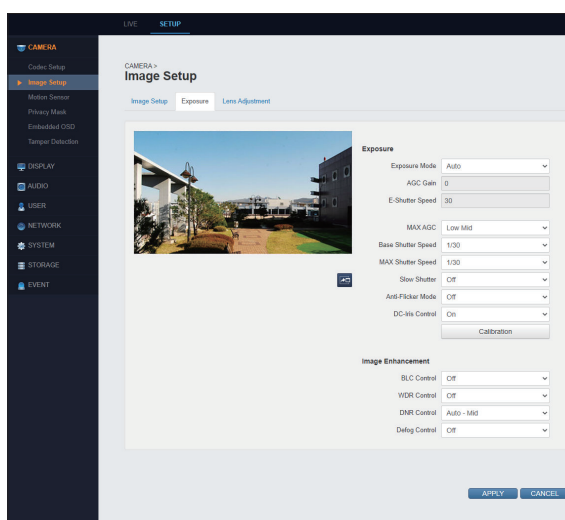
Web Viewer

- › MAX AGC : AGC is the abbreviation for Automatic Gain Control. When too strong level of signal is input, the AGC adjusts the Gain (film sensitivity) to prevent the signal from being saturated. When too weak level of signal is input, the AGC adjusts the Gain to keep a certain level of signal.
  - Maximum AGC sets the peak Gain which is applied to low light level environment. It is classified into LOW/LOW MID/HIGH MID/HIGH/MAX. Higher the value the screen looks brighter, but may increase noise.
  - Base Shutter Speed : Sets the default shutter speed that is applied when the exposure mode is set to <**Auto**> or <**Auto (Motion Priority)**>.
    If you set the default shutter speed to a faster value, you can capture moving objects without a blur.
- › MAX Shutter Speed : Set the maximum shutter speed.
- › Slow Shutter : Specifies whether to use digital sense-up mode or not.
  - Off : Disables DSS (Slow Shutter). You can use DSS in X2, X4, or X8 mode.

  ✔ If you use the sense-up mode in a dark place with very low light level, you can watch a much brighter video since the brightness still remains at the specified level. However, the video FPS becomes slower in this case.

- › Anti-Flicker Mode : Adjusts the exposure settings when using the camera in a place where fluorescent light is turned on.
  You can use this mode when screen flickers. '60 Hz' is generally specified as its value in Korea.
- › DC-Iris Control : Sets whether to use the camera's aperture control function. Adjust the camera aperture according to the ambient light to maintain the proper brightness.

- Image Enhancement

  - › BLC Control : Use this function to compensate scenes which are too bright under a backlight condition such as framing a bright window or open door from the inside. In such a case, using the function allows the camera to produce better images of the dark objects displayed on a monitor. BLC (Backlight Compensation) is classified into Off/Adaptive/Zone.
    - Off : Disables the BLC (Backlight Compensation) function.
    - Adaptive : Applies BLC without considering the location of bright area.
    - Zone : If you specify a bright area as Zone, the BLC is applied to the Zone. If you don't specify properly, the screen may look darker.

    ✔ BLC function is useful in most cases when framing a window or door with backlight. For outdoor camera installation, it is recommended to set BLC (Backlight Compensation) function to <**Off**>.

  - › WDR Control : Wide Dynamic Range (WDR) is a feature that allows for different objects at different exposures to be viewed in the same scene (ex; one object in a bright area and one in a dark area).
  - › DNR Control : use temporal and spatial noise reduction to improve image quality and reduce video noise. This can be set to Off, Auto(LOW/MID/HIGH), or to Manual(LOW/MID/HIGH) levels.
  - › Defog Control : Adjusts the image of foggy or very cloudy weather. Set this if the image is foggy.

    ✔ Note that resulting image can look dark if applied to an image taken in light mist while the manual fog level is set too high.

3. Lens Adjustment

You can select where to set the zoom or focus of your lens by dragging on the image with your mouse.

> Zoom : Click the (-) or (+) button to adjust the zoom.
> Focus : Click the (-) or (+) button to adjust the focus.
> IRIS : Click the (-) or (+) button to adjust the iris.
> Go to : Enter your desired number to set the zoom/focus as designated.
> ONE PUSH : Drag your mouse on the video to set the location for auto focus. Click [ONE PUSH] button to fit the focus automatically.
> HOME : Click [HOME] button to move to the default flange back position.
> Default Area : Reset the focus area to the default area (the entire image area).
> Focus Compensation : Select <On> to switch between Day and Night mode and adjust the focus automatically.
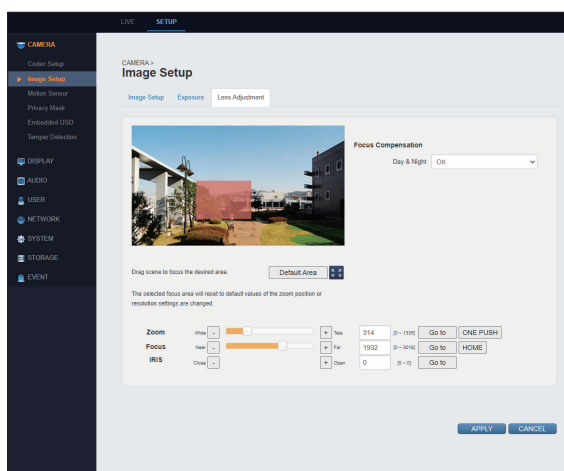
Motion Sensor

When motion is detected in specified area, you can get E-mail notification or the image transferred via FTP or e-mail.
When completed, click <APPLY> to apply.

> Motion: Sets the motion detection function.
> AI motion: Sets the AI motion detection function.
> AI motion OSD: You can set the range of AI motion detection.
  - When you select "Show only detected object in selected zone", the OSD is displayed only when an object is detected within the set detection zone.
> AI motion object: You can set the object to be recognized by AI motion detection function. Select a desired object among persons, cars and bikes.
> AI motion threshold: You can set the reference value for each object to be recognized by AI motion detection function.
> Select Area : You can select up to 4 different motion areas.
> Sensitivity(Day) : You can set the daytime sensitivity for the selected area within the range of 1 through 30.
> Sensitivity(Night) : You can set the nighttime sensitivity for the selected area within the range of 1 through 30.
> Select All : Selects all the areas.
> Deselect All : Deselects all the areas.

✔ If you specified multiple "Motion" areas, some of camera functions may be slow down.

English | **27**
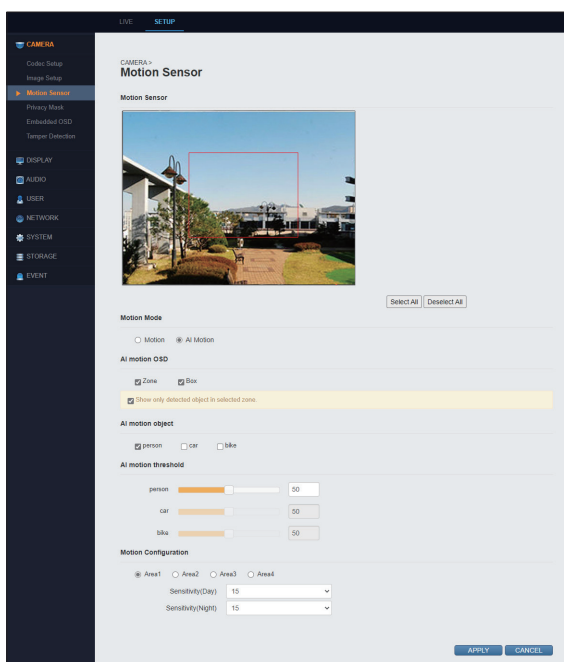
Web Viewer

Privacy Mask

You can directly specify a certain area of the camera video to be blocked to protect privacy.
When completed, click <**APPLY**> to apply.

> Select Area : Allows to select up to 4 different areas to be blocked to protect privacy.

> COLOR : Allows to specify blocking color for each area.

> Clear : Allows to deselect specified blocking area(s).

> Clear All : Deselects all the areas.
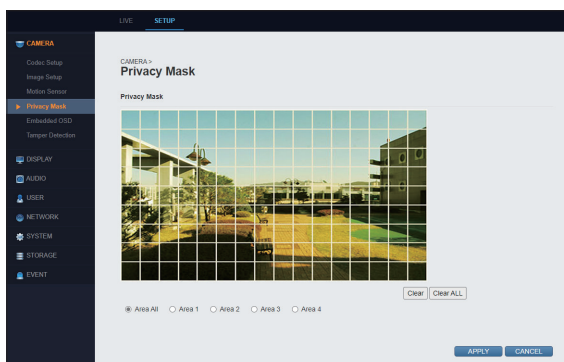
Embedded OSD

You can choose to display the resolution, date/time, and device name on the live screen. When you select a function, information is displayed on the recorded video.

✔ The Embedded OSD is to display text in the window of the live screen. It is different from the OSD displayed on the recorded video.

When completed, click <**APPLY**> to apply.

> Resolution : Specifies whether to display camera resolution on screen or not.

> Date / Time : Specifies whether to display date/time on screen or not.

> DEVICE NAME: Specify whether to display the device name on the screen. You can set the device name in "SYSTEM > System Management". (Page 35)
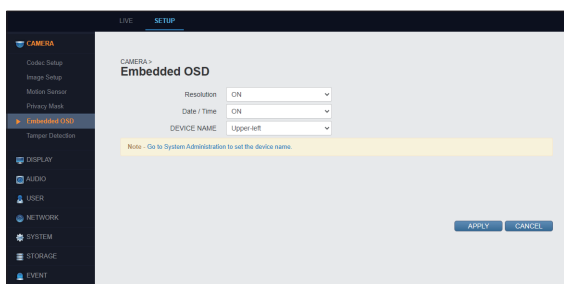
Tamper Detection

You can set the camera to detect the external factors that will prevent the user from seeing the video that they want, such as change of the installed camera's direction, blocking of the camera's lenses, or blocking/distortion of the video due to paint or spray.

When completed, click <**APPLY**> to apply.

> Tamper Detection : Sets the level of neutralization of the camera that can be detected.
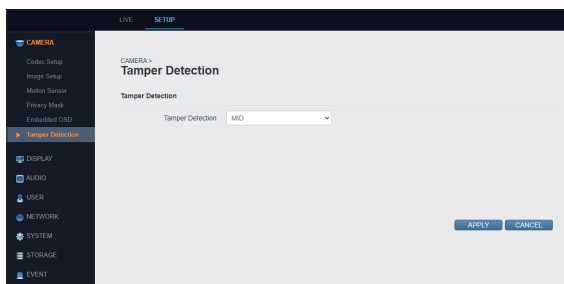
DISPLAY

OSD

Language to be displayed by the product. The interface will be marked in a selected default language. Users can choose the language they want.
Changing this language setting will also change the setting in "Session Configuration > Language" in the same way.

> LANGUAGE : Select the language to be displayed on the screen.
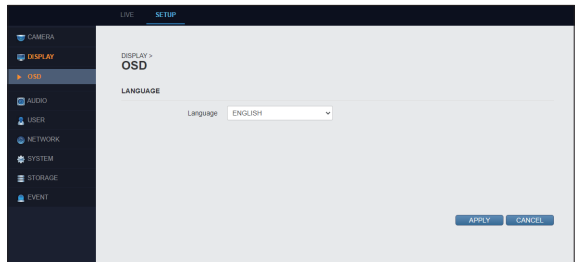
Audio

You can set whether to use audio or not and specify the volumes for microphone and speaker.
When completed, click <**APPLY**> to apply.

> Enable Audio : Selects whether to use audio or not.

> Audio Codec : Transmits audio sounds with different qualities.

> Mic Volume : Sets the microphone volume.

> Speaker Volume : Sets the speaker volume.
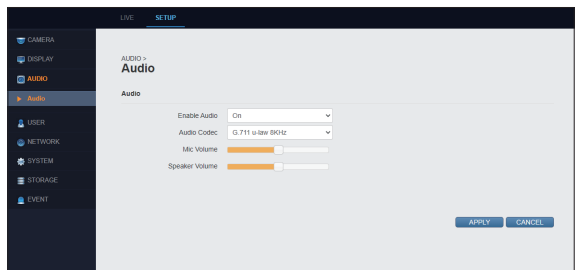
Web Viewer

USER

Management

You can add or delete a user account and change password.
When completed, click <**APPLY**> to apply.

> Add/Edit/Delete : Add, edit, or delete a user account.

✔ You can register up to 8 accounts including '**ADMIN**'.

> User ID : You can log in to network camera with '**User ID**'.

> Password : You can log in to network camera with password.

> Group : Select the permission of user account.

- Admin : Allowed to change all the camera settings.
- Manager : Permission to the Live function and other selected settings are allowed to a user by default (you can modify the default permission settings).
- User : Permission to the Live function is allowed to a user by default (you can modify the default permission settings).

❗ The permission of Manager or User may be different depending on the Group Authority settings.

> E-Mail : Enter the target e-mail address which will receive the event notification.

> Notification : Select whether to use the E-mail Notification function or not.

✔ You cannot delete or change '**ADMIN**' which is main administrator account ID. (allowed to change password)
You cannot add new account with the same <**User ID**> and <**Password**>.
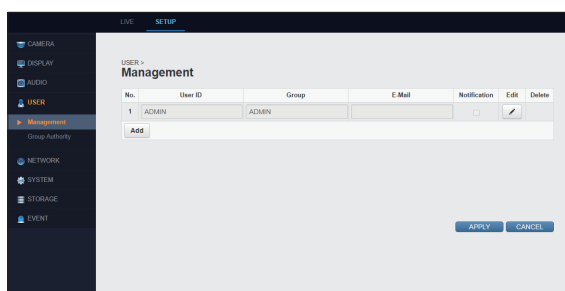
Group Authority

You can grant different user groups different permissions to a specific menu.
When completed, click <**APPLY**> to apply.

> Event Action Control : Set the permissions to output the alarm or control the buzzer if an event such as alarm occurs.

> Listen To Audio : Set the permission to listen to the audio.

> Mic : Set the permission to speak through the microphone.

> System Reboot : Set the permission to reboot the camera.

> Factory Default : Set the permission to perform the Factory Default.

> System Setup : Set the permissions for the System Setup menu.
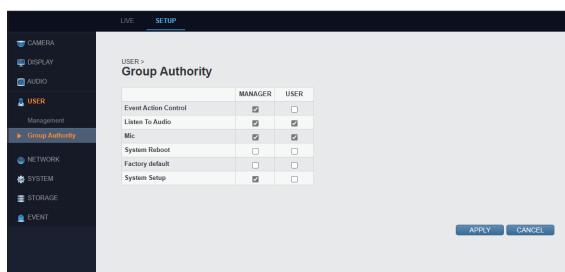
NETWORK

IP Setup

You can modify and check the camera network settings. Set each items. When completed, click <**APPLY**> to apply.

- IP Address
  - › DHCP : If router or internet sharer in (local) network where your camera is installed, you can use "DHCP" function to apply the network settings including camera IP address automatically.
    - IP Address : Enter the camera IP address.
    - Subnet Mask : Enter the subnet mask value of your camera.
    - Default Gateway : Enter the gateway value of your camera.
    - 1st DNS : Enter the 1st domain name of your camera.
    - 2nd DNS : Enter the 2nd domain name of your camera.

- Service Port

  You can enter the port by clicking the input field of each port.

  - › HTTP Port : Allows to change the port number of web service.
  - › RTSP Port : Supports AV streaming server to set port number.

  ✔ RTSP : A protocol to send/receive sound or movie in real time

  ❗ If you change the settings without basic knowledge on network, you may not be able to access the camera. If you are forced to change the settings, contact the implementation service provider or network engineer.

Web Viewer

DDNS

You can configure the DDNS settings.
When completed, click <**APPLY**> to apply.

> ❯ DDNS : Select whether to use DDNS service or not.

> ❯ User Set URL: Can check the URL address that the user will use as the DDNS domain.

> ❯ DDNS Test : Can test the DDNS service for the verified domain address.

E-MAIL

When an even occurs at camera, you can send a message to specified e-mail address by using SMTP. To send message, enter mail server or user account information.
When completed, click <**APPLY**> to apply.

> ❯ Server : Enter the sending mail server (smtp).

> ❯ Port : Enter the port of sending mail server.

> ❯ Security : Select whether to use the security function of mail server or not.

> ❯ User : Enter the user name of sending mail server.

> ❯ Password : Enter the password of sending mail server.

> ❯ Test E-Mail Address : Enter the recipient's e-mail address and use the <**Test E-Mail**> button to test e-mail.

> ✔ E-mail (SMTP) setup process is different depending on user's e-mail address (portal company). For more information, search for "SMTP setup" in the internet or contact your network administrator.

UPnP

You can set whether to use the UPnP function or not.
When completed, click <**APPLY**> to apply.

> ❯ UPnP : Select whether to use UPnP function or not.

> ✔ A router or internet sharer with UPnP function should be connected with the network where the camera has been installed.

> ✔ To use the UPnP function of camera, the internet sharer should support the UPnP function.
> Though the UPnP function is generally supported by internet sharer, some internet sharers may not support.

RTP

- RTP Port Range

  › Start Port : Set the range of start port.

  › End Port : Set the range of Last port.

  ✔ **RTP (Real-time Transport Protocol)** is a protocol designed to transport real-time data such as sound, video, etc. under unicast or multicast condition.

- Multicast Setup

  › 1st Stream IP / Video Port / Audio Port / TTL : Specifies the IP address of main stream, video port, audio port and TTL.

  › 2nd Stream IP / Video Port / Audio Port / TTL : Specifies the IP address of secondary stream, video port, audio port and TTL.

  ✔ **Multicast** is a method to send the same data to multiple specific receivers simultaneously in a network.This method cuts down on network waste, gets rid of unnecessary burden, and is generally used in unrestricted network (intranet).
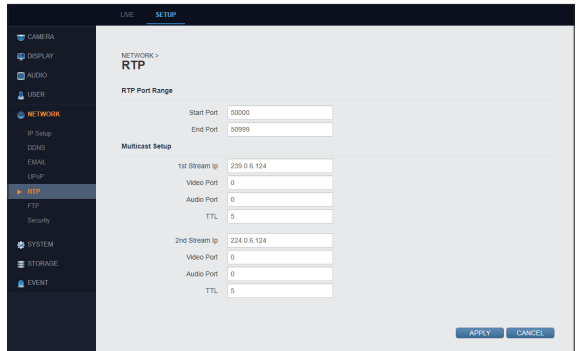
FTP

You can configure the FTP settings so that you can transfer the images saved in camera's storage media to your PC if an event or alarm occurs.
When completed, click <**APPLY**> to apply.

- SERVER CONFIGURATION

  › FTP Server : Sets whether to use an FTP server. The default is set to <**Off**>.

  ✔ This function is available only if SD card is mounted.
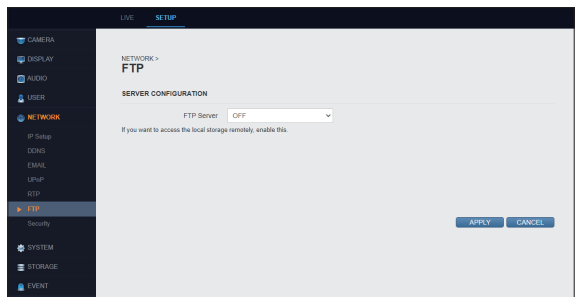
Web Viewer

Security

When connecting to a web service, you can choose whether to use HTTPS communication protocol or not and can register the IP address you wish to filter.

1. SECURITY

If using a web service, choose whether to use RTST authentication and HTTPS or not in order to enhance the security.

> ❯ RTSP AUTHENTICATION : Sets whether to use RTSP. When enabled, you can choose between <**Basic/Digest**>.

- WEB SERVICE PORT

  > ❯ HTTPS ENABLE : Sets whether to use HTTPS.

  > ❯ HTTP AUTHENTICATION : Sets the HTTP authentication method.
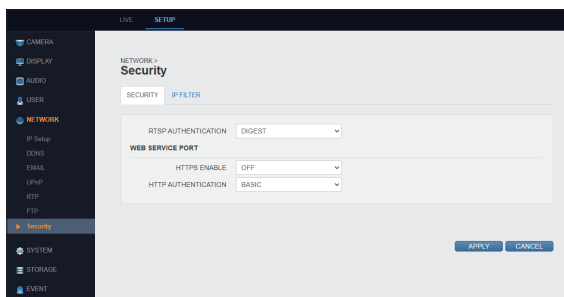
2. IP FILTER

You can register and manage certain IP addresses to allow or deny their access.

- IP ADDRESS FILTERING

  > ❯ IP FILTER ENABLE: Sets whether to use IP filter.

  > ❯ IP FILTER RULE: Select the IP filter you want from <**ALLOW LIST/DENY LIST**>.

  > ❯ TYPE: Select the IP type you wish to register. You can choose from <**IP ADDRESS/NETWORK A~C CLASS**>.

  > ❯ LIST: View the information of the registered IP address.

  > ❯ ADDRESS: Enter the IP address you wish to register.

  > ❯ ADD: Register the IP address you wish to filter.

  > ❯ EDIT: Change the registered IP address.

  > ❯ DELETE: Remove the registered IP address.
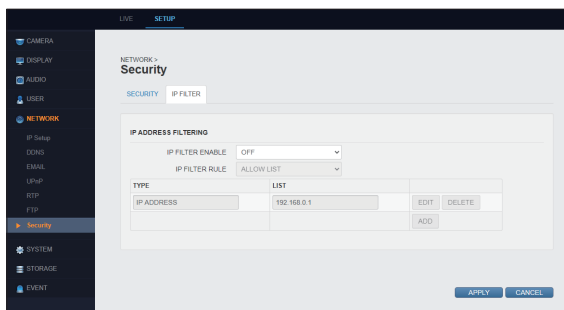
SYSTEM

DATE / TIME

You can set configurable date for system.
When completed, click <**APPLY**> to apply.

- Date Time Setup

  › Date Time : Displays the date and time of current network camera.

  › Date Format : Select your desired date format.

  › Time Format : Select your desired time format.

- Network Time Server Setup

  › Time Server : Enter server IP or host name.

  › Auto Time Sync : Synchronizes the time automatically. Click the <**SYNC.**> to synchronize system time to an NTP server.

  › Sync Time : If the Auto Time Sync is set to On, the system time is synchronized to the NTP server time in specified due time.

- Timezone / DST

  › Timezone / DST : Select your desired time zone (divided into 24 time zones in the world)

  › DST : Select whether to use Daylight Saving Time or not.
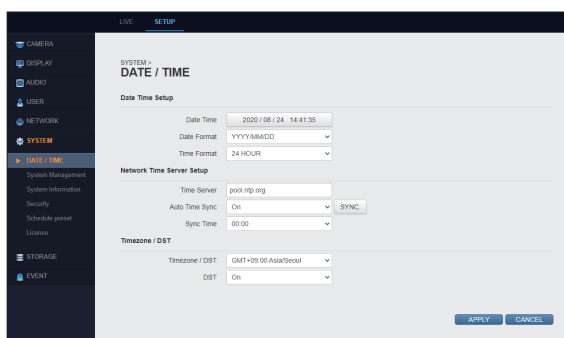
System Management

You can rename the network camera, restart the system, initialize to factory defaults, and update the firmware.
When completed, click <**APPLY**> to apply.

  › F/W Upgrade : Updates camera firmware.

  ! If network transfer rate is slow, error may occur during firmware update process.

  ! It is recommended to update your firmware during your camera and PC are connected with local network.

  ! Do not shut down devices during firmware update process.
  Camera will restart if update is finished. (It takes about 2~5 minutes)

  ! Do not remove the USB device while the upgrade is in progress.

  › Factory Default : Restores your camera settings to factory defaults. (It takes about 1 minute)

  ✔ If you perform the <**Factory Default**>, all the settings excepting camera network settings will be initialized.

  › System Data : Save the system settings or get the system information from other device.

    - Save : Save the settings of your camera in connected PC.
    - Load : Copy the settings saved in the connected PC to the camera.

  › System Reboot : Restarts your network camera.(It takes about 1 minute)

  › System ID : Renames your camera.

  › Device Name : Sets the device name to be displayed on the screen.

  › Expired Term Of Password : You will be prompted to change the current password after a certain period of time.
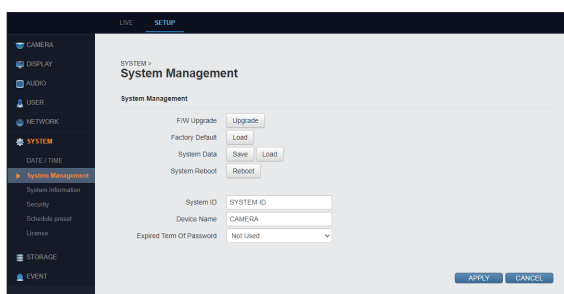
Web Viewer

System Information

You can confirm the firmware version, model name, MAC address, IP address, etc. of your camera.

- ❯ Model : Displays camera 'Model Name'.
- ❯ F/W Version : Displays camera 'F/W Version'.
- ❯ SD Card Capacity : The capacity of the SD card installed in the camera is displayed.
- ❯ SD Card usage : The usage of the SD card attached to the camera is displayed.
- ❯ MAC Address : Displays camera 'MAC Address'.
- ❯ Others : Displays network setup information for the camera.
- ❯ IR LED : The camera's IR LED information is displayed.

Security

- ❯ Auto Logout : If there is no user input for a certain period of time, you can set to log out automatically.
- ❯ Auto Logout Duration : Specify the waiting time for Auto Logout.

Schedule preset

This function configures the Preset actions which will be activated during a live Event. Use the Schedule Preset function to arrange a schedule for a set of specific actions at specified time and then associate it with a specific event.

- ❯ Name : Enter the name of preset.
- ❯ Type : You can select one between <Daily> and <Weekly>, and decide your desired weekday(s) by clicking the < ✎ >.
- ❯ Start/End Time : Set the start time and end time for schedule preset.
- ❯ Add/Delete : Add or delete your desired schedule preset.

License

License

You can import and register license information registered on the server.

After completing the settings, click <**Apply**> to apply the changes.

> IMPORT FROM SERVER : Gets the license information registered on the server.

> ADD LICENSE : Registers the license imported from the server.

Device information

You can check product information such as model name and FW version.

Web Viewer

▍STORAGE

SD Card

You can set the inserted SD card directly.
When completed, click <**APPLY**> to apply.

- DISK WRITE MODE
  - › DISK WRITE MODE : If <**ONCE**> is selected, the SD card will stop recording when the SD card is full. If <**OVERWRITE**> is selected, old data will be deleted so that new data can be saved when the SD card is full.

- SD Card
  - › Total Size : Displays the total capacity of SD card.
  - › Used : Displays the occupied capacity of SD card.
  - › Available : Displays the remaining capacity of SD card.
  - › Status : Displays the information about SD card status.

- Configuration
  - › Storage Name : You can rename the storage device.
  - › Storage Type : Displays the type of the storage device.
  - › Storage Status : Displays the information about SD card status. Click the <**UNMOUNT**> to safely dismount the SD card.
  - › SD Card Format : Formats the SD card.
  - › Check Disk : Checks the status of your storage device.
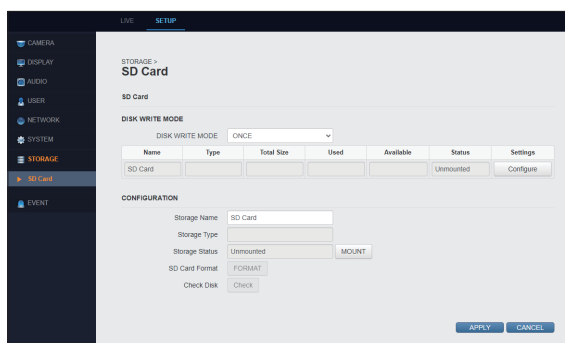
✔ If the front cover is not completely fastened after mounting your SD card, the inside of camera may get damp.

EVENT

Action

1. Alarm Out

You can set the Alarm Out conditions and its schedule.

> Name : Rename the alarm.
> Port : Specify the Alarm Out port.
> Operation : Specify the Alarm Out mode.
>> - ALARM OUT : Alarm Out operates according to the mode.
>> - ON : Always activate Alarm Out.
>> - OFF : Alarm Out is disabled.
> Schedule : Arrange a schedule for the Alarm Out as you prefer.

✔ To set your preferred schedule, make a new preset in "**SYSTEM** > **Schedule preset**" (page 36).

> Type : Specify the Alarm Out type.
> Duration : Specify the duration.

2. Send Image

> Receiver : Enter the recipient's e-mail address to send the image.
> Type : Send the image in your preferred type between <**SD card**> and <**FTP**>.
> Host : If selecting <**FTP**> type, you can specify the host.
> Min. Frequency : Specify the event transfer interval (Immediately or within 5~300 seconds).
> Log : Specify whether to include the log or not when transferring the event.
> Configure : You can set the <**Receiver Type**>, <**Receiver**>, <**File Priefix**>, <**Min.Frequency**>, <**Log**> and your preferred <**Schedule**>.

Web Viewer

Event Notification

1. E-Mail

- E-Mail List

  When an event occurs, email can be sent to a preset address. Click the <**Add**> button to register an e-mail.

- Options

  › Minimum E-Mail Frequency : Specify the minimum e-mail frequency for notification.

  › Include Snapshot : Select whether to include snapshot(s) or not.

- Schedule

  You can select your preferred event notification schedule.

  ✔ To set your preferred schedule, make a new preset in "**SYSTEM** > **Schedule preset**" (page 36).
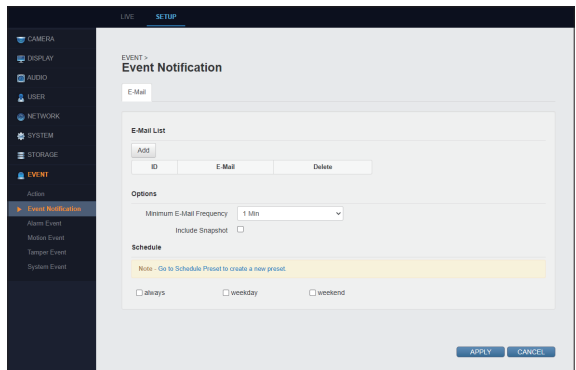
Alarm Event

- Event Parameter

  › Port : Enter the alarm event port.

  › Name : Enter the alarm event name.

  › Operation : Select <N/O> or <N/C> for alarm event operation.

  ✔ For more information, refer to "**Event** > **Action**" (page 39).

- Action

  › Alarm Out : Specify whether to activate Alarm Out or not when an event occurs.

  › Send Image : Specify whether to send corresponding image or not when an event occurs.

  ✔ For more information, refer to "**Event** > **Action**" (page 39).

- Notification

  › E-mail : Specify whether to send an e-mail notification or not when an event occurs.

  ✔ For detail settings, refer to "**Event** > **Event Notification**" (page 40).

Motion Event

- Event Parameter

  › Ignoring Interval : Select the ignoring duration for detected motion event in the range of 5 through 30 seconds.

- Action

  Setting details are the same as "**Event** > **Alarm Event**".

- Notification

  Setting details are the same as "**Event** > **Alarm Event**".

Web Viewer

Tamper Event

- Event Parameter

  › Ignoring Interval : Select the ignoring duration for detected motion event in the range of 5 through 30 seconds.

- Action

  Setting details are the same as "**Event** > **Alarm Event**". (page 41)

- Notification

  Setting details are the same as "**Event** > **Alarm Event**". (page 41)

System Event

- Event Parameter

  › Booting Event : Specify to activate an event when the system boots up.

  › Temperature Failure Event : Specify to activate an event when a system temperature failure is detected.

- Action

  Setting details are the same as "**Event** > **Alarm Event**". (page 41)

- Notification

  Setting details are the same as "**Event** > **Alarm Event**". (page 41)

Session Configuration

The Session Configuration influences only the browser in use. It has no effect on any other user.

🔳 This is not the data saved in your camera. The configuration may have a different action depending on the internet browser.

- Player Selection

  To select the player you want to use, go to <**Active X**> or <**No PlugIn(JPEG only)**>.

- Viewer Setup

  › LiveView Protocol : You can select one among RTP Unicast (UDP) / RTP Multicast (UDP) / RTP over RTSP (TCP).

  › Buffering Time : Displayed in (0~90) x 1/30 sec. (0~3 sec.)

  🔳 If buffering time is slow, the video transmission is delayed.

- Toolbar Configuration

  › Snapshot : For capturing a snapshot, specify whether to save it in PC or not.

  › Panic Recording : Specify whether to save the emergency video in the PC or not.

- Download Location

  › Default Video Download Location : Change default video download path.

  › Default Snapshot Download Location : Change default snapshot download path.

- Display Option

  › Aspect Ratio

    Select <**Adjust the aspect ratio to window size**> or <**Keep the aspect ratio of the original video**> for aspect ratio.

- Language

  › System Language : Language to be displayed by the product.

  › Session Language : You can change the session language. The changed language will only apply to the currently connected session.

Appendix

Troubleshooting (FAQ)

Problem and Symptom	Solution
I can't turn on camera.	• Check the UTP cable connection. • If you use PoE power supply, check if enough power is supplied to PoE switch.
PC is not connected with network camera.	• Check the status of LAN cable connected to network camera and the status of hub. • If the network camera's network setting was set to DHCP, check the IP address history of the DHCP server (router). • Check if camera network settings are changed or not by using ADMIN TOOL.
I cannot access via web or mobile application.	• Check if the network cable for internet access is correctly connected with the LAN port in main body. • If you use sharer, check if port forwarding is correctly configured.
I cannot watch any video even though I can access to web or mobile application.	• If you use sharer, check if port forwarding is correctly configured. • It may happen since communication company or network administrator has blocked the service port of network camera. • Change the RTSP port and HTTP port of your network camera and configure the port forwarding of sharer again. • Retry to access to web or mobile application by using new port.

Product Overview

109.3

58.5

⌀100.5

⌀151.4
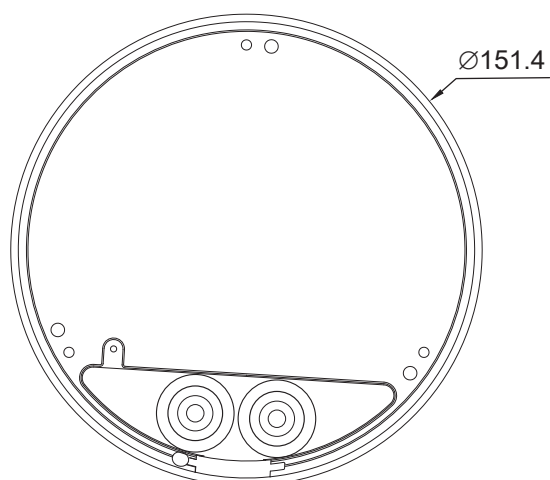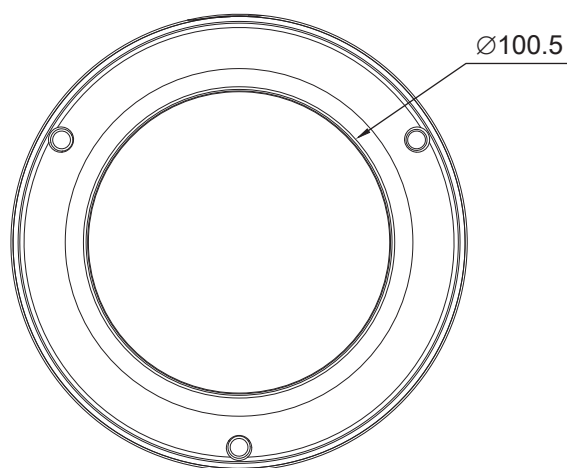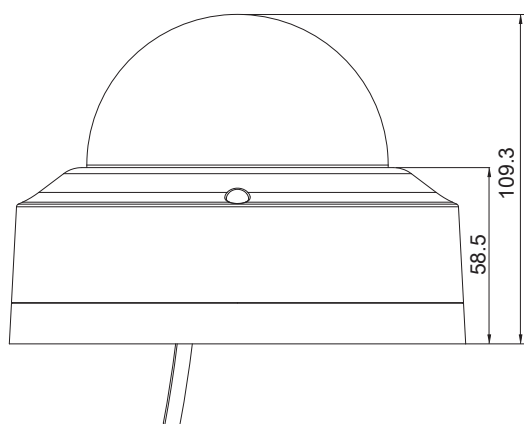
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