ViOnyx

INSTALLATION GUIDE

Version 1.03

English
EN 101.00.VQF12-R

suprema
SECURITY & BIOMETRICS

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Safety Instructions

Please read this safety instructions before you use the product to prevent injury to yourself and others and to prevent property damage.

The term ‘product’ in this manual refers to the product and any items provided with the product.

Compliance Information

Warning

Used to indicate warning information that could lead to serious injury or death if violated while using the product.

Caution

Used to indicate caution information that may result in minor injury or product damage if violated while using the product.

Info

Used to provide notes or additional information while using the product.

Note

Used to provide notes or additional information while using the product.

⚠ Warning

Install

Be especially careful of miswiring when using high-capacity power supplies.

- Serious fires, electric shocks, or product damage may occur due to miswiring.

Do not allow users to install or repair the product arbitrarily.

- Causes fire, electric shock, or injury.
- No free repair service will be provided if the product is damaged due to arbitrary installation or repair by the user.

Do not install the product in places exposed to direct sunlight, moisture, dust, or soot, or where gas may leak.

- May cause fire or electric shock.

When installing the product outdoors, make sure to install it in a shaded and well-ventilated area.

Do not use a completely sealed enclosure when installing the product outdoors.

- The internal temperature of the enclosure may rise due to direct sunlight, causing fire, electric shock, or product damage.

Do not install the product in places where heat is generated, such as near heaters.

- May cause fire or electric shock due to overheating.

Do not install in damp places.

- May cause electric shock or product damage due to moisture.

Do not install in places with electromagnetic interference.

- May cause electric shock or product damage.

When mounting the camera on a wall or ceiling, make sure it is securely attached and does not wobble.

- May cause serious injury if the product falls.

Do not connect multiple cameras to the same power adapter at the same time.

- May cause overheating or fire if the rated power capacity is exceeded.

When installing the camera, keep the installation area clear of other people.

- May cause serious injury if the product falls or in other accidents.

Avoid pinching cables or damaging wire insulation, as this may cause product damage or fire.

Usage

Do not allow liquids such as water, beverages, or chemicals to enter the product.

- May cause fire, electric shock, or product damage.

Do not use damaged power adapters or plugs, or loose outlets.

- If connections are unstable, may cause fire or electric shock.

Do not bend or break the power cord excessively.

- May cause fire or electric shock.

Do not place conductive metal objects (coins, tools, etc.) or containers of liquid on top of the product.

- May cause electric shock, fire, or injury from falling objects.

Do not replace with unauthorized or incorrect battery types.

- May cause fire or explosion.

> **Power supply requirements**
>
> Use only a power supply certified for PS2 or LPS.

⚠ Caution

Install

Read this manual carefully before installing the product to ensure safe and correct installation.

When wiring power cables and connectors, make sure to turn off the power to all devices you are connecting before wiring and connecting.

- Devices may malfunction.

Before connecting the power to the product, check the manual again to ensure that wiring is correct, then connect the power.

Do not install the product in places directly exposed to sunlight or ultraviolet light.

- May cause product damage, malfunction, discoloration, or deformation.

Do not leave power cables in passageways.

- May cause bodily injury or product damage.

Do not install near strong magnetic objects such as magnets, TVs, CRT monitors, or speakers.

- The device may malfunction.

When installing the product on a wall, do not seal around the product with silicone or similar materials.

- The device may malfunction.

Use a power adapter that has IEC/EN 62368-1 approval and is rated above the power consumption of the terminal device. It is recommended to use the power adapters sold by Suprema.

- Using an unsuitable power supply may cause devices to malfunction.
- Refer to the Power in the product specifications for maximum current consumption specifications.

Do not connect the power supply and PoE+ power together.

- Devices may malfunction.

It is recommended to use an enclosure when installed outdoors with full exposure.

- Decreased waterproof and dustproof performance may cause malfunction.

Connect via PoE+ power. The default recommended specification is PoE+.

- When using standard PoE, some product features may be limited depending on system power consumption.

Remove valuables or fragile items from beneath the installation area before beginning.

- May lead to unexpected accidents.

Wear safety gloves when installing or removing the product.

- May cause burns from hot device surfaces during operation.

Do not forcefully assemble or install the product.

- May cause product damage or malfunction.

Do not install the camera in environments where chemical substances or fumes are present. Cooking oil residues can also cause product damage or deformation, so do not install near kitchens.

- May cause severe physical damage to the product.

Keep chemical solutions from coming into contact with the product's exterior during installation.

- Certain chemical solvents, such as those in some cleaners or adhesives, can cause severe surface damage.

Usage

Do not drop or subject the product to shock.

- The device may malfunction.

Ensure the power supply is not interrupted during firmware upgrades of the product.

- The device may malfunction.

Do not press the product's buttons (touchpad) forcefully or use sharp tools to press them.

- The device may malfunction.

Use the product within -40 °C to 50 °C and store it at appropriate temperatures, not too low or too high.

- The device may malfunction.

Be careful when cleaning the product.

- Gently wipe the product surface with a clean, dry cloth.
- If disinfecting the product, dampen a clean cloth with a suitable amount of disinfectant alcohol and gently wipe the product surface. Use disinfectant alcohol that contains 70-75% isopropyl alcohol and a clean, lint-free soft cloth.
- Do not spray disinfectant directly onto the product.

Do not use the product for purposes other than its intended use.

- The device may malfunction.

Do not operate or tamper with the product using unapproved tools.

- May cause product damage or malfunction. Use only the specified tools.

Do not install or disassemble the product in any way not specified in the manual.

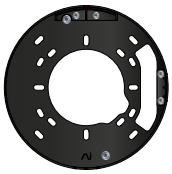
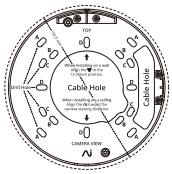
- May prevent the product from functioning normally or performing as intended.

Getting Started

Overview of the ViOnyx camera's components, including the name and function of each part.

Components

> **Caution**
> The desiccant module comes in sealed packaging. Exposure to air can reduce dehumidification performance. Open the package just before attaching it.

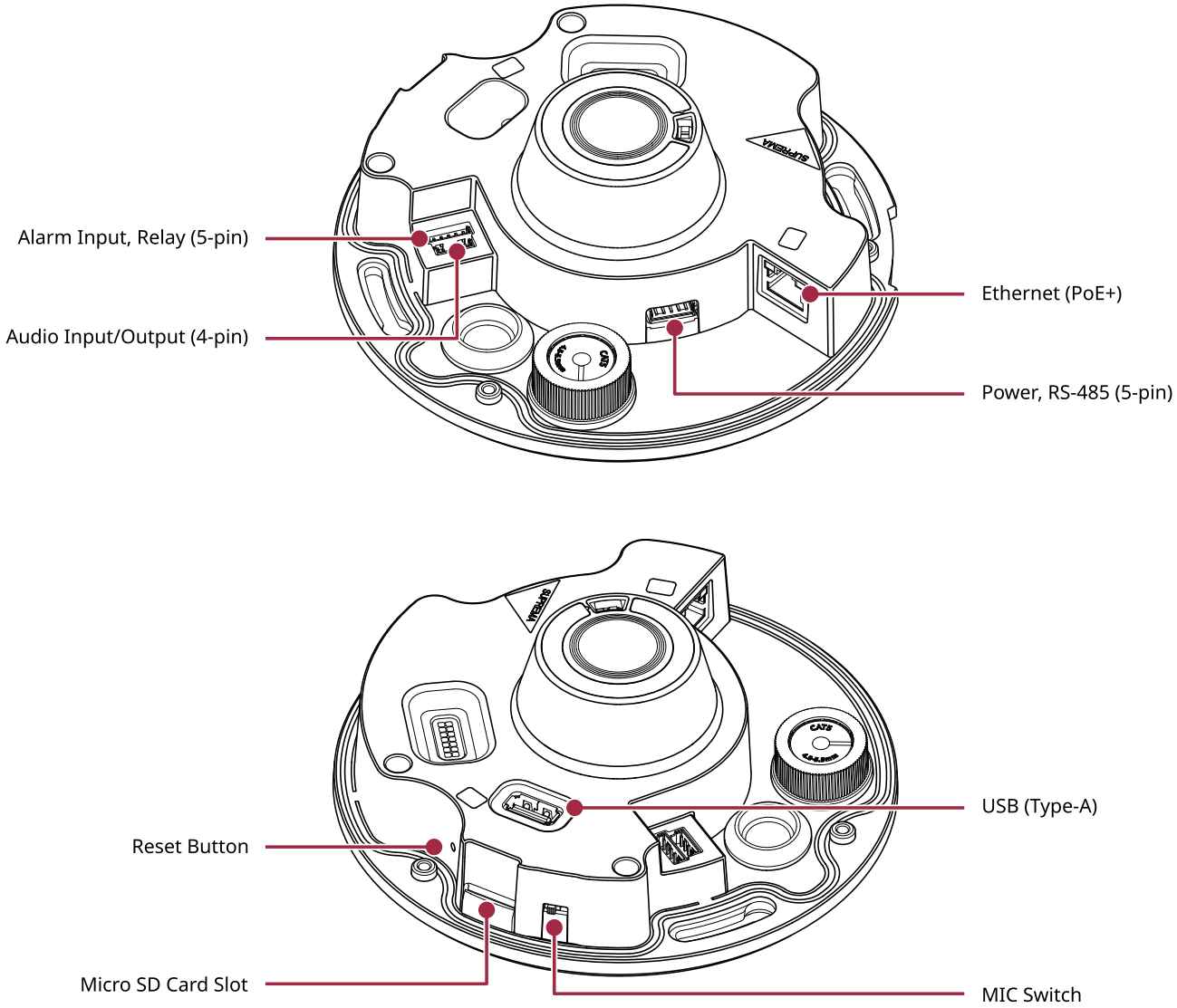
			
Cover	Camera Body	Mounting Plate	Drilling Template

				
Desiccant Module	Connection Cables	Waterproof Grommet for Ethernet Cable	Waterproof Rubber Hole Plug	Fixing Screw x4
				
Diode	120 Ω Resistor	T10 Torx Driver (Star-shaped)	Quick Guide	Open Source Software Guide

> **Info**
>
> - Components may vary according to the installation environment.

Name and function of each part

Internal port configuration



Name	Function
Alarm Input, Relay (5-pin)	Connect the cable for alarm input and relay output.

Name	Function
Audio Input/Output (4-pin)	Connect the cable for audio input/output.
Ethernet (PoE+)	Connect the Ethernet cable. Power can be supplied via PoE+.
Power, RS-485 (5-pin)	Connect the cable for power and RS-485 communication.
Reset Button	Reset all settings to factory defaults. For more information on factory initialization, refer to Factory reset.
Micro SD Card Slot	Insert a microSD card.
USB (Type-A)	Connect USB-based accessories.
MIC Switch	Use the microphone switch to physically enable or disable audio recording.

Cables and connectors

Power & RS-485



Cable	Pin	Name	Color
POWER	1	PWR +VDC	Red
	2	PWR GND	Black
RS-485	3	485 TRXP	Blue
	4	485 TRXN	Yellow
	5	485 GND	Gray

Alarm input & relay



Cable	Pin	Name	Color
ALARM_IN	1	ALARM IN	Purple
	2	ALARM GND	Black
RELAY	3	RLY NC	Orange
	4	RLY COM	Blue
	5	RLY NO	White

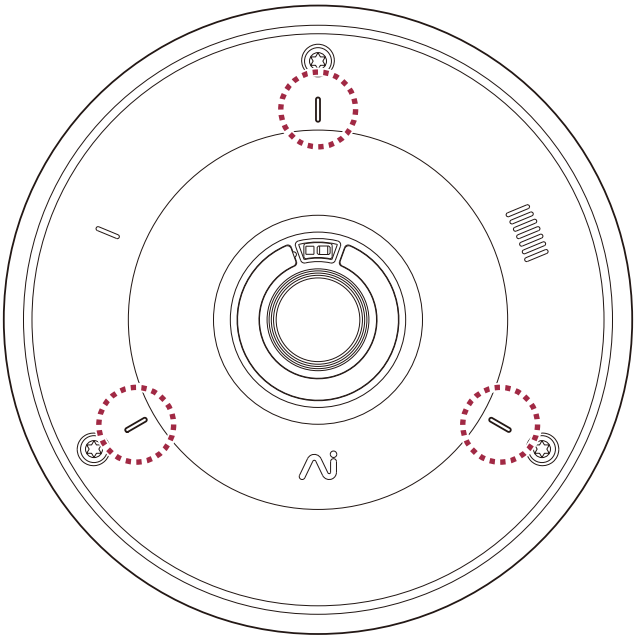
Audio input/output



Cable	Pin	Name	Color
LINE_IN	1	LINE IN	White
	2	LINE IN GND	Black
LINE_OUT	3	LINE OUT	White
	4	LINE OUT GND	Black

LED Status Indicator

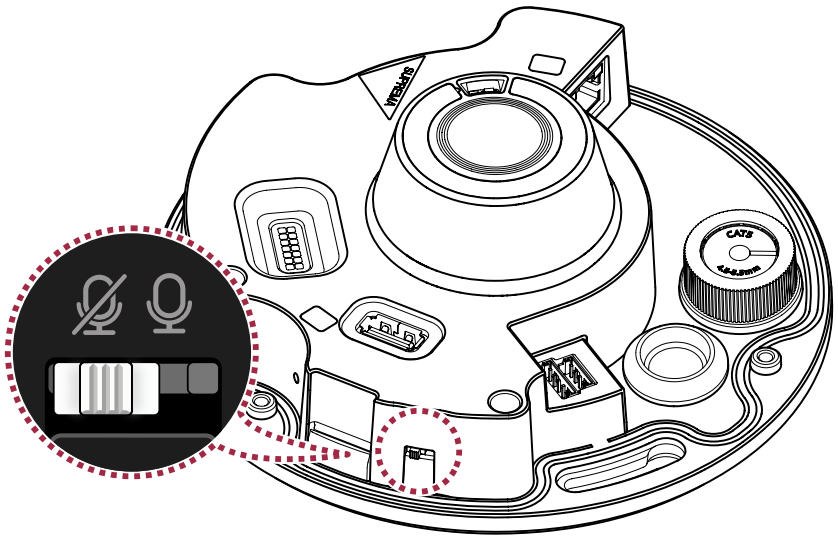
The LED on the front of the camera cover shows the device's operating and authentication status using colors and blinking patterns.



LED color	Status
Green	Authentication successful
Red	Authentication failed
Blue	Normal operation
Blue/Green blinking	When setting **DHCP** to use, unable to retrieve IP address.

Microphone switch settings (coming soon)

Use the microphone switch to physically disable the camera's microphone and prevent audio recording.



- Audio recording is disabled by default.
- Slide the microphone switch to the right to enable audio recording.

Installation and Connection

Provides the complete installation procedures and connection examples required for the device.

Installing the Camera

Follow the steps below to safely install the camera.

Installation Precautions

Be sure to read the following precautions before installing the camera.

Warning

- Install the camera in a location that can support a load of at least 5 times the camera's weight.
- Inspect the wall or ceiling to check whether reinforcement is needed.
- Avoid pinching cables or damaging the wire insulation, as this may cause product damage or fire.
- Keep others away from the installation area while installing the camera. Before you begin, remove any valuables or items below the installation area that could be damaged.
- Using excessive force when assembling may cause malfunction or damage to the product. Use only the specified tools.

Caution

Waterproof and Dustproof Precautions

- This product meets IP66 and IP67 ratings for water and dust protection, but do not install it in locations exposed to direct water spray or continuous immersion.
- When opening the cover during installation, take care to prevent moisture or dust from entering the interior.
- When connecting cables, make sure to properly fasten the provided waterproof components.

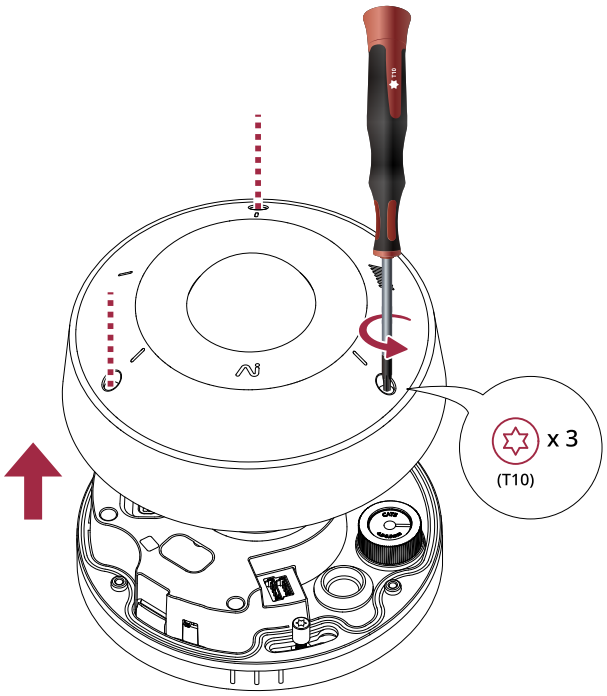
Installation

Info

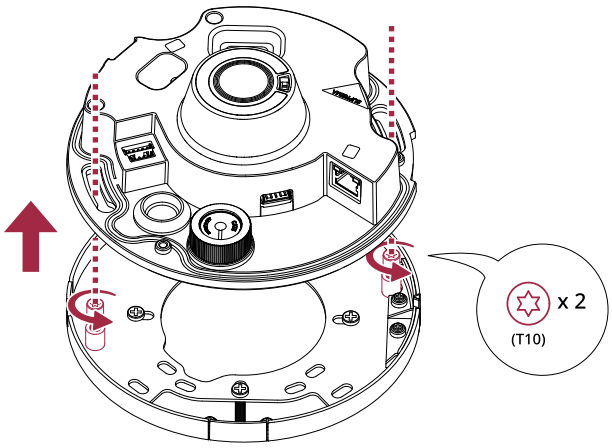
- We recommend mounting the camera on the ceiling to achieve a wide field of view.
- Do not install the camera where it will be exposed directly to sunlight or UV rays.
- Adjust the installation location to avoid direct sunlight on the lens or strong backlighting, as these can degrade AI-based face and object recognition performance.

1 Disassemble

1. Use the provided T10 star screwdriver to turn the screws counterclockwise and remove the camera cover.



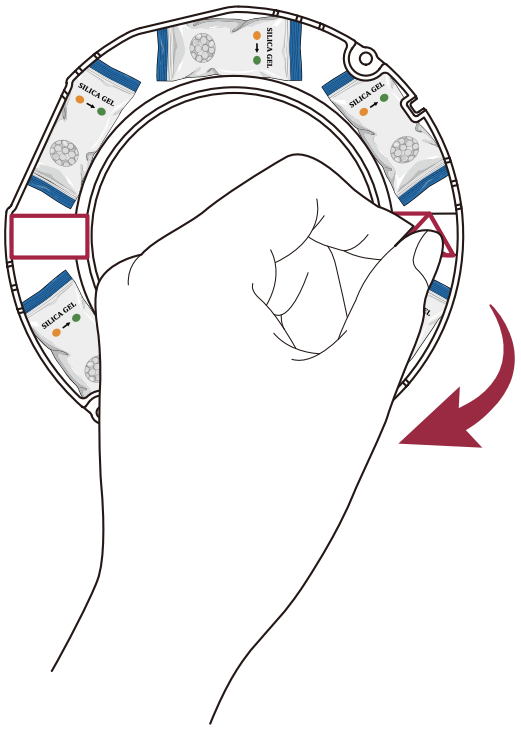
2. Loosen the mount plate's fixing screws by turning them counterclockwise, then separate the mount plate from the camera body.



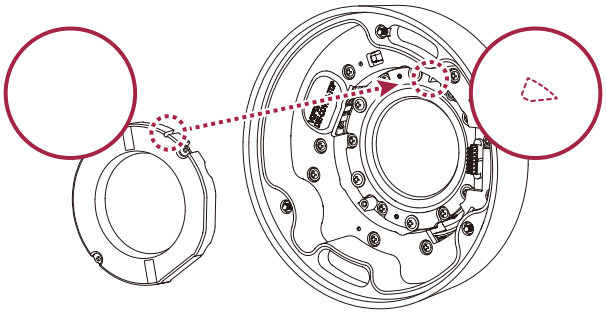
2 Attach the desiccant module

> **Caution**
>
> The desiccant module comes in sealed packaging. Exposure to air can reduce dehumidification performance. Open the package just before attaching it.

1. Remove the protective film from the back of the desiccant module.

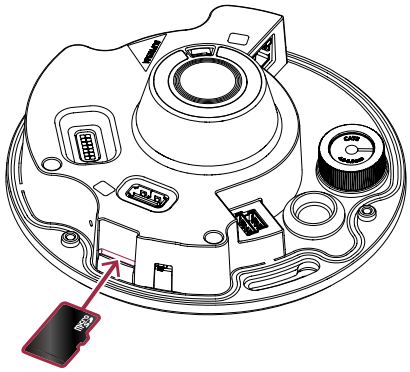


2. Align the groove on the silica gel module with the protrusion on the cover. Attach it, and press firmly until it attaches securely.



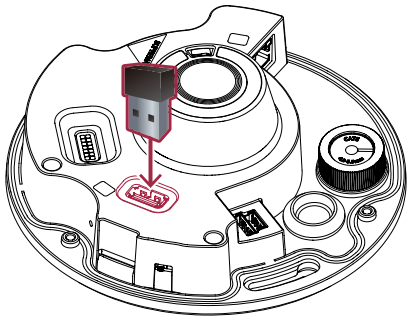
3 Insert the Micro SD card

Insert a microSD card into the microSD card slot on the camera body.



4 Connect the accessory to the USB port

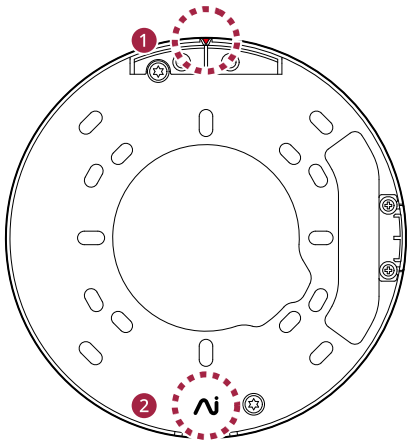
To connect USB (Type-A) accessories, plug them into the USB port.



5 Determine the installation location

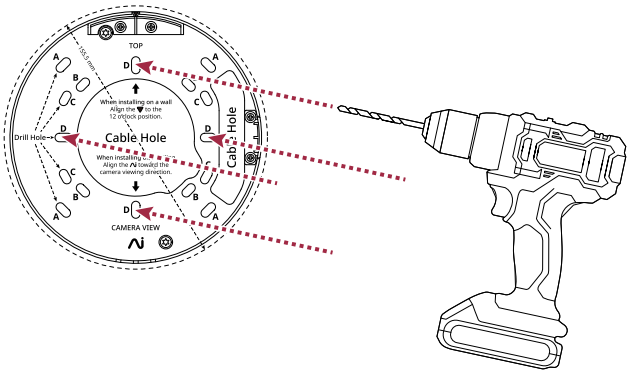
Choose the installation location based on the camera's viewing direction.

- **When mounting on a wall**: Install the mount plate so the 1 **Red triangle** points to 12 o'clock (up).
- **When installing on the ceiling**: Install the mount plate so the 2 **AI logo** faces the direction of the camera.

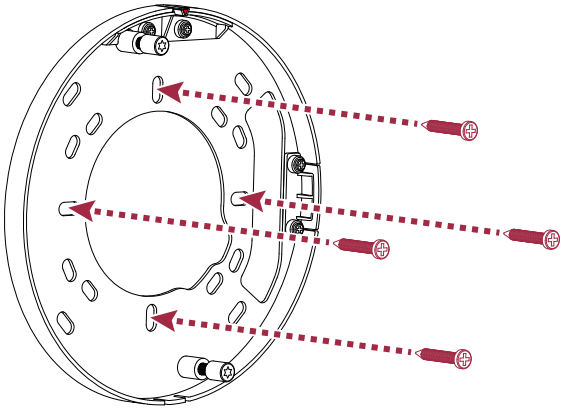


6 Install directly on the ceiling or wall

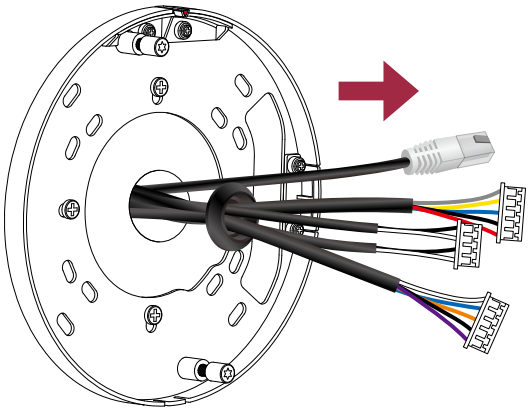
1. Attach the provided drilling template at the installation location, then drill the screw and cable holes.



2. Use the mounting screws to securely fasten the mount plate.



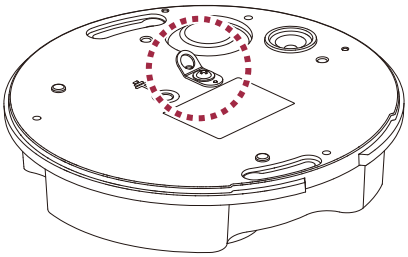
3. Pass the cables to be connected (power, network, audio/alarm, etc.) through the appropriate hole in the mounting plate.



7 Connect the safety wire

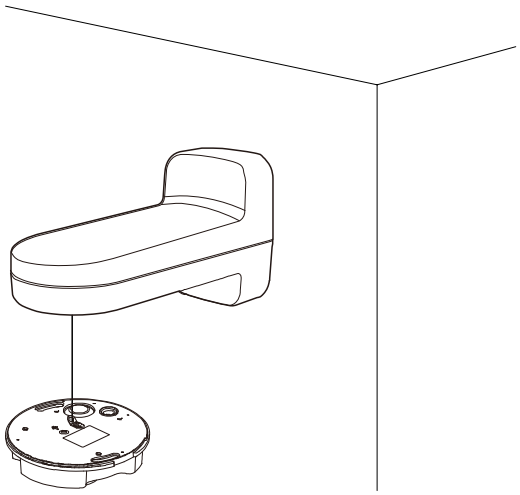
> **Info**
>
> - The safety wire or bracket is not included in the standard package. Purchase a product suitable for the installation environment separately and install it.
> - Purchase a safety wire product that matches the 6.0 mm diameter of the camera body safety wire loop.

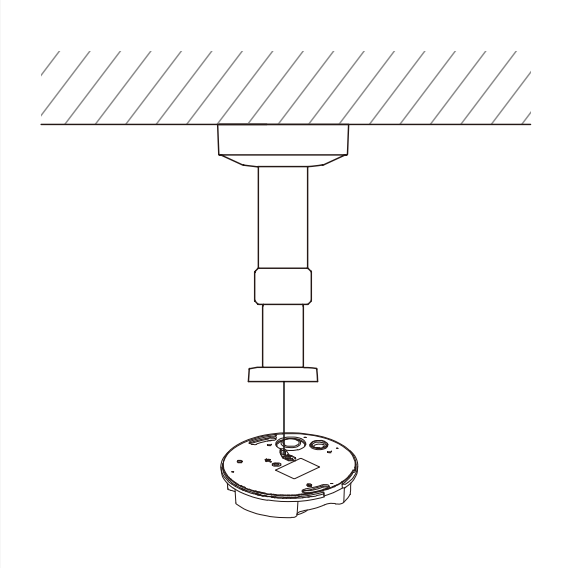
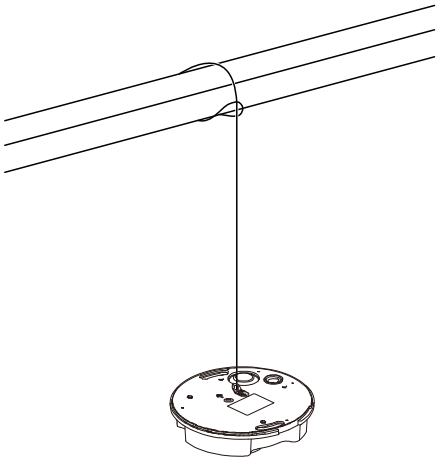
1. Check the location of the safety wire loop on the bottom of the camera body.



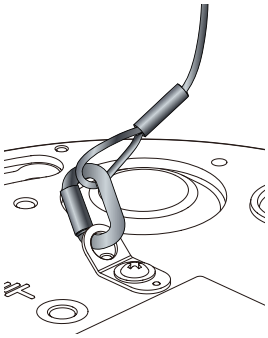
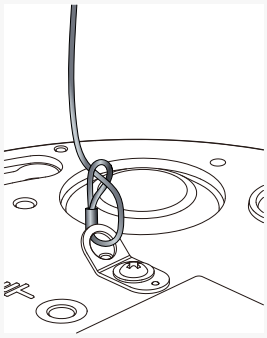
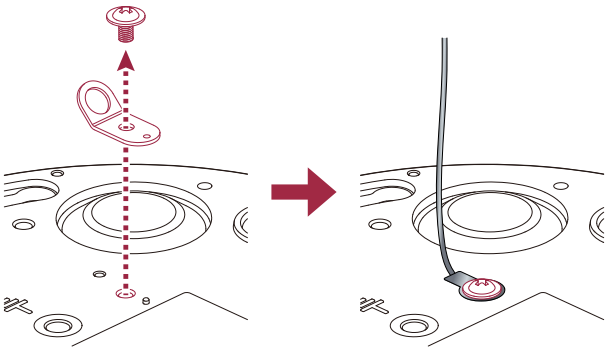
2. To prevent falling, connect the safety wire to a bracket or structure installed on the wall or ceiling. The securing method varies depending on the installation environment and wire type, so refer to the information below.

Securing method by installation environment

Installation environment	Fastening method	
When installing on a wall		After securing the wall bracket to the wall, connect one end of the safety wire to the bracket and the other end to the camera body safety wire loop, then secure it.

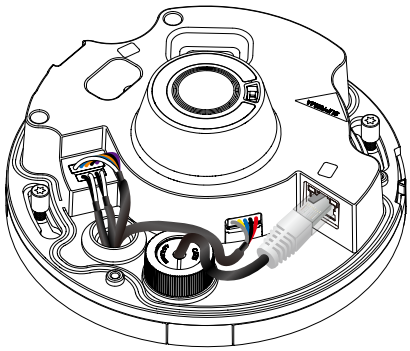
Installation environment	Fastening method	
When installing on a ceiling		After securing the ceiling bracket to the ceiling, connect one end of the safety wire to the bracket and the other end to the camera body safety wire loop, then secure it.
When using a ceiling structure		Wrap the safety wire once around the structure installed on the ceiling, then pass one end of the wire through the other end. Connect the passed end to the camera body safety wire loop and secure it.

Securing method by safety wire type

Safety wire type	Fastening method	
Carabiner type (snap ring type)		Connect the wire directly to the safety wire loop to secure it.
Ring type (loop type)		Wrap the wire once around the safety wire loop, as shown, to secure it.
Lug terminal type (screw terminal type)		Loosen the screws to remove the assembled safety wire loop. Then align the lug hole in the wire with the screw hole on the camera body, and tighten the screws to secure it.

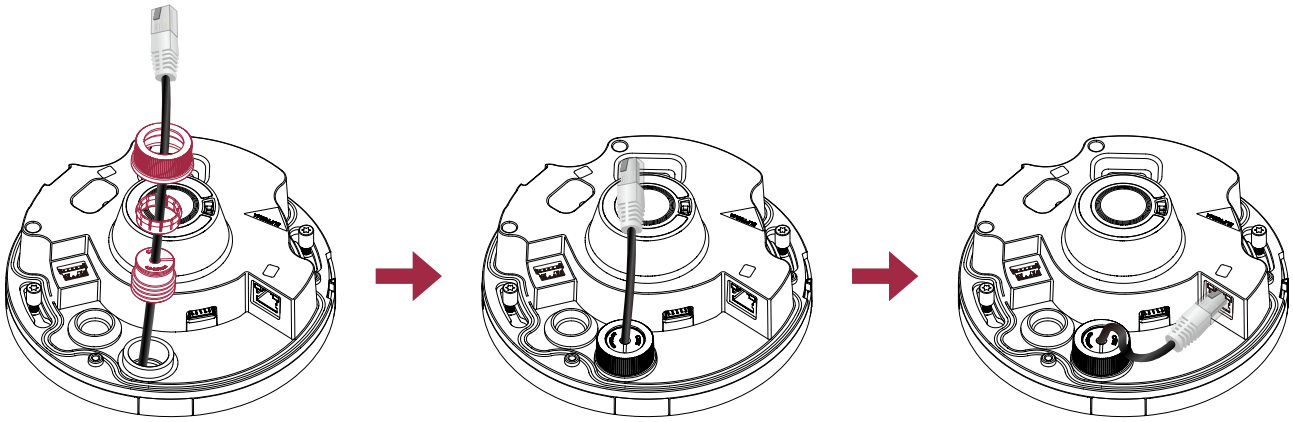
8 Connect the cable

Remove the Ethernet cable's waterproof rubber and the waterproof hole plug from the camera body, then attach the required cables.



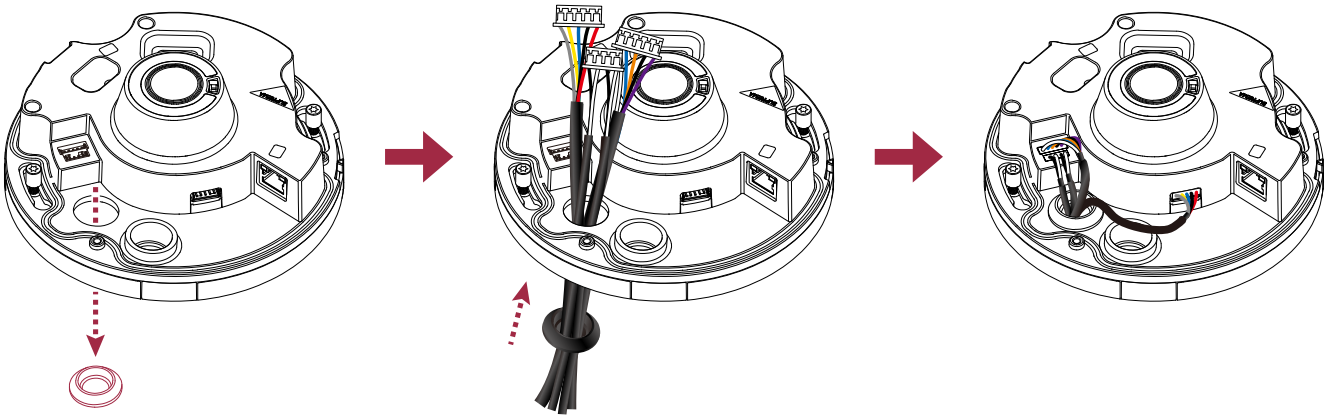
Connect the Ethernet cable

1. Slide the waterproof rubber boot for the Ethernet cable onto the Ethernet cable. Install the appropriate waterproof rubber sleeve provided for the Ethernet cable (CAT5E or CAT6).
2. Insert the Ethernet cable's waterproof rubber into the camera body's Ethernet hole.
3. Fasten the joint and nut onto the Ethernet cable's waterproof rubber.



Connect other cables

Pass the cable through the hole where you removed the camera body's waterproof hole plug, then install the waterproof rubber.

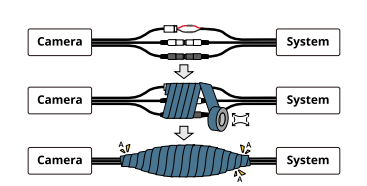


Caution

Waterproof the cable

When installing outdoors, moisture may enter through gaps in the cable connections. We recommend using commercially available butyl rubber waterproof tape and following the steps below to seal the cable connections.

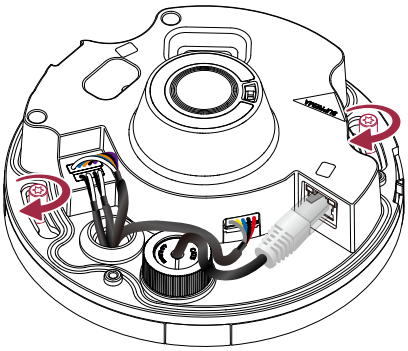
1. Connect the required cables, such as power, I/O, and audio.
2. Wrap the butyl rubber tape from the cable connection to the cable jacket (part A), ensuring each layer overlaps the previous one by at least half its width.

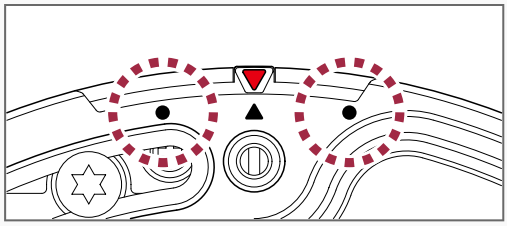


- If the cable jacket (part A) is not properly waterproofed, it may cause leaks. Tape it tightly with no gaps.
- Waterproof butyl rubber tape is made of butyl rubber and can stretch to more than 2 times its original length. Stretch the tape sufficiently as you wrap it.

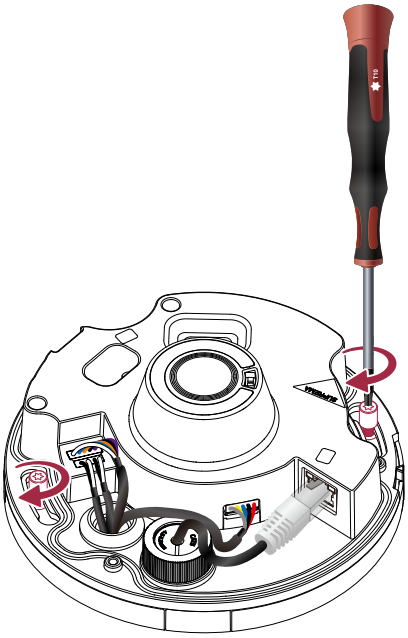
9 Attach the camera body

1. Fully loosen the mount plate fixing screw, align the camera body with the center of the printed mark (red triangle), then turn the fixing screw clockwise to secure it.



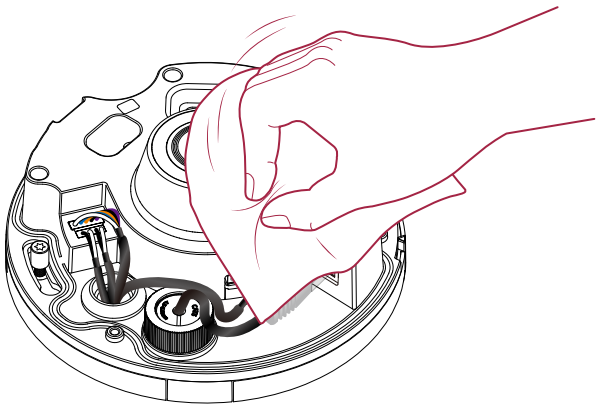
> **Info**
>
> If you need to adjust the camera angle, rotate the camera body left or right to set the installation angle up to 15° total (up to 8° to each side).
>
> 

2. Use a T10 star driver to firmly tighten the fixing screw again.

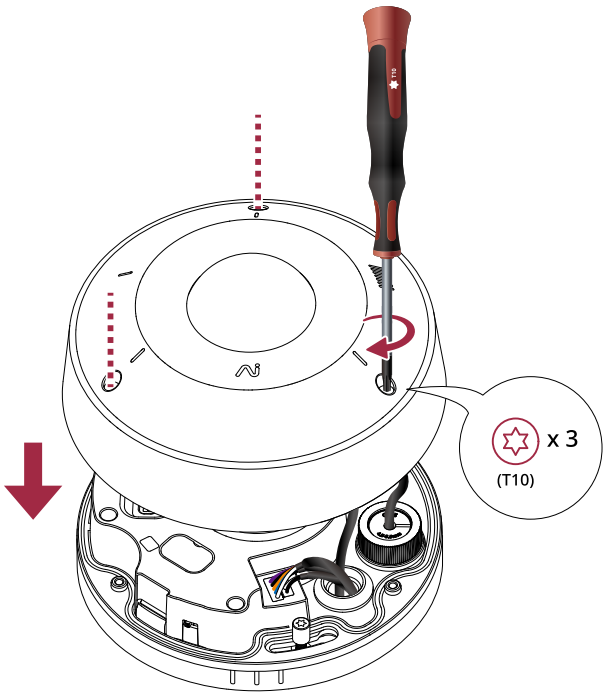


10 Finish

1. To prevent reduced camera performance, wipe any dirt or oil from the inside and outside of the lens and cover with a soft, dry cloth.



2. Attach the cover to the camera body and use a T10 Torx driver to firmly secure the 3 screws.

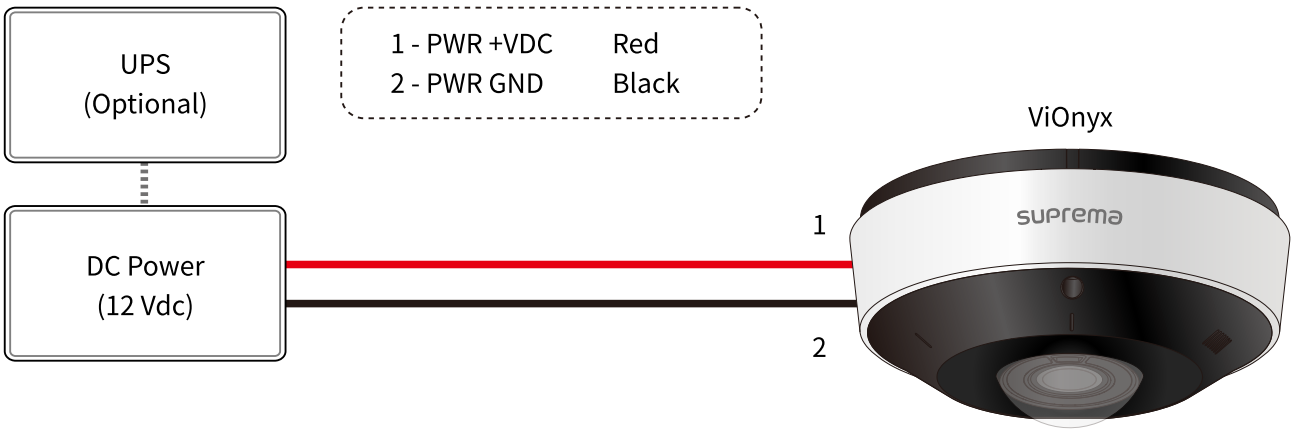


Caution

Fully tighten the screws when securing the cover; otherwise, waterproofing may be compromised. (IP66/IP67)

Cable connection and setup

Power supply connection



Caution

- Do not connect the power supply (or adapter) and the PoE+ power source at the same time.
- Use a power adapter approved to IEC/EN 62368-1 with an output rating equal to or greater than the camera's maximum power consumption. If you plan to connect another device to the power adapter, use an adapter with a capacity equal to or greater than the combined power consumption of the camera and the other device.
  - Refer to the Power section in the product specifications for maximum current consumption.
- When connecting the power supply, be aware of the distance between the device and the power supply. The device should be connected as close as possible to the power supply so that the length of the connecting cable is kept to a minimum. If cable connections are made improperly it may cause the device to malfunction. It is recommended to use a 16 AWG or 18 AWG cable if the product is far from the power supply. This product uses a rated voltage of 12Vdc. Do not apply power above the rated voltage, as this may damage the product. Check the maximum extension length for each cable specification and connect the power correctly.

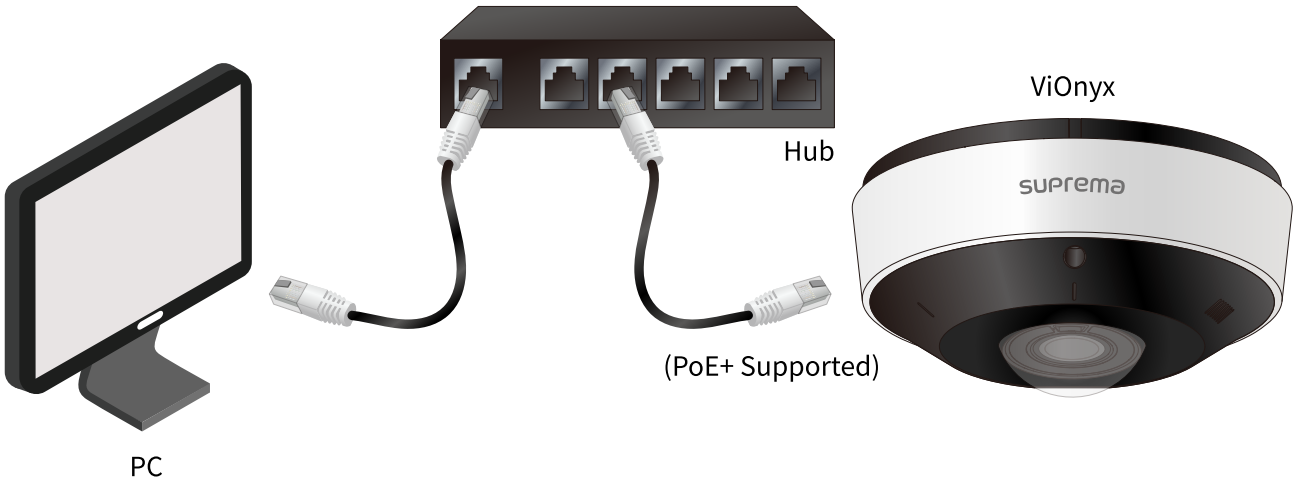
Cable standard	Max. extended length
16 AWG	50 m
18 AWG	30 m
20 AWG	20 m

- DO NOT extend the length of power cable when using the power adapter.

Network Connection

TCP/IP: LAN connection (connect to a hub)

- You can connect to the hub using a standard CAT-5e cable.
- Supports PoE+, which provides both power and data over a single Ethernet cable.



Network ports and services

This device uses the following ports for network communication and stable service operation.

Protocol	Service
TCP	Used for communication services between the server and the device, and for the device operation status switching service.
UDP	Used for the device discovery service to search for devices on the network.

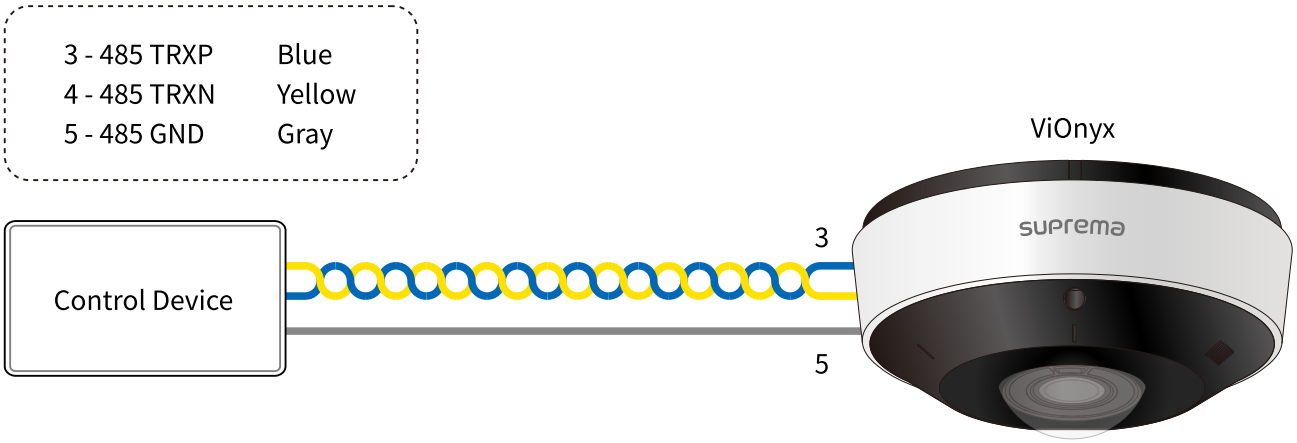
Info

These ports are required for the product's normal network operation. When configuring firewall or network security settings, allow traffic through these ports.

RS-485 Connection

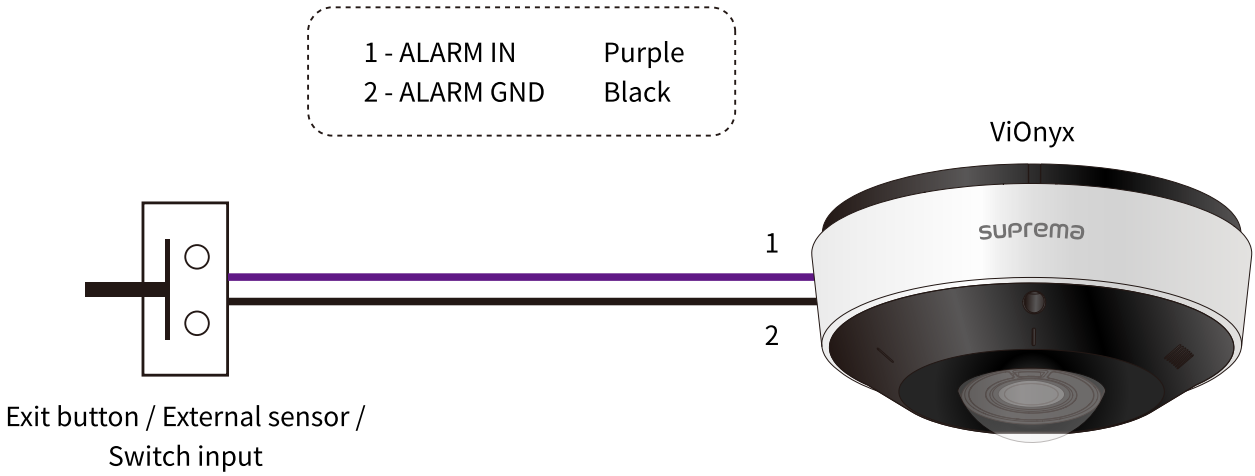
Connect to external devices via RS-485. Observe the polarity (A/B) when wiring.

- Use an AWG24 twisted pair with a maximum length of 1.2 km for the RS-485 cable.
- It is recommended to use RS-485 cables with a characteristic impedance of 120 Ω.
- If connecting with a RS-485 daisy chain, connect the termination resistor (120 Ω) to both ends of the daisy chain connection. If connected to the middle line, the signal level becomes smaller and the communication performance will deteriorate. Make sure to connect it to both ends of the daisy chain connection.



Alarm input connection

This is an input port that receives signals from external sensors or switches.

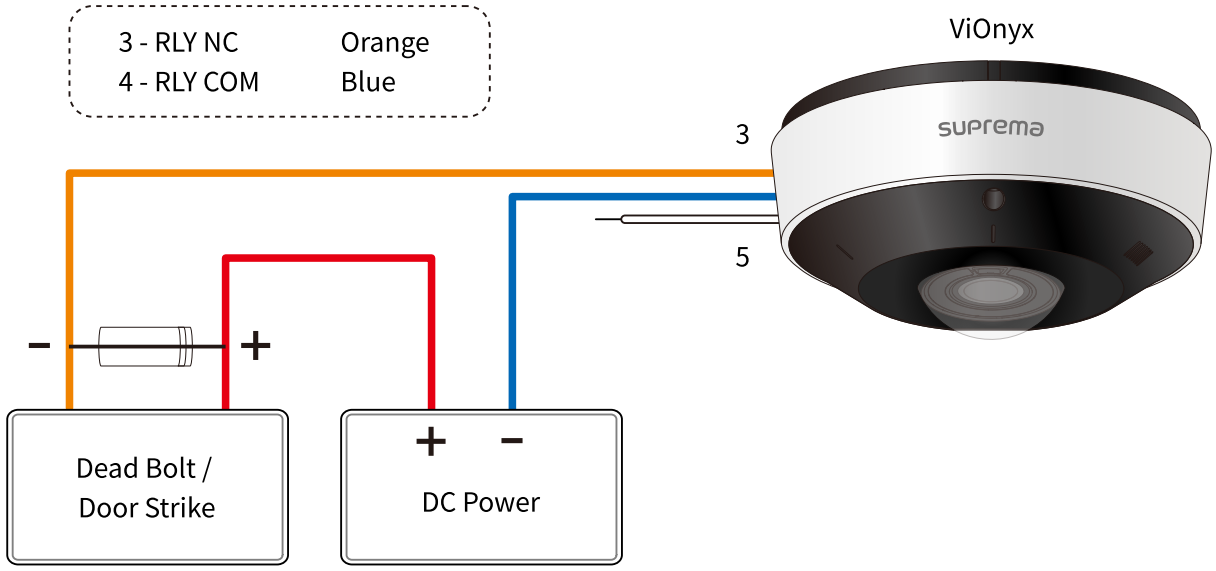


- Alarm input VIH: Min. 3 V, Max. 5 V
- Alarm input VIL: Max. 1 V

Relay Connection

Fail Safe Lock

In order to use the Fail Safe Lock, connect N/C relay as shown in the figure below. There is normally a current flowing through the relay for the Fail Safe Lock. When the relay is activated, blocking the current flow, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will open.



Caution

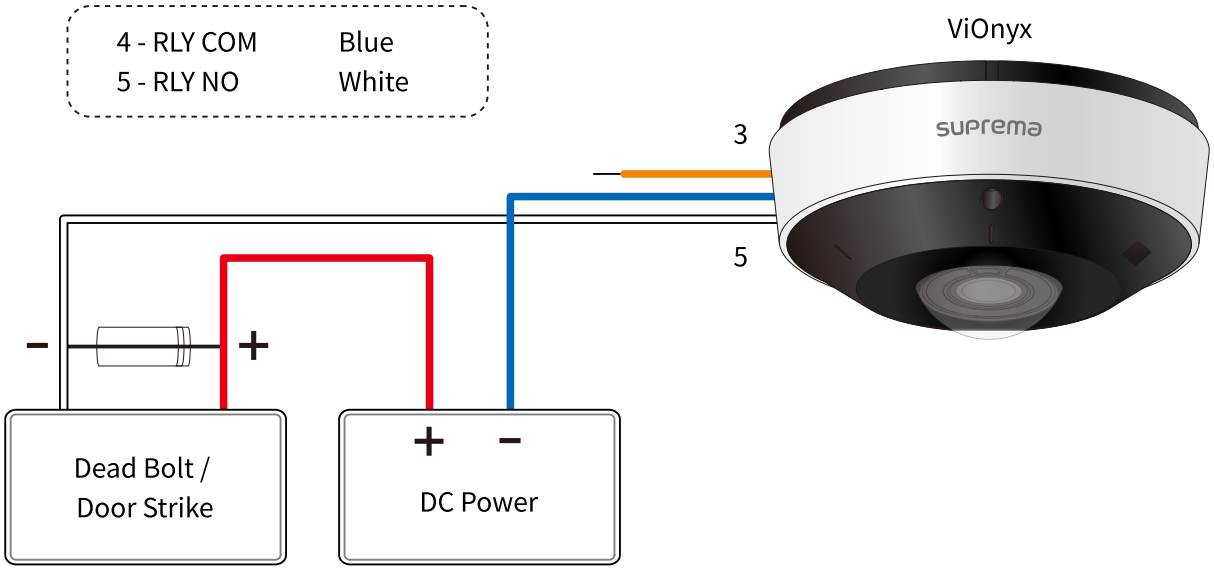
- Install diodes on both sides of the wiring as shown to protect the relay from reverse current generated when a door lock or strobe light activates.
- External devices connected to the product (e.g., door locks) must use a separate power supply.
- Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

Info

Take caution of the installation direction of the diode. Install the diode as close as possible to the connected external device.

Fail Secure Lock

In order to use the Fail Secure Lock, connect N/O relay as shown in the figure below. There is normally no current flowing through the relay for the Fail Secure Lock. When the current flow is activated by the relay, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will lock.



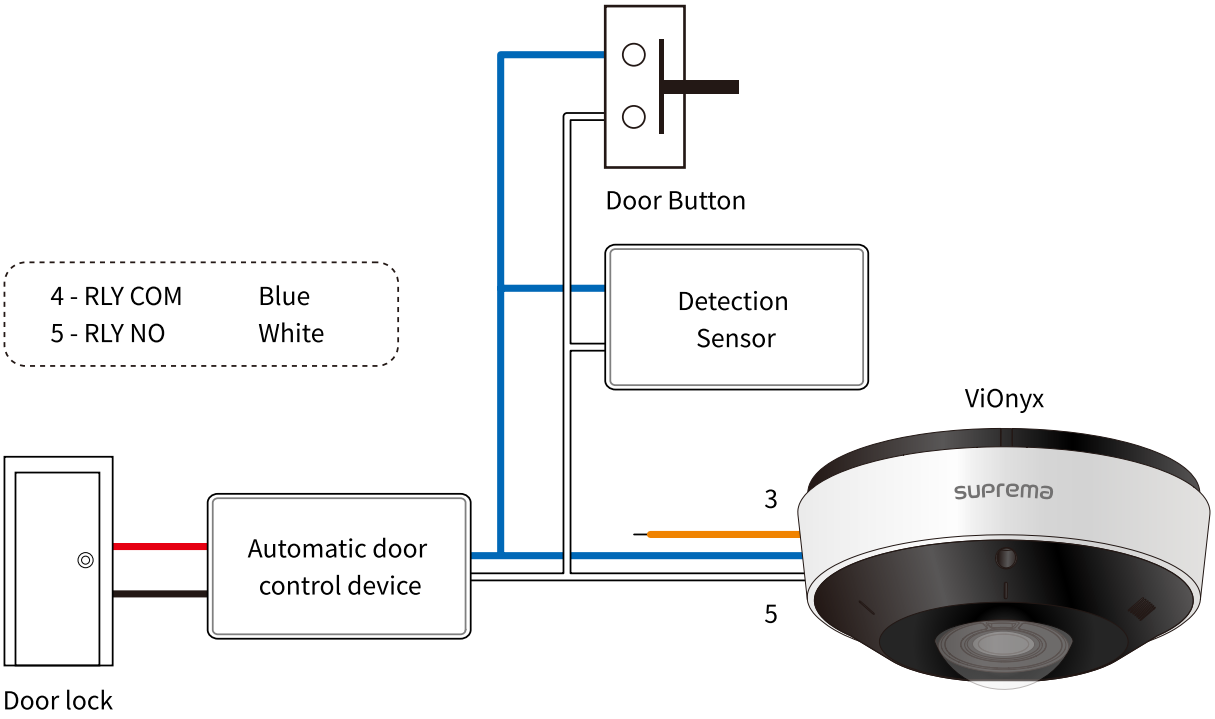
Caution

- Install diodes on both sides of the wiring as shown to protect the relay from reverse current generated when a door lock or strobe light activates.
- External devices connected to the product (e.g., door locks) must use a separate power supply.
- Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

Info

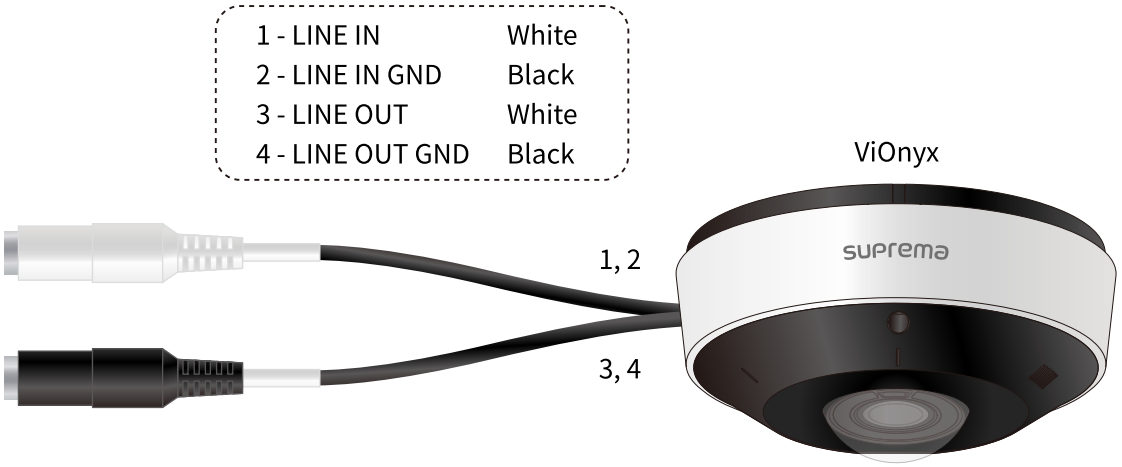
Take caution of the installation direction of the diode. Install the diode as close as possible to the connected external device.

Automatic door connection

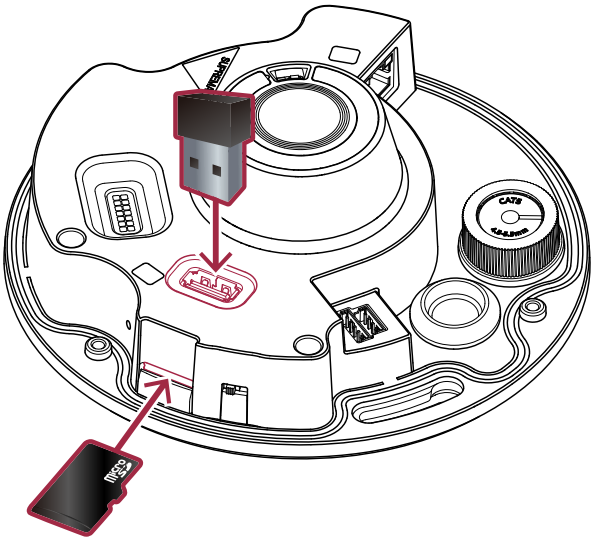


Audio connection (coming soon)

- Audio input (LINE IN): Connect an audio source. The product includes a built-in microphone on the front.
- Audio output (LINE OUT): Connect to an amplifier. This product does not include a built-in audio amplifier; use a separate amplifier and speakers.



Micro SD card and USB device connection (coming soon)



- **Micro SD card**: Insert a microSD card to record video.
- **USB**: Connect other USB (Type-A) accessories.

Info

Recommended microSD/SDHC/SDXC card specifications

- Recommended capacity: 16GB to 1TB
- We recommend using memory cards from the following manufacturers and product lines.
  - Manufacturers: Samsung, SanDisk, Transcend, Micron
  - Product lines: High Endurance, Pro Endurance
- Compatibility may vary by card manufacturer and type.

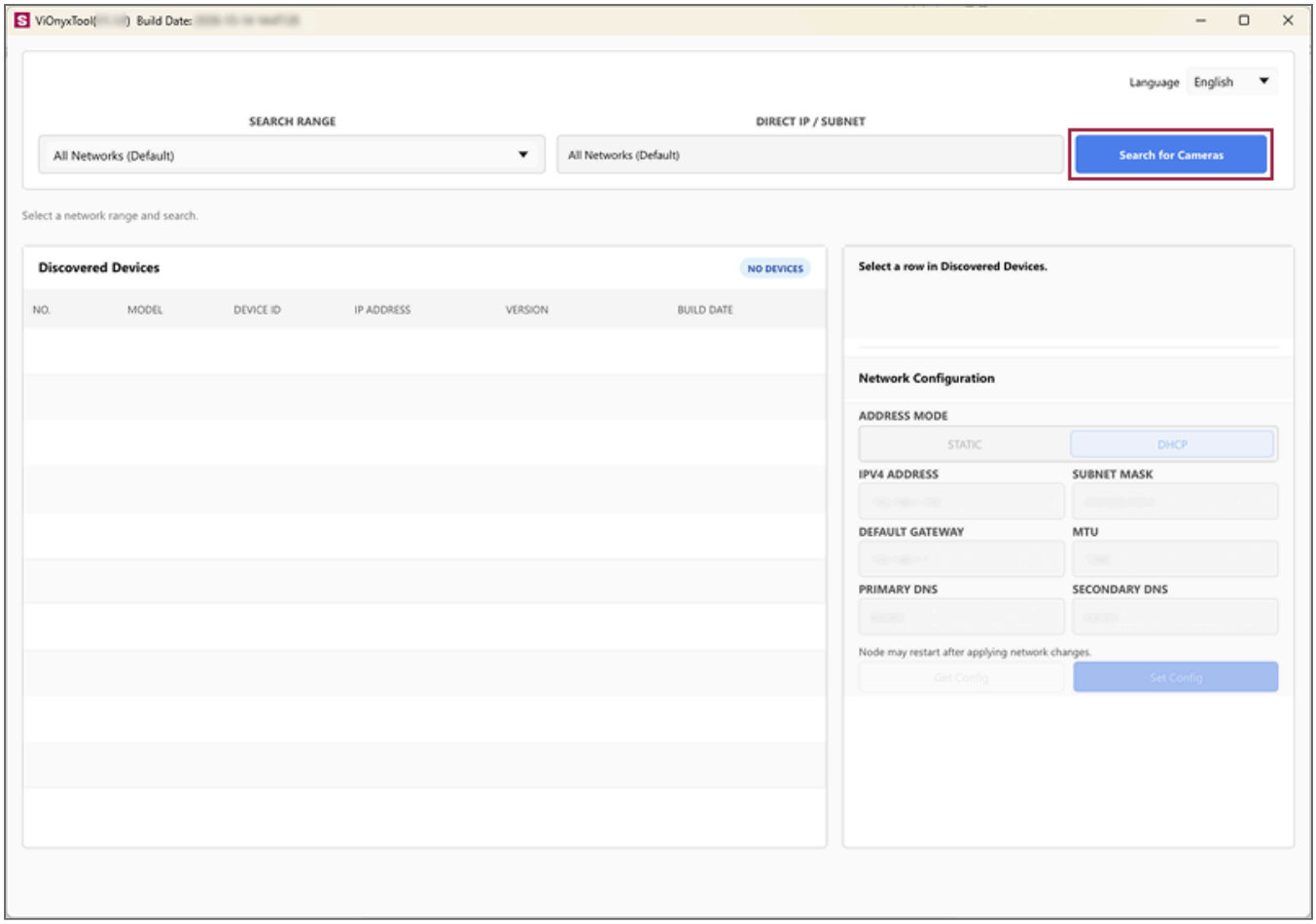
Accessing and Configuring the Web Server

This topic explains how to set a password and log in the first time you access the ViOnyx Web Server.

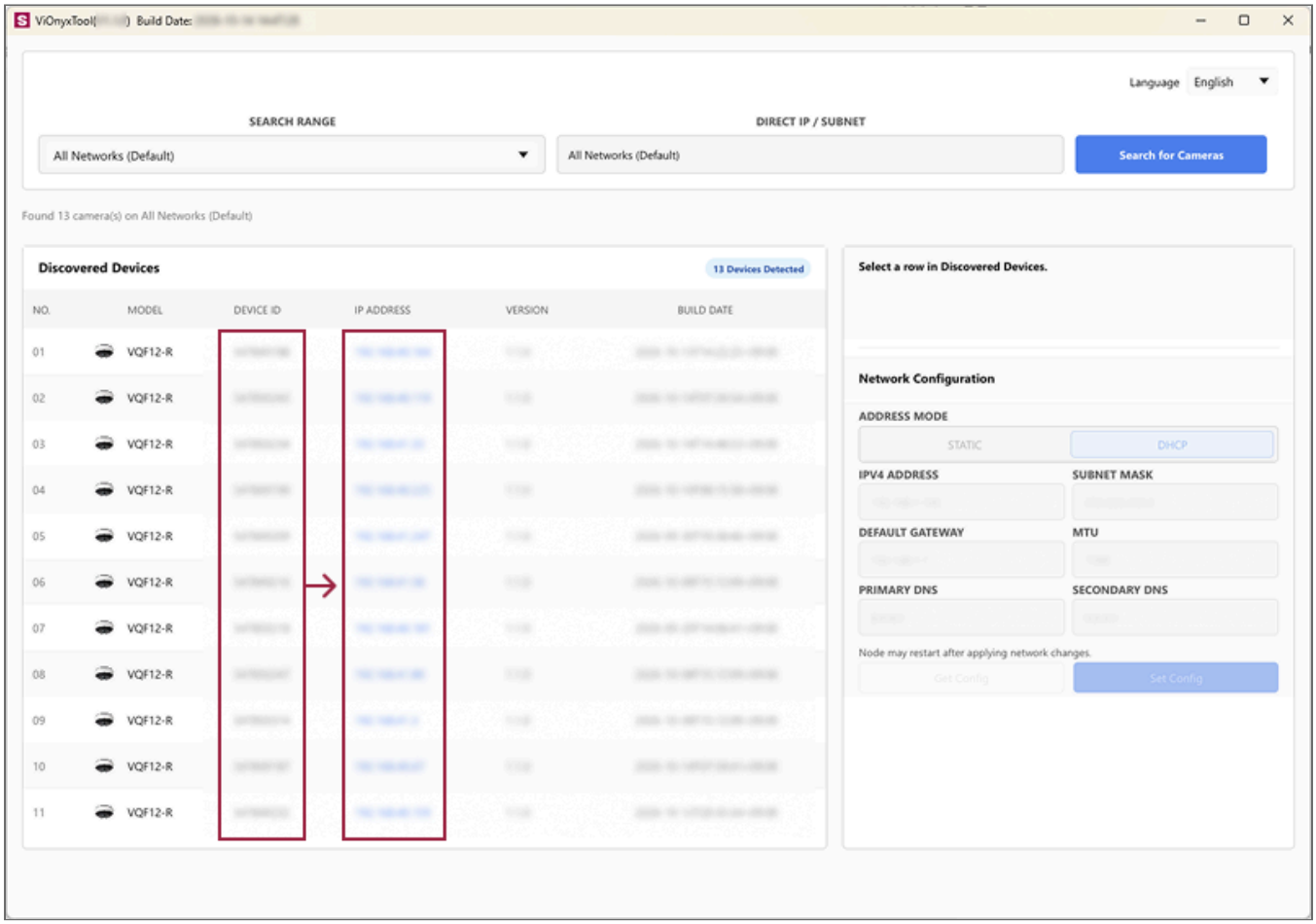
Access the camera web server

> **Info**
>
> - Use a computer connected to the same network as the camera.
> - If the device does not get an IP address after factory initialization, it changes to the default IP (https://192.168.1.100). Open the address in a web browser.

1. Request the installation package (*VionyxTool.zip*) from the Suprema Sales.
2. Extract the installation file, then run *ViOnyxTool_X.X.X.exe*.



3. Click **Search for Cameras**.
4. In the list of detected cameras, find the **DEVICE ID**(S/N) of the camera to connect, and check the **IP ADDRESS**.



5. Open a web browser and go to the camera's assigned IP address (`https://{IP ADDRESS}`).

   > *Example:* *https://192.168.1.100/*

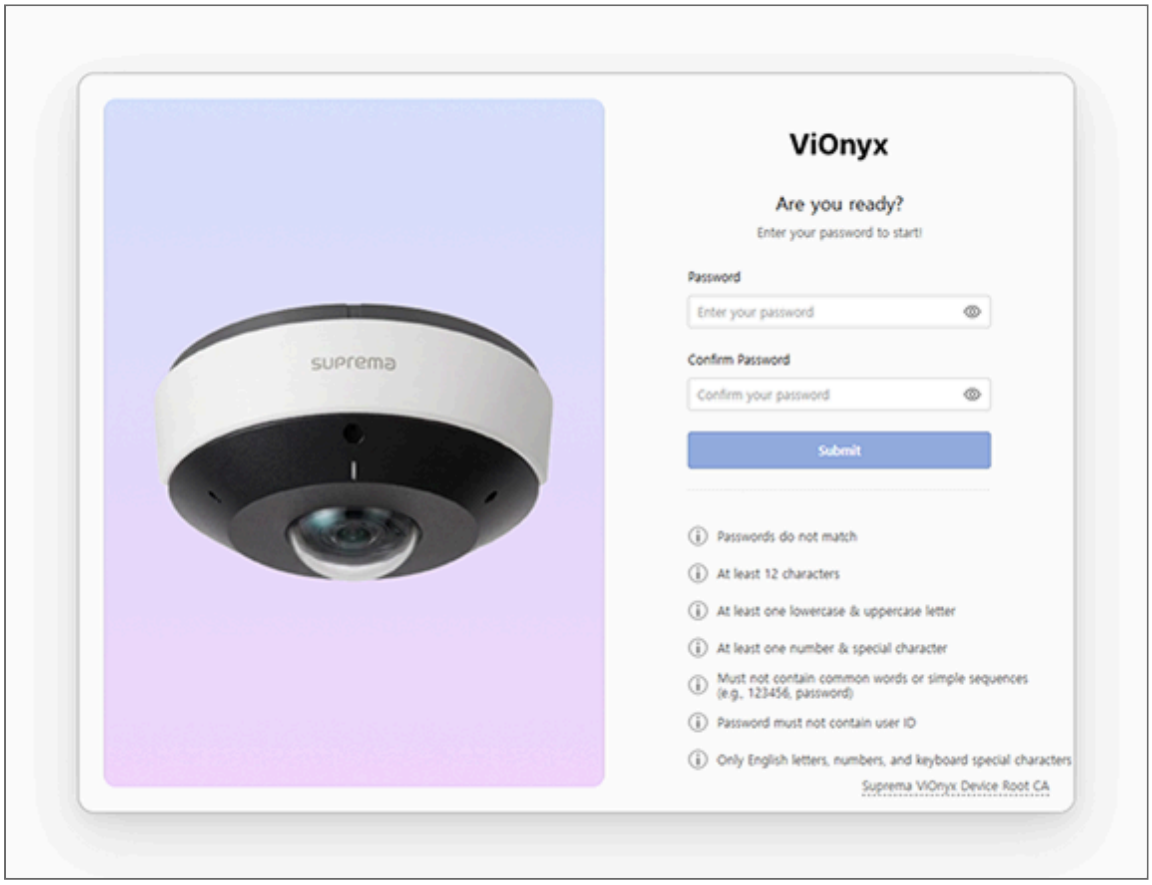
6. The ViOnyx Web Server page appears.

Set Password

When you first access the ViOnyx Web Server, set a password.

1. See Access the camera web server, then open a web browser and go to the IP address assigned to the camera (`https://{IP ADDRESS}`).

   > *Example:* *https://192.168.1.100/*



2. Review the password requirements below, then enter a password in the **Password** field.

Password requirements

- **Length**: Enter between 12 and 64 characters.
- **Character composition**: Must include at least 1 of each of the following: English uppercase letters (A-Z), English lowercase letters (a-z), digits (0-9), and special characters (`"` `!` `@` `#` `$` `%` `^` `&` `*` `(` `)` `-` `_` `=` `+` `[` `]` `{` `}`).
  - Spaces, Hangul, and other Unicode characters are not allowed.
- **Security rules**: To prevent security vulnerabilities, the following patterns are not allowed.
  - Consecutive sequences of 4 or more letters or numbers (e.g., abcd, 1234, 4321)
  - Identical characters or digits repeated 4 or more times (e.g., aaaa, 1111)
  - Contains the user ID (case-insensitive)
  - Common words or patterns that are easy to guess (e.g., password, qwerty)
- **Password confirmation**: Values in the **Password** and **Confirm Password** fields must match exactly.

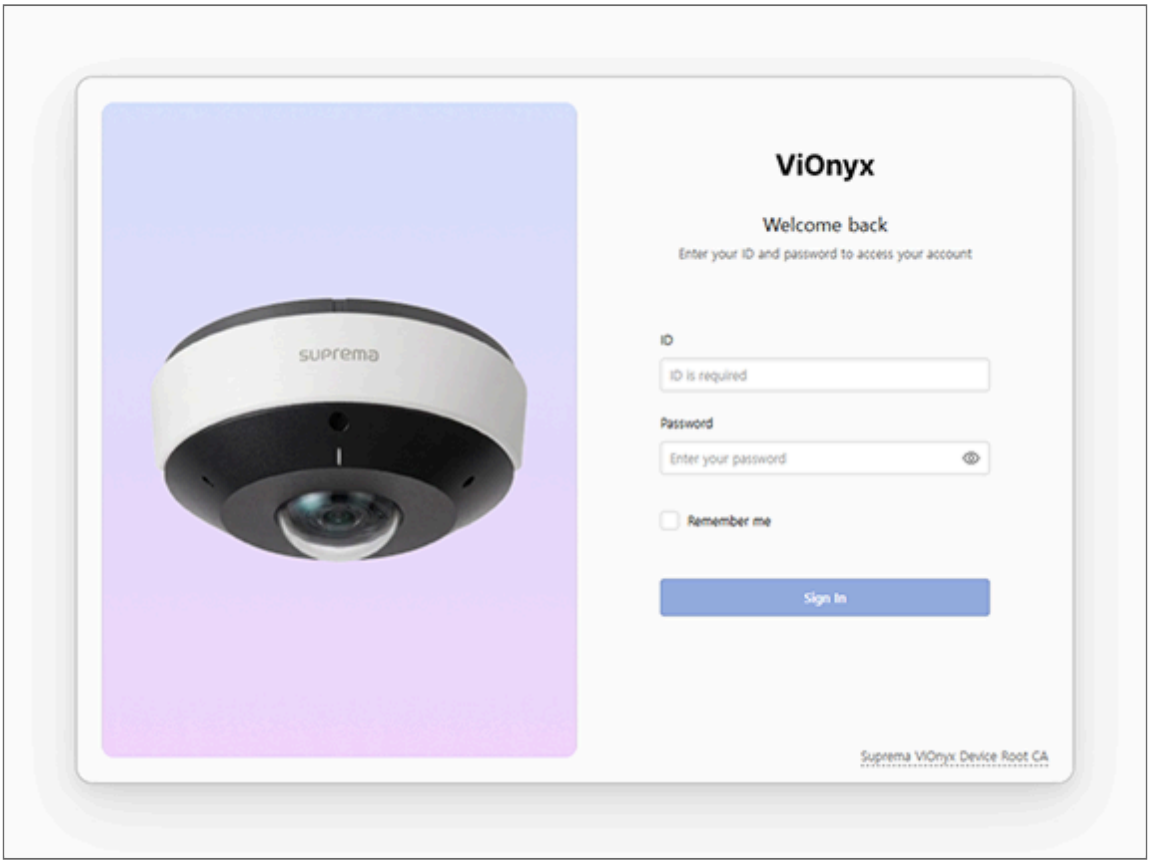
3. Enter the same password again in the **Confirm Password** field.
4. When all password requirements are met, **Submit** becomes active. Click the button to finish setting your password.

Caution

Take care not to lose your password. If you lose your password, you will need to reset the camera.

How to Log in

After the password is set, you will be automatically redirected to the login page. Enter the administrator ID and the password you set to access the ViOnyx Web server.



1. Enter **admin** in the **ID** field.
    - Change the administrator ID (**admin**) in **System** → **Account**.
2. Enter the password you set in the **Password** field.
3. Click the **Sign In** button. After successfully logging in, the ViOnyx Web Server's live camera viewer will appear.
4. Refer to the ViOnyx Web Server to set up the camera.

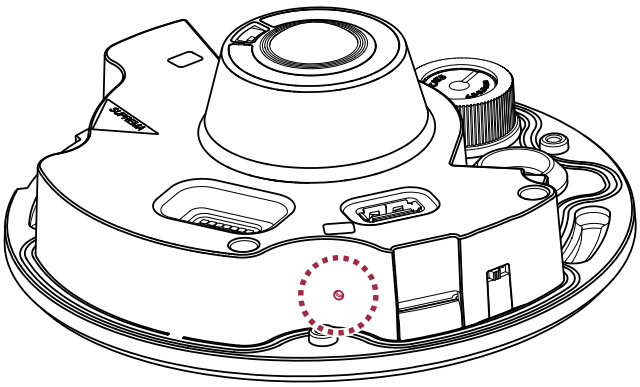
Maintenance and Care

This guide explains how to reset the camera to factory settings and replace the desiccant module.

Factory reset

Deletes all information stored on the camera and resets all settings.

1. After connecting the camera to power, locate the reset button.



2. Press and hold the reset button for at least 5 seconds, then release it.
3. After the factory reset completes, the camera will restart automatically.

Caution

Performing a factory reset will delete all user data and settings, including network settings.

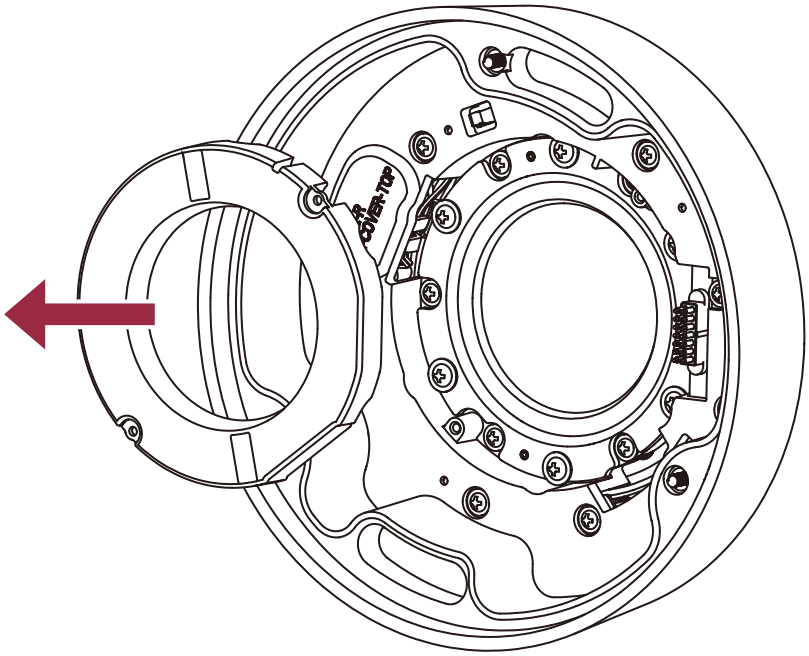
Info

- By default, the IP address is configured via DHCP.
- If the device does not get an IP address after factory initialization, it changes to the default IP (https://192.168.1.100). Open the address in a web browser.

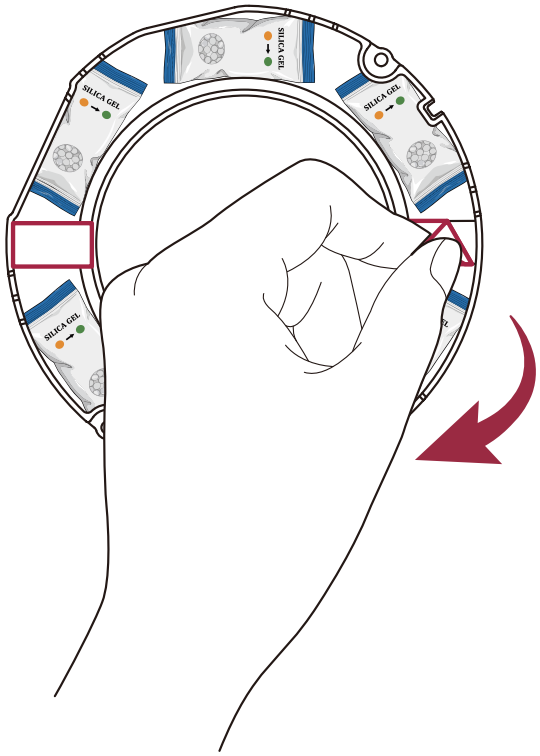
Replace the silica gel module

To maintain dehumidification performance, we recommend replacing the desiccant module at least every 1 year.

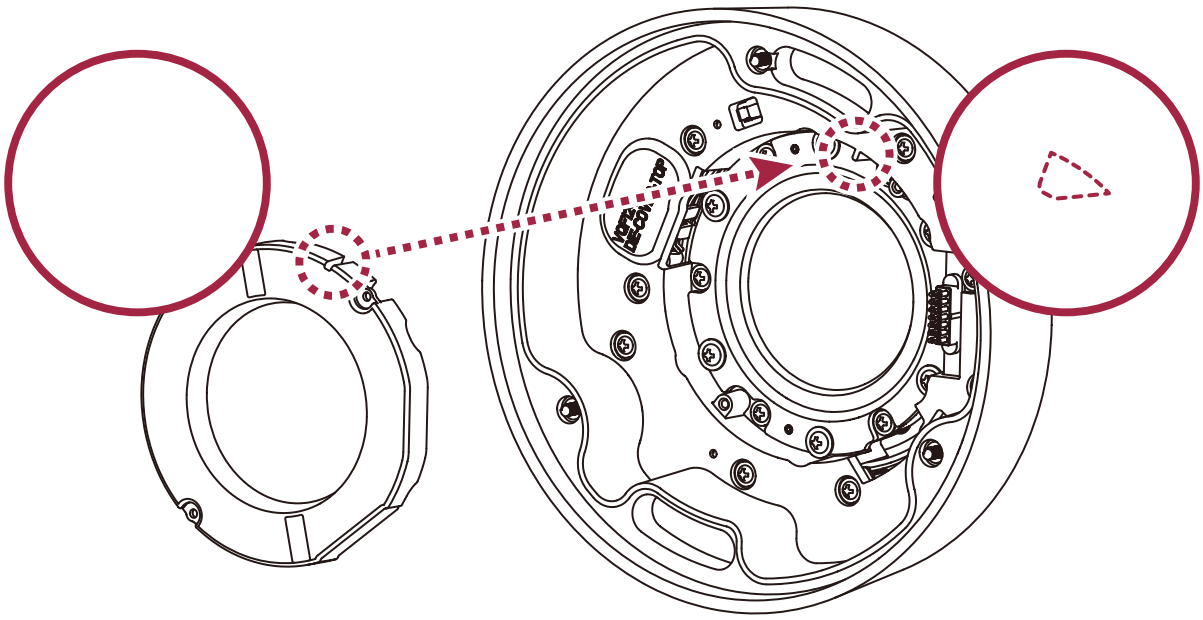
1. Remove the used silica gel module from the cover.



2. Remove the protective film from the back of the new silica gel module.



3. Align the groove on the silica gel module with the protrusion on the cover. Attach it, and press firmly until it attaches securely.



Caution

- The desiccant module comes in sealed packaging. Exposure to air can reduce dehumidification performance. Open the package just before attaching it.
- Replacement intervals may vary depending on the installation environment.

Info

- Record the replacement date to keep track of the next replacement.
- Replacement desiccant modules can be purchased from the retailer where you bought the product.

Troubleshooting

This document provides information to solve unexpected issues that you may encounter when using the device.

Check items before reporting a malfunction

This document provides information to solve unexpected issues that you may encounter when using the device.

Power

Q. No video is being recorded, or the image doesn't appear.

- If you're using a power adapter, make sure its output equals or exceeds the camera's maximum power consumption.
- Do not connect a power adapter and PoE+ at the same time. Doing so may cause the device to malfunction.
- If receiving power via an Ethernet cable, ensure it is connected using the PoE+ standard. The recommended standard is PoE+.
- Check that the network cable is securely connected and that the Ethernet waterproof rubber seal is properly fastened.

Installation and Use

Q. The image appears tilted after installing the camera.

- When mounted on a wall, make sure the red triangle on the mount plate points to 12 o'clock (north).
- Rotate the camera body left or right to adjust the installation angle. The maximum adjustment is 8° to each side (15° total). If you need more adjustment, change the mounting plate hole positions and reinstall.

Q. When Windows 10 users access the web server using Chrome or Firefox, the microphone volume may fluctuate periodically.

- This happens when the microphone driver is set to Realtek. Change the microphone driver to "High Definition Audio Device" (the Windows default) or install a third-party driver.

Q. What are the required WAVE file specifications for audio playback during events?

- Use a sampling rate of 24,000 Hz or 48,000 Hz.
- Use 8-bit or 16-bit bits per sample (bps).
- Only PCM-encoded formats are supported.

Q. I can't see the video.

- If video transmission is set to multicast, ensure the router on the camera's local network supports multicast.

Q. A video analytics event occurred but no alarm was generated.

- Ensure the alarm output port is set correctly.

Q. Cannot access the camera from the browser.

- Ensure the camera's network settings are correct.
- Ensure the network cable is connected properly.
- If connected via DHCP, ensure the camera obtained a dynamic IP address.
- If the camera is connected to a router, ensure port forwarding is configured correctly.

Q. The connection to the web server that was monitoring the video was lost.

- If another user changes camera or network settings, the connected web server disconnects.
- Ensure the network connection is working.

Q. Cameras connected to the network are not being discovered.

- Device communication may be blocked by firewall or network security settings. Ensure the ports (TCP, UDP) required for device discovery and communication are allowed on the network.

Q. Recording is not being saved to the Micro SD card.

- Check whether the Micro SD card is faulty.
- Always power off the device before replacing the Micro SD card.

Q. The Micro SD card is inserted but not recognized.

- Ensure the Micro SD card is inserted in the correct orientation. Micro SD cards formatted by other devices cannot be guaranteed to work with this camera.
- Ensure the card capacity (recommended 16GB–1TB) and manufacturer (Samsung, SanDisk, Transcend) meet the recommended specifications. Use High Endurance or Pro Endurance product lines for continuous write operations. Cards from other manufacturers or product lines may vary in compatibility.

Q. Moisture or condensation forms inside the camera.

- After assembling the cover, ensure the 3 retaining screws are fully tightened. Failure to fully tighten the screws may compromise waterproof/dustproof (IP66/IP67) performance.
- When wiring the Ethernet and other cables, ensure the supplied waterproof rubber, joints, and nuts for the Ethernet cable are fully and securely fastened with no gaps. Insert waterproof rubber hole plugs fully into any unused holes.

Q. AI face and object recognition performance has noticeably declined.

- Ensure the lens is not exposed to direct sunlight or installed in an area with strong backlight. Lens flare or backlighting is a primary cause of reduced AI detection accuracy.

Product Specifications

Provides key specifications of the product, including size, features, and performance.

General

Model Name	**VQF12-R**	
Expandable Memory	**Supports MicroSD, SDHC, SDXC (Up to 1 TB)**	
Operating Temperature	**-40 °C ~ 50 °C**	
Storage Temperature	**-40 °C ~ 70 °C**	
Operating Humidity	**0 % ~ 90 %, non-condensing**	
Storage Humidity	**0 % ~ 90 %, non-condensing**	
Dimensions (W x H x D)	**Device**	**155.5 x 155.5 x 68.9 (mm)**
	Bracket	**148.15 x 148.15 (mm)**
Weight	**Device**	**1.8 kg**
	Bracket	**188 g (including washers and bolts)**
IP Rating	**IP66, IP67, NEMA 4X**	
IK Rating	**IK10**	
Authentication	**CE, UKCA, KC, FCC, IC, RCM, VCCI, RoHS, REACH, WEEE**	

Camera

Image Sensor	**1/1.6" 12MP (3520 x 3520)**
Lens	• **Focal Length: 1.7 mm** • **Aperture: F2.0**

Field of View (FOV)	**180° (Min distance: 50 cm)**
Minimum Illumination	• **Color: ≤ 0.01 lux** • **IR: 0 lux**
Zoom and PTZ	• **Digital Zoom ≥ x12** • **ePTZ supported**
IR LED	**10 ea (IR Cut Filter supported)**

Video and Audio

Video Compression	**H.265, H.264, MJPEG**
Wide Dynamic Range (WDR)	**120 dB**
Audio	• **Speaker** • **Built-in Mic**[1)]

Interface

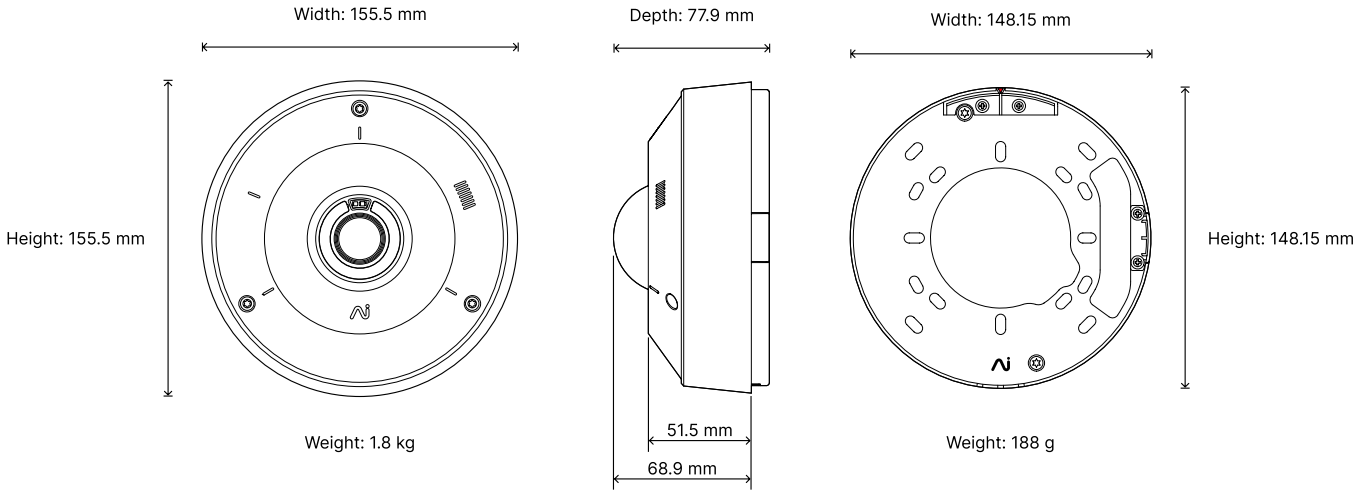
Ethernet	**Supported (10/100/1000 Mbps, auto MDI/MDI-X)**
Network Protocol	**ONVIF (Profile S, T)**
RS-485	**1 ch**
RS-485 Communication Protocol	**OSDP V2 compliant**
Alarm	**1 ch Input**
Relay	**1 relay (1 A @ 30 VDC)**
Audio[1)]	• **1-channel input (LINE IN, Supported voltage: 2.5 VDC)** • **1-channel output (LINE OUT, Maximum output: 1 Vrms)**

PoE	**Supported (IEEE 802.3af compliant)**
PoE+[2)]	**Supported (IEEE 802.3at compliant)**
RTSP	**Supported**
USB[1)]	**USB Type-A**
Tamper	**Supported**
Micro SD Card Slot[1)]	**Supported**

Electrical

Power	**12 VDC / PoE / PoE+**	
Power Consumption	**PoE**	• **Max. 12.95 W** • **12 VDC: 1.08 A**
	PoE+	• **Max. 23 W** • **12 VDC: 1.92 A**
Alarm Input VIH	• **Min.: 3 V** • **Max.: 5 V**	
Alarm Input VIL	**Max.: 1 V**	

Dimensions and Weight



1) Support will be added in a future firmware update.

2) It is recommended to use PoE+ (IEEE 802.3at, 30 W) power. When using standard PoE, some product features may be limited depending on system power consumption.

Info

Product specifications are subject to change without notice for performance improvement.

Regulatory Information

Provides information on regulations and certifications complied with by the product.

FCC Compliance Information

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

> **Info**
>
> This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
>
> Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
>
> This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
>
> This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. Do not install or operate this device and its antenna in conjunction with any other antenna or RF transmission device.

IC information

This device complies with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage ;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le

fonctionnement.

EU Declaration of Conformity (CE)

This product has been tested for CE marking according to the following European Directive and standards:

- Electromagnetic Compatibility Directive 2014/30/EU

For more information, please contact us via the contact details below.

Suprema Inc.

Address: 17F Parkview Tower, 248, Jeongjail-ro, Bundang- gu, Seongnam-si, Gyeonggi-do, 13554, Rep. of KOREA

Tel: +82-31-783-4502 / Fax: +82-31-783-4503

Appendices

Includes legal notices contained in the product.

Disclaimers

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- All warranties are VOID if Suprema products have been: 1) improperly installed or where the serial numbers, warranty date or quality assurance decals on the hardware are altered or removed; 2) used in a manner other than as authorized by Suprema; 3) modified, altered or repaired by a party other than Suprema or a party authorized by Suprema; or 4) operated or maintained in unsuitable environmental conditions.
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You can download the modified source code based on Linux Kernel 5.x, as well as the source code for the glibc, GStreamer 1.0, and libgpiod libraries included in this product, by contacting the Suprema Technical Support Team.

Precautions for camera installation

Follow the precautions below when installing cameras in public places.

> **Caution**
> Violating applicable laws may result in fines or other penalties, depending on the nature and severity of the violation.

Install only for permitted purposes

- Install only for designated purposes, such as crime prevention, facility safety, and fire prevention.
- Do not install in spaces where personal privacy may be violated (bathrooms, toilets, saunas, changing rooms, etc.).

Restrict unauthorized tampering and recording

- Post a notice in a location easily visible to users that includes the camera's purpose, the area covered, and contact information for the person responsible.

Restrict unauthorized tampering and recording

- Do not change the camera angle or otherwise tamper with it in ways that deviate from its original installation purpose. Do not use the recording function in public areas; it is prohibited by applicable laws.

Limit Unauthorized Disclosure and Public Release of Video Information

- When providing personal video information, verify your identity first and provide only the information that is essential. Protect others by pixelating or blurring faces in videos.

Establish Policies for Operation and Management

- Designate a person responsible for managing video information, and publish the camera operation and management policies through accessible channels such as the website.

Security Measures to Protect Video Information

- Ensure that only authorized administrators can access video information. Give each administrator an individual account and implement security measures such as physical locks.

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