WISENET

NETWORK CAMERA

User Manual

QND-8010R/8020R/8030R/8080R
QNV-8010R/8020R/8030R/8080R
QNO-8010R/8020R/8030R/8080R

CE

Network Camera
User Manual

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Disclaimer

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❖ **Design and specifications are subject to change without prior notice.**

❖ **The initial administrator ID is "admin" and the password should be set when logging in for the first time.**
Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.
Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
   (Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.



13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.16A (QNO-8010R/8020R/8030R).
16. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.2A (QNO-8080R)
17. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.14A (QND-8020R/8030R).
18. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.15A (QNV-8020R/8030R).
19. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.16A (QND-8010R/QNV-8010R).
20. This product is intended to be a Listed Power Supply Unit marked "Class2" or "LPS" and rated from PoE(48V), 0.19A (QND-8080R/QNV-8080R)
21. This product is intended to be supplied by isolation power.
22. If you use excessive force when installing the product, the camera may be damaged and malfunction.
    If you forcibly install the product using non-compliant tools, the product may be damaged.
23. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
    This may cause damage to the product.
24. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
    Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
25. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
    Install the product by referring to "Installation & connection" in the user manual.
26. Installing or using the product in water can cause serious damage to the product.
27. Although a rapid change in temperature could cause frost inside the dome, there will be no problem with the video.

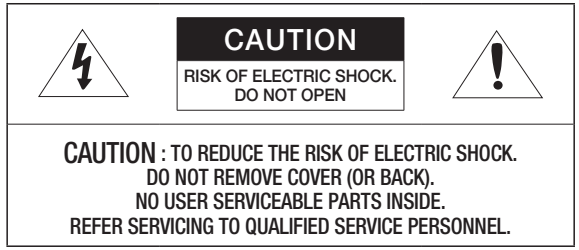
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The battery cannot be replaced.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please use the input power with just one camera and other devices must not be connected.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802-3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
  The high temperature of the product surface may cause a burn.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

WARNING

To Prevent damage which may caused by IR LED, don't stare at operating lamp.

For below models only.

QND-8010R/8020R/8030R/8080R
QNV-8010R/8020R/8030R/8080R
QNO-8010R/8020R/8030R/8080R

Risk Group 1
WARNING IR emitted from this product. **Do not stare at operating lamp.**
Product tested against IEC 62471

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PRODUCT FEATURES

- **Dustproof/Waterproof (IP66) (QNV-8010R/8020R/8030R/8080R, QNO-8010R/8020R/8030R/8080R)**
  The dustproof and waterproof design makes you feel at ease when installing the product outdoors or exposing it to rain.
- **IR mode**
  If the IR indicator turns on, the product switches to the IR mode for preventing an object from being too bright, which helps you identify the object in near distance.
- **Supports 5 megapixel resolution videos**
- **Multi-Streaming**
  This network camera can display videos in different resolutions and qualities simultaneously using different CODECs.
- **Web Browser-based Monitoring**
  Using the Internet web browser to display the image in a local network environment.
- **Alarm**
  When an event occurs, video is either sent to the email address registered by the user, sent to the FTP server, saved in a Micro SD card or NAS, or a signal is sent to the alert output terminal.
- **Tampering Detection**
  Detects tempering attempts on video monitoring.
- **Defocus detection function**
  Detects the defocus phenomenon of the camera lens.
- **Motion Detection**
  Detects motion from the camera's video input.
- **Auto Detection of Disconnected Network**
  Detects network disconnection before triggering an event.
- **ONVIF Compliance**
  This product supports ONVIF Profile S&G.
  For more information, refer to www.onvif.org.

ONVIF
Driving network video through global standardization

RECOMMENDED PC SPECIFICATIONS

- CPU : Intel(R) Core(TM) i7 3.4 GHz or higher
- RAM : 8G or higher
- Supported OS : Windows 7, 8.1, 10, Mac OS X 10.12, 10.13, 10.14
- Supported web browsers : Google Chrome
- Supported web browsers : MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)
- VGA : PCIe 256MB GDDR3 video graphics card or higher

※ Please see the appendix for detailed information on verified OS and browsers.

RECOMMENDED MICRO SD/SDHC/SDXC MEMORY CARD SPECIFICATIONS

- Recommended capacity : 16GB ~ 128GB(MLC type)
- Recommended Manufacturers : SanDisk, Transcend
- Product Type : High endurance
- The compatibility varies depending on the card manufacturers and types.

NAS RECOMMENDED SPECS

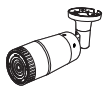
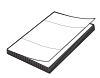
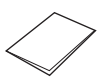
- Recommended capacity : 200GB-2TB is recommended
- Simultaneous access : One unit of NAS can accept a maximum of sixteen camera accesses.
- For this camera, you are recommended to use a NAS with the following manufacturer's specs.

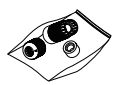
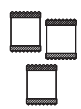
Recommended products	Available sizes
QNAP NAS	A maximum of 16 cameras can access simultaneously.
Synology NAS	A maximum of 16 cameras can access simultaneously.

▪ If you use NAS equipment for purposes other than video saving, the number of accessible cameras may be reduced.

WHAT'S INCLUDED

Please check if your camera and accessories are all included in the product package.
(As for each sales country, accessories are not the same.)

Appearance	Item Name	Quantity	Description	Model Name
	Camera	1		QND-8010R/8020R/ 8030R/8080R
		1		QNO-8010R/8020R/ 8030R/8080R
		1		QNV-8010R/8020R/ 8030R/8080R
	Quick Guide (Optional)	1		QND-8010R/8020R/ 8030R/8080R, QNV-8010R/8020R/ 8030R/8080R, QNO-8010R/8020R/ 8030R/8080R
	Warranty card (Optional)	1		QND-8010R/8020R/ 8030R/8080R, QNV-8010R/8020R/ 8030R/8080R, QNO-8010R/8020R/ 8030R/8080R
	Template	1	Product installation guide	QND-8010R/8020R/ 8030R/8080R, QNV-8010R/8020R/ 8030R/8080R, QNO-8010R/8020R/ 8030R/8080R
	L Wrench	1	Used to control the direction of the camera	QNO-8010R/8020R/ 8030R/8080R,
	L Wrench (star-shaped)	1	Used to remove and replace the dome cover	QNV-8010R/8020R/ 8030R/8080R,

Appearance	Item Name	Quantity	Description	Model Name
	Alarm cable	1	Used when connecting to an alarm	QND-8010R/8020R/ 8030R/8080R
	Alarm cable	1	Used when connecting to an alarm	QNV-8010R/8020R/ 8030R/8080R
	RJ45 waterproof accessory	1	Used to install in humid places	QNO-8010R/8020R/ 8030R/8080R
	Sunshield	1	It protects the camera from the direct sunlight.	QNO-8010R/8020R/ 8030R/8080R
	Sunshield Hold	1	It fixes the sunshield with the camera.	QNO-8010R/8020R/ 8030R/8080R
	Card-type moisture absorbent	3	Attached when installed.	QNO-8010R/8020R/ 8030R
		1		QNV-8010R/8020R/ 8030R/8080R
	Cable for the testing monitor	1	Used to test the camera connection to a portable display device	QND-8010R/8020R/ 8030R/8080R, QNV-8010R/8020R/ 8030R/8080R, QNO-8010R/8020R/ 8030R/8080R

Appearance	Item Name	Quantity	Description	Model Name
	Cable bush	1	Used to connect the LAN cable	QNV-8010R/8020R/ 8030R/8080R
	Cap Installer	1		

Optional Accessories for Installation

For your easier installation, you can purchase appropriate optional accessories available.

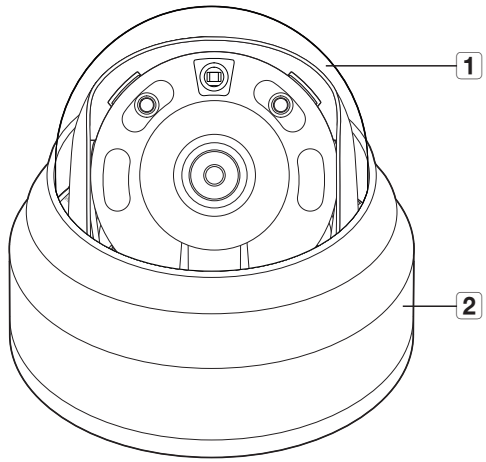




Model name	Hanging Mount	Back Box	Pole Mount	All
QNV-8010R/8020R/8030R	SBP-122HMW	SBV-120GW		SBP-300LMW (Parapet Mount) SBP-300CMW (Ceiling Mount) SBP-300WMW1 (Wall Mount) SBP-300NBW (Instalation Box) SBP-300PMW (Pole Mount) SBP-300KMW (Corner Mount)
QNV-8080R	SBP-301HMW2	SBV-136BW		
QND-8010R/8020R/8030R	SBP-300HMW7			
QND-8080R	SBP-122HMW			
QNO-8010R/8020R/ 8030R/8080R		SBO-100B1	SBP-302PM	
QNO-8080R		SBO-126B		

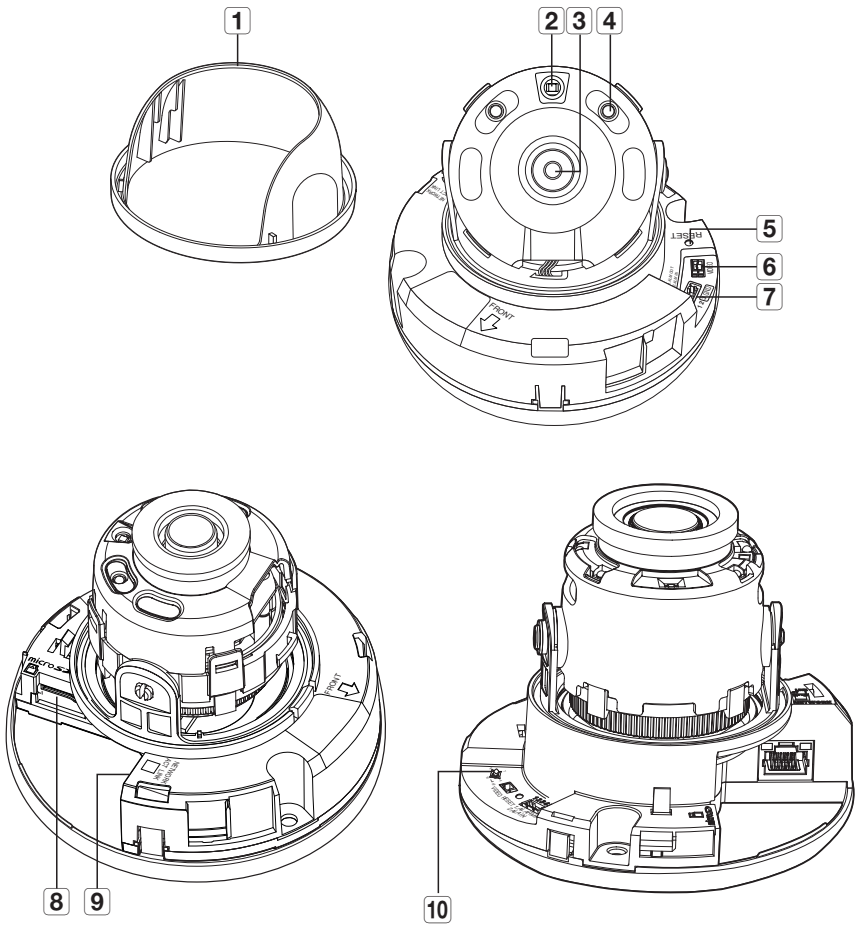
AT A GLANCE (QND-8010R/8020R/8030R/8080R)

Appearance



Item	Description
1 Dome cover	Case cover used to protect the lens and the main unit.
2 Camera Case	Housing part that covers the camera body.

Components

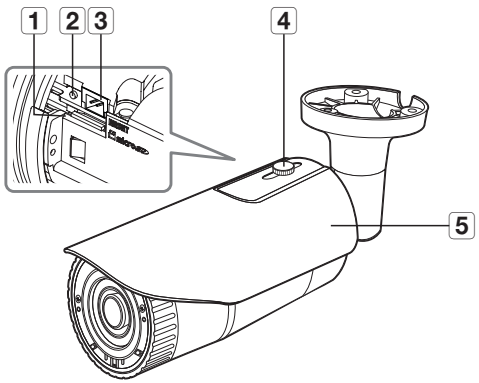


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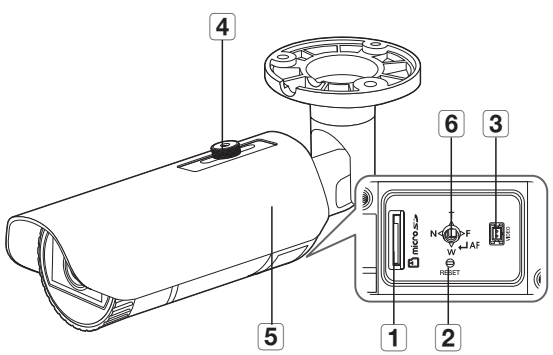
Item		Description	
1	Inside cover	Protective cover for the main body.	
2	Illumination Sensor	Detects incoming light to control the IR LED.	
3	Lens	Lens for the camera.	
4	IR LED	These infrared LED's are controlled by the illumination sensor. (The number of LED bulbs may vary depending on the model.)	
5	Reset Button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. ! If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the IP Installer program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.	
6	Test Monitor Out	Output port for test monitoring the video output. Use the test monitor cable to connect to a mobile display and check the test video.	
7	Alarm I/O Port	ARM OUT	Used to connect the alarm output signal.
		ARM IN	Used to connect the alarm input sensor or external day/night sensor.
		GND	These are common ports to connect alarm input/output signals.
8	Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.	
9	PoE Connector	Connects to the network and supplies power through an Ethernet cable.	
10	Zoom/Focus Control Button	T	Zoom in (Tele)
		W	Zoom out (Wide)
		N	Focusing on a near object (Near)
		F	Focusing on a far object (Far)
		Focus Control	Press this button for automatic focus control.

AT A GLANCE (QNO-8010R/8020R/8030R/8080R)

Appearance



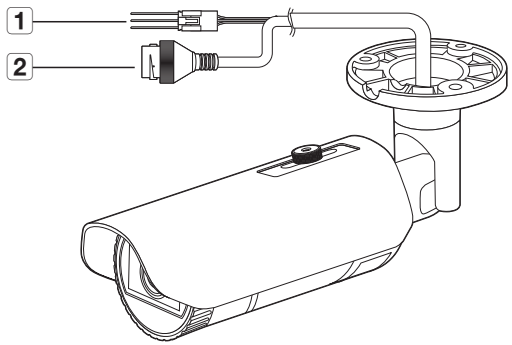
<QNO-8010R/8020R/8030R>



<QNO-8080R>

Item		Description	
1	Micro SD card slot	(Internal space of the product) This is a slot in which you can insert a Micro SD card.	
2	Reset Button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. ! If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the IP Installer program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.	
3	Test Monitor Out	Output port for test monitoring the video output. Use the test monitor cable to connect to a mobile display and check the test video.	
4	Sunshield Hold	It fixes the sunshield with the camera.	
5	Sunshield	It protects the camera from the direct sunlight.	
6	Zoom/Focus Control Button	T	Zoom in (Tele)
		W	Zoom out (Wide)
		N	Focusing on a near object (Near)
		F	Focusing on a far object (Far)
		Focus Control	Press this button for automatic focus control.

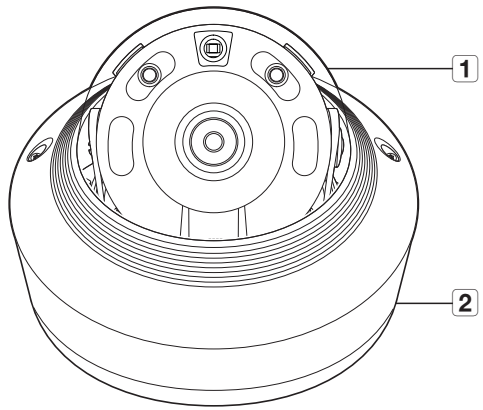
Components



Item		Description
1 Alarm I/O Port	ARM OUT	Used to connect the alarm output signal.
	ARM IN	Used to connect the alarm input sensor or external day/night sensor.
	GND	These are common ports to connect alarm input/output signals.
2 PoE Connector	Connects to the network and supplies power through an Ethernet cable.	

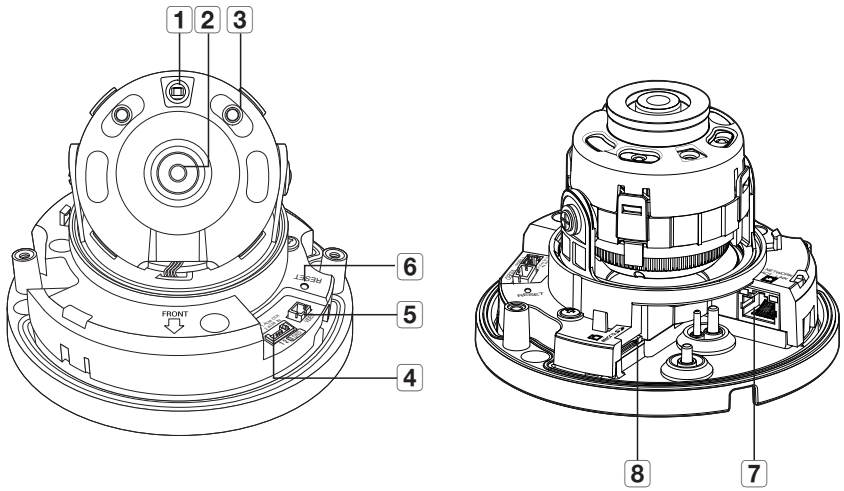
AT A GLANCE (QNV-8010R/8020R/8030R/8080R)

Appearance

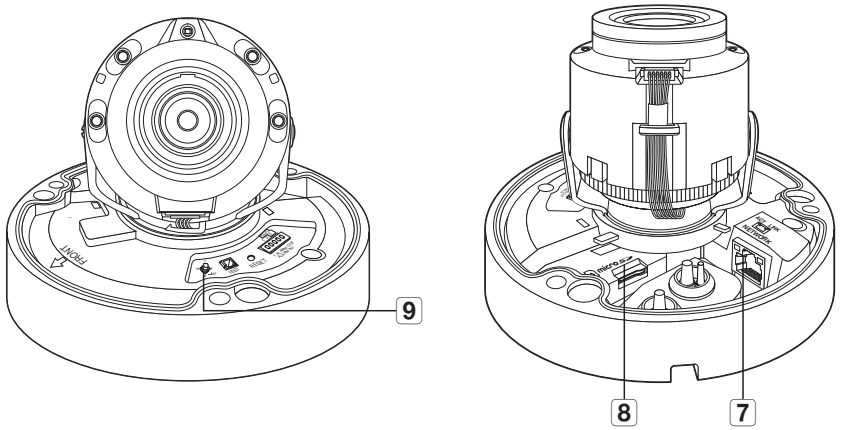


Item	Description
1 Dome cover	Case cover used to protect the lens and the main unit.
2 Camera Case	Housing part that covers the camera body.

Components



<QNV-8010R/8020R/8030R>



<QNV-8080R>

Item		Description	
1	Illumination Sensor	Detects incoming light to control the IR LED.	
2	Lens	Lens for the camera.	
3	IR LED	These infrared LED's are controlled by the illumination sensor. (The number of LED bulbs may vary depending on the model.)	
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7	PoE Connector	Connects to the network and supplies power through an Ethernet cable.	
8	Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.	
9	Zoom/Focus Control Button	T	Zoom in (Tele)
		W	Zoom out (Wide)
		N	Focusing on a near object (Near)
		F	Focusing on a far object (Far)
		Focus Control	Press this button for automatic focus control.

INSTALLATION (QND-8010R/8020R/8030R/8080R)

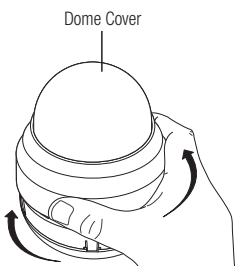
Precautions before installation

Ensure you read out the following instructions before installing the camera:

- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.

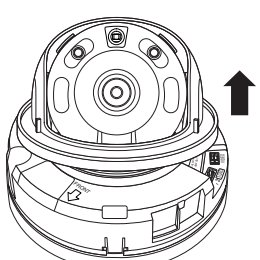
Disassembling

1. Use one hand to hold the camera's bottom part and turn the cover counterclockwise with another hand to separate it.



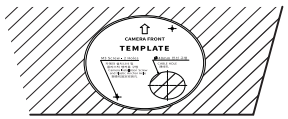
▪ Do not touch the transparent part of the dome cover once the protective film is removed.

2. Lift up the inner cover to separate it.

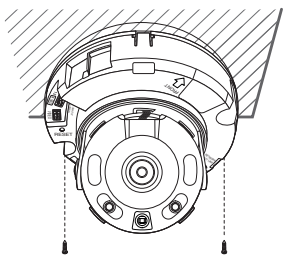


Installation

1. Consider the direction to be monitored, attach the template, and drill holes by following the template.

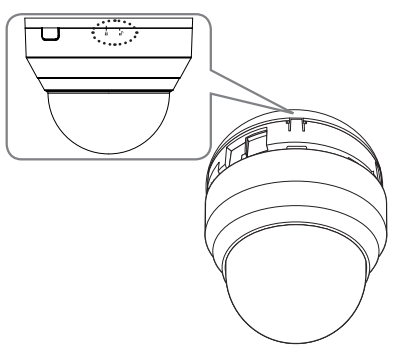


2. Using 2 tapping screws, fix the camera at 2 holes drilled with a template.
   ▪ Set the < ⇧ > mark imprinted on the camera to face the direction of camera monitoring.
3. Connect the camera internal terminal with the corresponding cable.
4. Adjust the lens in a desired direction by referring to the "**Adjusting the monitoring direction for the camera**" section. (Page 17)



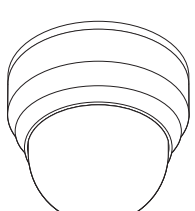
▪ We recommend you not to touch the lens as the camera lens has been properly focused in the final process of manufacturing. If so, the lens may be out of focus or stained by alien substances.

5. Please connect the inner cover to the main body.
6. While holding the base of the camera, use another hand to grab and push the cover.



▪ When installing the dome cover, align the [🔒] and the guideline on the base and apply enough force to push the cover in place.
If the dome cover is rotated during assembly or is assembled incorrectly, diffused reflection may occur or the lens section may rotate, which will cause the shooting range to be changed.

▪ Make sure that the dome cover is correctly connected to the bottom part as shown in the figure.
If the snap-fit is not connected correctly, the dome cover may fall, which may cause injury.



INSTALLATION (QNO-8010R/8020R/8030R/8080R)

▪ This camera is waterproof and in compliance with the IP66 spec, but the jack connected to the external cable is not. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

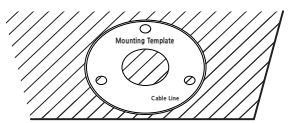
Precautions before installation

Ensure you read out the following instructions before installing the camera:

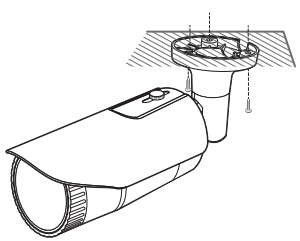
- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- Do not use the sunshield hole for any purpose other than for connecting the sunshield.

Installation

1. Consider the direction to be monitored, attach the template, and drill holes by following the template.

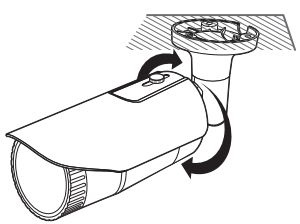


2. Insert and fasten 3 tapping screws into 3 holes to secure the camera.
3. Connect the appropriate cables with camera terminals.



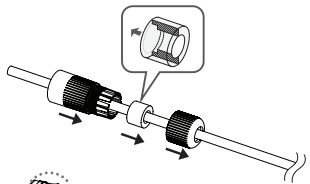
4. Adjust the camera direction using the L wrench provided.

▪ When you adjust the camera position using a bracket, please loosen the bracket screw, adjust the camera, and tighten it. If you attempt to adjust it forcibly while the screw is tight, it may result in a scratch or other problems.

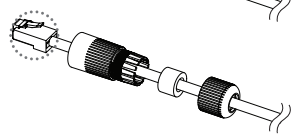


How to connect the RJ45 waterproof cable to a LAN cable

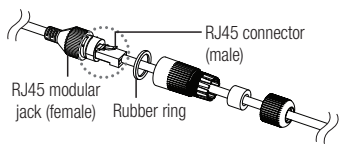
1. Insert it through the arrow direction.



2. Connect the LAN connector (male) to the cable.

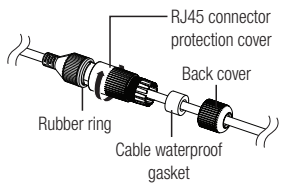


3. Connect the RJ45 modular jack (female) to the RJ45 connector (male).

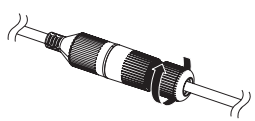


▪ Please, keep each of the parts separated.

4. Assemble by rotating the RJ45 modular jack (female) and the RJ45 protection cover clockwise (Follow the arrow).



5. Assemble by rotating RJ45 protection cover and back cover clockwise (Follow the arrow).
When the back cover is assembled, the cable waterproof gasket is tightly attached to the cable to make it waterproof.

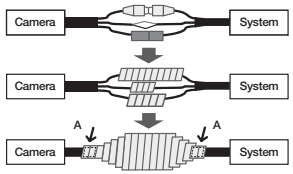


▪ You must fully assemble it to rotate the back cover up to the end of the screw thread of the RJ45 connector.

Outdoor installation

When you install it outside of the building, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect the PoE cable.
2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.



- If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

INSTALLATION (QNV-8010R/8020R/8030R/8080R)

- This camera is waterproof and in compliance with the IP66 spec, but the jack connected to the external cable is not. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

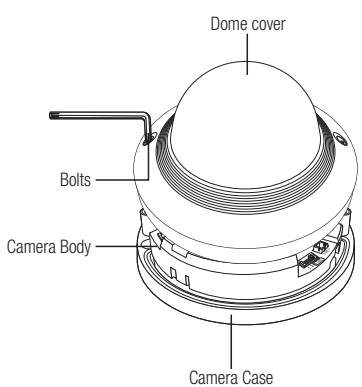
Precautions before installation

Ensure you read out the following instructions before installing the camera:

- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.

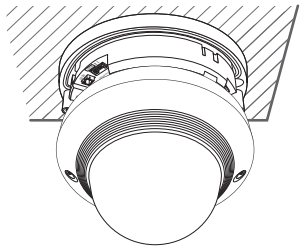
Disassembling

1. Using the L wrench provided, turn the 2 fastening bolts on the dome cover counter clockwise to remove the cover.



Installation

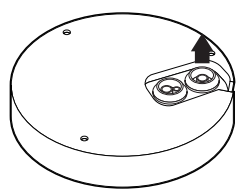
1. Using the template provided as an accessory, drill the screw installation hole(diameter of 6mm, minimal depth of 55mm) and firmly insert the plastic anchor provided as an accessory to the end.
2. Fit the bottom hole to the anchor hole and insert and fix the taping screw (M4.5xL50).
3. Connect and arrange the necessary cables lest that they should be damaged or twisted while installing the camera.
4. Adjust the lens in a desired direction by referring to the "**Adjusting the monitoring direction for the camera**" section. (Page 17)
5. Close the dome cover.
   - Securely fasten the fastening bolt using an L wrench to prevent water from leaking.



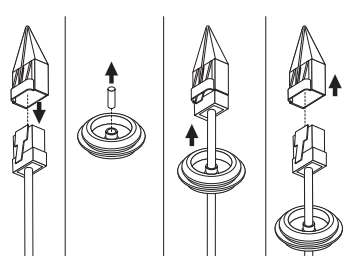
Connecting the LAN cable

1. Remove the dome cover and the case.
2. Pull out the cable bush on the bottom as shown in the figure.

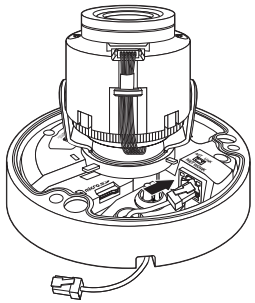
- Use an appropriate cable bush for the LAN cable to be connected.
  - Basic camera : Use the cable with a diameter of Ø5~6.5.



3. Pull off the extruded part of the 1-hole bush provided.
4. Use the cap installer to pass through the LAN cable.

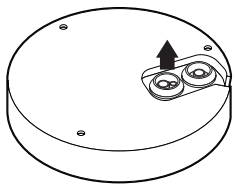


5. Route the LAN cable through the hole created after removing the cable bush in Step 2, and then connect it to the ethernet terminal.
6. Insert the bush of the LAN cable into the hole.

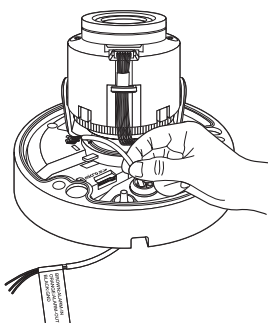


Connecting the alarm cable

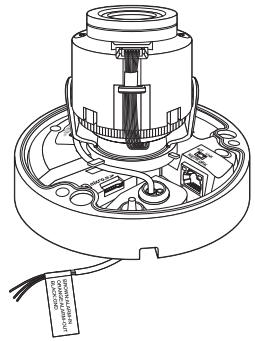
1. Remove the dome cover and the case.
2. Use the cap installer to route the LAN cable through the cable bush.



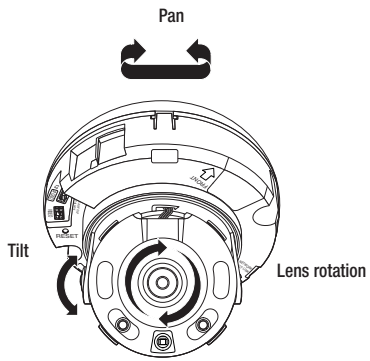
3. Through the hole from which the cable bush was removed from in Step 2, insert the alarm cable and connect it to the alarm terminal block of the PCB.



4. When mounting the camera, hang the cables on the fixed hook to avoid cables from being damaged or pinched.
5. Insert the bush of the alarm cables into the hole.
6. Adjust the lens in a desired direction by referring to the "**Adjusting the monitoring direction for the camera**" section. (Page 17)
7. Attach the dome cover.



Adjusting the monitoring direction for the camera (QND-8010R/8020R/8030R/8080R, QNV-8010R/8020R/8030R/8080R)



▪ **Adjusting the monitoring direction**

You can adjust the camera direction only when the camera is fixed on the ceiling.
Where, rotating the camera unit to the left or right is called Pan, adjusting the tilt is called Tilt, and turning the lens on its axis is called Rotation.

- The effective range of pan is a total of 350 degrees.
- The effective range of rotation is a total of 355 degrees.
- The effective range of tilt is a total of 67 degrees.

▪ The image can be covered up by the camera case depending on the angle.

▪ Do not forcefully turn the focus/zoom lens after the dome case is disassembled. Otherwise, it may cause an incorrect focus due to a motor failure.

▪ **Methods of adjustment**

1. After installing the camera, adjust the panning angle in consideration of the monitoring direction.
2. Set the horizontal angle so that the image is not reversed.
3. Adjust the tilt angle so that the camera faces toward the monitoring object.

INSERTING/REMOVING A MICRO SD MEMORY CARD

▪ Disconnect the power cable from the camera before inserting the Micro SD memory card.

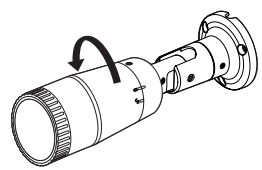
▪ Do not insert the Micro SD memory card while it's upside down by force. Otherwise, it may damage the Micro SD memory card.

▪ When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.

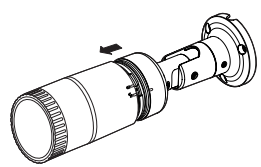
▪ Disassembly of the product cover should be finished within 5 minutes, or there will be the risk of internal dew condensation.

Inserting a Micro SD Memory Card (QNO-8010R/8020R/8030R/8080R)

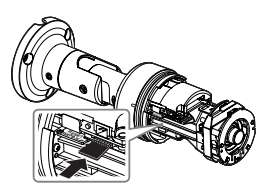
1. Turn the front cover to the UNLOCK [ ] direction.



2. Pull and separate the front cover.

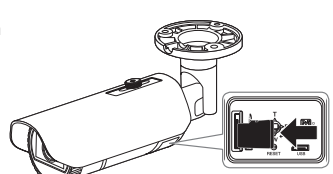


3. Insert a Micro SD card in the arrow direction shown in the figure.



<QNO-8010R/8020R/8030R>

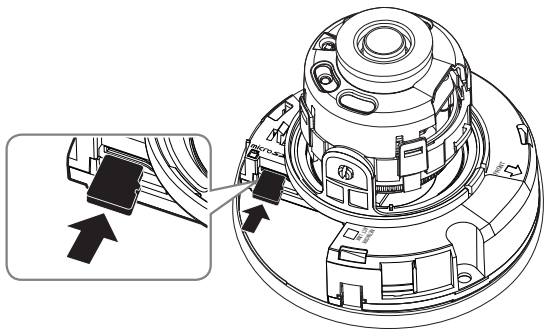
4. Open the cover interface and insert the SD card in the direction marked by an arrow.



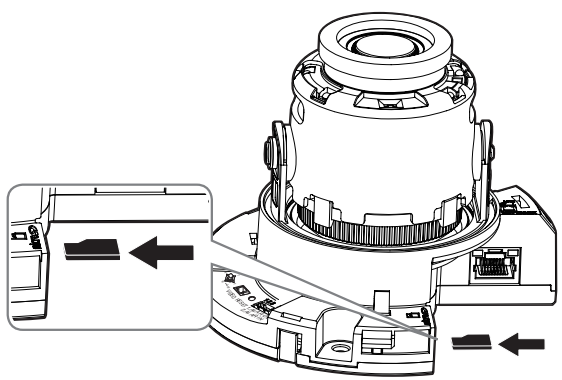
<QNO-8080R>

Inserting a Micro SD Memory Card (QND-8010R/8020R/8030R/8080R, QNV-8010R/8020R/8030R/8080R)

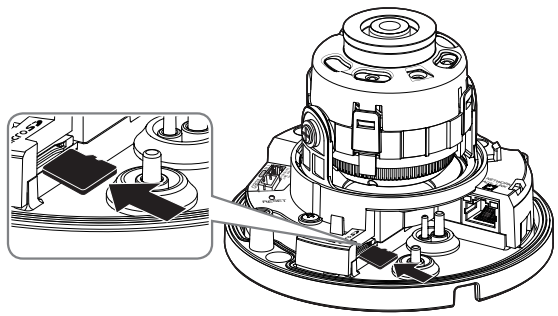
1. Separate the Dome cover of the camera.
2. Insert a Micro SD card in the arrow direction shown in the figure.



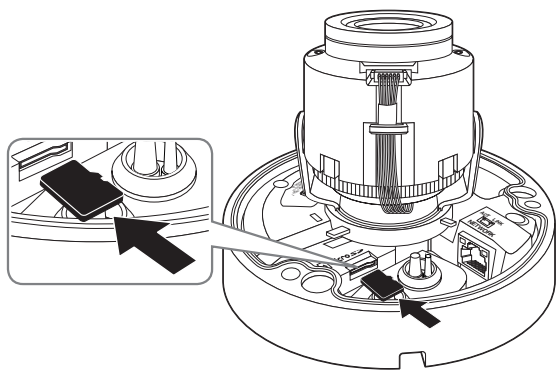
<QND-8010R/8020R/8030R>



<QND-8080R>



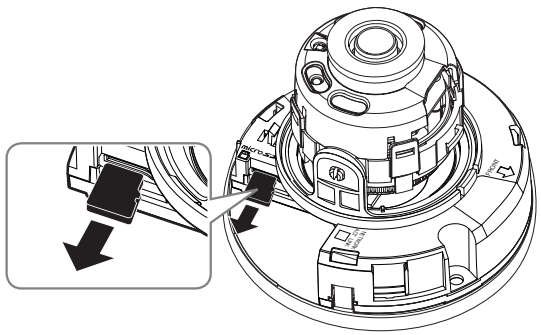
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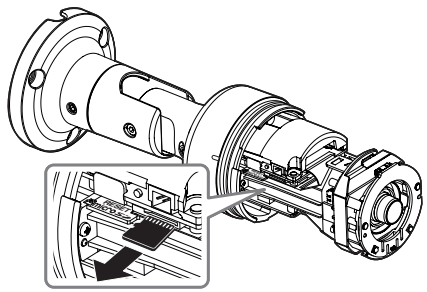
<QNV-8080R>

Removing a Micro SD Memory Card

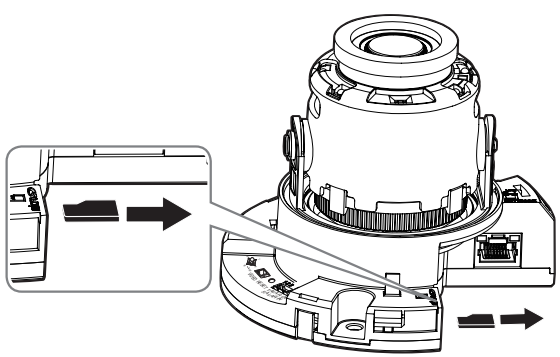
Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.



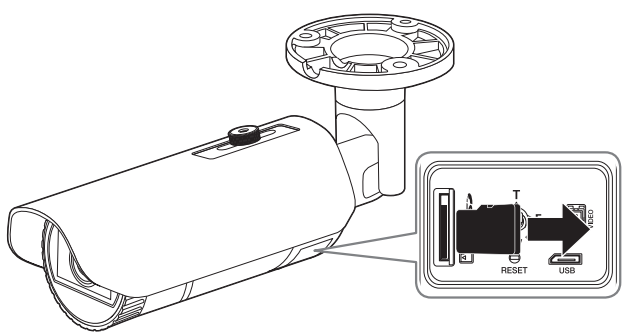
<QND-8010R/8020R/8030R>



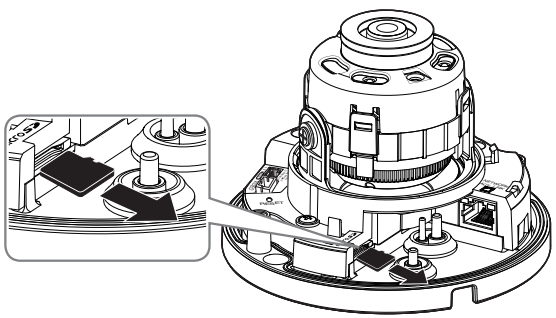
<QNO-8010R/8020R/8030R>



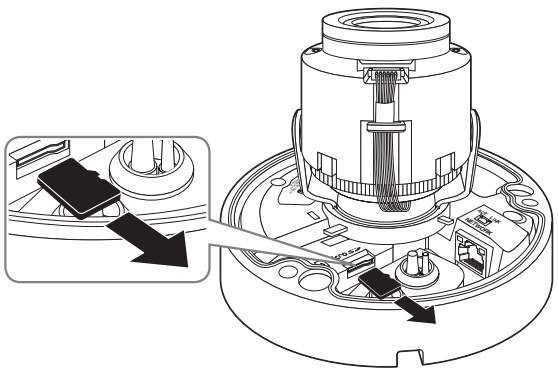
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<QNO-8080R>



<QNV-8010R/8020R/8030R>



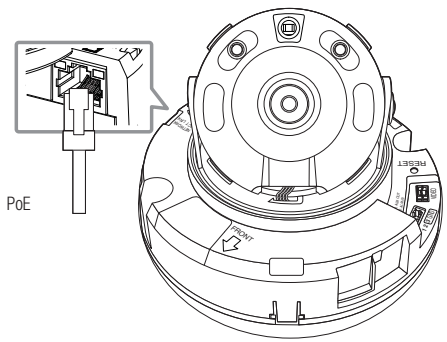
<QNV-8080R>

- Pressing too hard on the Micro SD memory card can cause the card to shoot out uncontrollably from the slot when released.
- Before removing the Micro SD memory card, in <**Storage**>, set the device to <**Off**> and press the [**Apply**] button and turn the camera off.
- If you turn off the camera or remove the Micro SD memory card that contains data from the product, the data may be lost or damaged.

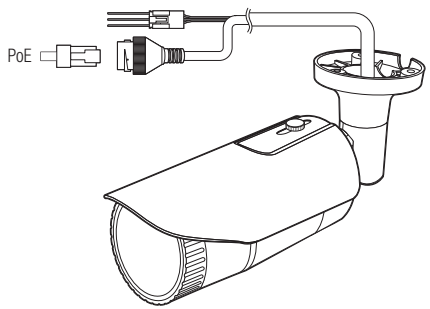
POWERING AND NETWORKING

Connect your PoE device to the camera.

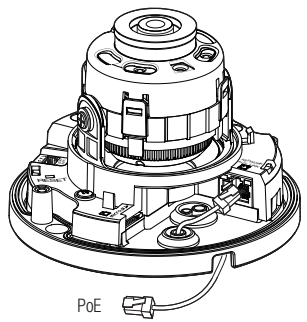
- Connect to a PoE (Power over Ethernet) enabled router's PoE connector.
- Use PoE (Power over Ethernet) equipment that supports the IEEE802.3af standard.



<QND-8010R/8020R/8030R>



<QNO-8010R/8020R/8030R>

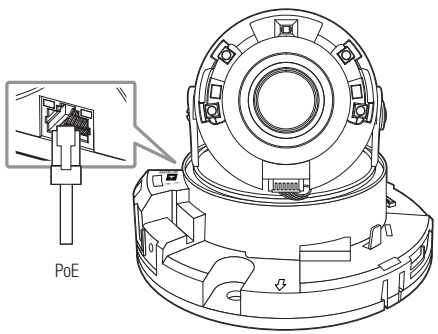


<QNV-8010R/8020R/8030R>

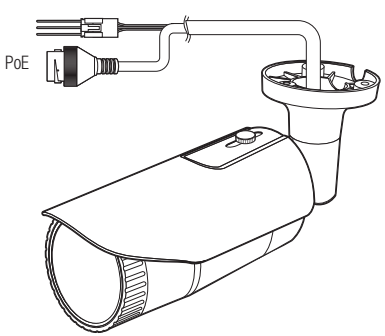
Network Cable Specification

Item	Contents	Remark
Connector	RJ45	
Ethernet	10/100BASE-T	10/100 Mbps
Cable	Category 5e	
Max Distance	100M	DC Resistance ≤ 0.125 Ω/m
PoE Support	IEEE 802.3af	

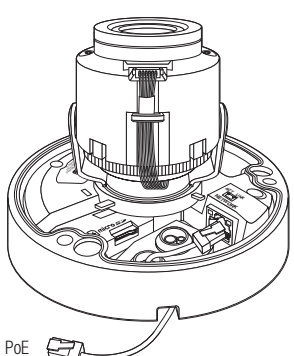
▪ If you use a cable other than Category 5e standards, 100m of transmission distance is not guaranteed.



<QND-8080R>



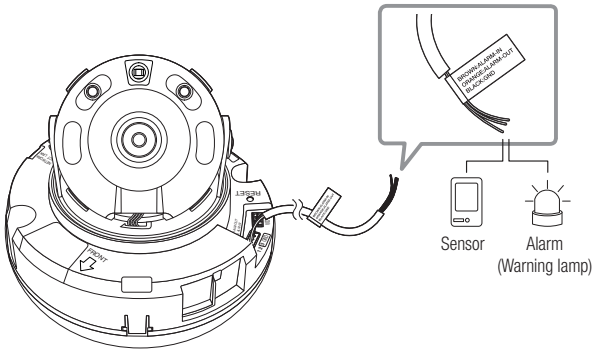
<QNO-8080R>



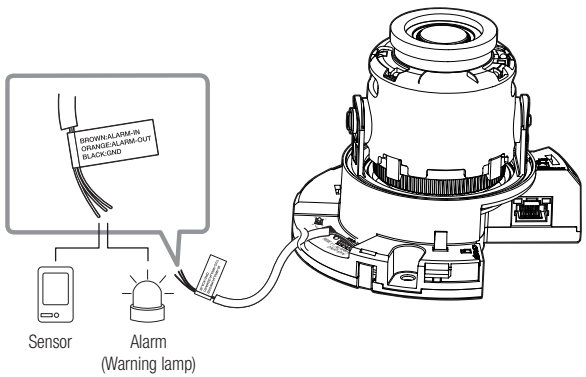
<QNV-8080R>

Connecting to the I/O port box

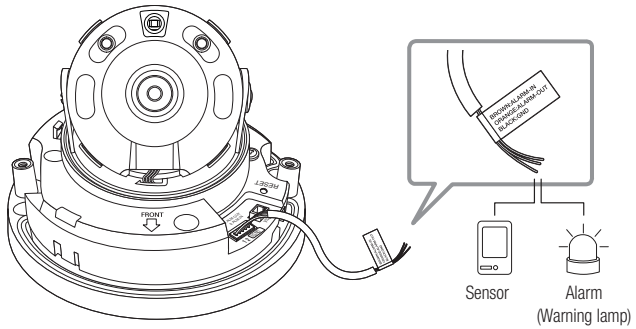
Connect the Alarm I/O cable to the corresponding port of the port box.



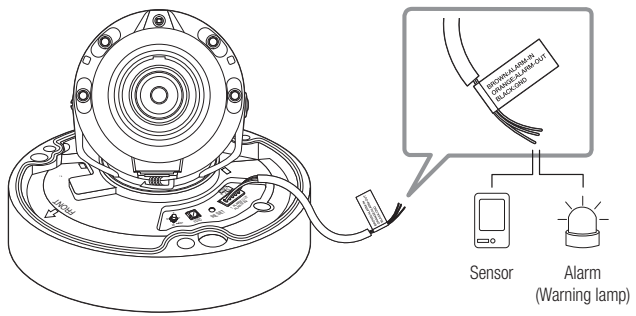
<QND-8010R/8020R/8030R>



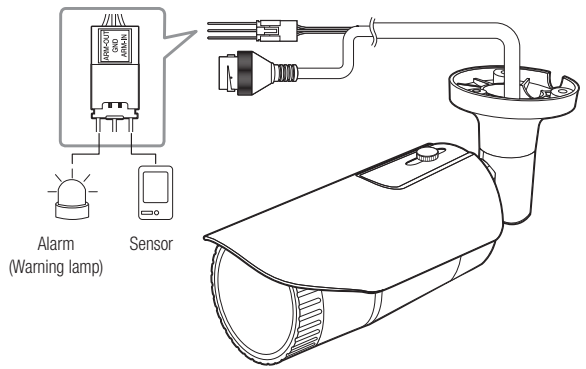
<QND-8080R>



<QNV-8010R/8020R/8030R>



<QNV-8080R>



<QNO-8010R/8020R/8030R/8080R>

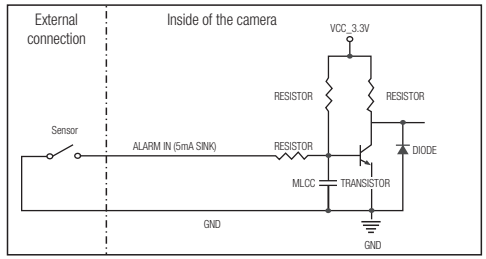
- ALARM-IN : Used to connect the alarm input sensor or external day/night sensor.
- ALARM-OUT : Used to connect the alarm output signal.
- GND : Common port for alarm in/output signal.

▪ If devices (e.g., flashing light and siren) that exceed the voltage and current specifications are connected by using the open collector method, it may cause malfunction.
Refer to the "**Alarm Out Wiring Diagram**" when connecting devices that exceed the voltage and current specifications.

To connect the external sensor

Connect one strand of each signal line (2-strand) of the sensors to the [**ALARM IN**] port, and connect the other strand to the [**GND**] port.

Alarm In Wiring Diagram

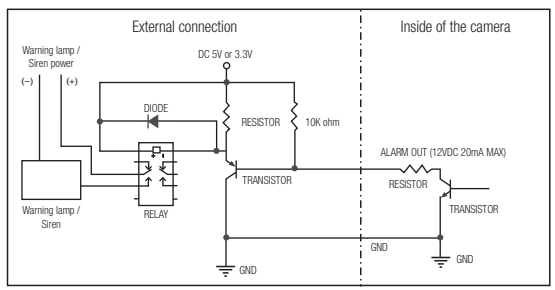


To connect the alarm out

If devices (e.g., flashing light and siren) that exceed the voltage and current specifications are connected by using the open collector method, it may cause malfunction.

Refer to the alarm out connection diagram below when connecting devices that exceed the voltage and current specifications.

Alarm Out Wiring Diagram

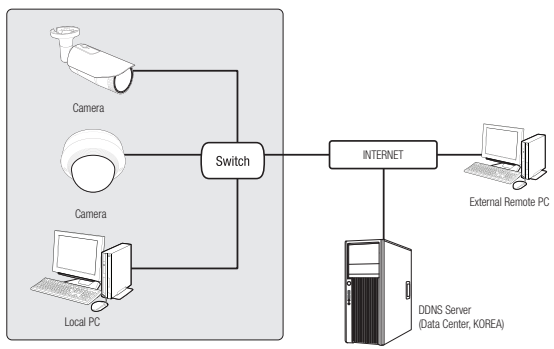


You can set up the network settings according to your network configurations.

CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

Connecting to the camera from a local PC in the LAN

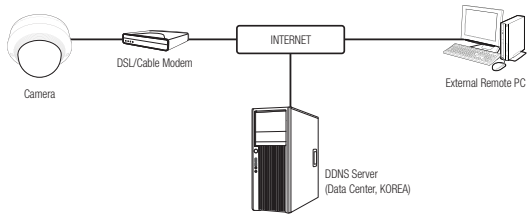
1. Launch an Internet browser on the local PC.
2. Enter the IP address of the camera in the address bar of the browser.



<Local Network>

- A remote PC in an external Internet out of the LAN network may not be able to connect to the camera installed in the intranet if the port-forwarding is not properly set or a firewall is set.
  In this case, to resolve the problem, contact your network administrator.
- In the IP installer, you can use the initial password, "**4321**" to set IP Address, Subnet Mask, Gateway, HTTP Port, VNP Port, IP type. After changing the network interface, for better security, access the web viewer and change the password.
- By factory default, the IP address will be assigned from the DHCP server automatically.
  If there is no DHCP server available, the IP address will be set to 192.168.1.100.
  To change the IP address, use the IP Installer.
  For further details on IP Installer use, refer to "**Static IP Setup**". (Page 25)

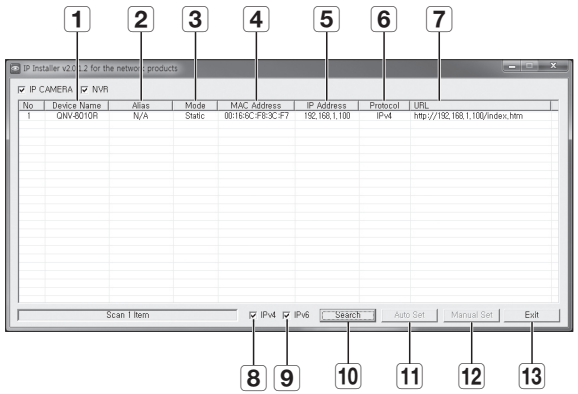
CONNECTING THE CAMERA DIRECTLY TO A DHCP BASED DSL/CABLE MODEM



1. Connect the user PC directly with the network camera.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the web viewer.
4. Move to [**Setup**] page.
5. Move to [**Network**] – [**DDNS**] and configure the DDNS settings.
6. Move to [**Basic**] – [**IP & Port**], and set the IP type to [**DHCP**].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For information on how to set DDNS, refer to the online help of Web Viewer.
- For information on how to set the IP format, refer to the online help of Web Viewer.

BUTTONS USED IN IP INSTALLER



Item	Description
1 Device Name	Model name of the connected camera. Click the column to sort the list by model name. However, search will be stopped if clicked during the search.
2 Alias	This function is not currently implemented.
3 Mode	Displays either <**Static**> or <**Dynamic**> for the current network connection status.
4 MAC(Ethernet) Address	Ethernet address for the connected camera. Click the column to sort the list by Ethernet address. However, search will be stopped if clicked during the search.
5 IP Address	IP address. Click the column to sort the list by IP address. However, search will be stopped if clicked during the search.
6 Protocol	Network setting for the camera. The factory default is "IPv4". Cameras with the IPv6 setting will be displayed "IPv6".
7 URL	DDNS URL address enabling access from the external Internet. However, this will be replaced with the <**IP Address**> of the camera if DDNS registration has failed.
8 IPv4	Scans for cameras with the IPv4 setting.
9 IPv6	Scans for cameras with the IPv6 setting. Activated in an IPv6 compliant environment only.
10 Search	Scans for cameras that are currently connected to the network. However, this button will be grayed out if neither IPv4 nor IPv6 is checked.
11 Auto Set	The IP Installer automatically configures the network settings.
12 Manual Set	You should configure the network settings manually.
13 Exit	Exits the IP Installer program.

- Use the latest version of the IP installer. You can download the latest version from the Hanwha Techwin web site.
- If the supporting OS is Windows 8.1, it is recommended that you use the Wisenet Device Manager instead of the IP Wisenet. The Wisenet Device Manager Program can be downloaded by visiting the Hanwha Techwin website (http://www.hanwhasecurity.com) under the menu <**Technical Guides**> - <**Online Tool**>.

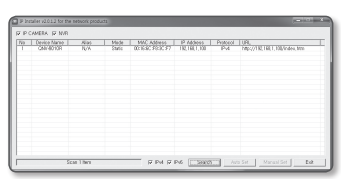
STATIC IP SETUP

Manual Network Setup

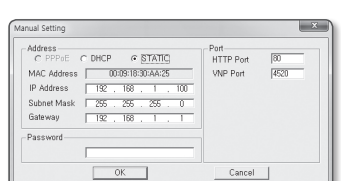
Run <**IP Installer_v2.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.

1. Select a camera in the search list.
   Check the MAC address of the camera on the camera's label.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.



2. Click [**Manual Set**].
   The Manual Setting dialog appears.
   <**IP Address**>, <**Subnet Mask**>, <**Gateway**>, <**HTTP Port**>, and <**VNP Port**> of the camera are displayed in the preset values.
3. In the <**Address**> pane, provide the necessary information.
   - MAC (Ethernet) Address : The MAC address imprinted on the camera label is automatically displayed and requires no user setting.

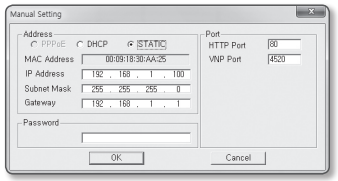


- IP related parameters can be set only when DHCP is not checked.

If not using a Broadband Router

For setting <**IP Address**>, <**Subnet Mask**>, and <**Gateway**>, contact your network administrator.

4. In the <**Port**> pane, provide necessary information.
   - HTTP Port : Used to access the camera using the Internet browser, defaulted to 80.
   - VNP Port : Used to control the video signal transfer, defaulted to 4520.
5. Enter the password.
   Enter the password of "**admin**" account, which was used to access the camera.

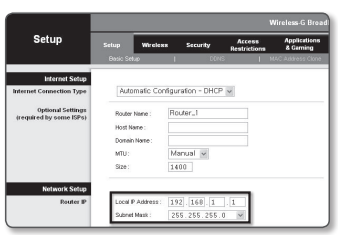


- For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.
- For information on how to change the password, refer to the online help of Web Viewer.

6. Click [**OK**].
   Manual network setup will be completed.

If using a Broadband Router

- IP Address : Enter an address falling in the IP range provided by the Broadband Router.
  ex) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask : The <**Subnet Mask**> of the Broadband Router will be the <**Subnet Mask**> of the camera.
- Gateway : The <**Local IP Address**> of the Broadband Router will be the <**Gateway**> of the camera.



- The settings may differ depending on the connected Broadband Router model.
  For more information, refer to the user manual of the applicable router.
- For more information about port forwarding of the broadband router, refer to "**Port Range Forward (Port Mapping) Setup**". (Page 27)

If the Broadband Router has more than one camera connected

Configure the IP related settings and the Port related settings distinctly with each other.

ex)

Category		Camera #1	Camera #2
IP related settings	IP Address Subnet Mask Gateway	192.168.1.100 255.255.255.0 192.168.1.1	192.168.1.101 255.255.255.0 192.168.1.1
Port related settings	HTTP Port VNP Port	8080 4520	8081 4521

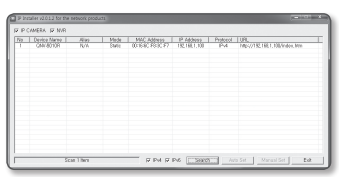
- If the <**HTTP Port**> is set other than 80, you must provide the <**Port**> number in the address bar of the Internet browser before you can access the camera.
  ex) http://IP address : HTTP Port
  http://192.168.1.100:8080

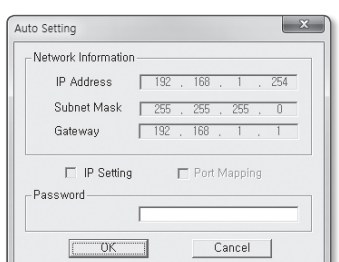
Auto Network Setup

Run <**IP Installer_v2.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.

1. Select a camera in the search list.
   Check the MAC address of the camera on the camera's label.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Auto Set**].
   The Auto Setting dialog appears.
   The <**IP Address**>, <**Subnet Mask**>, and <**Gateway**> will be set automatically.
3. Enter the password.
   Enter the password of "**admin**" account, which was used to access the camera.





- For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.
- For information on how to change the password, refer to the online help of Web Viewer.

4. Click [**OK**].
   Auto network setup will be completed.

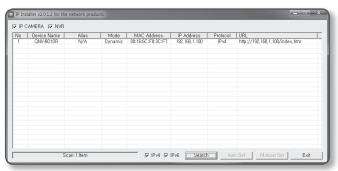
DYNAMIC IP SETUP

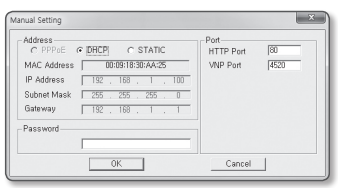
Dynamic IP Environment Setup

- Example of the Dynamic IP environment
  - If a Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
  - If connecting the camera directly to modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

Checking the Dynamic IP

1. Run the IP Installer on the user's local computer.
   Cameras allocated with <**Dynamic IP**> address are shown in the list.
2. Select a camera from the search result.
3. Click the [**Manual Set**] button and check the camera's <**Dynamic IP**> address.
   If you uncheck <**DHCP**>, you can change IP to <**Static**>.



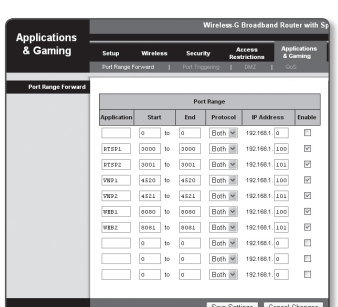


PORT RANGE FORWARD (PORT MAPPING) SETUP

If you have installed a Broadband Router with a camera connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

Manual Port Range Forwarding

1. From the Setup menu of the Broadband Router, select <**Applications & Gaming**> - <**Port Range Forward**>.
   For setting the port range forward for a third-party Broadband Router, refer to the user guide of that Broadband Router.
2. Select <**TCP**> and <**UDP Port**> for each connected camera to the Broadband Router.
   The number of each port to be configured to the IP router should be set according to the port number designated in <**Setup**> - <**Basic**> - <**IP & Port**> on the camera web viewer.



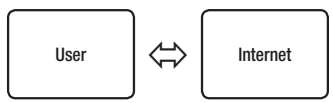
3. When done, click [**Save Settings**].
   Your settings will be saved.

- Above sample instructions are based on the CISCO's Broadband Router.
- The settings may differ depending on the connected Broadband Router model.
  For more information, refer to the user manual of the applicable router.

Setting up Port Range Forward for several network cameras

- You can set a rule of Port Forwarding on the Broadband Router device through its configuration web page.
- A user can change each port using the camera setting screen.

When Camera1 and Camera2 are connected to a router :



Broadband Router			
Start	End	Protocol	IP Address
3000	3000	TCP/UDP	192.168.1.100
3001	3001	TCP/UDP	192.168.1.101
4520	4520	TCP/UDP	192.168.1.100
4521	4521	TCP/UDP	192.168.1.101
8080	8080	TCP/UDP	192.168.1.100
8081	8081	TCP/UDP	192.168.1.101

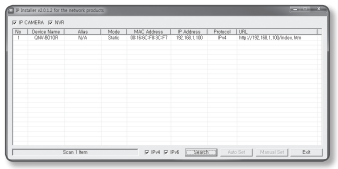
Camera1 (192.168.1.100)	
HTTP port	8080
Device port	4520
RTSP port	3000

Camera2 (192.168.1.101)	
HTTP port	8081
Device port	4521
RTSP port	3001

- Port forwarding can be done without additional router setup if the router supports the UPnP (Universal Plug and Play) function. After connecting the network camera, select the checkbox from the menu <**Quick connect**> in <**Wisenet DDNS**> in "**Settings → Network → DDNS**".

CONNECTING TO THE CAMERA FROM A SHARED LOCAL PC

1. Run the IP Installer.
   It will scan for connected cameras and display them as a list.
2. Double-click a camera to access.
   The Internet browser starts and connects to the camera.



- Access to the camera can also be gained by typing the camera's IP address in the address bar of the Internet browser.

CONNECTING TO THE CAMERA FROM A REMOTE PC VIA THE INTERNET

Since using the IP Installer on a remote computer that is not in the Broadband Router's network cluster is not allowed, users can access cameras within a Broadband Router's network by using the camera's DDNS URL.

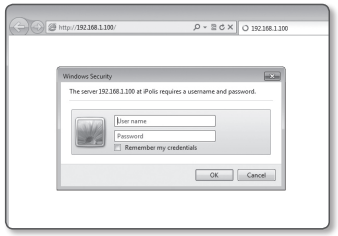
1. Before you can access a camera in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the camera, or the IP address of the Broadband Router in the address bar.
   ex) http://ddns.hanwha-security.com/ID

- For information on how to register DDNS, refer to the network setup guide.

CONNECTING TO THE CAMERA

Normally, you would

1. Launch the Internet browser.
2. Type the IP address of the camera in the address bar.
   ex) • IP address (IPv4) : 192.168.1.100 ➞ http://192.168.1.100
   - the Login dialog should appear.
   • IP address (IPv6) : 2001:230:abcd: ffff:0000:0000:ffff:1111 ➞ http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - the Login dialog should appear.



If the HTTP port is other than 80

1. Launch the Internet browser.
2. Type the IP address and HTTP port number of the camera in the address bar.
   ex) IP address : 192.168.1.100:HTTP Port number(8080)
   ➞ http://192.168.1.100:8080 - the Login dialog should appear.

Using URL

1. Launch the Internet browser.
2. Type the DDNS URL of the camera in the address bar.
   ex) URL address : http://ddns.hanwha-security.com/ID
   - the Login dialog should appear.

▪ Network connection is disabled in the LAN only environment.

Connecting via UPnP

1. Run the client or operating system in support of the UPnP protocol.
2. Click the camera name for search.
   In the Windows operating system, click the camera name searched from the network menu.
   - The login window is displayed.

Connecting via Bonjour

1. Run the client or operating system in support of the Bonjour protocol.
2. Click the camera name for search.
   In the Mac operating system, click the camera name searched from the Bonjour tab of Safari.
   - The login window is displayed.

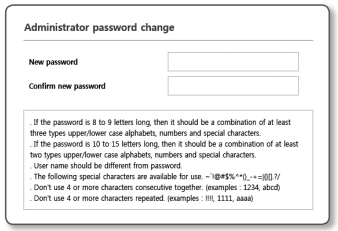
To check the DDNS address

If the camera is connected directly to the DHCP cable modem, DSL modem, the IP address of your network will be changed each time you try to connect to the ISP (Internet Service Provider) server.
If this is the case, you will not be informed of the IP address changed by DDNS.

Once you register a dynamic IP-based device with the DDNS server, you can easily check the changed IP when you try to access the device.
To register your device to the <**DDNS**> server, visit http://ddns.hanwha-security.com and register your device first, and then set the Web Viewer's <**Network**> - <**DDNS**> to <**Wisenet DDNS**>, as well as providing <**Product ID**> that had been used for DDNS registration.

PASSWORD SETTING

When you access the product for the first time, you must register the login password.
When the "**Password change**" window appears, enter the new password.

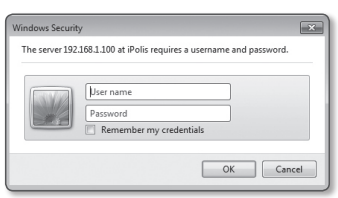


- For a new password with 8 to 9 digits, you must use at least 3 of the following: uppercase/lowercase letters, numbers and special characters. For a password with 10 to 15 digits, you must use at least 2 types of those mentioned.
  - Special characters that are allowed. : ~`!@#$%^*()_-+=|{}[].?/
- For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
- If you lost your password, you can press the [**RESET**] button to initialize the product. So, don't lose your password by using a memo pad or memorizing it.

LOGIN

Whenever you access the camera, the login window appears.
Enter the User ID and password to access the camera.

1. Enter "**admin**" in the <**User name**> input box.
   The administrator ID, "**admin**", is fixed and can not be changed.
2. Enter the password in the <**Password**> input field.
3. Click [**OK**].
   If you have logged in successfully, you will the Live Viewer screen.



- When you access the camera web viewer, pay special attention to the security by checking whether the image data is encrypted.

- If you check the "**Remember my credentials**" option when your input is done, in future you will be logged in automatically without being prompted to enter the login information.
- You will experience the best video quality if the screen size is 100%. Reducing the ratio may cut the image on the borders.

CAMERA WEB VIEWER SETUP

1. Click the [**Setup (** ⚙ **)**] icon.
2. The Settings window appears.
3. You can configure settings for the camera's basic information, video, audio, network, event, analysis, and system over the network.
4. Click <**Help (** ? **)**> to view detailed descriptions of each function.

SPECIFICATION

Items		Description		
		QND-8010R/8020R/ 8030R/8080R	QNV-8010R/8020R/ 8030R/8080R	QNO-8010R/8020R/ 8030R/8080R
Video	Imaging Device	1/2.8" 5MP CMOS		
	Effective Pixels	2592(H)x1944(V)		
	Min. Illumination	QND-8010R/8030R, QNV-8010R/8030R, QNO-8010R/8030R Color: 0.15Lux(F2.0, 1/30 sec) B/W: 0Lux(IR LED) QND-8020R/8080R, QNV-8020R/8080R, QNO-8020R, 8080R Color: 0.15Lux(F1.6, 1/30 sec) B/W: 0Lux(IR LED)		
	Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation		
Lens	Focal Length (Zoom Ratio)	QND-8010R, QNV-8010R, QNO-8010R : 2.8mm fixed focal QND-8020R, QNV-8020R, QNO-8020R : 4mm fixed focal QND-8030R, QNV-8030R, QNO-8030R : 6mm fixed focal QND-8080R, QNV-8080R, QNO-8080R : 2.7~12mm(4.4x) motorized varifocal		
	Max. Aperture Ratio	QND-8010R/8030R, QNV-8010R/8030R, QNO-8010R/8030R : F2.0 QND-8020R/QNV-8020R/QNO-8020R : F1.6 QND-8080R/QNV-8080R/QNO-8080R : F1.6(Wide)~F2.9(Tele)		
	Angular Field of View	QND-8010R/QNV-8010R/QNO-8010R : H: 104.7°/ V: 76.5°/ D: 136.0° QND-8020R/QNV-8020R/QNO-8020R : H: 79.8°/ V: 58.1°/ D: 105.9° QND-8030R/QNV-8030R/QNO-8030R : H: 49.4°/ V: 37.4°/ D: 61.0° QND-8080R/QNV-8080R/QNO-8080R : H: 100.3°(Wide)~31.2°(Tele) / V: 72.3°(Wide)~23.5°(Tele) / D: 133.1°(Wide)~38.8°(Tele)		
	Focus Control	QND-8010R/8020R/8030R, QNV-8010R/8020R/8030R, QNO-8010R/8020R/8030R : Fixed QND-8080R, QNV-8080R, QNO-8080R : Simple focus		
Pan / Tilt /Rotate	Range of Pan/Tilt/Rotation	0˚~350˚ / 0˚~67˚ / 0˚~355˚	0˚~350˚ / 0˚~67˚ / 0˚~355˚	-

Items		Description		
		QND-8010R/8020R/ 8030R/8080R	QNV-8010R/8020R/ 8030R/8080R	QNO-8010R/8020R/ 8030R/8080R
Operational	IR Viewable Length	QND-8010R/8020R/8030R/8080R, QNV-8010R , QNO-8010R: 20m(65.62ft) QNO-8020R/QNV-8020R : 25m(82.02ft) QNO-8030R,QNV-8030R, QNO-8080R,QNV-8080R : 30m(98.42ft)		
	Camera Title	Displayed up to 85 characters		
	Day & Night	Auto (ICR)		
	Backlight Compensation	BLC, WDR, SSDR		
	Wide Dynamic Range	120dB		
	Digital Noise Reduction	SSNR		
	Motion Detection	4ea, polygonal zones		
	Privacy Masking	6ea, rectangular zones		
	Gain Control	Low / Middle / High		
	White Balance	ATW / AWC / Manual / Indoor / Outdoor		
	LDC	Support		
	Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)		
	Video Rotation	Flip, Mirror, Hallway (90˚ / 270˚)		
	Analytics	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line		
	Alarm I/O	Input 1ea / Output 1ea		
	Alarm Triggers	Analytics, Network Disconnect, Alarm input		
	Alarm events	• File upload via FTP, E-Mail • Notification via E-Mail • SD/SDHC/SDXC or NAS recording at event triggers • Alarm output		

Items		Description		
		QND-8010R/8020R/ 8030R/8080R	QNV-8010R/8020R/ 8030R/8080R	QNO-8010R/8020R/ 8030R/8080R
Network	Ethernet	RJ-45 (10/100BASE-T)		
	Video Compression Format	H.265/H.264 : Main/High, MJPEG		
	Resolution	2592x1944, 1920 x 1080, 1280 x 960, 1280 x 720, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360		
	Max. Framerate	H.265/H.264 : Max. 30fps/25fps (60Hz/50Hz) MJPEG : Max. 15fps/12fps (60Hz/50Hz)		
	Smart Codec	WiseStreamⅡ		
	Video Quality Adjustment	H.264/H.265 : Target Bitrate Level Control MJPEG : Quality Level control		
	Bitrate Control Method	H.264/H.265 : CBR or VBR Motion JPEG : VBR		
	Streaming	Unicast(6 users) / Multicast Multiple streaming (Up to 3 profiles)		
	Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP		
	Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1x Authentication (EAP-TLS, EAP-LEAP)		
	Edge Storage	Micro SD/SDHC/SDXC 1slot 128GB		
	Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform		
	Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch		
	Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.12, 10.13, 10.14 Recommended browser: Google Chrome Supported web browsers : MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)		
	Memory	512MB RAM, 256MB Flash		

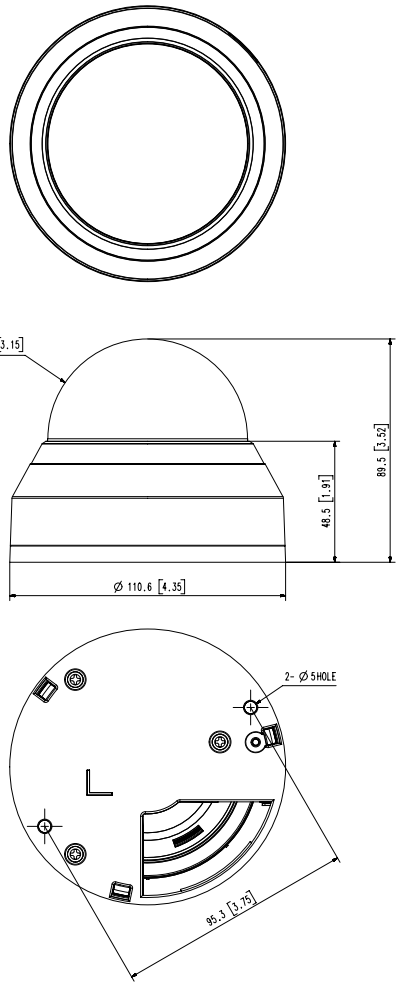
Items		Description		
		QND-8010R/8020R/ 8030R/8080R	QNV-8010R/8020R/ 8030R/8080R	QNO-8010R/8020R/ 8030R/8080R
Environmental	Operating Temperature / Humidity	<QND-8010R,8020R,8030R> -10°C ~ +55°C (14°F ~ +131°F) / Less than 90% RH <QND-8080R> -10°C ~ +55°C (Normal) / -10°C ~ +60°C (Intermittent) Less than 95% RH (Non-condensing)	<QNV-8010R,8020R,8030R/QNO-8010R,8020R,8030R> -30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH * Start up should be done at above -20°C <QNV-8080R/QNO-8080R> -30°C ~ +55°C (Normal) / -30°C ~ +60°C (Intermittent) Less than 95% RH (Non-condensing) * Start up should be done at above -20°C	
	Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH		
	Certification	-	IP66, IK10	
Electrical	Input Voltage	PoE(IEEE802.3af, Class3)		
	Power Consumption	QND-8010R, QNV-8010R : PoE: Max 7.5W, typical 5.8W QND-8020R/8030R: PoE: Max 6.8W, typical 5.0W QNV-8020R/8030R : PoE: Max 7.2W, typical 5.4W QNO-8010R/8020R/8030R : PoE: Max 7.5W, typical 6.1W QND-8080R, QNV-8080R: PoE: Max 8.9W, typical 6.6W QNO-8080R: PoE: Max 9.5W, typical 7.3W		
Mechanical	Color / Material	White / Plastic, Aluminum	White / Aluminum	Dark grey / Aluminum
	RAL Code	RAL9003		-
	Product dimensions / Weight	QND-8010R/8020R/8030R: Ø110.6x89.5mm (Ø4.33x3.39"), 360g QND-8080R: Ø120.3x102.0mm (Ø4.72x3.89"), 430g	QNV-8010R/8020R/8030R: Ø120.3 x 91.7mm (Ø4.74x3.61"), 510g QNV-8080R: Ø137.0 x 106.1mm (Ø5.39x4.18"), 700g	QNO-8010R/8020R/8030R: Ø70.0 x 246.0mm (Ø4.33x3.39"), 680g QNO-8080R: Ø91x322.9mm (Ø35.8x127.1"), 1190g

※ Available in Hanwha Techwin Middle east and Africa Only-Code extension /KME

PRODUCT OVERVIEW(QND-8010R/8020R/8030R/8080R)

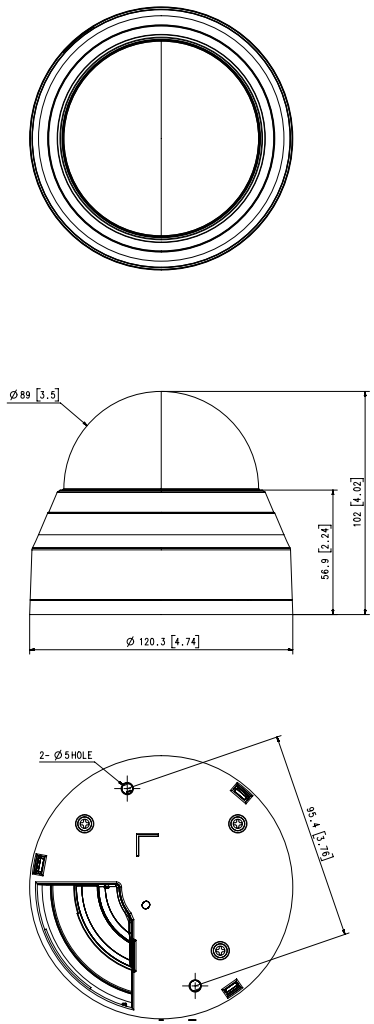
QND-8010R/8020R/8030R

Unit : mm [inch]



QND-8080R

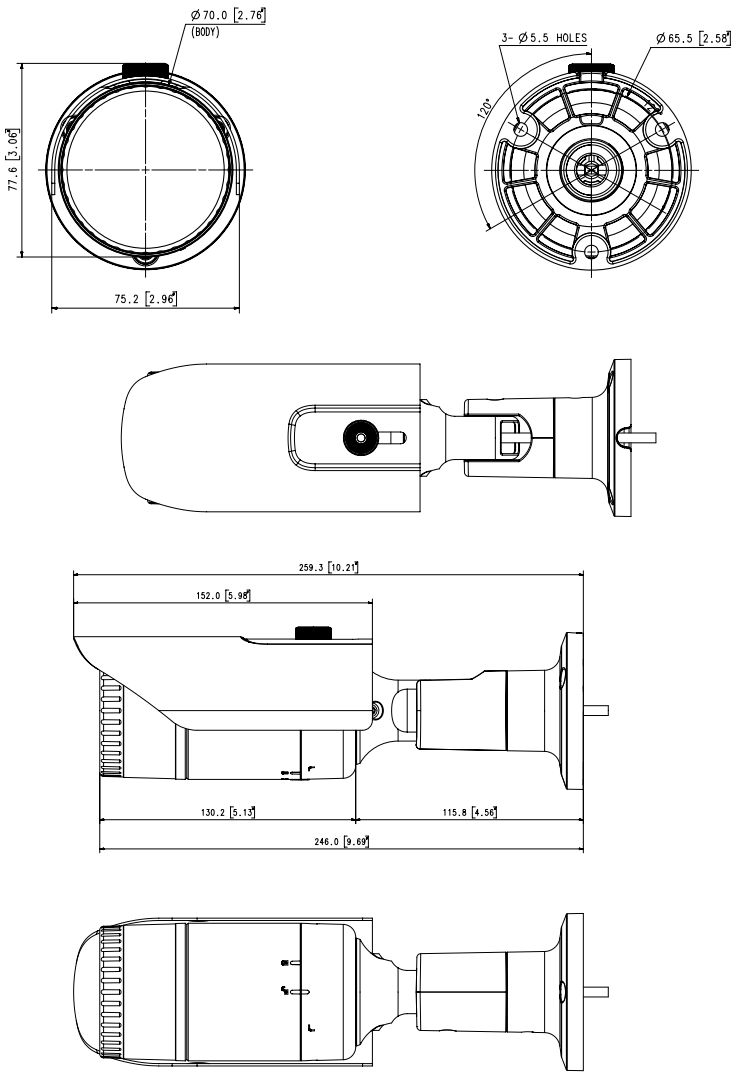
Unit : mm [inch]



PRODUCT OVERVIEW(QNO-8010R/8020R/8030R/8080R)

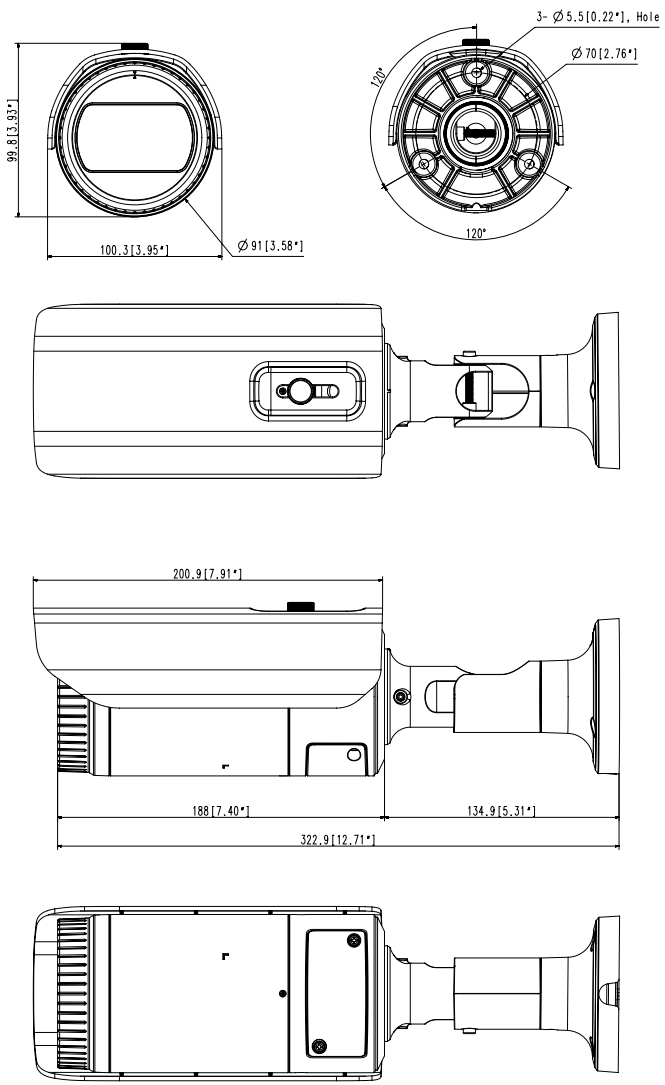
QNO-8010R/8020R/8030R

Unit : mm [inch]



QNO-8080R

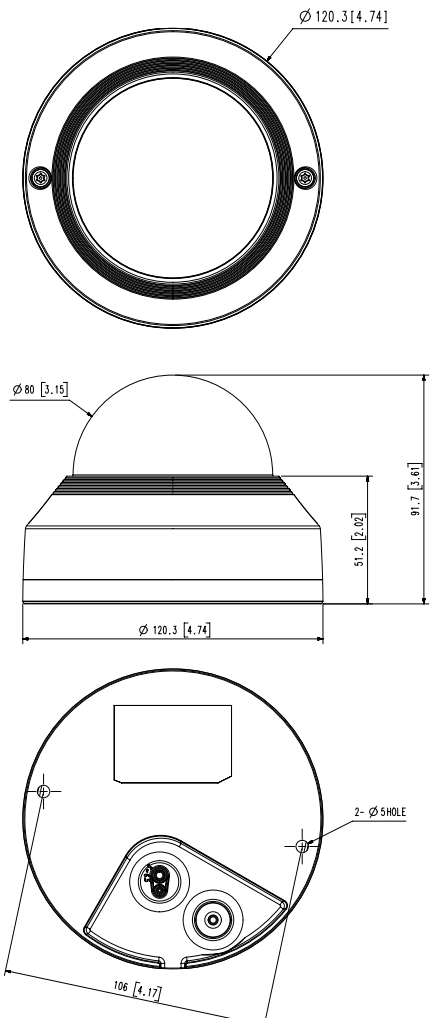
Unit : mm [inch]



PRODUCT OVERVIEW(QNV-8010R/8020R/8030R/8080R)

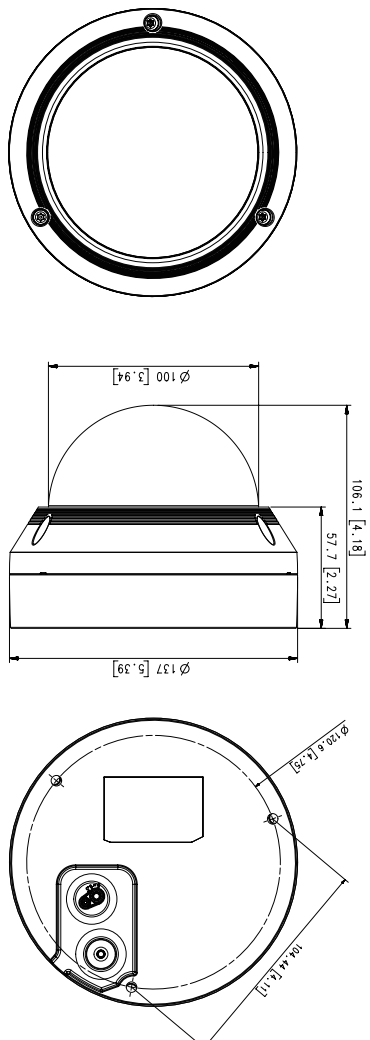
QNV-8010R/8020R/8030R

Unit : mm [inch]



QNV-8080R

Unit : mm [inch]



TROUBLESHOOTING

PROBLEM	SOLUTION
When an Windows 10 user accesses the web viewer through Chrome or Firefox, the sound volume of microphone changes periodically.	• This is what happens when microphone driver has been set to Realtek driver. Install the High Definition Audio device (Windows Default Driver) or the third party driver as the microphone driver.
No video is displayed when accessing the plug-in free webviewer on Safari via HTTPS.	• On the authentication popup window prompted when initially accessing https, click "View Authentication Certificate" and select the "Always trust when connecting to the designated webviewer IP" check box. • If the webviewer continues failing to display a video after you select "Next" on the message window below, press the command key + Q to exit the Safari browser, access again and follow the procedures stated above.
I can't access the camera from a web browser.	• Check to make sure that the camera's Network settings are appropriate. • Check to make sure that all network cables have been connected properly. • If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem. • If the camera is connected to a Broadband Router, verify that port forwarding is properly configured.
Viewer got disconnected during monitoring.	• Connected Viewers become disconnected upon any change to camera or network configurations. • Check all network connections.
No video is displayed when I newly access the webviewer or connect streaming to the client.	• The maximum number of profiles available is 3. The connection may be lost if you use 4 or more of profiles. Example) If you access MJPEG, H264 and H265 and then access with a different profile, the connection will be lost.
The camera connected to the network is not detected in the IP installer program.	• Turn off the firewall settings on your PC and then search the camera again.
Images overlap.	• Check whether two or more cameras are set to a single multicast address instead of different addresses. If a single address is used for multiple cameras, the images may overlap.

PROBLEM	SOLUTION
No image appears.	• If the transmission method is set to multicast, check whether there is a router that supports multicast in the LAN the camera is connected to.
Voice is not recorded even though audio input settings are configured.	• You must enable the <Audio In> check box in <Basic> - <Video Profile>.
<Motion detection> of <Analytics> is set to <Enable>, but no notification e-mail reaches me even when an analysis event had occurred.	• Verify the settings in the following sequence: A. Check <Data & Time> settings. B. The <Motion detection> should be set to <Enable>. C. Check if the <E-mail> option of <Event setup> menu is checked to use.
Cannot record into the Micro SD memory card.	• Check if the memory card is defective.
Micro SD memory card is inserted but the camera does not operate properly.	• Check if the memory card is inserted in the proper direction. Operation of memory card that is formatted by other devices is not guaranteed with this camera unit • Format the memory card again in <Setup> → <Event> → <Storage> menu.
Cannot record in the NAS.	• Confirm that the information registered in the NAS is correct.
It reports that NAS setting has failed.	• Confirm that the IP address of the NAS is valid. • Confirm that the ID/password of the NAS is valid. • Confirm that you can access the folder designated as the default folder using the ID of the NAS. • Confirm that the NAS SMB/CIFS items are unchecked. • Confirm that the NAS IP address and the camera IP address are in the same format. ex) The NAS & camera subnet mask initial value is 255.255.255.0. If the IP address is 192.168.20.32 then the NAS IP address should be in the range of 192.168.20.1~192.168.20.255. • Check whether you tried to access as another user without formatting the default folder saved or used. • Confirm that you used recommended NAS equipment.

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GPL SW

Component Name	License	URL
Base Kernel	GPL 2.0	
Busybox	GPL 2.0	http://www.busybox.net/downloads/snapshots
iproute2-4.3.0	GPL 2.0	
iptables-1.4.21	GPL 2.0	http://ftp.netfilter.org/pub/iptables
ethtool-4.2	GPL 2.0	
mtd-1.5.2	GPL 2.0	ftp://ftp.infradead.org/pub/mtd-utils
mii-diag-2.11	GPL 2.0	
rp-pppoe-3.11	GPL 2.0	http://www.roaringpenguin.com/pppoe/
wpa_supplicant-2.5	GPL 2.0	
bash-4.3.30	GPL 3.0	
zeroconf	GPL 2.0	

LGPL SW

Component Name	License	URL
gLibc	LGPL 2.0	
Inetutils	LGPL 3.0	
neon-0.29.6	LGPL 2.0	http://www.webdav.org/neon/

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Version 2, June 1991

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The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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established by T-Engine Forum
on January 23, 2004
revised on June 17, 2004
revised on December 21, 2006
revised on March 24, 2009

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1. This License Agreement sets forth copyrights and the terms and conditions of use applicable to the source code of T-Kernel distributed by T-Engine Forum and any derivative work created therefrom.

Article 2. Definition

1. "T-Kernel" means a real-time operating system controlled and distributed by T-Engine Forum on behalf of the copyright holder thereof.

2. "Source Code" means a source program, including related comments and documentations, for the T-Kernel and the Ported Source Code defined in Article 2.8 which is registered with T-Engine Forum.

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6. "T-Engine Hardware" means the hardware which is manufactured in accordance with the T-Engine Hardware specifications or the µT-Engine Hardware specifications issued by T-Engine Forum, and registered with T-Engine Forum.

7. "Similar Hardware to T-Engine Hardware" means any hardware (including software which emulates hardware) other than that defined in Article 2.6 above, on which the T-Kernel can be operated.

8. "Ported Source Code" means a source program produced from the Source Code by modifying only its Hardwaredependent Part and/or Compiler-dependent Part to enable it to be operated on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware. The Ported Source Code which is registered with T-Engine Forum shall be included in the Source Code.

9. "Modified Source Code" means a source program modified from the Source Code for the purpose of improving its performance, increasing or decreasing its function, and the like. The Ported Source Code shall not be included in the Modified Source Code.

10. "Binary Code" means an executable code form which is created by compiling programs, which include all or part of the Source Code or the Modified Source Code.

11. "Derivative Work" means the Modified Source Code or the Binary Code.

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16. "Patch for Modification" means a difference, program, system, or the like in order to create the Modified Source Code from the Source Code or the Binary Code thereof.

17. "Vicarious Execution of Patch Processing" means vicarious execution service to create the Modified Source Code applying the Patch for Modification to the Source Code or the Binary Code thereof.

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2. to transmit a work to the general public through the Internet communication, broadcasting, and the like automatically in response to a request from the public; and

3. to distribute a copy of a work to the general public or a large number of specific persons.

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2. to run the Source Code provided by T-Engine Forum hereunder for its own research, development and the like.

3. to run the Source Code modified in accordance with the provision of Article 4.3 (1) above for its own research, development and the like.

4. to distribute the Binary Code created from the Source Code provided by T-Engine Forum hereunder or from the Source Code modified in accordance with the provision of Article 4.3 (1) above.

4. In accordance with the license granted under Article 4.1 above, the System Developer may perform the following acts:

1. to perform any and all acts set forth in the Article 4.3 above.

2. to develop and manufacture the Embedded Product containing the Binary Code, and, whether with or without payment, provide the End User with the same and make the Binary Code available to the End User on the Embedded Product.

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2. The Distributor of Modification may create the Modified Source Code based on the Source Code provided by T-Engine Forum and the Patch for Modification to be applied to create such Modified Source Code from the Source Code.

3. The Distributor of Modification shall, prior to the distribution, inform T-Engine Forum of and register a name and description of the Modified Source Code in such a way as specified by T-Engine Forum.

4. The Distributor of Modification shall determine the name of the Modified Source Code subject to the rules separately established by T-Engine Forum and publish an appropriate notice as required by the rules on the Patch for Modification and the Modified Source Code.

5. The Distributor of Modification may distribute the Modified Source Code to a third party, whether with or without payment, provided that the Distributor of Modification shall take the necessary measures to prohibit the third party from making the re-Distribution of the Modified Source Code.

6. Developer with the Patch for Modification. Provided, however, that the Distributor of Modification shall be obligated to confirm that the System Developer is the Source Code User duly licensed under Article 4.1.

7. The Distributor of Modification may perform the Vicarious Execution of Patch Processing for the System Developer.

8. The System Developer shall not distribute the Modified Source Code in further modified form to any third party as a stand-alone software product.

9. The System Developer may, under the same obligation as imposed in Article 4.5, make the Embedded Product available for the End User through use of the Patch for Modification distributed by the Distributor of Modification or the Derivative Works obtained through the Vicarious Execution of Patch Processing.

Article 6. Distribution and Registration of the Ported Source Code

1. The Source Code User and the System Developer may, whether with or without charge, distribute to any third party only the following parts of the Ported Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware:

1. The Hardware-dependent Part and/or Compiler-dependent Part; provided that the Source Code User and the System Developer shall inform T-Engine Forum of, and T-Engine Forum may publish, a method for distributing said Part(s) to third parties.

2. The Header File; provided that the Header File shall be distributed together with the Binary Code of the Ported Source Code.

2. Any member of T-Engine Forum may request T-Engine Forum to register and distribute, as an original source code for T-Kernel, the Ported Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.

3. Any member of T-Engine Forum who requests the distribution mentioned in the preceding paragraph shall accede to the following conditions:

1. The member shall confirm that the object hardware is the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.

2. The member shall provide T-Engine Forum with a complete set of operational environment for the object hardware and T-Kernel free of charge when requesting the distribution.

3. The member shall submit test results of the Ported Source Code to T-Engine Forum when requesting the distribution.

4. In the event that T-Engine Forum accepts the request mentioned in Article 6.2, T-Engine Forum shall register and distribute the Ported Source Code as the Source Code for T-Kernel. Provided, however, that the Ported Source Code may be treated in the same way as the Modified Source Code until the time of registration hereunder.

5. The provision set forth in Article 3 shall apply to the Ported Source Code registered in accordance with this Article.

Article 7. Use for Other Purpose

1. Any use of the Source Code, the Modified Source Code or the Ported Source Code other than those stipulated in Articles 4, 5 and 6 shall be subject to the prior approval of T-Engine Forum.

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3. Any legal dispute which may arise in relation to any breach of this License Agreement shall be subject to the exclusive jurisdiction of the Tokyo District Court.

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Iperf performance test

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files http://www.ietf.org/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

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