

Network Camera

Installation Manual

Before operating the unit, please read this manual thoroughly and retain it for future reference.

SNC-VM772R

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About the Manuals

Safety Regulations (supplied)

The Safety Regulations describes the secure usage of camera. Be sure to read it.

Installation Manual (this document)

This Installation Manual describes the names and functions of parts and controls of the Network Camera, gives connection examples and explains how to set up the camera. Be sure to read the Installation Manual before operating.

User's Guide/Application Guide/SNC toolbox mobile Application Guide (Web)

The User's Guide describes how to set up the camera and how to control the camera via a Web browser.

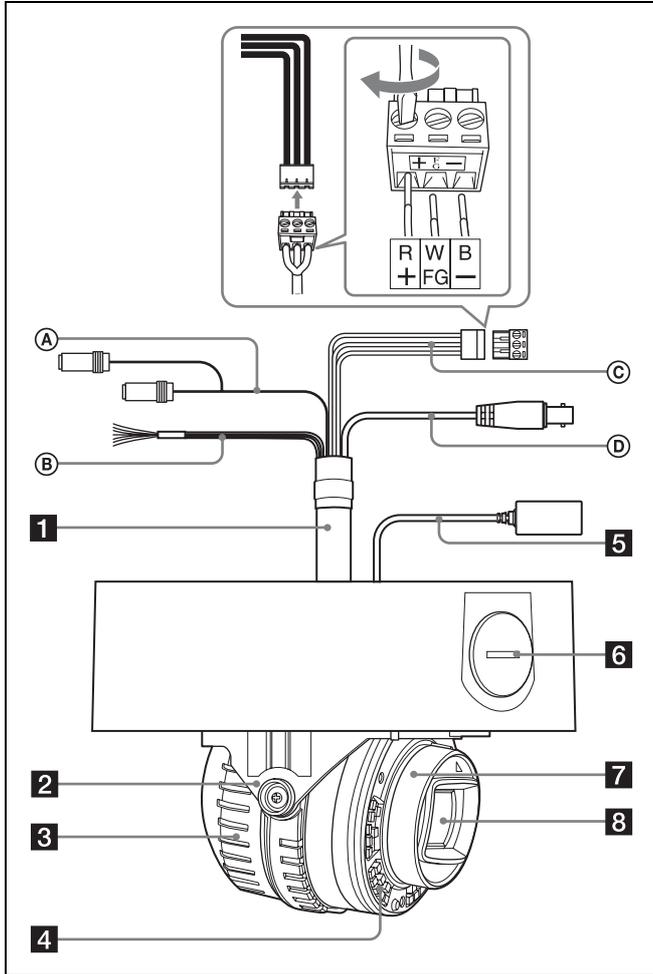
These guides describe the following methods:

- How to control the camera via a web browser
- How to setup the camera
- How to adjust the view angle of the camera using a smartphone or tablet

After installing and connecting the camera correctly following the instructions in the Installation Manual, operate the camera by referring to these guides.

Location and Function of Part

Side



The figure shows the camera without the dome casing.

1 Multi connector cable (supplied)

Not connected to the camera at the factory.

Note

Using a device other than the recommended devices may cause a failure or malfunction.

A Audio cable

The connector with the longer cable (SP) is used for the line output connector, and the shorter cable (MIC) is used for the microphone/line input connector.

Switch the microphone input and the line input in the **Video/Audio** menu.

For details of the settings, refer to the User's Guide.

- SP terminal (minijack, monaural)
Not used with this unit.

- MIC terminal (minijack, monaural)
Connect a commercially available microphone. This jack supports pluginpower microphones.

B I/O (Input/Output) cable

This cable is provided with two sensor inputs and two alarm outputs.

The wires of the cable control the following signals.

Color of wire	Name
Red	Sensor In 1+
White	Sensor In 2+
Black	Sensor In – (GND)
Yellow	Alarm Out 1+
Brown	Alarm Out 1–
Green	Alarm Out 2+
Blue	Alarm Out 2–

- ◆ For details on each function and required settings, see the User's Guide.

- ◆ For the wiring, see "Connecting the I/O Cable" on page 13.

C Power input cable (supplied and connected to the camera at the factory)

Connect this cable to a 24 V AC or 12 V DC power supply system.

You can screw an extension cable in the connector tip attached at the end of the cable. When you use the power input cable, connect GND to the center of the 3-pin connector (FG).

D BNC cable

Not used with this unit.

2 Base (PAN)

3 Camera block

4 Infrared LED

Irradiates infrared light.

Notes

- Do not look at the infrared LED for a long time.
- Images may be dark if irradiated at a high temperature environment.

5 LAN cable (RJ-45) (supplied and connected to the camera at the factory)

Connect this cable to a hub or computer on the 10BASE-T or 100BASE-TX network using a commercially available network cable (UTP, category 5).

6 Side conduit hole ($\frac{3}{4}$ inches NPT or M27 (2.0 mm ($\frac{3}{32}$ inches)-pitched, hole diameter \varnothing 27 mm (1 $\frac{1}{8}$ inches)))

Connect a pipe to this hole. There is a conduit hole on the side of the camera unit. The conduit hole cover is installed in the side conduit hole at the factory.

Remove the cover as needed and connect the pipe to the hole.

An M25 cable gland can be connected to the hole by removing the nut inside the camera unit.

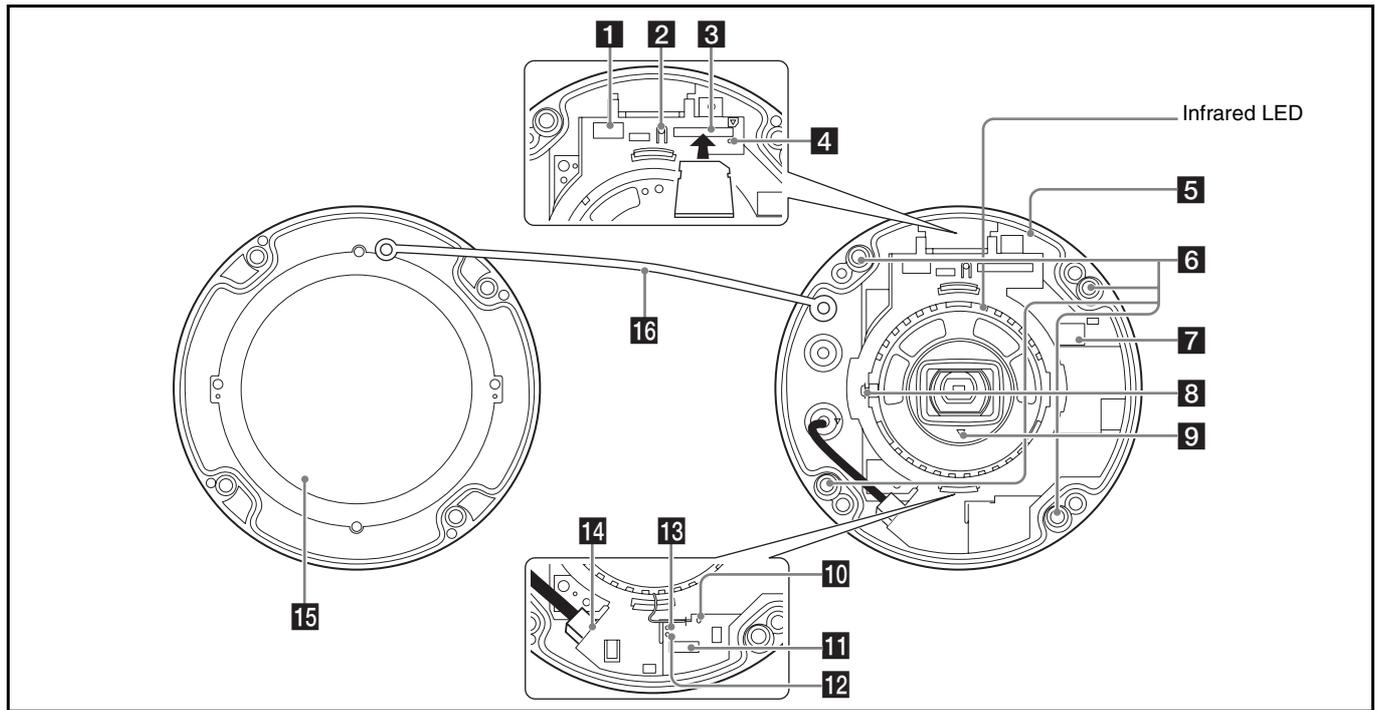
Note

Take care not to trap the cables between the camera and the ceiling or the wall. If the cable is trapped, it may cause a fire or electric shock due to breaking.

7 Camera head

8 Lens

Inside



1 Connector dedicated to WLAN (Wireless LAN terminal)

Attach a separately sold Sony product; USB Wireless LAN Module IFU-WLM3 (hereafter WLAN module). Use the module to view the angle adjustment when installing the camera.

Notes

- When the WLAN module is mounted, the wired LAN is not available.
- Using a device other than the specified devices may cause a failure or malfunction.
- Do not attach the dome casing while attaching the module to the connector.
- When using WLAN, use the camera at an outside air temperature between 0°C to 40°C.

2 SD OFF switch

By pressing the switch, the SD memory card can safely be removed. Remove the card after the SD MOUNT indicator goes off.

Notes

- The card may be damaged if you remove it while the indicator is on.
- If you press the SD OFF switch while writing to the SD memory card, the data written just before could be lost.

3 SD card slot

This slot is used for separately sold SD memory cards. Image data in the camera can be recorded to a memory card by inserting it into the slot. Align the notch of the memory card with the mark, and gently insert the memory card to the slot until it clicks into place.

This unit is compatible with the memory cards of SDXC and SDHC standards only.

Note

For inquiries regarding verified SD memory cards, contact your authorized Sony dealer.

4 SD MOUNT indicator

When mounting the SD memory card, the indicator lights up.

5 Camera unit

6 Camera unit mounting screws (four positions)

Make sure to tighten the screws securely when installing the camera.

7 24 V ~ / 12 V = (power input) connector

Connect the power input cable in the supplied multi connector cable.

8 Camera block fixing screw (tilt) (one position)

First, point the camera block in the desired direction, then tighten the screw to secure in place.

9 Δ TOP mark

Indicates the image direction.

10 Reset switch

To reset the camera to the factory default settings, hold down this switch with a pointed object and supply power to the camera.

11 AUDIO EXT CTRL (external control input/output) connector

Connect the AUDIO and I/O cables in the supplied multi connector cable.

12 NETWORK indicator (Green/Orange)

The indicator lights up or flashes when the camera is connected to the network.

The indicator is off when the camera is not connected to the network.

13 POWER indicator (Green/Orange)

When power is supplied to the camera, the camera starts checking the system.

If the system is normal, this indicator lights up in green.

When only the built-in heater is working (the system is stopped), the indicator lights up in orange.

14 LAN network port (RJ-45)

Connect a commercially available network cable (UTP, category 5) to communicate with a network or PoE* system.

For details on connection, see the Instruction Manual of the power supply equipment.

(*PoE + stands for Power over Ethernet. PoE is compliant with IEEE802.3af)

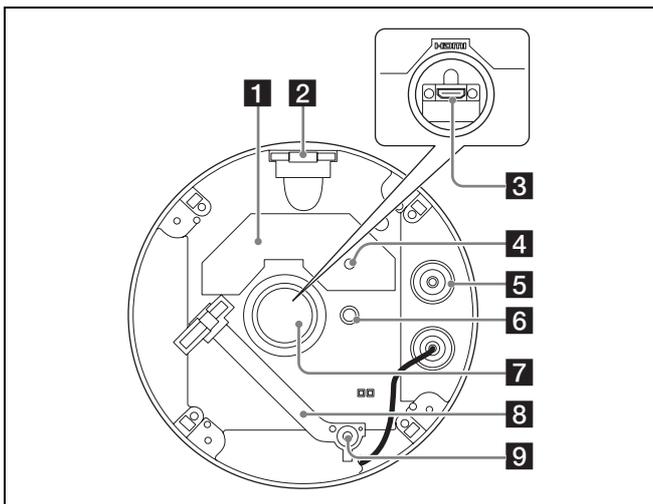
15 Dome casing

The dome cover is made of polycarbonate. A waterproof rubber gasket is provided on the joint surface to the unit.

16 Safety cord

This cord prevents the dome casing from falling off the unit.

Bottom



1 Rating label

Shows the name of this camera and its electric rating.

2 Nut ($\frac{3}{4}$ inches NPT or M27 (2.0 mm ($\frac{3}{32}$ inches)-pitched))

3 HDMI connector

Connect the commercially available HDMI cable.

Notes

- To prevent the HDMI cable disconnecting from the camera (either by its own weight or an external force), it is recommended to secure it with commercially available retaining parts, etc.
- When using the HDMI cable, use it at an outside temperature between 0 °C to 50 °C.

4 Vent filter

Note

Do not damage the filter and do not cover the hole of the filter.

5 Sealing rubber

When attaching the supplied multi connector cable, remove the rubber.

6 GND

Ground the camera when you install it.

Tip

When connecting the GND from the power input cable, the GND connection from the GND screw is not necessary.

Note

Use the supplied Screws \oplus (M4 \times 8)

7 Terminal rubber

By removing the terminal rubber, you can confirm the HDMI connector. When you use the HDMI connector, remove the rubber.

Note

When you remove the terminal rubber to use the HDMI connector, the water-proof capability of the camera is lost. Do not use the camera outdoors.

8 Fall-prevention strap

Connect to the brackets and prevent the camera from falling.

9 Screw

Preparations

Change connections and cable wiring

The supplied LAN cable is connected to the camera at the factory.

To change connections and cable wiring to suit your requirements, perform the following steps.

◆ When you route the cables from the side of the camera unit, see “c) If you use the side conduit hole”.

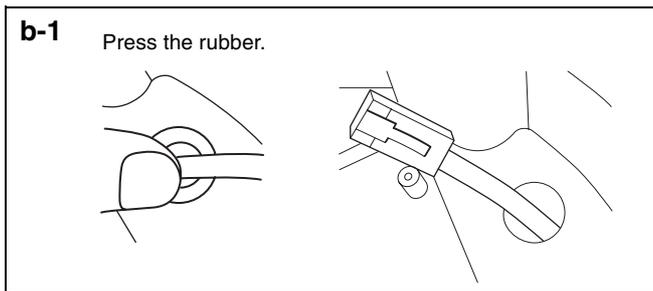
a) If you use the camera with its factory setting

The preparation is completed.

b) If you use a commercially available LAN cable

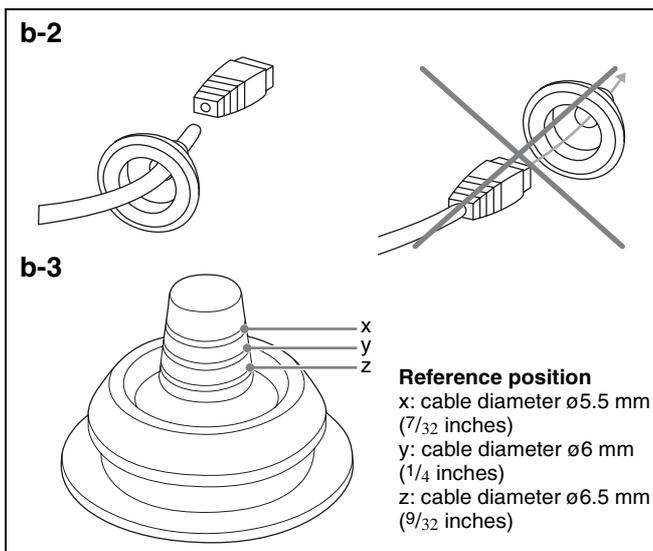
Use a LAN cable with a cable diameter between $\phi 5.5$ mm ($7/32$ inches) to $\phi 6.5$ mm ($9/32$ inches).

- ① Remove the dome casing. (See “Installing the Camera - Step 1” on page 9.)
- ② Remove the supplied LAN cable. (b-1)



- ③ Attach the sealing rubber to the LAN cable. (b-2)

Cut-off the supplied sealing rubber at the proper position, and insert the cable into the rubber. (b-3)



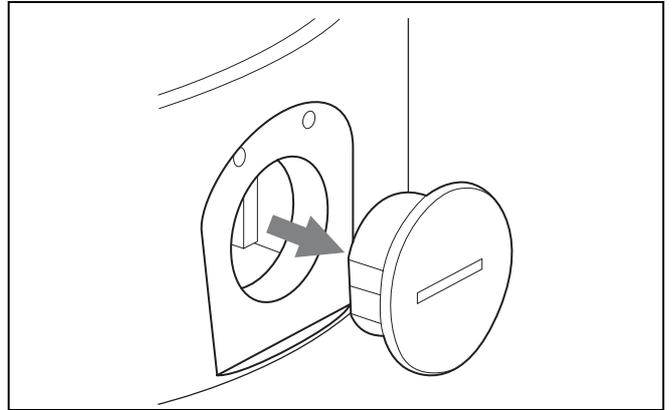
Notes

- Do not pull the cable strongly. The cable may disconnect from the connector.

- Waterproof the connection part between the cable and the sealing rubber.

c) If you use the side conduit hole

- ① Remove the side conduit hole cover.



Note

When using a flanged pipe or cable gland, refer to “Important precautions” (page 12).

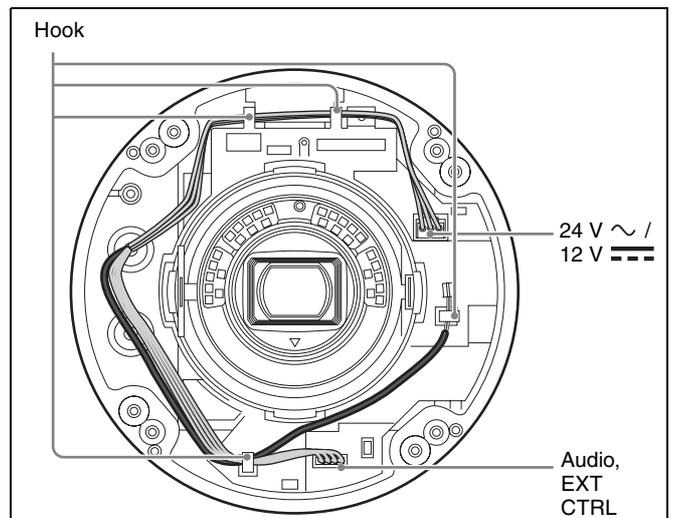
d) If you use a multi connector cable (supplied)

When you use a cable other than the network cables, use the multi connector cable (supplied).

- ① Remove the dome casing. (See “Installing the Camera - Step 1” on page 9.)
- ② Remove the sealing rubber of the camera.
- ③ Attach the multi connector cable (supplied) properly to the hole which has been covered with the sealing rubber.

Note

Water may enter if not attached properly.



- ④ Connect the AC/DC and 10Pin (Audio, EXT CTRL) cables to the connectors, and store cables in the hooks.

Installation

WARNING

- If you attach the camera in the height such as the wall or the ceiling, etc., entrust the installation to an experienced contractor or installer.
- If you install the camera at a height, ensure that the installation location and its material are strong enough to withstand a weight of 10 kg (22 lb 0.74 oz) or more, and then install the camera securely. If the ceiling is not strong enough, the camera may fall and cause serious injury.
- To prevent the camera from falling, make sure to attach the supplied fall-prevention strap.
- If you attach the camera to the ceiling, check periodically, at least once a year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.
- Install the bracket and the camera unit to a clean, flat, and level location that has no deformities. Otherwise, installation may not be possible.

Mounting screws

The supplied bracket is provided with eight $\varnothing 4.5$ mm ($3/16$ inches) mounting holes. Install the bracket on a ceiling or wall by tightening screws through four mounting holes (83.5 mm ($3\ 3/8$ inches) or 85.7 mm ($3\ 3/8$ inches)-pitched).

The required mounting screws differ depending on the installation location and its material. (Mounting screws are not supplied.)

Steel wall or ceiling: Use M4 bolts and nuts.

Wooden wall or ceiling: Use M4 tapping screws. The panel thickness must be 15 mm ($19/32$ inches) or more.

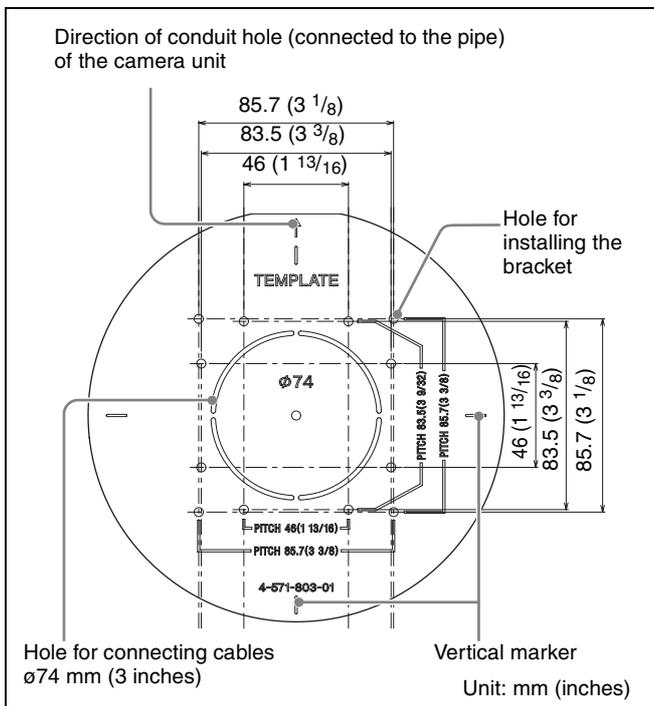
Concrete wall: Use anchors, bolts and plugs suitable for concrete walls.

Junction box: Use screws to match the holes on the junction box.

WARNING

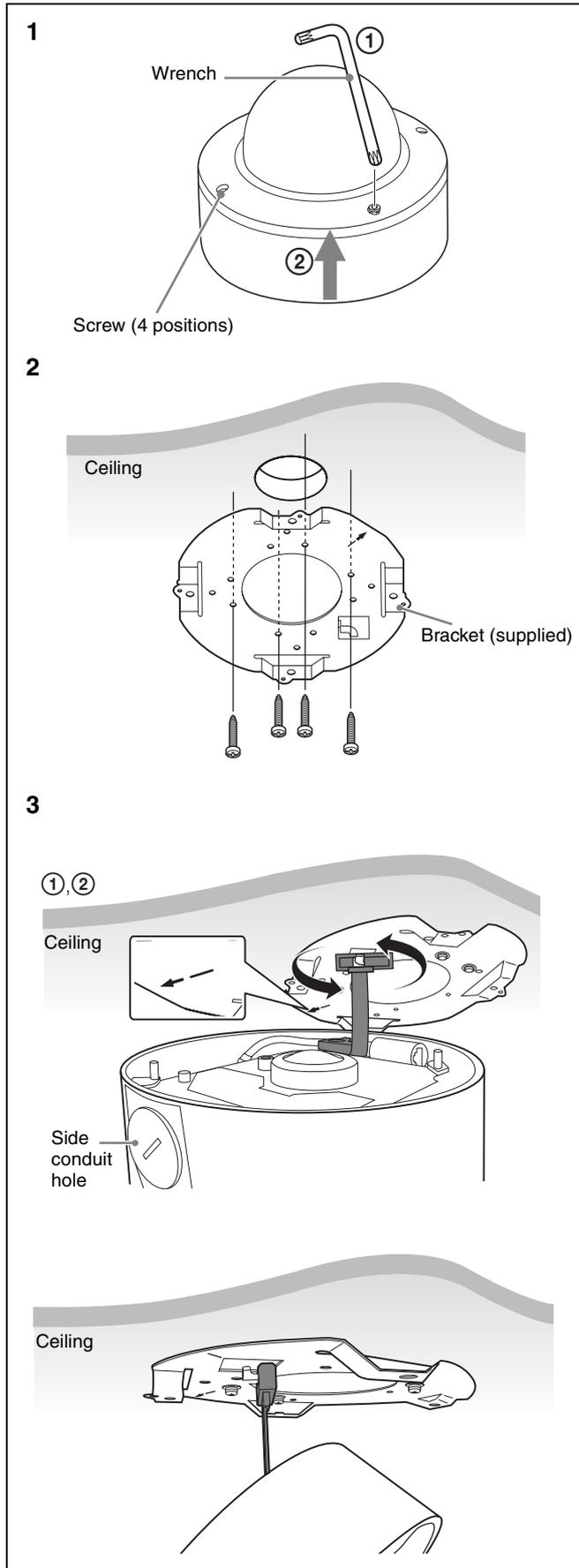
The required mounting screws differ depending on the installation location and its material. If you do not secure the camera with the appropriate mounting screws, the camera may fall off.

Deciding the Installation Location of the Camera



After deciding the direction in which the camera will shoot, make a hole of the appropriate size (within $\varnothing 74$ mm (3 inches)) for the connecting cables using the supplied template. Then, determine the four mounting hole positions to install the bracket. The “↑” mark indicates the direction of the conduit hole (connected to the pipe) of the camera unit.

Installing the Camera



1 Remove the dome casing.

- ① Loosen the screws with the wrench (supplied).
- ② Pull up and remove the dome casing. When the screw catches on the screw hole, pull up the screw.

2 Install the supplied bracket on the ceiling or wall.

“↑” mark indicates the direction of the conduit hole (connected to the pipe) of the camera unit. For the screws to be used, refer to “Mounting screws” (page 8).

3 Attach the fall-prevention strap to the bracket.

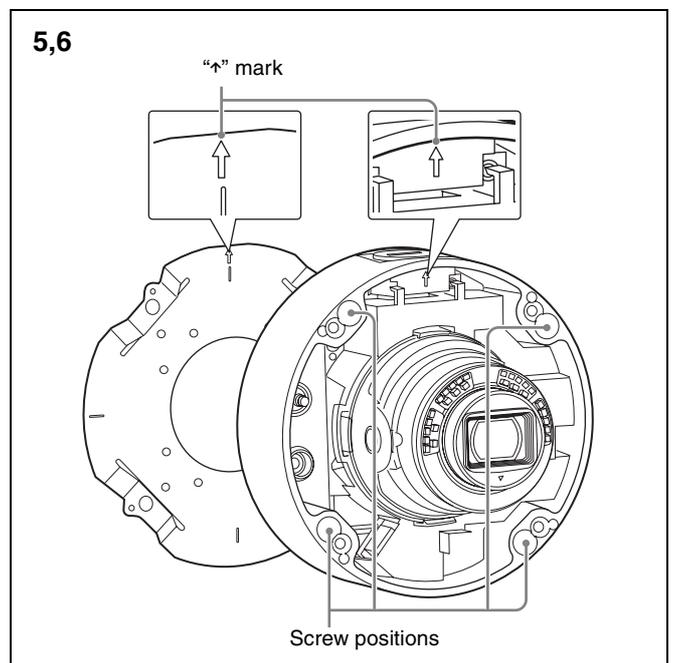
- ① Hang the strap matching the position between the bracket and the conduit hole as shown in figure. 3.
- ② Rotate the strap 90 degrees to enable the fall-prevention function.

4 Wire the cables on the bottom.

Wire the supplied LAN cable.

5 Attach the camera unit to the bracket temporarily.

Align the “↑” mark of the bracket and “↑” mark of the camera unit, and insert the camera unit into the bracket until it clicks into place. The camera unit is temporarily attached to the bracket, and the attached state is as it is even if you release your hands from the camera unit.



Note

The camera unit is temporarily attached. The temporary attachment may come off due to vibrations or shocks. After attaching temporarily, secure the camera unit to the bracket with the camera unit mounting screws immediately.

- 6 Attach the camera unit to the bracket with the camera unit mounting screws (four screws).

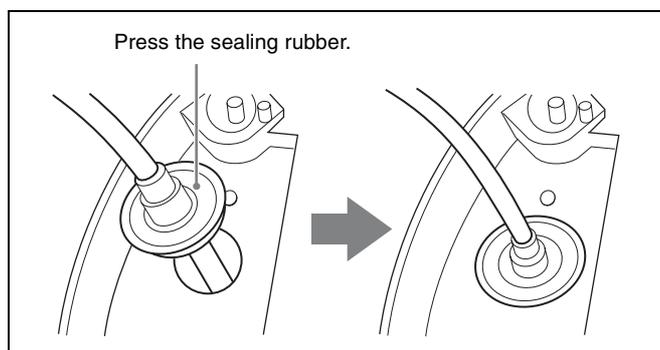
Tighten the four mounting screws attached to the unit, and fix the camera unit to the bracket.

Note

Water may enter if not attached properly.

Installing the Camera (if you use a commercially available LAN cable)

- 1 Perform the steps 1 to 3 of “Installing the Camera” (page 9).
- 2 Adjust the LAN cable to the camera unit.



Attach the LAN cable with the sealing rubber to the hole with the □ mark of the camera unit.

- 3 Perform the steps 5 to 6 of “Installing the Camera” (page 9).
- 4 Cut the cable to a proper length and attach the network connector at the end of the cable.
- 5 Connect the cable to the network port.

Note

Water may enter if not attached properly.

Installing the Camera (If you use the conduit hole on the side)

- 1 Perform the steps 1 to 3 of “Installing the Camera” (page 9).
- 2 Wire the cables on the bottom.
 - ① Insert the cables to the pipe and conduit hole.
 - ② Wire the cables.
 - ③ Insert the pipe to the conduit hole.

- 3 Perform the steps 5 to 6 of “Installing the Camera” (page 9).

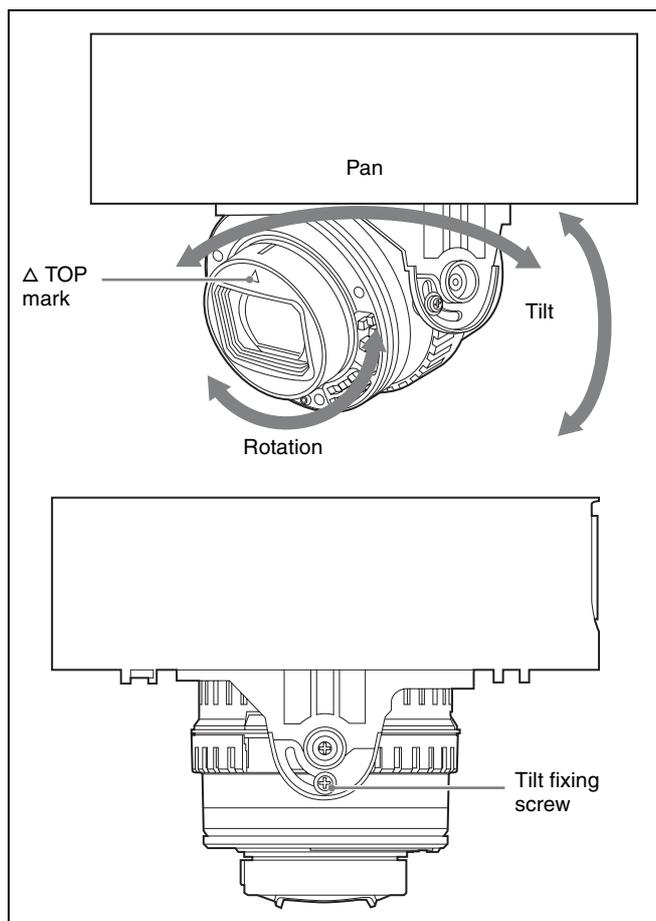
Note

When using a flanged pipe or cable gland, refer to “Important precautions” (page 12).

Installing the Camera (if you use a multi connector cable)

- 1 Perform the steps 1 to 3 of “Installing the Camera” (page 9).
- 2 Wire the cables on the bottom.
Wire the supplied LAN cable or multi connector cable as required.
- 3 Perform the steps 5 to 6 of “Installing the Camera” (page 9).

Adjustment of the Shooting Direction and Range



You can adjust the directions of pan, tilt, and rotation. There is no fixed screw for the pan and rotation directions. Δ TOP mark indicates the upper direction of the image. You can invert the image by using the setting menu.

- 1 Adjust the camera to turn the lens in the desired direction. (Pan/Tilt/Rotation)

Adjust the angle of view or focus while viewing the images, and decide the range in which the camera will shoot.

- 2 Tighten the tilt fixing screw.

Tighten the screw with the tightening torque that is $85 \text{ N}\cdot\text{cm} \pm 10 \text{ N}\cdot\text{cm}$.

Notes

- Tightening the tilt fixed screw with force more than specified may cause a damage or deformation of the screw.
- By attaching the dome casing to the camera, slight blurring may occur. In this case, perform the focus adjustment by using the system menu. For details, refer to "User's Guide".
- When attaching the dome casing, the case may be appear on the images depending on zooming, tilting or rotation. Distortion other than the specified optical area of the dome cover also may be appear on the images.

Adjustment using the SNC toolbox mobile

You can adjust the view angle easily by installing the SNC toolbox mobile to a smartphone or a tablet.

When the separately sold IFU-WLM3 is mounted to the camera, the following SSID is displayed in the Wi-Fi configuration of the smartphone. Select the SSID.

SNC-(MAC address of IFU-WLM3)

The default password is as follows:

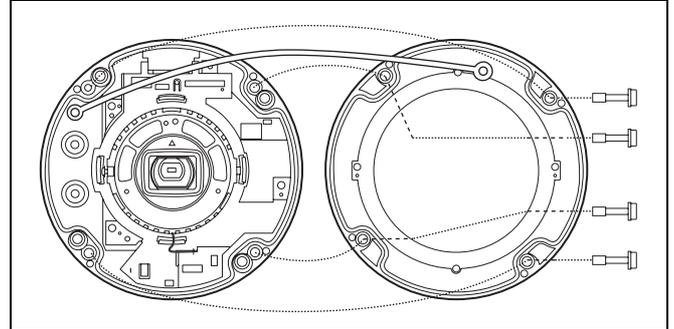
Password: T8qUDTUuFyb8a

For details, refer to the SNC toolbox mobile Application Guide on the Web site.

Attaching the Dome Casing

Fix the dome casing and the camera unit

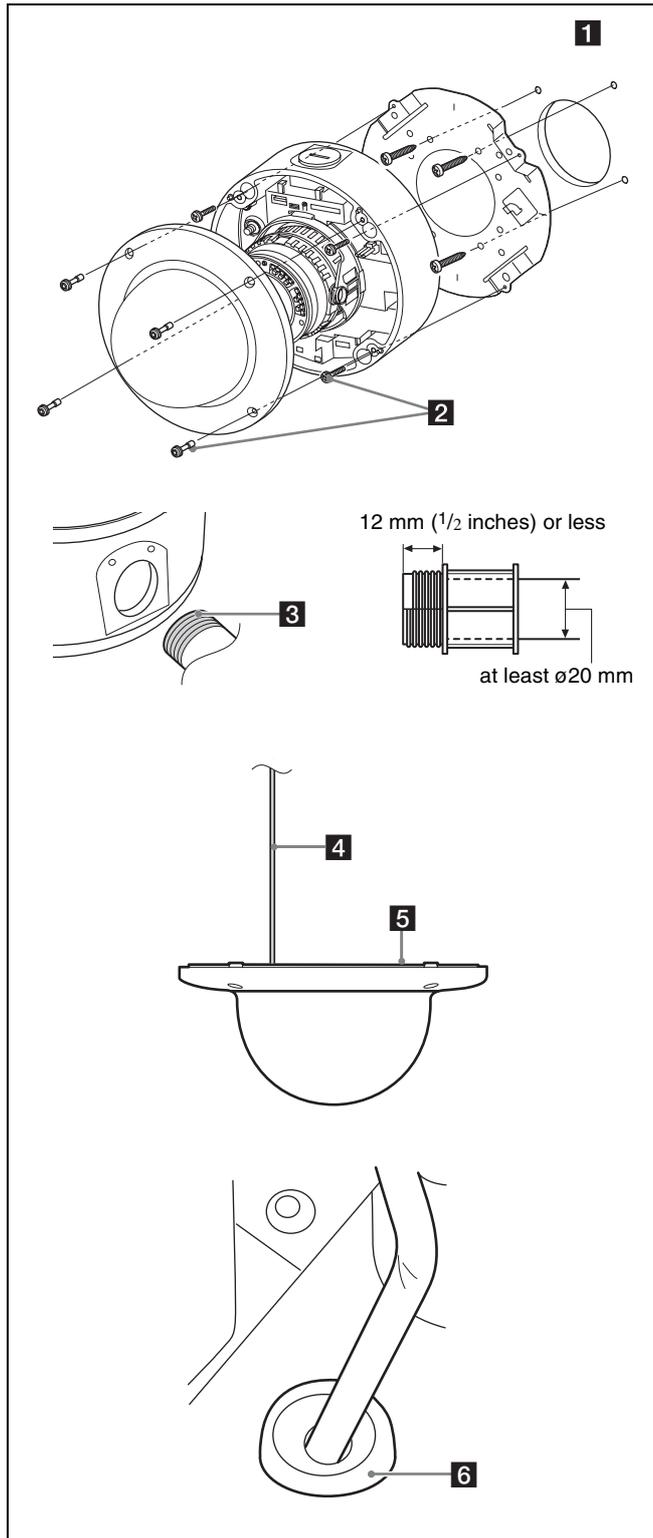
Align four screw holes on the dome casing with those on the camera unit, and tighten four dome casing fixed screws with the supplied wrench to secure the dome casing.



Note

Make sure the safety cord does not get caught between the dome casing and camera unit.

Important precautions



Despite the fact that this unit is rated IP66, this section includes important precautions to prevent any malfunction caused by condensation and/or water ingress. Read the precautions below thoroughly before installing the unit.

- Make sure to install the camera unit so that the surface of the connection cables (including connectors) does not water. Or waterproof should be performed properly. Otherwise, there may be a risk that water enters the unit through these cables.
- Install the bracket and the camera on an even ceiling or wall, etc. (1)
- Install the camera properly, using the screws, while referring to the Installation Manual. (2)
- Use a pipe/joint of $\frac{3}{4}$ inches-14 NPT or M27 (2.0 mm ($\frac{3}{32}$ inches)-pitched) with a thread length of 12 mm or less, and an internal diameter is at least $\varnothing 20$ mm ($\frac{13}{16}$ inches). (3)
- When connecting a cable gland to the side conduit hole, use the cable gland which has following conditions:
 - connectable to the side conduit hole with an opening of $\varnothing 27$ mm (1 $\frac{1}{8}$ inches)
 - a thread length of 12 mm ($\frac{1}{2}$ inches) or less
 - waterproof performance suited to the installation environment

Notes on assembly

- Make sure that do not get caught the fall-prevention cord and cables between the dome casing and camera unit. (4)
- Before attaching the dome casing to the camera unit, make sure the waterproof rubber gasket is clean and fits in the groove of the joint surface properly. (5)
- When using a rubber gasket or the multi connector cable, make sure the rubber portion is clean and attach to the camera unit properly. (6)

Connection

Connecting to the Network

Connect the LAN port of the camera to a router or hub in the network using a commercially available network cable (not supplied).

Connecting the Power Source

There are three ways to supply the power source to this camera, as follows.

- 12 V DC
- 24 V AC
- Power supply equipment pursuant to IEEE802.3af (PoE* system)

* PoE means Power over Ethernet.

Notes

- Do not turn off the camera immediately after turning it on. Wait for at least five minutes before turning off the camera.
- Do not connect the power input cable if power is supplied by a PoE system.

Connecting to 12 V DC or 24 V AC source

Connect the power input cable of the camera to a 12 V DC or 24 V AC source.

- Use a 12 V DC or 24 V AC source isolated from 100 to 240 V AC. Each usable voltage range is as follows. (Assured range of the voltage the camera is receiving (receiving-end voltage))
 12 V DC: 10.8 V to 13.2 V
 24 V AC: 19.2 V to 28.8 V
 - In the USA, The product shall be powered by a UL Listed Class 2 Power Supply Only.
 - In Canada, The product shall be powered by a CSA certified Class 2 Power Supply Only
- Use UL cable (VW-1 style 10368) for these connections.

Recommended cable

When using 12 V DC output power supply:

CABLE (AWG)	#14	#16	#18
Max. length (m)	50	30	20

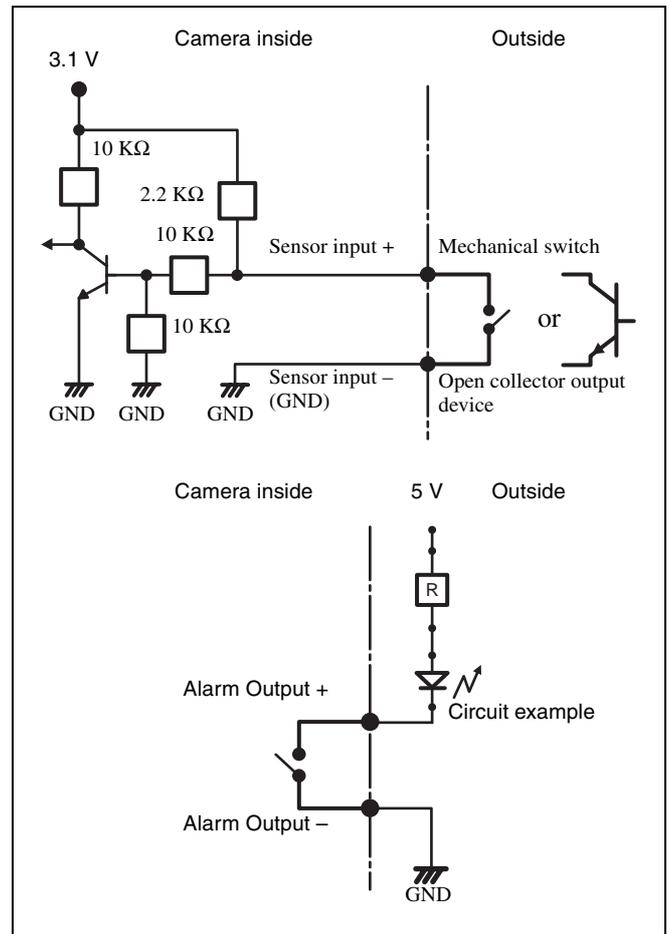
When using 24 V AC output power supply:

CABLE (AWG)	#20	#22	#24
Max. length (m)	106	67	42

Connecting to the power supply equipment pursuant to IEEE802.3af

The power supply equipment pursuant to IEEE802.3af supplies the power through a commercially available network cable. For details, refer to the Instruction Manual of the equipment.

Connecting the I/O Cable



Assigning the IP address

1 Download the installer of “SNC toolbox” in the appropriate folder from the download site.

2 Install the SNC toolbox.

Unzip the ZIP file of the downloaded installer.
Double-click “SncToolbox_Setup.exe.”
For details on installing and use refer to the Application Guide.

3 Assign an IP address to the camera.

Assign an IP address to the camera using the installed SNC toolbox.
For details, see “Using SNC toolbox” - “Assign an IP address” in the Application Guide.

Tip

SNC toolbox stands for Sony Network Camera toolbox.

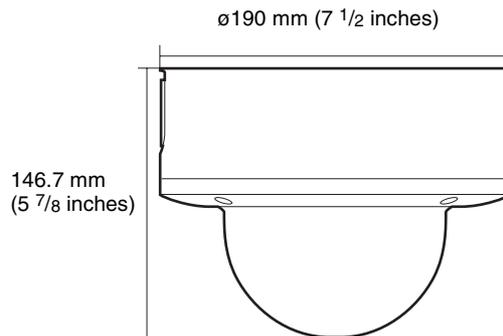
Specifications

SNC-VM772R	
Camera	
Image Sensor	1.0-type progressive scan Exmor R CMOS sensor
Number of Effective Pixels	Approx. 20 Megapixels
Sync System	Internal synchronization
Minimum Illumination (30 IRE)	Color: 0.06 lx (F1.8, 1/30 s) B/W: 0 lx (IR LED On, F1.8, 1/30 s)
Horizontal Viewing Angle	70.7° to 27.5° (16:9 aspect ratio) 76.6° to 29.8° (3:2 aspect ratio)
Vertical Viewing Angle	39.9° to 15.7° (16:9 aspect ratio) 51.5° to 20.1° (3:2 aspect ratio)
Focal Length	f = 8.8 mm to 25.7 mm
F-Number	F1.8 (Wide) to F2.8 (Tele)
Minimum Object Distance	300 mm
Pan/Tilt/Rotation Angle (manual)	Pan: ±192° Tilt: -10° to +81° Rotation: -100° to +100°
IR Illuminator	Wave length (typical): 850 nm, IR LED: 30 pieces)
IR Working Distance	50 m (30 IRE) 164 ft. (30 IRE)
Video	
Compression Format	H.264 (High/Main Profile), JPEG H.264 (B-picture) is supported for 3840 × 2160 and 2880 × 2160 resolution.
Maximum Frame Rate	H264: 30 fps (3840 × 2160)/10 fps (1920 × 1080) JPEG: 2.5 fps (5472 × 3648)
Audio	
Compression Format	G.711 (bit rate: 64 kbps, sampling frequency: 8 kHz) G.726 (bit rate: 40, 32, 24, 16 kbps, sampling frequency: 8 kHz) AAC-LC (bit rate: 64 kbps, sampling frequency: 16 kHz) AAC-LC (bit rate: 128 kbps, sampling frequency: 48 kHz)
Interface	
Digital Video Output	HDMI (type A) ×1
Microphone Input	Mini jack (monaural, 2.2 kΩ, plug-in-power)
Line Input	Mini jack (monaural)
Network Port	10BASE-T/100BASE-TX (RJ-45)
Alarm Input (Sensor Input)	×2, make contact, break contact
Alarm Output	×2, Max. 12 V AC/24 V DC, 0.4 A (solid-state relay outputs electrically isolated from the camera)
Wireless LAN Terminal	Yes
Card Slots	SD ×1

SNC-VM772R**General**

Power Requirements	IEEE 802.3af compliant (PoE) Class 3, 12 V DC \pm 10 %, 24 V AC \pm 20 %, 50/60 Hz
Power Consumption	Max. 12.95 W
Operating Temperature	-40 °C to +50 °C -40 °F to +122 °F
Storage Temperature	-20 °C to +60 °C -4 °F to +140 °F
Operating Humidity	20 % to 90 % (no condensation)
Storage Humidity	20 % to 80 % (no condensation)

Dimensions (Diameter \times Height)
[The values for dimensions are approximate.]



Mass	Approx. 1900 g Approx. 4 lb 3 oz
Supplied Accessories	Bracket (1), Template (1), Wrench (1), Screw (M4 \times 8) (1), Sealing rubber (1), Multi connector cable (1), Safety Regulations (1)
Optional Accessories	IFU-WLM3 (USB wireless LAN module)

Design and specifications are subject to change without notice.

Recommendation of Periodic Inspections

In case using this device over an extended period of time, please have it inspected periodically for safe use. It may appear flawless, but the components may have deteriorated over time, which may cause a malfunction or accident.
For details, please consult the store of purchase or an authorized Sony dealer.

Caution

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