

# Network Camera

## Installation Manual

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

## SNC-DH180/DH280

**IPELA** **Exmor™** **HD**

<http://www.sony.net/>

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## Owner's Record

The model and serial numbers are located on the bottom. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

## WARNING

**To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.**

### WARNING

This installation should be made by a qualified service person and should conform to all local codes.

### WARNING

A readily accessible disconnect device shall be incorporated external to the equipment.

### WARNING (for Installers only)

Instructions for installing the equipment on the ceiling or the wall: After the installation, ensure the connection is capable of supporting five times the weight of the equipment downwards.

### CAUTION

The rating label is located on the bottom.

### CAUTION for LAN port

For safety reason, do not connect the LAN port to any network devices that might have excessive voltage. The LAN port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1. Use IEEE802.3af standard compliant devices.

### Power Supply

#### Caution for U.S.A. and Canada

The SNC-DH180/DH280 operates on 24 V AC or 12 V DC. The SNC-DH180/DH280 automatically detects the power.

In the USA, this product shall be powered by a UL listed Class 2 Power Supply Only.

In Canada, this product shall be powered by a CSA Certified Class 2 Power Supply Only.

#### Caution for other countries

The SNC-DH180/DH280 operates on 24 V AC or 12 V DC. The SNC-DH180/DH280 automatically detects the power. Use a power supply rated 24 V AC or 12 V DC which meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.

#### For customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

#### For customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

#### For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.

The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

#### For the customers in Europe, Australia and New Zealand

### WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

In the case that interference should occur, consult your nearest authorized Sony service facility. This apparatus shall not be used in the residential area.

### ATTENTION

The electromagnetic fields at specific frequencies may influence the picture of the unit.

## Notes on Use

### Before Use

If you find condensation when you open the package, turn on the power after leaving it for about 60 minutes.

### Data and security

- You should keep in mind that the images or audio you are monitoring may be protected by privacy and other legal rights, and the responsibility for making sure you are complying with applicable laws is yours alone.
- Access to the images and audio is protected only by a user name and the password you set up. No further authentication is provided nor should you presume that any other protective filtering is done by the service. Since the service is Internet-based, there is a risk that the image or audio you are monitoring can be viewed or used by a third-party via the network.
- SONY IS NOT RESPONSIBLE, AND ASSUMES ABSOLUTELY NO LIABILITY TO YOU OR ANYONE ELSE, FOR SERVICE INTERRUPTIONS OR DISCONTINUATIONS OR EVEN SERVICE CANCELLATION. THE SERVICE IS PROVIDED AS-IS, AND SONY DISCLAIMS AND EXCLUDES ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICE INCLUDING, BUT NOT LIMITED TO, ANY OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THAT IT WILL OPERATE ERROR-FREE OR CONTINUOUSLY.
- Security configuration is essential for wireless LAN. Should a problem occur without setting security, or due to the limitation of the wireless LAN specifications, SONY shall not be liable for any damage, loss of recorded data or restoration thereof.
- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- If you lose data by using this unit, SONY accepts no responsibility for restoration of the data.

### Personal information

- The images taken by the system using this device can identify individuals and thus they fall under "personal information" stipulated in the "Act on the Protection of Personal Information". Please handle the video data appropriately according to law.
- Information recorded using this product may also be "personal information". Upon disposal, transfer, repair, or any other occasion where this product or storage media is passed on to a third party, practice due care in its handling.

### Operating or storage location

Avoid operating or storing the camera in the following locations.

- Extremely hot or cold places (Operating temperature: -30°C to +50°C [-22°F to +122°F])
- Close to heating equipment (e.g., near heaters)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock
- Don't touch the PCB board by hand directly.
- If the camera do not focus well because of the weather (such as rain), adjust the focus manually.

### Ventilation

To prevent heat buildup, do not block air circulation around the camera.

### Transportation

Always turn off the power when carrying.

When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

### Using in cold climates

- This device is equipped with a built-in heater, which automatically operates when the internal temperature drops significantly so that the camera can work even in a low temperature environment (except when in PoE). However, the heater cannot melt snow or frost on the dome cover or outside cabinet. Make sure you install this device where snow cannot accumulate on or blow against the dome cover.
- If you buy silica gel (4-267-409-01) for internal condensation prevention, consult the store of purchase or an authorized Sony dealer.

### Starting and closing under low temperature

When started under temperature conditions of -10°C (14°F) or below, the camera system may not start operating immediately after start-up. In such a case, the heater starts and raises the internal temperature, starting the camera system. It may take about two hours for the camera system to start streaming normal images.

### Cleaning

- Use a blower to remove dust from the lens.
- Use a soft, dry cloth to clean the external surfaces of the camera. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes.

### To install the camera outdoors

Attach the dome casing securely to the unit casing.

Make sure you seal the locations listed below with sealant (e.g. silicon sealant) to prevent moisture from getting inside the casing. It is better to install the camera in an environment of low humidity.

- Camera installation holes (4)
- Conduit holes (side/bottom)

### Note on laser beams

Laser beams may damage image sensors. You are cautioned that the surface of image sensors should not be exposed to laser beam radiation in an environment where a laser beam device is used.

## Phenomena Specific to Image Sensors

The following phenomena that may occur in images are specific to image sensors. They do not indicate a malfunction.

### White flecks

Although the image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.

This is related to the principle of image sensors and is not a malfunction.

The white flecks especially tend to be seen in the following cases:

- when operating at a high environmental temperature
- when you have raised the gain (sensitivity)
- when using the slow shutter

### Aliasing

When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

## About the Supplied Manuals

### 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 (stored in the CD-ROM)

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

After installing and connecting the camera correctly, operate referring to this User's Guide.

## Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User's Guides for this unit in PDF format.

### Preparations

The Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the guides stored in the CD-ROM disc.

### Note

If Adobe Reader is not installed, it may be downloaded from the following URL: <http://www.adobe.com/>

### Reading the manual in the CD-ROM

#### 1 Insert the CD-ROM in your CD-ROM drive.

A cover page appears automatically in your Web browser. If it does not appear automatically in the Web browser, double-click on the index.htm file on the CD-ROM.

#### 2 Select and click on the manual that you want to read.

This opens the PDF file of the manual.

Clicking an item in the Table of Contents allows you jump to the relevant page.

### Notes

- The files may not be displayed properly, depending on the version of Adobe Reader. In this case, install the latest version, which you can download from the URL mentioned in "Preparations" above.
- If you have lost or damaged the CD-ROM, you can purchase replacement. Contact your Sony service representative.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

## Smartphone viewer

This product is equipped with a Smartphone viewer.

With Smartphone viewer, you can display an image from a network camera, pan, tilt and zoom that camera, on your smartphone.

For more details, see "Smartphone viewer User's Manual" at the following URL: <http://www.sony.net/ipela/snc>

## Location and Function of Part

The figure shows the camera without the dome casing.

### Side

**A**

Cables ①, ② and ③ are not connected when the unit comes from the factory.

#### ① Audio cable (supplied)

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.

#### • SP terminal (minijack, monoaural)

Connect a commercially available speaker system with a built-in amplifier.

#### • MIC terminal (minijack, monoaural)

Connect a commercially available microphone. This jack supports plugin-power microphones (rated voltage: 2.5 V DC).

#### ② I/O (Input/Output) cable (supplied)

This cable is provided with a sensor input and two alarm outputs.

The wires of the cable control the following signals.

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

For details on each function and required settings, see the User's Guide stored in the supplied CD-ROM.

For the wiring, see "Connecting the I/O cable."

#### ③ Wiring slit

Feed the wire rope through this.

For details, see "Installing the Camera" on the reverse side.

#### ④ Camera head holder

#### ⑤ Lens

#### ⑥ 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 network cable (UTP, category 5).

#### ⑦ 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.

#### ⑧ BNC cable (supplied)

Outputs a composite video signal.

### Note

The output image is mainly used to adjust the view angle, and may not display correctly, depending on the video format and image size settings.

- The image may not display properly in the horizontal and/or vertical plane.
- The image may be reduced.

#### ⑨ Conduit holes (1/4 inch)

Connect a pipe to this hole. There are two conduit holes on the unit casing, one on the side and one at the bottom. The cover plug is installed in the side conduit hole at the factory. Remove the plug as needed and connect the pipe to the hole.

### 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.

## Inside

**B**

### ⑩ Camera unit

#### ① Camera head fixing screw

First loosen the screw and face the camera head to the desired direction, then tighten the screw to fix it.

#### ② AC / DC IN (power input) connector

Connect the supplied power input cable to this connector.

#### ③ Easy Focus button

Press this button to automatically adjust the focus easily.

#### ④ Reset switch

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

#### ⑤ ZOOM/FOCUS switch

Use this switch to adjust lens' zoom and focus. Slide the switch lever to select the desired function.

[W] WIDE: Zoom out

[T] TELE: Zoom in

[N] NEAR: Focus on a nearby subject

[F] FAR: Focus on a distant subject

#### ⑥ LAN port

Connect the supplied LAN cable.

#### ⑦ Camera installation hole (4 positions)

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

#### ⑧ Heater indicator (Green)

When the power is supplied by AC 24 V or DC 12 V, if the heater in the camera is working normally, the indicator lights up in green.

When the power is supplied by PoE, the heater will not work. However, the heater indicator may light up.

#### ⑨ NTSC/PAL switch

Switching the video output.

#### ⑩ POWER indicator (Green)

When the power is supplied to the camera, the camera starts checking the system. If the system is normal, this indicator lights up.

#### ⑪ 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. When 100BASE-TX is connected, the indicator turns green. When 10BASE-T is connected, the indicator turns orange.

#### ⑫ MONITOR output jack

Connect this jack to a video input connector of a video monitor. You can adjust the camera or lens while looking at the image on the video monitor. After adjusting the camera or lens, disconnect the cable.

#### ⑬ VIDEO OUT (video output) connector

Connect the supplied BNC cable to this connector.

#### ⑭ EXT CTRL (external control input/output) connector

Connect the supplied I/O cable to this connector.

#### ⑮ AUDIO IN connector

Connect the supplied audio cable to this connector.

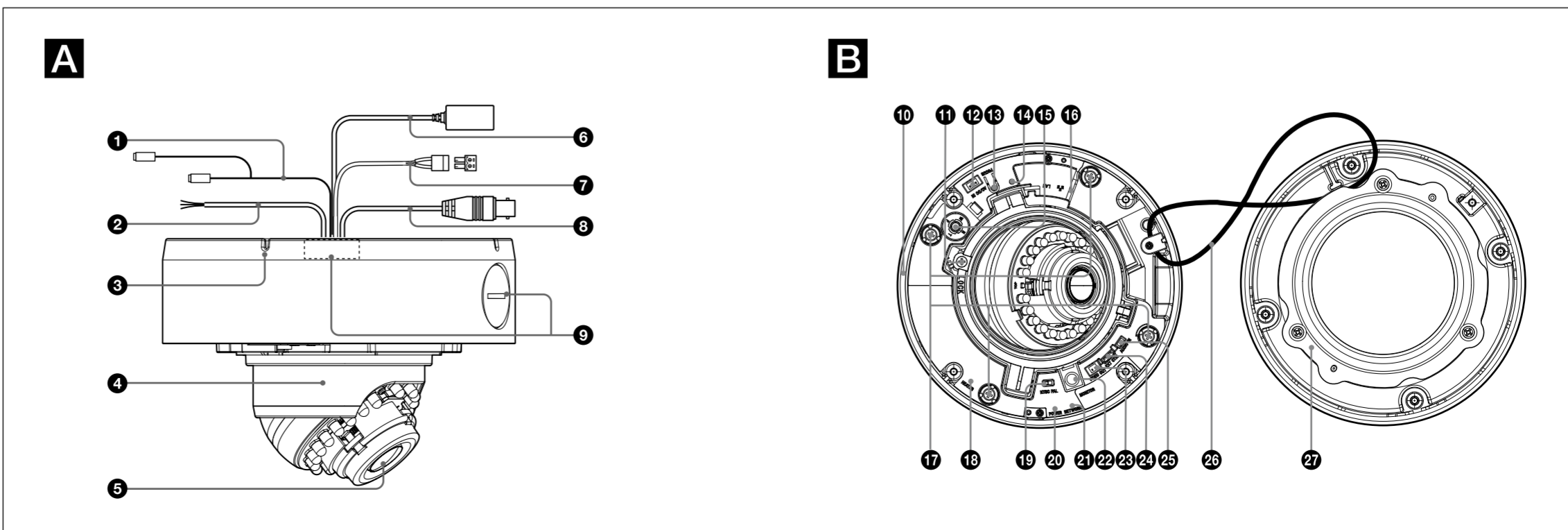
#### ⑯ Safety cord

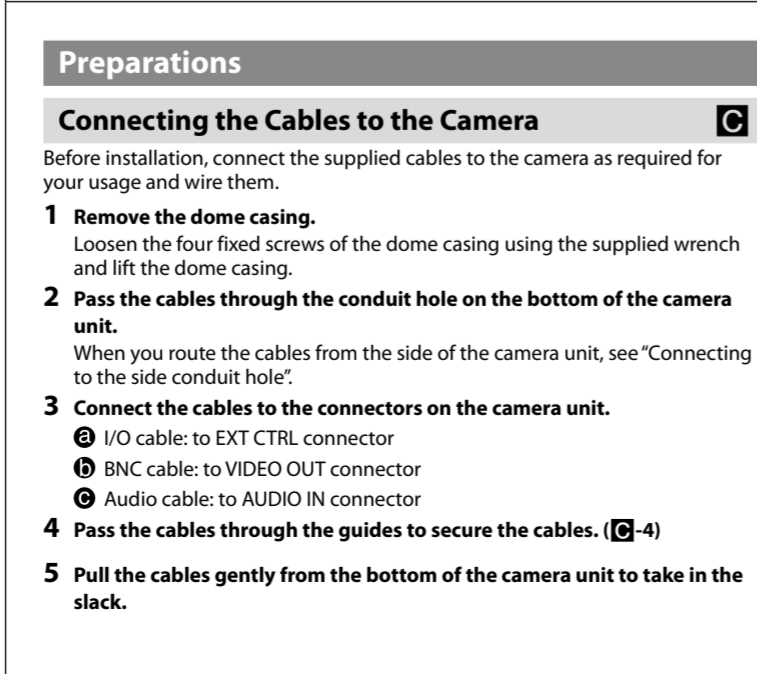
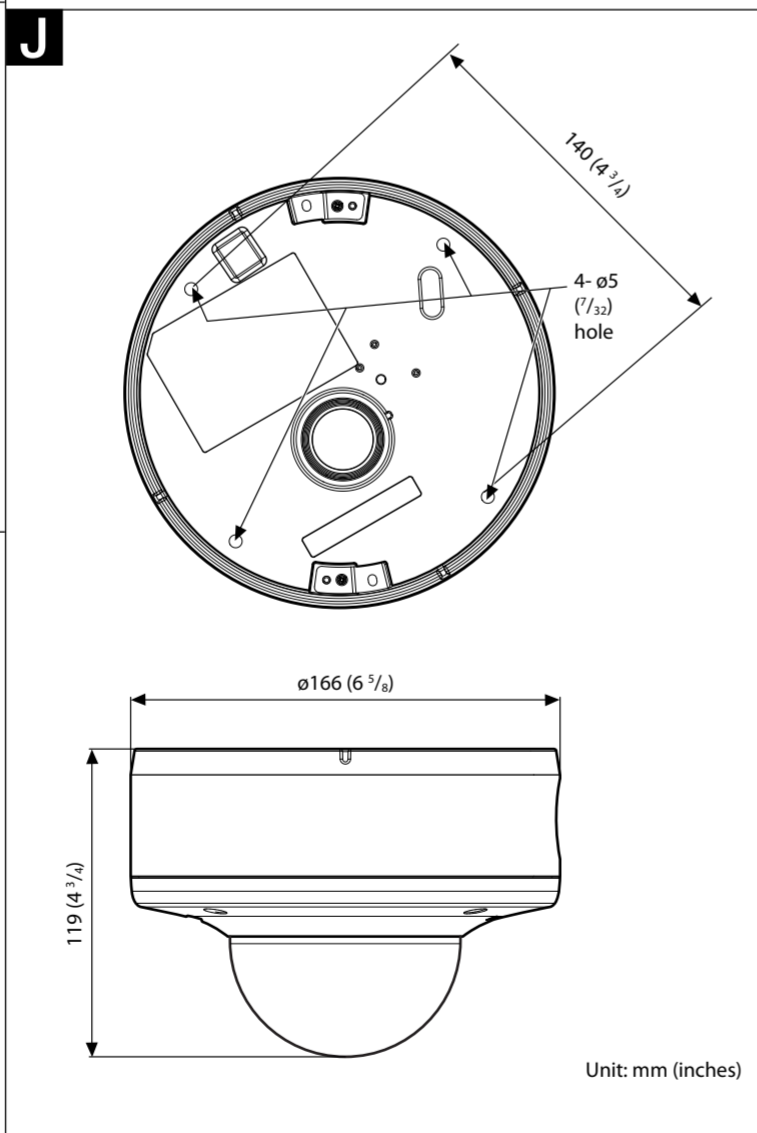
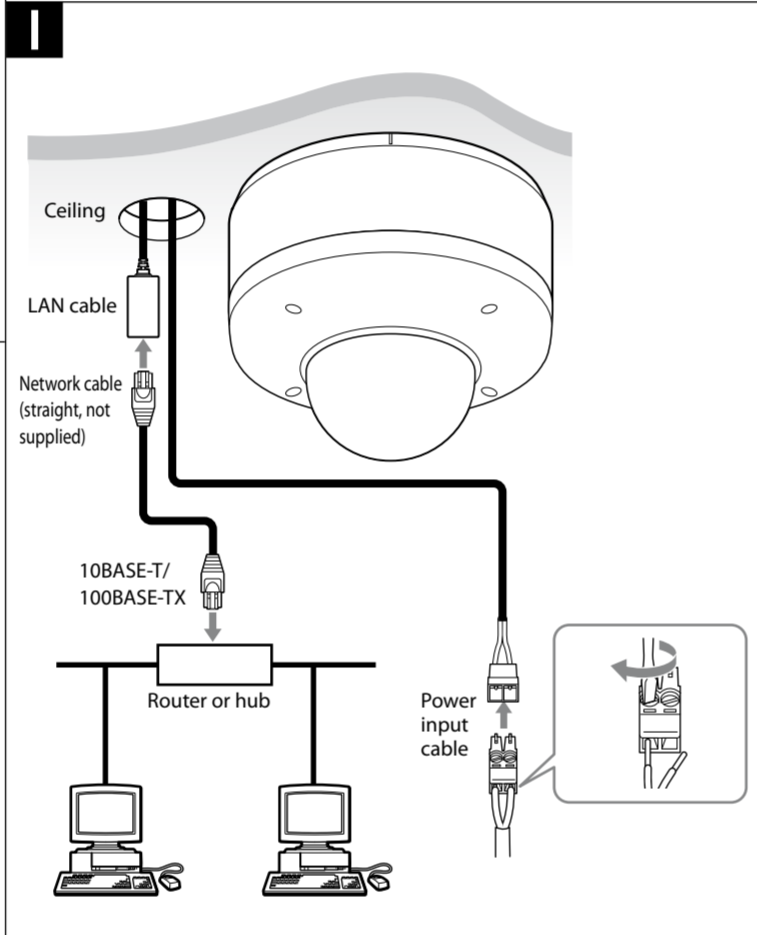
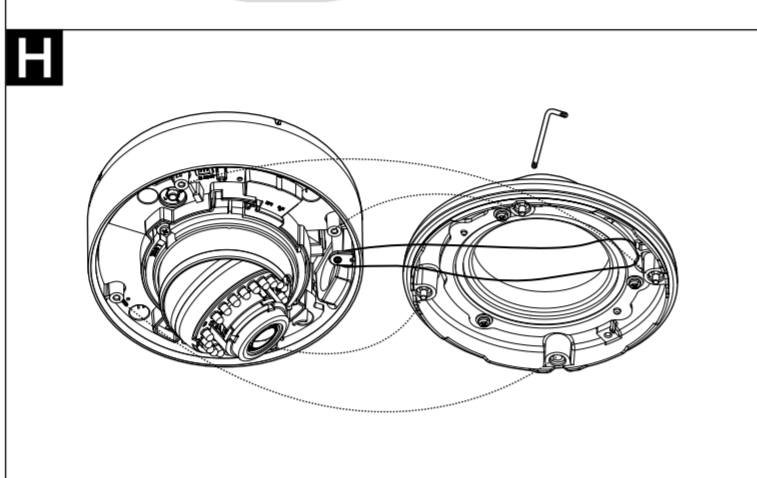
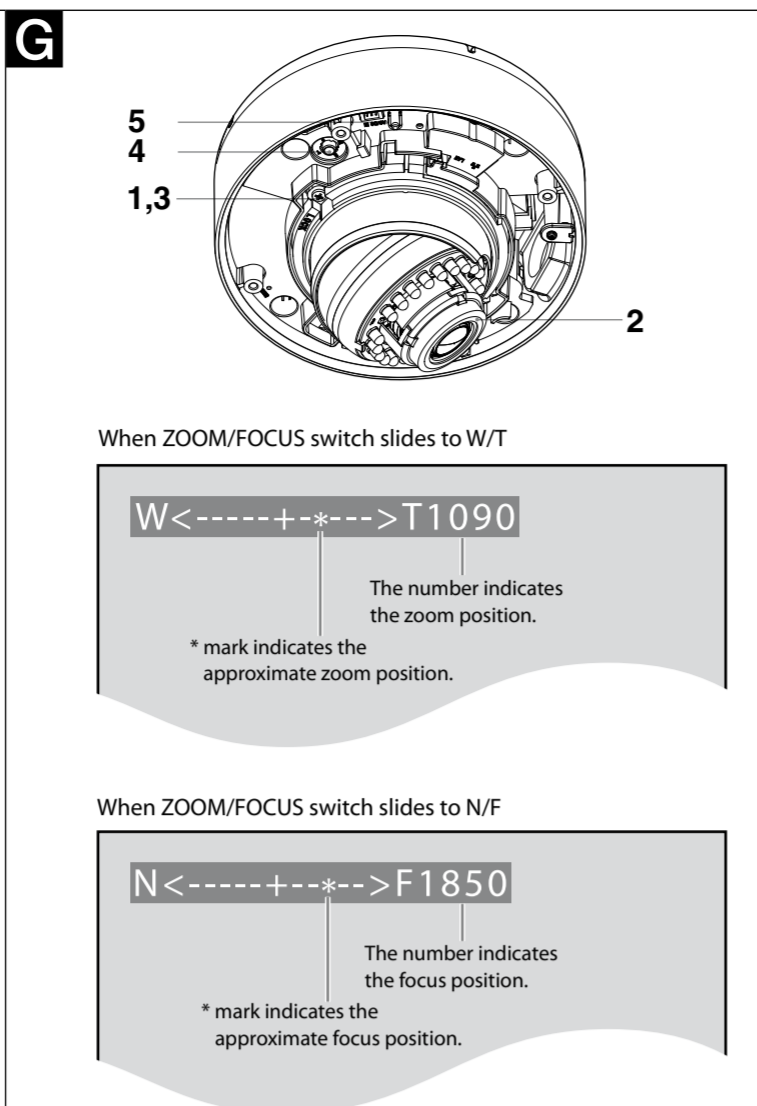
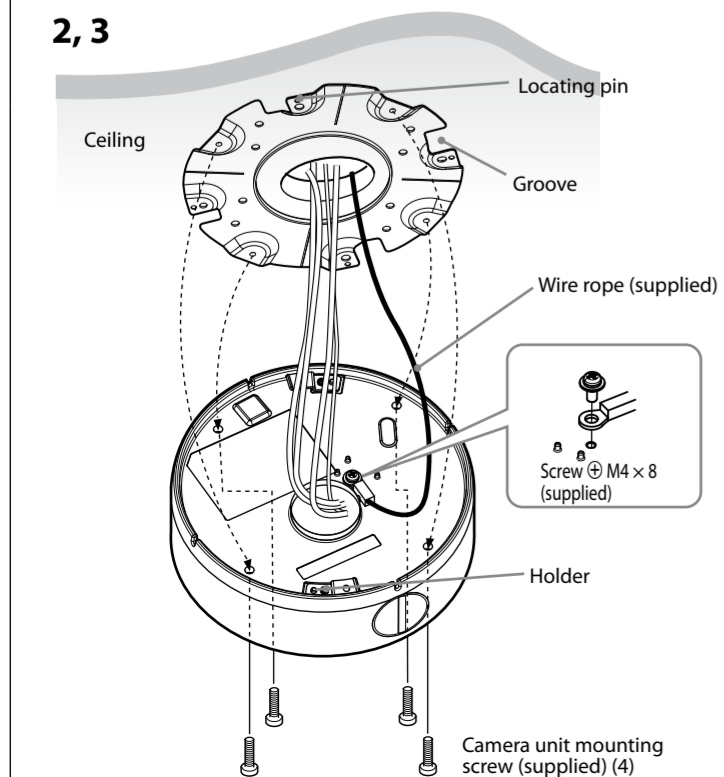
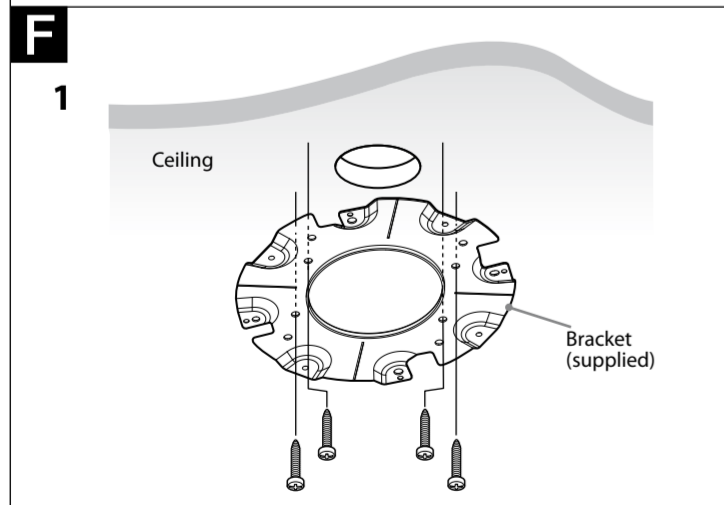
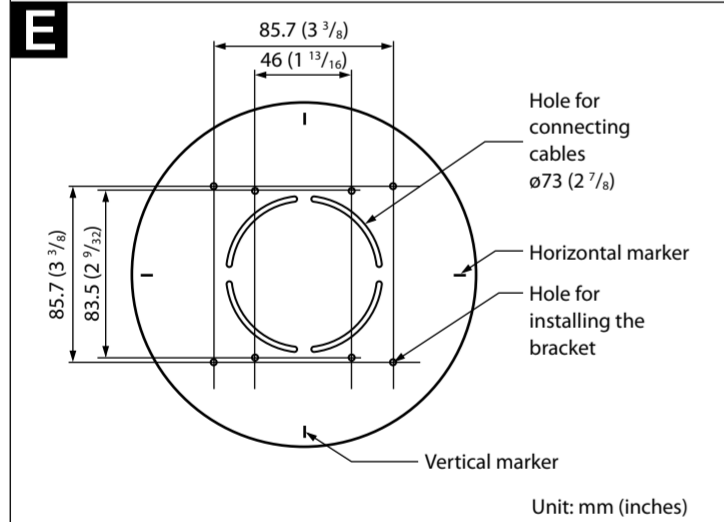
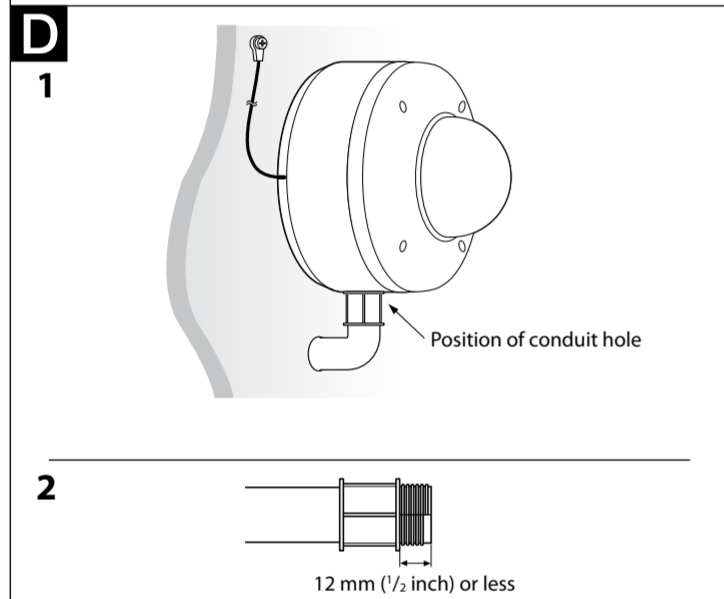
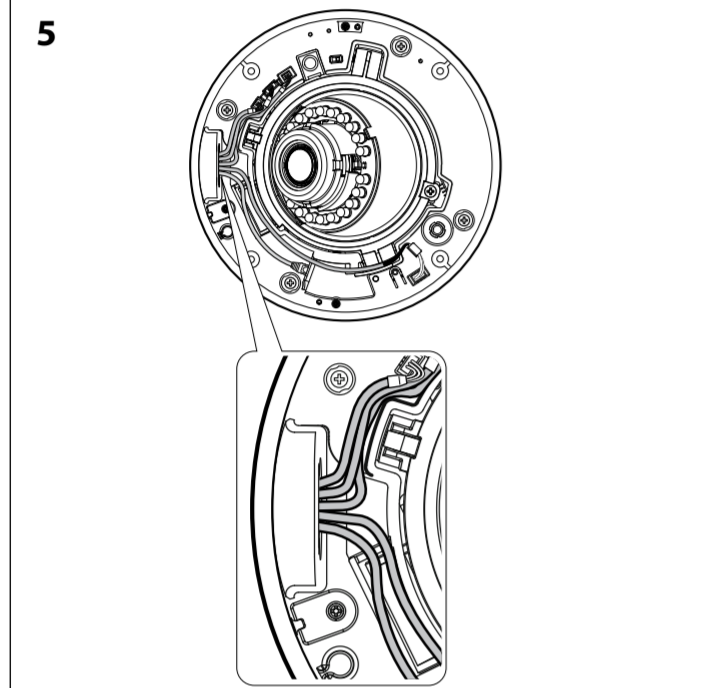
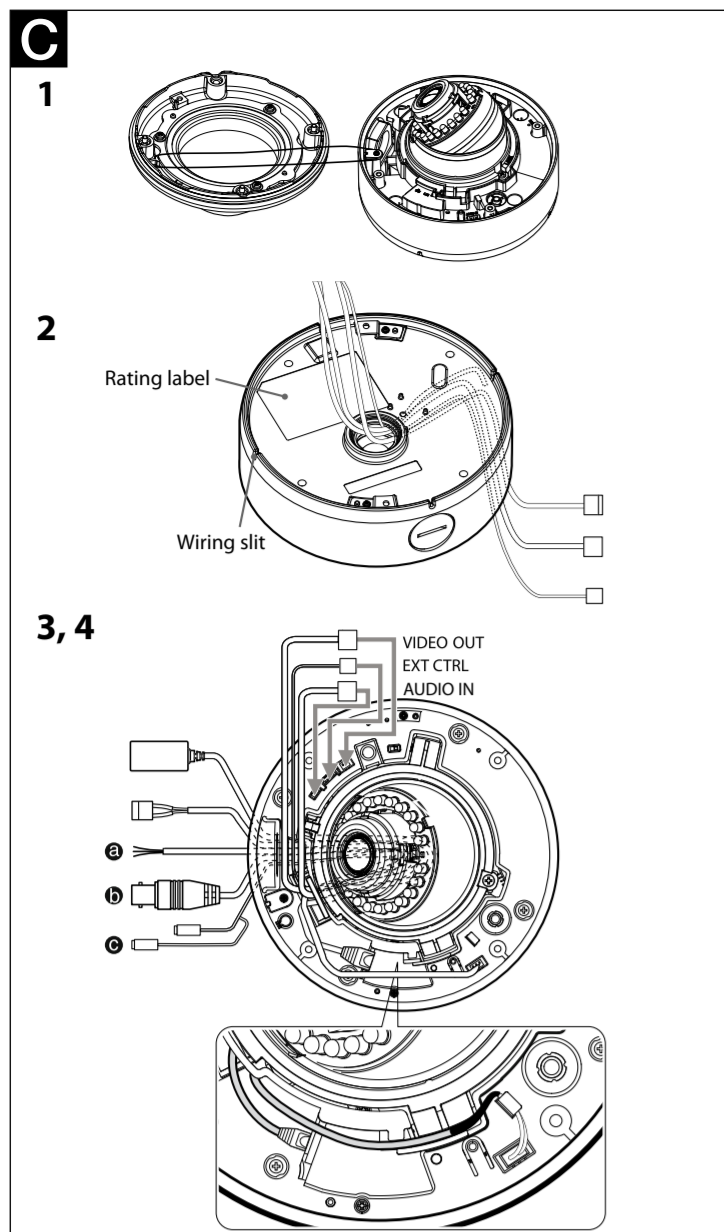
This cord prevents the dome casing from falling off the unit casing.

#### ⑰ Dome casing

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

(continued on the reverse side)





**Connecting to the side conduit hole**  
The cables are set up at the factory to pass through the bottom conduit hole. If you want to use the side conduit hole, perform the following steps:

- Remove the conduit hole cover.
- Disconnect the cables from the connectors, and pull them out from the bottom conduit hole.
- Insert the cables through the side conduit hole, and connect the cables to their respective connectors.
- Pass the cables through the guides to secure the cables. (G-5)
- Attach the conduit hole cover that was removed from the side conduit hole to the bottom conduit hole.

**Notes**

- If the bottom conduit hole is dirty, the conduit hole cover cannot be fixed firmly. In this case, moisture may leak into the casing and this may cause a malfunction. Wipe off the dust with a soft cloth, and fix the conduit hole cover firmly.
- Cover the joint part of the pipe/cover with silicon sealant, etc. to prevent moisture from getting inside the casing.
- When you install the camera on a wall lengthwise, position the side conduit hole directly below to prevent moisture from getting inside the casing. (D-1)
- Use a pipe/plug with a thread length of 12 mm (1/2 inch) or less so that it does not damage the camera. (D-2)

**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 15 kg (33 lb 11 oz) or more, and then install the camera securely. If they are not strong enough, the camera may fall and cause serious injury. 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 wire rope.
- 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.

**Deciding the Installation Location of the Camera**

After deciding the direction in which the camera will shoot, make the required hole (ø73 mm (2 7/8 inches)) for the connecting cables using the supplied template. Then decide the four mounting hole positions to install the bracket.

**Mounting screws**

The supplied bracket is provided with eight ø4.5 mm (7/16 inch) mounting holes. Install the bracket on a ceiling or wall with screws through four mounting holes: two 83.5 mm (3 2/5 inch)-pitched holes or four 85.7 mm (3 3/4 inch)-pitched holes. 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 (5/8 inch) 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.

**Installing the Camera**

- Install the supplied bracket on the ceiling or wall.**  
Refer to "Mounting screws" for screws to be used.
- Fix the supplied wire rope to the camera unit and the ceiling or wall.**
  - Fix the wire rope with the supplied Screw M4 × 8 to the hole for the wire rope on the bottom of the camera unit.
  - Fix the wire rope to the ceiling or wall.
- Attach the camera unit to the bracket with the supplied four screws.**  
The screws have a fall-prevention mechanism. The screws inserted into the screw holes of the camera unit do not fall even if you turn the camera unit upside down.  
Insert the two holders to any two of the grooves on the bracket. Turn the camera clockwise until the locating pins snap to the holes on the holders. Then the four camera installation holes will align the projections on the bracket accordingly. There are four projections with an angle of 90 degrees, so you can select one of four directions.  
Then tighten the four camera unit mounting screws to attach the camera unit to the bracket through the camera installation holes.

**Note**

If you cannot use screws on a ceiling or wall, or if you want to make the camera less conspicuous, use the YT-ICB45 in-ceiling bracket (optional) with which you can mount the camera on the ceiling.  
For this model, install the camera to the [B] position on the side brackets of YT-ICB45. Refer to the Installation Instructions of YT-ICB45 for detail information.

**Adjusting the Camera Direction and Coverage**

- Loosen the camera head fixing screw.
- Adjust the camera to turn the lens in the desired direction.
- Tighten the camera head fixing screw to fix the camera.
- Slide the ZOOM/FOCUS switch to W/T to adjust the zoom.  
The zoom indicator is displayed on the monitor.
- Press the Easy Focus button to automatically adjust the focus.
- Repeat steps 1 to 5 until the coverage and the focus are determined.

**Notes**

- When you adjust the camera head angle without loosening camera head fixing screw, an internal part may be damaged.
- When the lens is not put in the slit of the camera head holder, the moving range of the camera head is limited.
- If the camera head is too heavy to be adjusted, loosen the camera head fixing screw until it moves freely.
- When adjusting the angle, be sure that the TOP mark on the camera head section faces the ceiling. If the camera is installed with the TOP mark facing the floor, the image appears upside down.
- If you cannot achieve satisfactory focus with the Easy Focus button due to the shooting environment, slide the ZOOM/FOCUS switch level to N/F to focus manually. The focus indicator is displayed on the monitor.
- Poor focus may also be caused by the dome case assembly. Readjust the focus using the system menu.  
For details, refer to the User Guide of the equipment.

**Note**

Do not turn the lens more than 360 degrees, as this may damage the wiring inside, which may cause failure on video output.

**Attaching the Dome Casing**

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

**Note**

Make sure that the cord does not get caught between the dome casing and the unit casing. Rotate the cord and adjust the position of the cord.

**Connection**

**Connecting to the Network**

Connect the LAN cable of the camera to a router or hub in the network using the network cable (straight, not supplied).

**To connect to a computer**

Connect the LAN cable of the camera to the network connector of a computer using the network cable (cross, 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.

**Note**

If the power is supplied from the power input cable and LAN cable at the same time, the power from the LAN cable has priority over the other.

**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 ranges are as follows.
  - 12 V DC: 10.8 V to 13.2 V
  - 24 V AC: 21.6 V to 26.4 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**

DC 12 V:

CABLE(AWG)	#24	#22	#20
Max. length(m)	4	6	9

AC 24 V:

CABLE(AWG)	#24	#22	#20
Max. length(m)	13	23	30

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

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

**Connecting the I/O Cable**

Connect the wires of the I/O cable as follows:

**Wiring diagram for sensor input**

**Mechanical switch/open collector output device**

Camera inside      Outside

**Wiring diagram for alarm output**

Camera inside      Outside

**Specifications**

**Compression**

Video compression format: JPEG/MPEG4/H.264  
 Audio compression format: G.711/G.726 (40, 32, 24, 16 kbps)  
 Maximum frame rate: SNC-DH180: H.264: 30 fps (1280 × 720)  
 SNC-DH280: H.264: 30 fps (1920 × 1080)

**Camera**

IR LED: 21 pcs  
 IR working distance: SNC-DH180: 30 m (50 IRE)  
 SNC-DH280: 30 m (50 IRE)  
 Signal system: NTSC color system/PAL color system (switchable)  
 Image device: SNC-DH180: 1/3 type CMOS (Exmor)  
 Effective picture elements: Approx. 1,390,000  
 SNC-DH280: 1/2.8 type CMOS (Exmor)  
 Effective picture elements: Approx. 3,270,000

**Synchronization**

Horizontal resolution: Internal synchronization  
 600 TV lines (analog video)  
 Video S/N: More than 50 dB (AGC 0 dB)  
 Minimum illumination: SNC-DH180: F1.2/View-DR Off/VE Off/AGC High/XDNR Middle/ 50 IRE (IP)  
 Color 0.20 lx  
 Black & White 0 lx (IR On)  
 SNC-DH280: F1.2/View-DR Off/VE Off/AGC High/XDNR Middle/ 50 IRE (IP)  
 Color 0.40 lx  
 Black & White 0 lx (IR On)

**Lens**

Focal length: 3.1 mm to 8.9 mm  
 Maximum relative aperture: F1.2 ~ F2.1  
 View angle: SNC-DH180: Vertical: 67.4° to 25.0° (1280 × 1024)  
 Horizontal: 85.4° to 31.2°  
 SNC-DH280: Vertical: 65.2° to 24.2° (1920 × 1440)  
 Horizontal: 88.5° to 32.3°

**Interface**

LAN port: 10BASE-T/100BASE-TX, auto negotiation (RJ-45)  
 I/O port: Sensor input: × 1, make contact, break contact  
 Alarm output: × 2, 24 V AC/DC, 1 A (mechanical relay outputs electrically isolated from the camera)  
 Video output: VIDEO OUT: BNC, 1.0 Vp-p, 75 ohms, unbalanced, sync negative  
 Microphone input\*: Minijack (monaural)  
 Plug-in-power supported (rated voltage: 2.5 V DC)  
 Recommended load impedance: 2.2 kΩ  
 Minijack (monaural)

**Line input\***

\*The microphone input and the line input are switchable with operating menu.

**Line output**

Minijack (monaural), Maximum output level: 1 Vrms

**Others**

Power supply: 12 V DC ± 10%  
 24 V AC ± 10%, 50 Hz/60 Hz  
 IEEE802.3af compliant (PoE system)  
 Power consumption: SNC-DH180: 28 W max.  
 SNC-DH280: 29 W max.  
 Operating temperature (AC 24 V and DC 12 V): Start temperature: -20°C to +50°C (-4°F to +122°F)  
 Working temperature: -30°C to +50°C (-22°F to +122°F)  
 Operating temperature (IEEE802.3af (PoE SYSTEM)): Start temperature: 0°C to 50°C (32°F to 122°F)  
 Working temperature: -10°C to +50°C (14°F to 122°F)

**Heater operation**

Supported by 24 V AC and 12 V DC only.  
 IEEE802.3af (PoE SYSTEM) (camera power only)  
 Storage temperature: -20°C to +60°C (-4°F to +140°F)  
 Operating humidity: 20% to 80% (Non-condensing)  
 Storage humidity: 20% to 95%  
 Dimensions (diameter/height): 166 mm × 119 mm (6 5/8 inches × 4 3/4 inches), not including the projecting parts

**Mass**

Approx. 1.38 kg (3 lb 0.68 oz), not including the cables and bracket

**Supplied accessories**

CD-ROM (User's Guides, and supplied programs) (1), Bracket (1), Template (1), Wire rope (1), Camera unit mounting screws (4), Screw M4 × 8 (1), Audio cable (1), I/O cable (1), LAN cable (1), BNC cable (1), Power input cable (1), Wrench (1), Installation Manual (this document) (1 set)

**Optional accessory**

In-ceiling bracket YT-ICB45\*  
 \* Using the fixture position [B] on the bracket.

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.