# **Network Camera**

## **Installation Manual**

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

## IPELA

# SNC-RH124 SNC-RS46N/RS46P SNC-RS44N/RS44P

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 reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

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

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 in the building

# installation wiring.

**WARNING** (for Installers only)

## Instructions for installing the equipment on the ceiling:

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 reasons, do not connect the LAN port to any network devices that might have excessive voltage.

## **Power Supply**

Caution for U.S.A. and Canada

The SNC-RH124/RS46N/RS44N operates on 24V AC or 12V DC. The SNC-RH124/RS46N/RS44N automatically detects the power.

Use a Class 2 power supply which is UL Listed (in the U.S.A.) or CSA-certified (in Canada).

## **Caution for other countries**

The SNC-RH124/RS46P/RS44P operates on 24V AC or 12V DC.

The SNC-RH124/RS46P/RS44P 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 Second Edition. For customers in the U.S.A. (SNC-RH124/RS46N/RS44N only)

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

#### For customers in Canada (SNC-RH124/RS46N/RS44N only) 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

# For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minatoku, Tokyo, 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

## **Notes on Use**

### Before Use

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

#### Data and security

- 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. 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.
- 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

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.

- $\bullet$  Extremely hot or cold places (Operating temperature: 0 °C to +50 °C [32 °F to
- Exposed to direct sunlight for a long time, or 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

#### 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.

## 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. Please consult the store of purchase or authorized Sony dealer if there were

## Note on laser beams

troubles and anomalies.

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

# 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

# Vertical smear (SNC-RS46N/RS46P/RS44N/RS44P only)

When an extremely bright object, such as a strong spotlight or flashlight, is being shot, vertical tails may be produced on the screen, or the image may be distorted.

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

# **About the Supplied Manuals**

# Note

# 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

After installing and connecting the camera correctly, operate referring to this

# **Using the CD-ROM Manuals**

The supplied CD-ROM disc includes the User's Guides for this unit (Japanese, English, French, German, Spanish, Italian and Chinese versions) in PDF format.

### **Preparations**

Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the User's Guide stored in the CD-ROM disc.

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 to jump to the relevant

- 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.

### **Location and Function of Part**

Camera

Front cover

Remove the front cover, when using the CF card slot.

## 2 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-T is connected, the indicator turns green. When 10BASE-T is connected, the indicator turns orange.

## O CF card slot

This slot is used for the optional SNCA-CFW5\* wireless card or recommended

Insert the SNCA-CFW5\* into the slot and attach the optional wireless LAN antenna SNCA-AN1 to the camera to extend the communicable distance by wireless LAN

- Insert the CF memory card with its top side facing the camera's NETWORK indicator
- For inquiries regarding verified CF memory cards, contact your authorized
- \* SNCA-CFW5 is not available in some countries and areas. For details, contact your
- authorized Sony dealer. CF card lever

Press the lever to remove the CF memory card from the CF card slot.

## Reset switch

The camera can also be reset to the factory setting by turning on the power while pressing the reset switch with a needle/paper clip. O POWER indicator (green)

#### When the camera receives power, a system check is run internally in the camera. The indicator lights up when the camera is operating normally.

**1** LOCK buttons (2) When installing the camera on a ceiling, use the buttons to ensure proper

## installation of the camera.

**3** RELEASE buttons (2) Use these buttons to remove the camera from the ceiling.

## Lens

Cable cover

Remove the cover when bundling the cables from the side of the camera. 1 Built-in wire rope

#### The wire rope is used for fall-prevention of the camera. Camera connection terminal

Connect to the camera connection terminal of the ceiling unit.

# The model name and specifications are located on the camera.

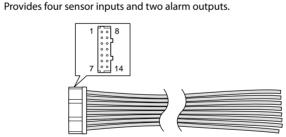
Ceiling attachment surface of the ceiling unit

- DC IN 12V / AC IN 24V (power input) terminal Use the provided AC power cable to connect to the 12 V DC/24 V AC power
- ☑ (line output) terminal (minijack, monaural) Connect to a speaker with a built-in amplifier. 1 LAN (network) port (RJ45)

Connect to a 10BASE-T or 100BASE-TX network using a network cable (UTP,

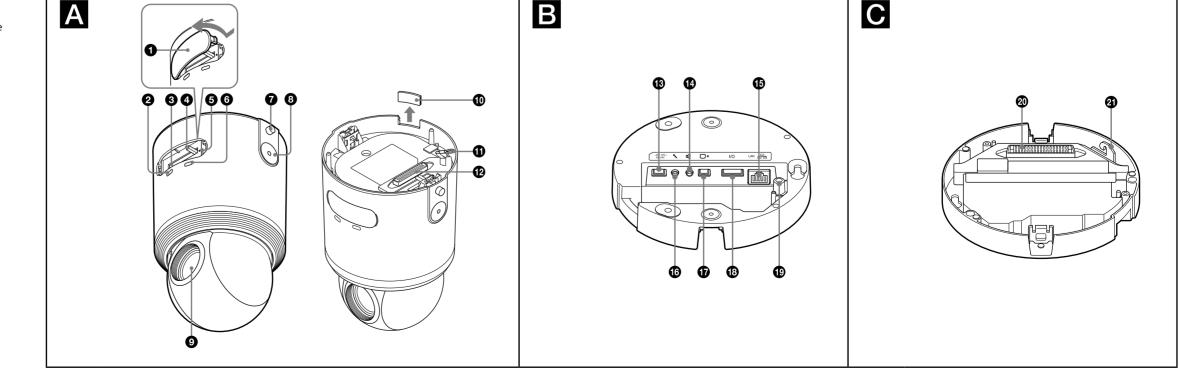
- category 5). (microphone input) terminal (minijack, monaural)
- Connect a commercially available microphone.
- **1** → (video output) terminal Outputs a composite video signal. Use the supplied monitor cable to connect

1 I/O (Input/Output) port



Pin No.	Pin name	Color	Pin No.	Pin name			
				RS232C	RS422/ RS485(Full)	RS485 (Half)	Color
1	Alarm Out 1-	Blue	8		Rx-	Tx-/Rx-	Yellow
2	Alarm Out 1+	Blue	9	Rx	Rx+	Tx+/Rx+	Orange
3	Sensor in 4	Yellow	10	Tx	Tx-		Red
4	Sensor in 3	Orange	11		Tx+		Brown
5	Sensor in 2	Red	12	GND			Black
6	Sensor in 1	Brown	13	Alarm Out 2-			Purple
7	GND	Black	14	Alarm Out 2+			Purple

For details about functions and settings, see the user's guide in the supplied



Screw hole for wire rope

Α

В

When installing the camera on a ceiling, fix the supplied wire rope to this hole using the supplied screw 

M4×10.

## Camera attachment surface of the ceiling unit

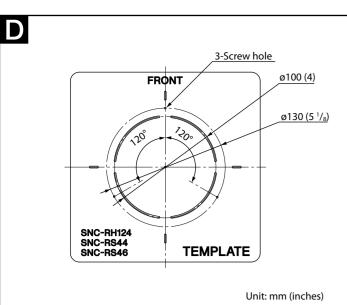
Camera connection terminal

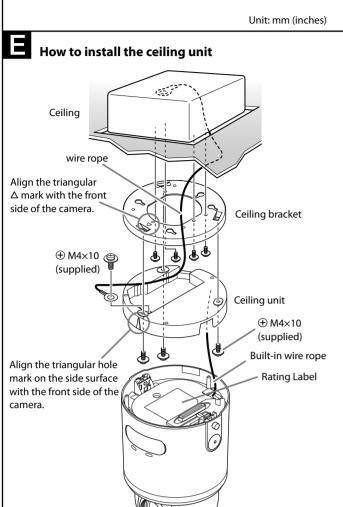
## Connect to the camera connection terminal of the camera.

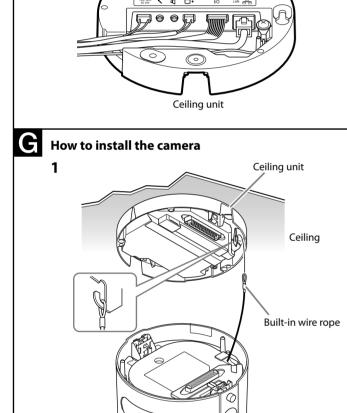
attachment hook for fall-prevention.

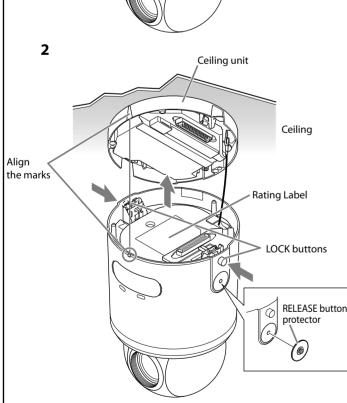
Built-in wire rope attachment hook Use when hooking the built-in wire rope of the camera on the wire rope

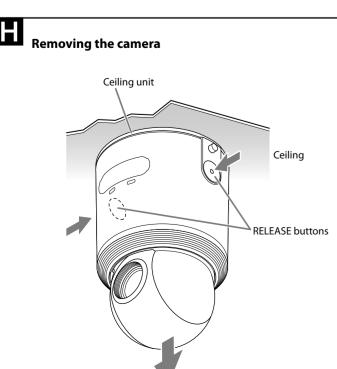
(continued on the reverse side)

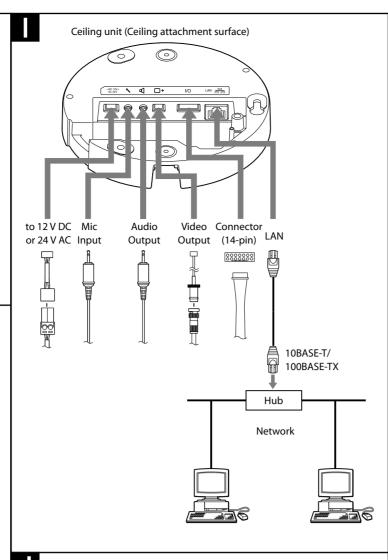


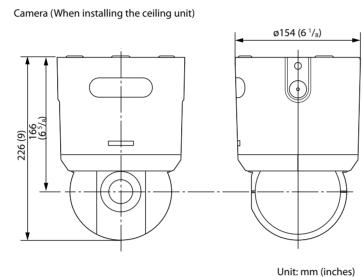


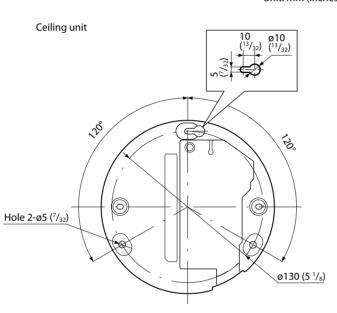


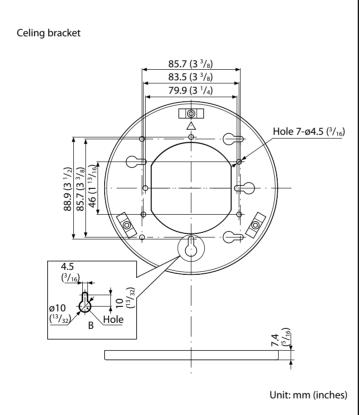












## Installation

## Notes

- Do not grasp the camera head when carrying the camera.
- Do not turn the camera head manually. Doing so will likely result in the camera malfunctioning.
- Turn off the power of ceiling unit before installing or removing the camera to the ceiling unit.

### Installing the Camera on a Ceiling

You can view the image of this camera in the normal direction when the camera is installed on the ceiling.

- There are three ways to install the camera:
- Install directly on a ceiling.
- Use the existing junction box. • In places you cannot use screws on the ceiling or in case you do not want the
- camera to stand out, use the optional in-ceiling bracket YT-ICB124. ◆ For details, see the installation instructions of YT-ICB124.

Install the camera to a horizontal ceiling. If you have to install the camera to an incline, make sure the incline is within  $\pm 15^{\circ}$  to the horizontal level to ensure the turning performance of the camera.

### WARNING

- If you attach the camera in a high location such as wall or ceiling, etc., entrust the installation to an experienced contractor or installer.
- If you install the camera in a high location, ensure that the ceiling is strong enough to withstand the weight of the camera plus the ceiling brackets 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 wire
- 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.

### **Before installation**

- After deciding the direction in which the camera will shoot, make the required holes for the junction box, and connect the cables.
- Remove the cable cover to wire the cables from the side of the camera.

### Installing directly on a ceiling

Using the supplied template, make a hole for the wiring (ø100 mm (4 inches)). Determine the location of the three screw holes for attaching the ceiling unit.

### Using the existing junction box

Attach the ceiling bracket to the junction box in the ceiling.

Screws for this operation are not supplied. Attach the ceiling bracket in a manner that the triangular mark faces the front side of the camera

### Fixing screws

The ceiling unit has three holes (ø5 mm (7/32 inches)). Use these holes to screw the ceiling unit on the ceiling.

Required screws (not supplied) vary in accordance with the location or material For steel: Fix with M4 screws and nuts.

For wood: Fix with tapping screws (nominal diameter 4). A material thickness of

15 mm (19/32 inches) or more is necessary. For a concrete wall: Fix with dry bit or plug bolts.

For a junction box: Fix with screws that accommodate the screw holes in the junction box.

## WARNING

Use the appropriate screws in accordance with the condition and material of the location site. Otherwise, the ceiling unit may fall and cause serious injury.

## How to install the ceiling unit

1 Attach the provided wire rope to the ceiling or junction box.

Use screws (not supplied) that accommodate the screw holes in the ceiling or iunction box.

**3** Fix the wire rope on the wire rope hole in the ceiling attachment side of the ceiling unit, using the supplied screws (⊕M4×10).

### Notes

2 Connect the cables.

- Make sure other cables are not caught in the wire rope when fixing the
- When drawing out cables from the side of the camera, draw them through the groove in the ceiling attachment surface of the ceiling unit. (F)
- 4 Attach the ceiling unit on the ceiling or ceiling bracket. Attach the cable screws to the unit temporarily. Then securely tighten all screws.

# Notes

Unit: mm (inches)

- Use the supplied screws to attach the ceiling bracket.
- Using other screws does not ensure proper attachment and may cause the
- Ensure that the cables are not caught between the ceiling unit and camera when drawing out the cables from the side of the camera.

# How to install the camera

- 1 Draw out the built-in wire rope from the camera and hook it on the wire rope attachment hook of the ceiling unit.
- 2 Align the marks and insert the camera into the ceiling unit until you hear a
- **3** Push in the two LOCK buttons and ensure that the camera is properly installed.

If you cannot press the LOCK buttons or if the buttons protrude from the ceiling unit, the camera is not properly installed. Insert the camera into the ceiling unit fully and press the lock buttons again to check if the installation

In order to lock the RELEASE button, install a RELEASE button protector.

Torque the screws to 0.5 N·m (4.9kgf·cm) or less to tighten them. Tightening the screws too much may cause damage to the RELEASE button protector.

# Removing the camera

1 Remove the camera while pressing the two RELEASE buttons on both sides at the same time.

If a RELEASE button protector is installed, remove it.

# Always hold the camera when you press the RELEASE buttons. This will

prevent any risk of the camera falling.

# Connection

# Connecting to the Network

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

# To connect to a computer

Connect the LAN port of the camera unit to the network connector of a

# computer using the network cable (cross, not supplied).

**Connecting the Power Source** 

The following two methods are available for connecting to a power source.

 12 V DC • 24 V AC

#### Connecting to a 12 V DC or 24 V AC power source supply Connect the 12 V DC or 24 V AC power supply system to the power input

terminal of the camera

• Use a 12 V DC or 24 V AC power source isolated commercial power supply. The usable voltage range is as follows:

12 V DC: 10.8 to 13.2 V 24 V AC: 21.6 to 26.4 V

• Use a UL cable (VW-1) for 12 V DC or 24 V AC connection.

# Recommended power cable

# 12 V DC

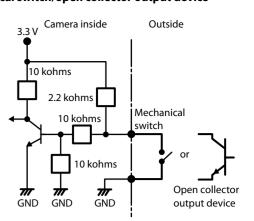
Cable(AWG)	#24(0.22 mm)	#22(0.33 mm)	#20(0.52 mm)	#18(0.83 mm)				
Maximum cable length (m (feet))	4.5 (14.8)	7.5 (24.6)	12 (39)	21 (69)				
24 V AC								

24 V AC									
Cable(AWG)	#24(0.22 mm)	#22(0.33 mm)	#20(0.52 mm)	#18(0.83 mm)					
Maximum cable length (m (feet))	10.5 (34)	16.5 (54)	27.5 (90)	45.5 (149)					

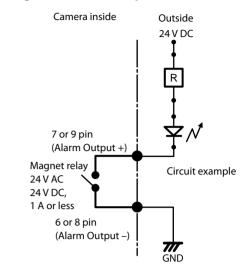
## Connecting the I/O Cable

### Wiring diagram for sensor input

Mechanical switch/open collector output device



### Wiring diagram for alarm output



## Specifications

# Network

Compression

Maximum frame rate

Camera

Camera system

Signal system

Image device

Synchronising

Minimum illumination

Horizontal resolution

Minimum object distance

Video S/N

TCP/IP, ARP, ICMP, HTTP, FTP (server/client), SMTP Protocol (client), DHCP (client), DNS (client), NTP (client),

SNMP (MIB-2), RTP/RTCP

JPEG/MPEG4/H.264

Video compression format G.711/G.726 (40,32,24,16 kbps) Audio compression format

SNC-RH124: JPEG/MPEG/H.264: 30fps (1280×720) SNC-RS46N/RS46P/RS44N/RS44P: JPEG/MPEG4/ H.264:30fps (720×480)

SNC-RH124: Camera HD (720P)

SNC-RS46N/RS46P/RS44N/RS44P: Camera SD SNC-RH124: NTSC color/PAL color switching system

SNC-RS46N/RS44N: NTSC color system SNC-RS46P/RS44P: PAL color system SNC-RH124: 1/3 type CMOS SNC-RS46N/RS46P/RS44N/RS44P:

1/4 type interline transfer CCD Effective picture elements SNC-RH124: Approx. 2,000,000 SNC-RS46N/RS44N: Approx. 380,000 (NTSC)

SNC-RS46P/RS44P: Approx. 440,000 (PAL) SNC-RH124: Internal (DC 12V / AC 24V) SNC-RS46N/RS46P/RS44N/RS44P: Internal

Line lock (AC 24V only) switchable SNC-RH124: 1.9 lx (F1.8/AGC ON/50 IRE) SNC-RS46N/RS46P: 0.7 lx (F1.6/AGC ON/50 IRE)

SNC-RS44N/RS44P: 0.4 lx (F1.4/AGC ON/50 IRE) SNC-RH124: 480 TV (analog video output) SNC-RS46N/RS46P/RS44N/RS44P: 530 TV

(analog video output) 50 dB or more (AGC 0 dB)

(DC 12V / AC 24V)/

Lens Focus length SNC-RH124: 5.1 to 51 mm SNC-RS46N/RS46P: 3.4 to 122.4 mm

SNC-RS44N/RS44P: 4.1 to 73.8 mm Maximum relative aperture SNC-RH124: F1.8(wide), F2.1(tele)

SNC-RS46N/RS46P: F1.6(wide), F4.5 (tele) SNC-RS44N/RS44P: F1.4(wide), F3.0 (tele)

SNC-RH124: 10 mm (wide) to 800 mm (tele) SNC-RS46N/RS46P: 320 mm (wide) to 1500 mm (tele)

SNC-RS44N/RS44P: 290 mm

(wide) to 800 mm (tele)

Mechanism

360°, endless rotation Maximum speed: 400°/s 210° (with auto invert function) Maximum speed: 400°/s

Interface

Line input

Line output

Others

Mass

П

Power supply

Power consumption

Supplied accessories

10BASE-T/100BASE-TX, auto negotiation (RJ-45) Network port I/O port Sensor input: × 4, make contact Alarm output: × 2, 24 V AC/DC, 1 A

(mechanical relay outputs electrically isolated from the camera) VIDEO OUT: BNC, 1.0 Vp-p, Video output

75 ohms, unbalanced, sync negative CF card slot CF Type I/II Microphone input

Minijack (monaural) Plug-in-power supported (rated voltage: 2.5 V DC) Recommended load impedance 2.2 kohms

\* A selector menu allows switching between microphone input and line input

Minijack (monaural) Recommended load impedance 10 kohms

\* A selector menu allows switching between microphone input and line input

Minijack (monaural), Maximum output level:

12 V DC  $\pm$  10%

24 V AC ± 10%, 50/60 Hz SNC-RH124: Max. 25W (DC 12V Input) SNC-RS46N/RS46P/RS44N/RS44P: Max. 23W

(DC 12V Input) 0 °C to +50 °C (32 °F to 122 °F)

Operating temperature -20 °C to +60 °C (-4 °F to +140 °F) Storage temperature Operating humidity 20% to 80% Storage humidity 20% to 95%

Dimensions (Diameter/Height) J ø154×226 mm (ø6 <sup>1</sup>/<sub>8</sub> x 9 inches)

(When installing the ceiling unit, not including the projecting parts) Approx. 2 kg (4.4 lb) (including ceiling unit) Ceiling unit (1)

Ceiling bracket (1) Fixing screws (Camera, Wire rope) ( $\oplus$ M4×10) (4) Power input cable (1)

BNC cable (1) I/O cable (1) Installation manual (1 set) CD-ROM (User's Guide, supplied programs) (1) Template (1)

Wire rope (1) Release button protector (2)

**Optional accessories** SNCA-CFW5\* Wireless LAN antenna SNCA-AN1 In-ceiling Bracket YT-ICB124

Dome cover (clear) YT-LD124C\*\* Dome cover (smoked) YT-LD124S\*\* \* SNCA-CFW5 is not available in some countries and areas. For details, contact

your authorized Sony dealer.

\*\*In-ceiling bracket (YT-ICB124) is required for using the dome cover. 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.