SONY

4-107-639-**14** (1)

Network Camera

Installation Manual

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

IPELA *ExwavePRO*

SNC-CM120
SNC-CS20

http://www.sony.net/

 Printed in China

Owner's Record

The model and serial numbers are located on the top. 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.

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 in the building installation wiring.

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 at least a force of 50 Newtons (N) downwards.

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 Second Edition.

Power Supply

Caution for U.S.A. and Canada
The SNC-CM120/CS20 operates on 24V AC or 12V DC.
The SNC-CM120/CS20 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-CM120/CS20 operates on 24V AC or 12V DC.
The SNC-CM120/CS20 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.

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 or 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, 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: -10 °C to +50 °C [22 °F to 122 °F])
- 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.

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

Regular parts replacement
Some of the parts that make up this product (electrolytic condenser, for example) need replacing regularly depending on their life expectancies. The lives of parts differ according to the environment or condition in which this product is used and the length of time it is used, so we recommend regular checks.
Consult the dealer from whom you bought it for details.

Phenomena Specific to CCD Image Sensors

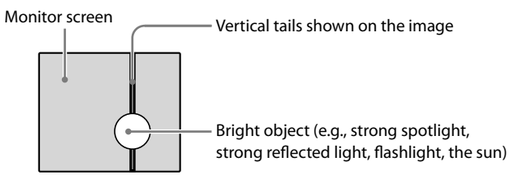
The following phenomena that may appear in images are specific to CCD (Charge Coupled Device) image sensors. They do not indicate malfunctions.

White flecks

Although the CCD 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 CCD 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

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.



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.

Easy Setup Guide for the Sony Network Camera (stored in the CD-ROM)

The Easy Setup Guide shows you how to set up the camera in order to view the image shot by the camera on a computer.
After installing and connecting the camera following the Installation Manual, perform setup using the Easy Setup Guide.

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. Operate the camera referring to the User's Guide.

Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User's Guides and Easy Setup 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.

Location and Function of Part

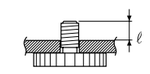
Front A

1 Lens
A vari-focal lens for 1/3 type (SNC-CM120) or 1/4 type (SNC-CS20) is mounted as standard equipment.

2 Focus ring
Turn this ring toward N (near) to focus on a closer object. Turn it toward ∞ (infinite) to focus on a farther object.

3 Zoom ring
Turn this ring toward T for telephoto, or toward W for wide-angle.

4 Tripod screw hole
Use this screw hole when attaching the camera to a tripod (screw: 1/4", 20 UNC). You can attach a tripod to either the top or bottom of the camera.



U1/4", 20 UNC
ℓ = 4.5 mm - 9 mm (ISO standard) (with the screws are fastened)

Caution
Use the mounting screw whose length is 4.5 mm – 9 mm only. Use of other screws may cause improper mounting and damage parts inside the camera.

5 Lens connector cover
Use this cover to release the lens connector.

6 Lens connector (4-pin socket)
Supplies power and control signals to an auto-iris lens.

Rear B

7 LAN port (RJ-45)
Connect to a hub on the 10BASE-T/100BASE-TX network using a network cable (UTP, category 5).
Refer to "Connecting the power source" on the reverse side for PoE connection.

8 I/O (Input/Output) port
This port is used as a sensor input and alarm output terminals.

Pin assignment

Pin No.	Assignment
1	Alarm output 1–
2	Alarm output 1+
3	Alarm output 2–
4	Alarm output 2+
5	Sensor input – (GND)
6	Sensor input +

9 (microphone input) jack (minijack, monaural)
Connect a commercially available microphone. This jack supports plug-in-power microphones (rated voltage: 2.5 V DC).

10 AUDIO IN (audio input) selector
Select the level of the audio signal to be input to the microphone/line input connector.
LINE: line input level
MIC: microphone input level
The factory default setting is MIC.

11 (line output) jack (minijack, monaural)
Connect a commercially available speaker system with a built-in amplifier.

12 VIDEO OUT selector
Each time you press the selector button, the camera operation mode switches from IP mode to NTSC+IP mode to PAL+IP mode cyclically, and the VIDEO OUT indicator shows the selected mode. (The factory default setting is IP mode.)
When adjusting the field of view using a video monitor, select the appropriate video signal with this selector.
IP mode: The video signal is not output from the VIDEO OUT connector. (VIDEO OUT indicator: off)
NTSC+IP mode: The NTSC video signal is output from the VIDEO OUT connector. (VIDEO OUT indicator: lights in green.)
PAL+IP mode: The PAL video signal is output from the VIDEO OUT connector. (VIDEO OUT indicator: lights in orange.)

Note
In NTSC+IP or PAL+IP mode, the video and audio signals can be output to a computer via a LAN although there are certain restrictions. For details of the restrictions, see the User's Guide.

13 DC 12 V/AC 24 V (power input) terminal
Connect to a 12V DC or 24V AC power supply system.

14 VIDEO OUT (video output) connector
Connect the BNC cable (not supplied) to this connector.

15 POWER indicator
When the power is supplied to the camera, the camera starts checking the system. If the system is normal, this indicator lights up. If a system error occurs, this indicator flashes every second. In this case, consult your authorized Sony dealer.

16 (ground) terminal
This is a ground terminal for the chassis.

Note
When 24 V AC or 12 V DC is supplied to the unit, the maximum power consumption of the unit is 9W (SNC-CM120) or 7.5W (SNC-CS20). Check the maximum allowable power when you connect the unit.

17 Fall-prevention wire rope mounting screw hole
When installing the camera to the ceiling or the wall, secure the supplied fall-prevention wire rope to this hole using the supplied shoulder screw.

18 Reset switch
To reset the camera to the factory default settings, turn on the power to the camera while holding down this switch with a pointed object.

19 IRIS selector
Use this selector when adjusting the focus of the lens.
Each time you press the selector button, the iris of the lens switches between open and normal. (The factory default setting is normal.)
When the iris is set to open, the IRIS OPEN indicator and the focus assist indicator appear on a monitor screen. When the VIDEO OUT selector is set to the NTSC+IP or PAL+IP mode, the indicators are displayed on the monitor connected to the VIDEO OUT connector. When it is set to the IP mode, the indicators are displayed on the monitor of the computer.
For details, see "Focus Assist Function" on the reverse side.

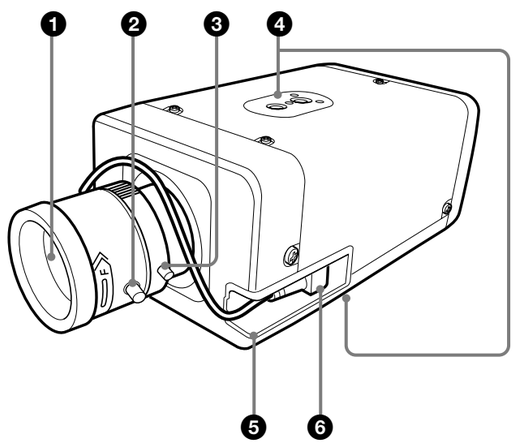
20 NETWORK indicator
Flashes in green when the camera is connected to the network.
Goes off when the camera is not connected to the network.

21 VIDEO OUT (video output) indicator
The indicator shows the camera operation mode according to the VIDEO OUT selector setting. It goes off in IP mode, lights in green in NTSC+IP mode and lights in orange in PAL+IP mode.

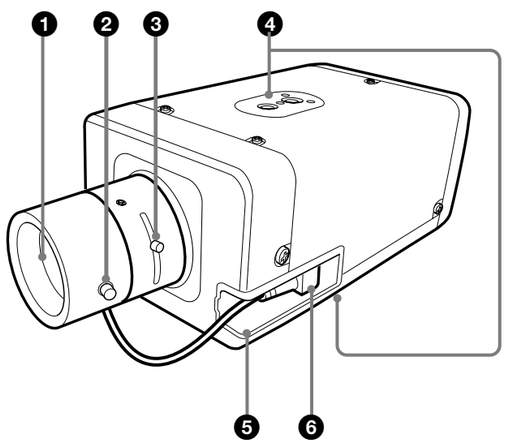
(continued on the reverse side)

A

SNC-CM120



SNC-CS20



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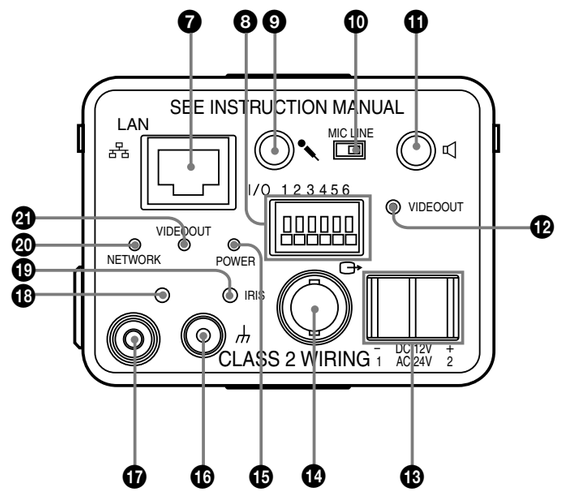

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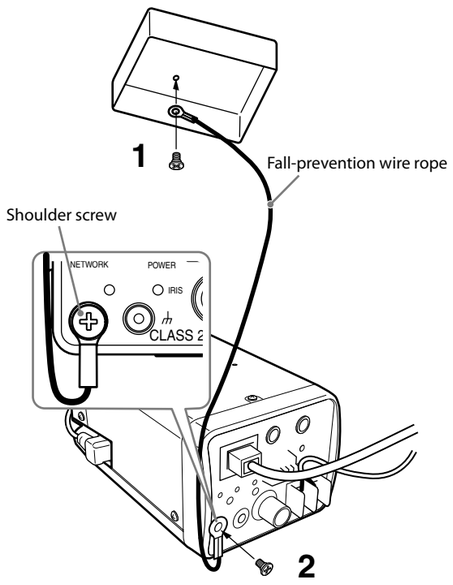
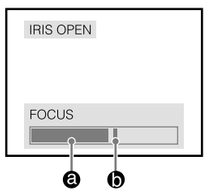


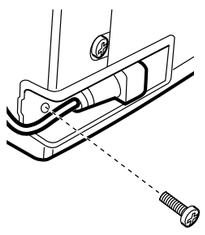
D

Focus assist indicator



E

1



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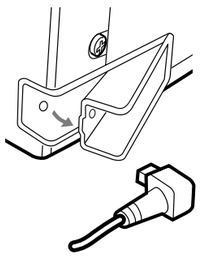

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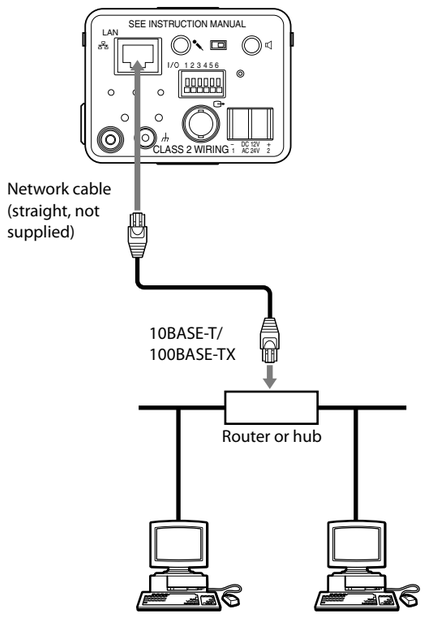
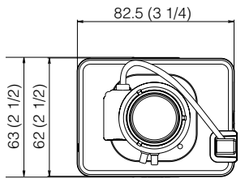
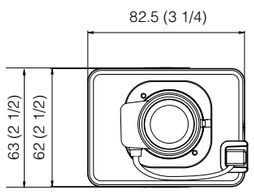


G

Front (SNC-CM120)

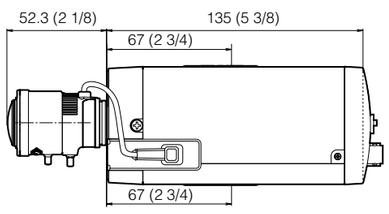


Front (SNC-CS20)

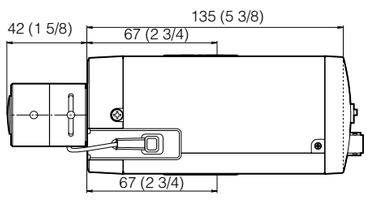


Unit: mm (inches)

Side (SNC-CM120)



Side (SNC-CS20)



Unit: mm (inches)

Installation

Caution

Request for an expert to install it to the ceiling.

Attaching the fall-prevention wire rope C

When you install the camera on a ceiling or a high position, be sure to attach the supplied fall-prevention wire rope to prevent the camera from falling.
Attach the fall-prevention wire rope to the screw hole on the rear of the camera, as in the illustration.

Note

Take care not to short-circuit the power terminal or the cable with the wire rope when you attach it.

1 Secure the wire rope to the junction box on the ceiling.
Use a screw to match the screw hole of your junction box (not supplied).

2 Secure the wire rope to the wire rope mounting screw hole on the rear of the camera using the supplied shoulder screw.

Caution

Use the supplied screws for installation. If not, the wire rope may not function properly.

Focus Assist Function D

1 Select the camera operation mode to match the video monitor in use with the VIDEO OUT selector.

2 Set the iris to open with the IRIS selector.

The IRIS OPEN indicator and the focus assist indicator appear on the monitor screen.

The length of bar ⓐ varies according to the degree of focus adjustment. Bar ⓑ indicates the peak hold value.

3 Turn the focus ring until bar ⓐ reaches the peak hold value ⓑ.

Release the lens connector E

1 Remove the screw.

2 Pull out the lens connector cover as shown to release the lens connector and then tighten the screw.

Connection

Connecting to the Network F

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 power 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. The acceptable voltage ranges for each are as follows.
  12 V DC: 10.8 V to 13.2 V
  24 V AC: 21.6 V to 26.4 V
- Use UL cable (VW-1 style 1007) for these connections.

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

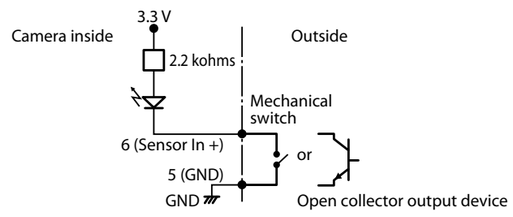
The power supply equipment pursuant to IEEE802.3af supplies the power through the LAN cable. For details, refer to the Instruction Manual of the equipment.

Connecting the I/O Cable

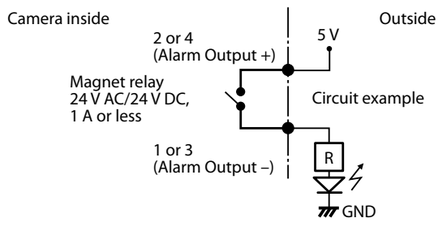
Connect the wires of the I/O cable as follows:

Wiring diagram for sensor input

Mechanical switch/open collector output device



Wiring diagram for alarm output



Specifications

Compression

Video compression format	JPEG/MPEG4
Audio compression format	G.711/G.726 (40, 32, 24, 16 kbps)
Maximum frame rate	30 fps

Camera SNC-CM120

Signal system	NTSC color system/PAL color system (switchable)
Image device	1/3 type interline transfer (ExwavePRO) CCD Total picture elements: Approx. 1,320,000 Effective picture elements: Approx. 1,250,000
Synchronization	Internal synchronization
Horizontal resolution	600 TV lines (analog video)
Video S/N (AGC 0 dB)	50 dB or more
Minimum illumination (F1.3, 50 IRE)	Color: 0.8 lx (AGC 30 dB, normal readout), 0.2 lx (AGC 36 dB, Light funnel ON) Black & White: 0.07 lx (AGC 30 dB, normal readout) 0.01 lx (AGC 36 dB, Light funnel ON)

Camera SNC-CS20

Signal system	NTSC color system/PAL color system (switchable)
Image device	1/4 type interline transfer (ExwavePRO) CCD Total picture elements: Approx. 350,000 Effective picture elements: Approx. 330,000
Synchronization	Internal synchronization
Horizontal resolution	400 TV lines (analog video)
Video S/N (AGC 0 dB)	50 dB or more
Minimum illumination (AGC 36 dB, F1.3, 50 IRE)	Color: 0.2 lx Black & White: 0.01 lx

Lens (standard equipment of SNC-CM120)

Focal length	2.8 to 6 mm
Maximum relative aperture	F1.3
View angle	Vertical: 74.2° to 35.2° Horizontal: 101.2° to 47.0°
Minimum object distance	300 mm (11 7/8 inches)

Lens (standard equipment of SNC-CS20)

Focal length	3 mm to 8 mm
Maximum relative aperture	F1.0
View angle	Vertical: 49.3° to 20.2° Horizontal: 66.6° to 27.0°
Minimum object distance	200mm (7 7/8 inches)

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)
Line input*	Minijack (monaural)

* The microphone input and the line input are switchable with a selector.

Line output	Minijack (monaural), Maximum output level: 1 Vrms

Others

Power supply	12 V DC ± 10% 24 V AC ± 10%, 50/60 Hz IEEE802.3af compliant (PoE system)
Power consumption	SNC-CM120: 9W max. SNC-CS20: 7.5W max.
Operating temperature	–10 °C to +50 °C (22 °F to 122 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Operating humidity	20 to 80 %
Storage humidity	20 to 95 %
Dimensions (w/h/d) G	82.5 × 63 × 135 mm (3 1/4 × 2 1/2 × 5 3/10 inches), not including the projecting parts
Mass	Approx. 610 g (1 lb 5 1/2 oz) (SNC-CM120),with lens not including the accessories Approx. 600 g (1 lb 5 oz) (SNC-CS20),with lens not including the accessories
Supplied accessories	CD-ROM (Users Guides, Easy Setup Guides and supplied programs) (1) Fall-prevention wire rope (1) Shoulder screw M4 (1) Installation Manual (this document) (1) B&P Warranty Booklet (1)

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.