SONY®

Network Camera

Installation Manual

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

SNC-HMX70

Table of Contents

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 (Web)

• How to control the camera via a web browser
• How to setup the camera
Operate the camera referring to the guide above after having installed and connected the camera properly based on the Installation manual.

System overview

SNC-HMX70 is a discreet, aesthetic, low-profile camera for indoor use. The 12MP sensor operating at 30 fps provides full panoramic surveillance with complete area coverage, fine details and high speeds. The camera offers full situational awareness and simultaneous E-PTZ views in high resolution.

Unobtrusive design and easy installation

The low profile of the camera makes it exceedingly suitable for installations where aesthetics are important. Its unobtrusive nature allows it to fit in with architectural features without detracting from the surroundings. Museums, historic buildings or impeccably designed interiors will all benefit from the discreet design.
The camera is easily mounted to any surface using a twist-click mechanism via the supplied mounting ring. The high quality IR corrected lens is factory focused and is not restricted by a bubble, so installation is simplified and sharpness is assured. The LED indicators, reset button and SD card slot are easily accessed via two hinges at the front of the camera. A complete set of indoor mounting accessories, such as a surface mount box or a pendant pipe mount, are available.
Power for the camera is supplied via a Power-over-Ethernet compliant network cable connection. With this configuration, only a single cable connection is required to view, power, and control the camera.

Advantages of panoramic surveillance

Panoramic surveillance offers 360° coverage of the designated area. Because our panoramic cameras cover the full area, they provide complete situational awareness and are ideally suited to following movement in one continuous sweep.

The 360° version of the camera, when mounted centrally on a ceiling, gives complete wall-to-wall coverage.

Application variants

The camera has a choice of application variants that set up the camera for optimum performance in a specific environment. Select the application variant best suited to your installation. The application variant must be selected before any other changes are made, as the camera reboots automatically and resets the factory defaults when the application variant is changed.

Using the camera

To access the features of the camera, use a web browser. The browser provides live viewing of the camera streams in the interface window, and also allows you to access and change the extensive list of settings and parameters for camera configuration. Refer to the software manual for more information on the browser interface.

Planning

Unpacking

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper immediately.
Verify that all parts are included.
The original packaging is the safest container in which to transport the unit and can be used if returning the unit for service.

Contents

The packaging contains:
– SNC-HMX70 Panoramic Camera
– Safety Regulations
– Identification labels
– Mounting ring
– 2 × Allen keys (T10 and 1.5)
– 4 × screws (4.5 × 40)
– 4 × plugs
– 2 × washers (M4 × 14) for mounting to 4s box

System requirements

To enjoy the full benefits of megapixel resolutions, ensure that the computer, the graphic adapter, the display connections, and the monitor are sufficiently powerful to view our camera images at their best.
Our recommendations are:
– Computer with Dual core Hyper Threading processor or better
– Graphic card with performance that matches or is better than the resolution of the camera
– Windows 7 or later operating system
– Network access
– Internet Explorer version 11 or later

Caution

Megapixel cameras can generate high bitrate streams. Ensure that your network can handle high volume traffic and that you use a powerful, high performance computer.

Installation

Local storage

Local storage on SD cards should only be used for alarm recording. To minimize the risk of losing information, use multiple, redundant recording systems and a procedure to back up all digital information.

Inserting an SD card

1 Push a small object (for example, the 1.5 Allen key) into the opening above the access flap to open it (push straight, do not wobble).

2 Slide the memory card into the slot until it latches into place.

3 Turn the locking screw counterclockwise to lock the card into place.
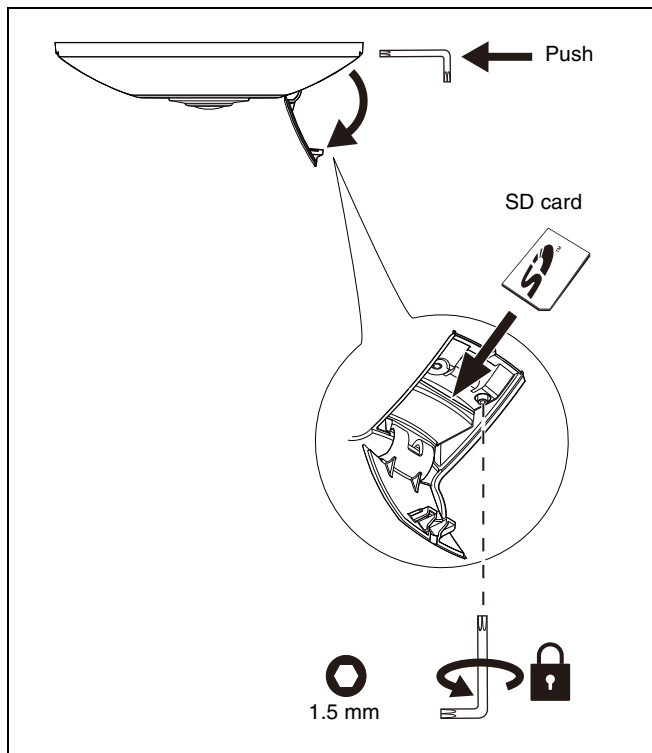

Ceiling mount

Mount flush to ceiling

To flush mount the camera in a ceiling:

1 Use the mounting ring to mark out the recess hole and to mark the four mounting holes.
The mounting holes PCD is 133 mm (5 1/4 in).

2 Cut out the inner recess hole: Ø105 mm (4 1/4 in).

3 Drill four holes with a diameter of 6 mm (1/4 in).

4 Insert the supplied mounting plugs (6 × 30) into the holes.

5 Use the supplied screws (4.5 × 40) to securely attach the mounting ring to the ceiling surface:
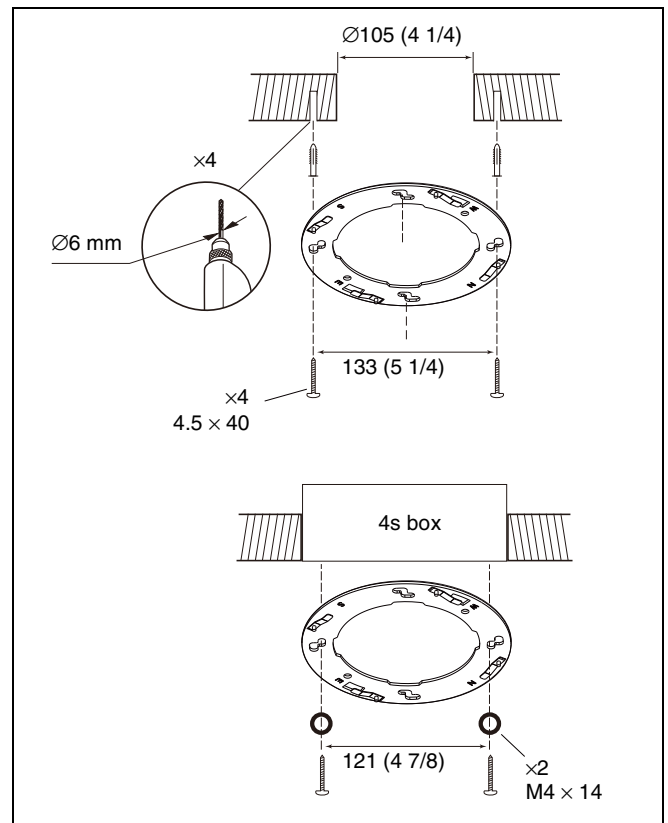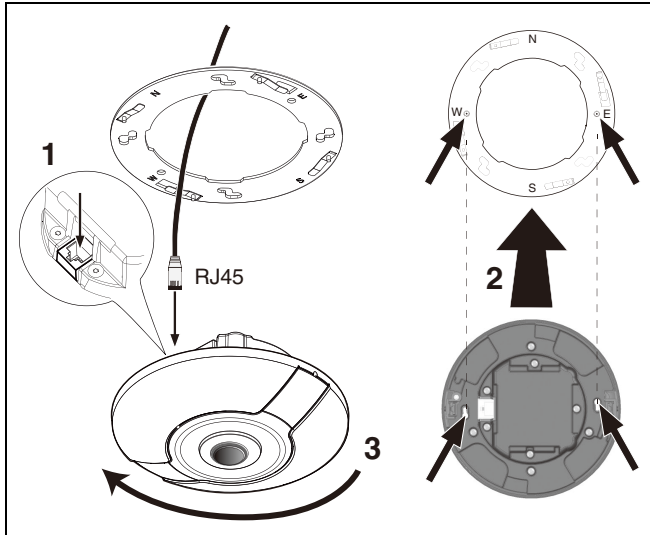

Note

If using a recessed 4s mounting box, attach the mounting ring using two screws and the supplied washers (M4 × 14).

Attach the camera body

1 Insert the Ethernet cable into the RJ45 connector on the back of the camera.

2 Mount the slots on the back of the camera onto the studs of the mounting ring.

**3** Rotate the camera body clockwise until it clicks into place.

Mounting with a Surface Mount Box

To mount the camera using a Surface Mount Box (SMB):

1 Use the SMB to mark out the cable hole (if required) and to mark the three mounting holes.
The PCD is 123 mm (4 7/8 in).

2 Drill three holes with a diameter of 6 mm (1/4 in).

3 Insert the supplied mounting plugs (6 × 30) into the holes.

4 Use the supplied screws (4.5 × 40) to securely attach the SMB to the surface:

5 Use the four screws (M5) to attach the mounting ring to the SMB.

6 Attach the camera body to the mounting ring as described above.
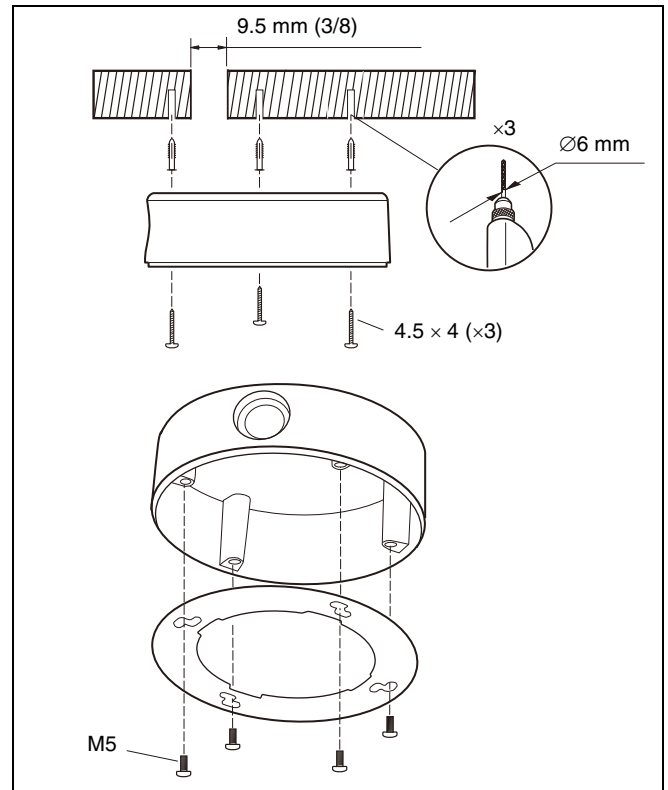

Wall mount

Use the Surface mount box (SMB) to mount the camera on a wall as described above. It is however, very important to pay attention to the following points:
– Ensure that the SMB is mounted in one of the four 90° rotation positions and that it is horizontal along the axes shown. (Use the slots as a reference.)
– When attaching the mounting ring, ensure that the **N** is at the top.

– When attaching the camera body, ensure that the Sony logo is at the top.
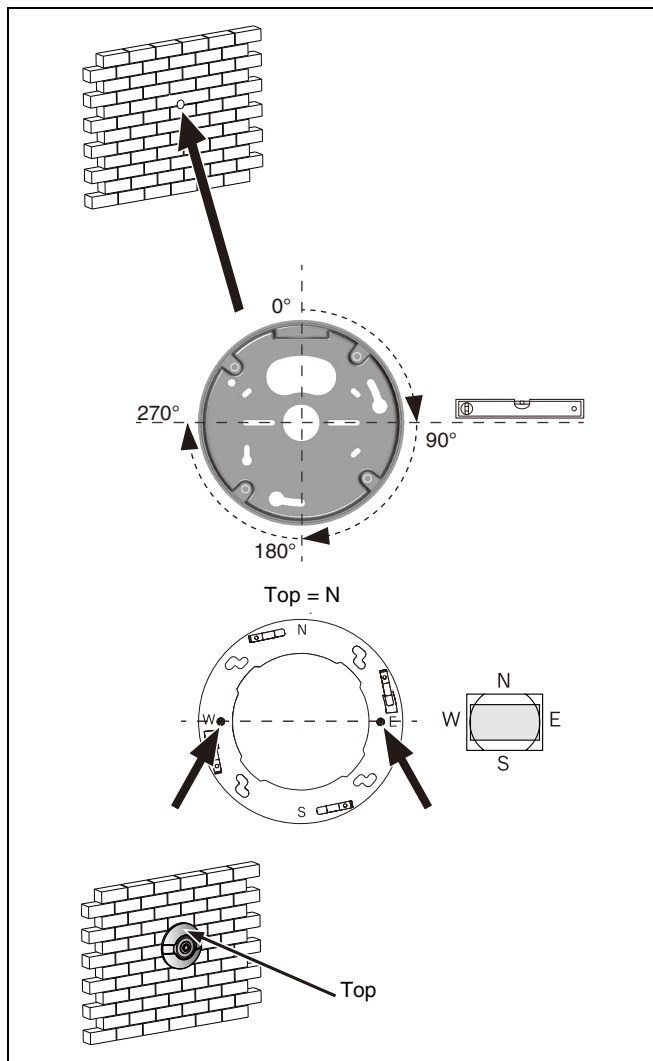
Removing the camera

Loosen the mounting screws

**1** Push a small object (for example, the 1.5 Allen key) into the opening above the access flaps to open them (push straight, do not wobble).

2 Using the T10 Allen key, turn each mounting screw four full turns counterclockwise to loosen them.
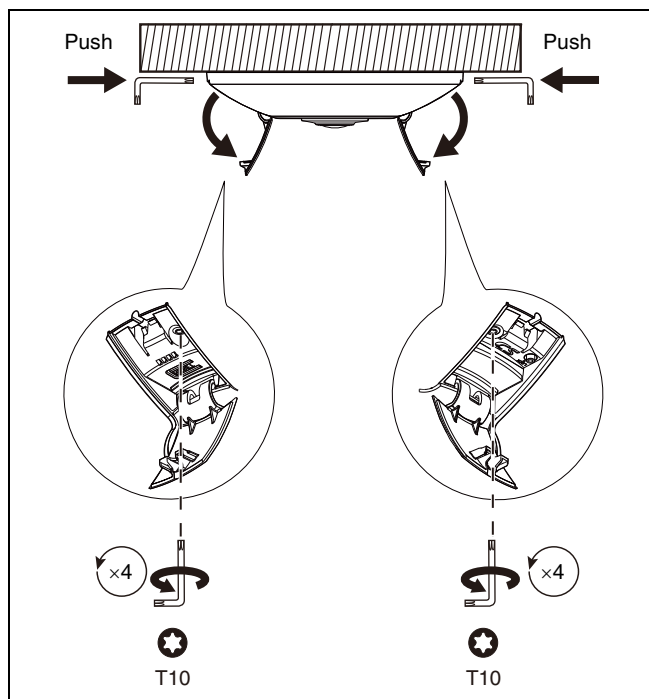
Remove camera

1 Turn the camera counterclockwise to disconnect it from the mounting ring.

2 Disconnect the Ethernet cable and remove the camera.
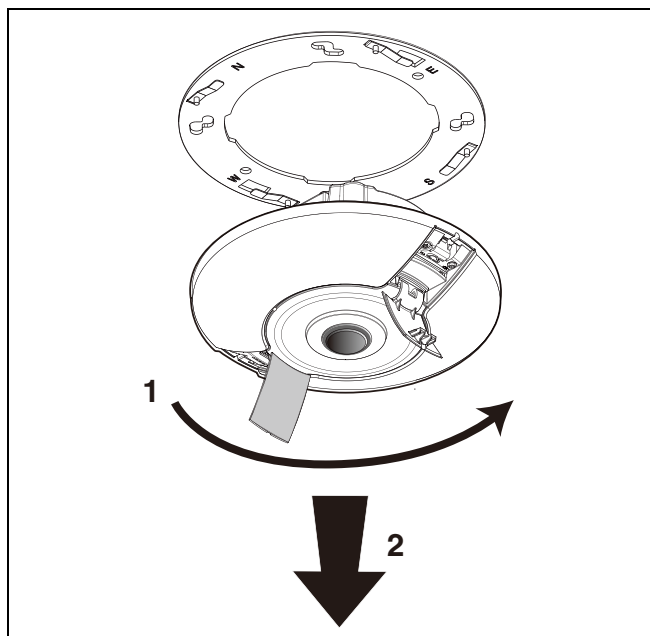
Reset the mounting screws

It is important to reset the mounting screws to ensure correct remounting of the camera.

1 Using the T10 Allen key, turn each mounting screw four full turns clockwise to tighten them (this resets the mounting clips).

2 Close the flaps.
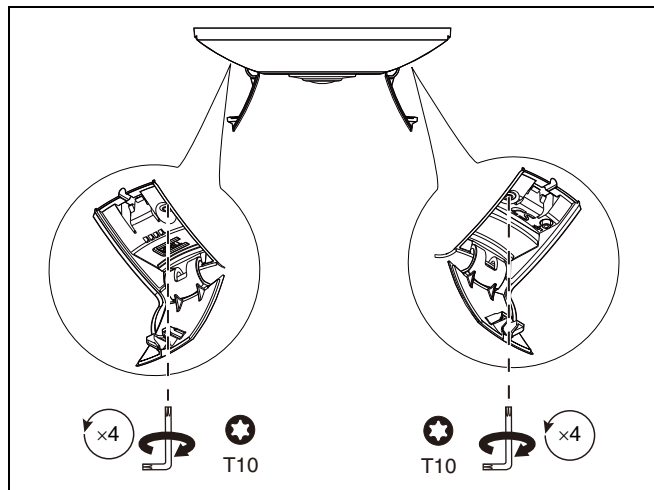
Network connection

Network (and PoE power)

Connect the camera to a 10/100 Base-T network:
– Use STP Category 5e cable with RJ45 connectors (the camera network socket is Auto MDIX compliant).
– Power is supplied to the camera via the Ethernet cable compliant with the Power-over-Ethernet standard.

Caution

Use only PoE approved devices.

Configuration

Browser connection

A computer with Microsoft Internet Explorer is used to receive live images, control the unit, and replay stored sequences. The unit is configured over the network using the browser.

Establishing the connection

The unit must have a valid IP address to operate on your network and a compatible subnet mask. By default, DHCP is preset at the factory to **On** and so your DHCP server assigns an IP address. With no DHCP server the default address is 192.168.0.1

1 Start the Web browser.

2 Enter the IP address of the unit as the URL.

3 During initial installation, confirm any security questions that appear.

Protected network

If a RADIUS server is used for network access control (802.1x authentication), the unit must be configured first. To configure the unit, connect it directly to a computer using a network cable and configure the two parameters, **Identity** and **Password**. Only after these have been configured can communication with the unit via the network occur.

Troubleshooting

LED status overview

The camera has four LEDs that are visible when the side flap is opened:
– Two LEDs (green and red) indicate the camera status
– Two LEDs (green and orange) indicate the LAN status
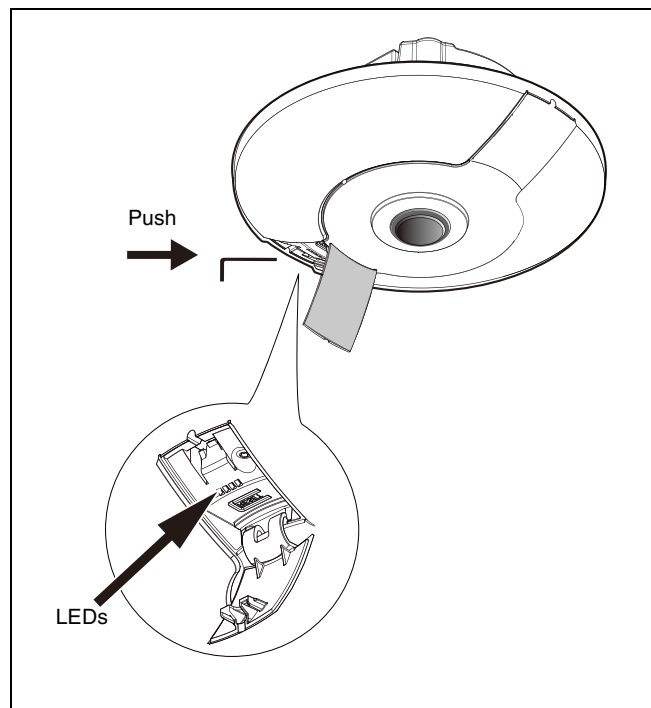
Resolving problems

The following table is intended to help identify the causes of malfunctions and correct them where possible.

Malfunction	Possible causes	Solution
Unit does not operate.	Power failure.	Check power supply.
	Faulty cable connections.	Check all cables, plugs, contacts and connections.
No connection established, no image transmission.	Incorrect unit configuration.	Check all configuration parameters (reset to factory default if necessary).
	Faulty installation.	Check all cables, plugs, contacts and connections.
	Wrong IP address.	Check the IP addresses (ping).
	Faulty data transmission within the LAN.	Check the data transmission with ping.
	The maximum number of connections has been reached.	Wait until there is a free connection and call the transmitter again.
No audio transmission to remote station.	Hardware fault.	Check that all connected audio units are operating correctly.
	Faulty cable connections.	Check all cables, plugs, contacts and connections.
	Incorrect configuration.	Check audio parameters on the **Audio** configuration and **LIVE** page functions pages.
	The audio voice connection is already in use by another receiver.	Wait until the connection is free and then call the sender again.
The unit does not report an alarm.	Alarm source is not selected.	Select possible alarm sources on the Alarm sources configuration page.
	No alarm response specified.	Specify the desired alarm response on the Alarm connections configuration page; if necessary change the IP address.
The unit is not operational after a firmware upload.	Power failure during programming by firmware file.	Have the unit checked by Customer Service and replace if necessary.
	Incorrect firmware file.	Enter the IP address of the unit followed by /main.htmin your Web browser and repeat the upload.
Placeholder with a red cross instead of the ActiveX components.	JVM not installed on your computer or not activated.	Install JVM.
Web browser contains empty fields.	Active proxy server in network.	Create a rule in the local computer's proxy settings to exclude local IP addresses.
The camera LED flashes red.	Firmware upload failed.	Repeat firmware upload.

Testing the network connection

The ping command can be used to check the connection between two IP addresses. This allows testing whether a device is active in the network.

1 Open the DOS command prompt.

2 Type **ping** followed by the IP address of the device.

If the device is found, the response appears as "Reply from ... ", followed by the number of bytes sent and the transmission time in milliseconds. Otherwise, the device cannot be accessed via the network. This might be because:
– The device is not properly connected to the network. Check the cable connections in this case.
– The device is not correctly integrated into the network. Check the IP address, subnet mask, and gateway address.

Customer service

If a fault cannot be resolved, please contact your supplier or system integrator.
The version numbers of the internal firmware can be viewed on a service page. Please note this information before contacting Customer Service.

1 In the address bar of your browser, after the unit IP address, enter: /version
for example: 192.168.0.80/version

2 Write down the information or print out the page.

Maintenance

Cleaning

It is generally sufficient to use a dry cloth for cleaning, but a moist lint-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.

Lens cleaning

It is important to keep the lens clean to ensure optimum performance. Dust, grease, or fingerprints should be removed from the lens surface. When cleaning the lens, take extra care not to damage the special coating used to reduce light reflections.
– Remove dust with a blower-brush or grease-free soft brush.
– Wipe water drops off the lens with a clean soft lint-free cloth and dry the lens surface.
– Use special lens cleaning paper or cloth treated with lens cleaning fluid to gently wipe off any remaining dirt (wipe spirally from the lens center towards the edge).

Repair

Warning

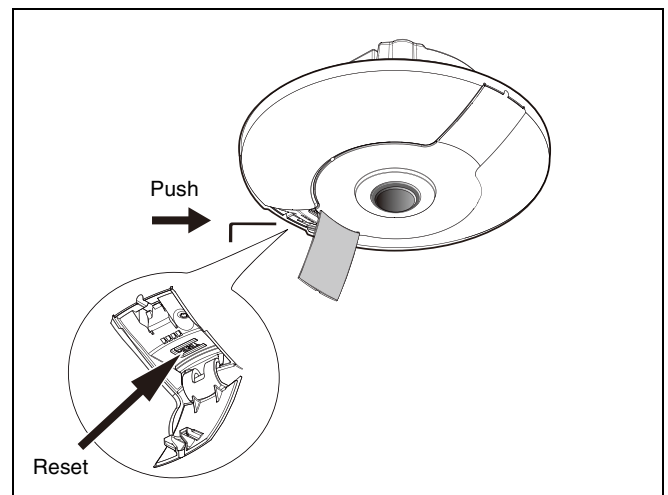Never open the casing of the unit.

The unit does not contain any user-serviceable parts. Refer all repairs to suitable qualified specialists.

Reset

Use the factory reset button to restore the unit to its original settings. Any changes to the settings are overwritten by the factory defaults. A reset may be necessary, for example, if the unit has invalid settings that prevent it from functioning as desired.

Specifications

Power	
Power Supply	Power-over-Ethernet 48 VDC nominal
Power Consumption	9.6 W
PoE	IEEE 802.3af (802.3at Type 1)
Sensor	
Type	1/2.3.inch CMOS
Total sensor pixels	12MP
Used pixels (360° version)	2640 × 2640 (7MP)
Video performance – Sensitivity – 360° lens	
(3100K, reflectivity 89%, F2.8, 30IRE)	
Color	0.55 lx
Mono	0.18 lx
Video performance – Dynamic range	
Dynamic range	92 dB WDR (+16 dB IAE)
Video streaming	
Video compression	H.264 (MP); M- JPEG
Streaming	Multiple configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth. Multiple channels with edge dewarping. Regions of Interest (ROI)
Overall IP Delay	Min. 120 ms, Max. 340 ms
Encoding interval	1 to 25 [30] ips

Video resolution (H × V) – 360° version		
Video 1 channel	Full image circle	2640 × 2640
Video 2 channel	Full panoramic	3584 × 504
	E-PTZ	1536 × 864
	Quad	1536 × 864
	Panoramic	2688 × 800
	Double panoramic	1920 × 1080
	Corridor	1600 × 1200
Video 3 channel	E-PTZ	1280 × 720

Video functions	
Day/Night	Color, Monochrome, Auto (adjustable switchover points)
Adjustable picture settings	Contrast, Saturation, Brightness
White Balance	2500 to 10000K, 4 automatic modes (Basic, Standard, Sodium vapor, Dominant color), Manual mode and Hold mode
Shutter	Automatic Electronic Shutter (AES) Fixed (1/30 [1/25] to 1/15000) selectable Default shutter
Sharpness	Sharpness enhancement level selectable
Backlight compensation	Off / On / Intelligent Auto Exposure (BLC)
Contrast enhancement	On/off
Noise reduction	Intelligent Dynamic Noise Reduction with separate temporal and spatial adjustments
Intelligent defog	Intelligent Defog automatically adjusts parameters for best picture in foggy or misty scenes (switchable)
Exposure region	Multiple selectable regions
Privacy Masking	Eight independent areas, fully programmable
Video Content Analysis	MOTION+
Pre-positions	Six independent sectors
Display stamping	Individual names and stamps for all video channels
Other functions	Pixel counter, Video watermarking, Location
Optical	
Lens (360° version)	1.6 mm fixed-focus lens (IR corrected), F2.8
Lens mount	Board mounted
Iris control	Fixed iris
Field of view (360° version)	180° (H) × 180° (V)
Minimum object distance	0.1 m (4 in)
Day/Night	Switched mechanical IR filter
Audio	
Audio input	Integrated microphone (can be permanently disabled)
Audio streaming	
Standard	G.711, 8 kHz sampling rate L16, 16 kHz sampling rate AAC-LC, 48 kbps at 16 kHz sampling rate AAC-LC, 80 kbps at 16 kHz sampling rate
Signal-to-Noise Ratio	>50 dB
Audio Streaming	Full-duplex / half duplex
Local storage	
Internal RAM	10 s pre-alarm recording
Memory card slot	Supports up to 32 GB SDHC / 2 TB SDXC card. (An SD card of Class 6 or higher is recommended for HD recording)
Recording	Continuous recording, ring recording. alarm/events/schedule recording
Software	
Unit Configuration	Web browser
Firmware update	SNC toolbox
Software viewer	Web browser

Network	
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, APIPA (Auto-IP, link local address), NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Encryption	TLS 1.2, SSL, DES, 3DES
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Connectivity	ONVIF Profile S, Auto-MDIX
Mechanical	
Dimensions	158 × 33 mm (6 1/4 × 1 5/16 in)
Weight	526 g
Environmental	
Operating Temperature	–20°C to +40°C (–4°F to 104°F)
Storage Temperature	–20°C to +60°C (–4°F to 140°F)
Operating humidity	20% to 93% RH
Storage humidity	up to 98% RH
Vandal resistance	IK06 (Lens: IK04)

Dimensions

∅105 (4 1/4)

68 (2 3/4)

34 (1 3/8)

∅158 (6 1/4)

N

W

E

S

∅150 (6)

mm (inches)

PG16

NPT 3/4"

∅158 (6 1/4)

47 (1 7/8)

mm (inches)