SNC-RX Series
Network Cameras

IPELA™

www.sony.com/security

IPELA

Stunning video and audio brought to you by the **IPELA** series of visual communication products that encompass the three-pronged concept of "Reality", "Intelligence", and "Usability". **IPELA** is the identity symbolizing the Sony vision for the workplace of the future, connecting people, places, and information with reality that has never before been achieved. **IPELA** products let you share, understand, and experience as if you are actually there, when infact, you are miles away. It allows you to quickly grasp a situation to make better business decisions.

Reality
- High Frame Rate
- Dynamic Frame Intergration

Intelligence
- Intelligent Motion Detection
- Intelligent Object Detection

Usability
- JPEG, MPEG-4, H.264 Compression Formats
- Dual Encoding Capability
- User-Friendly GUI

Real audiovisual communication over networks – this is business communication of the future, this is business communication brought to you today, this is **IPELA**.

Intelligent and Feature Rich – Sony High-Performance Multi-Codec Network Cameras Deliver Efficient 24/7 Monitoring

The SNC-RX Series, SNC-RZ50, and SNC-CS50 third-generation Network Cameras are the latest in a series of Sony network cameras that support "Intelligent Video Analytics."[1] This efficient and intelligent processing method can provide greater operational efficiency and a high level of security.

These cameras incorporate advanced compression technologies to transmit image data in three different formats: JPEG, MPEG-4, and H.264. Users can choose any of these compression formats to match their system's network environment and application requirements. What's more, these third-generation cameras can simultaneously stream JPEG and MPEG-4 data for even greater operational flexibility.

These latest Sony cameras employ robust detection methods - Intelligent Motion Detection (IMD) and Intelligent Object Detection (IOD) to maximize the efficiency of the monitoring system. Object 'tags' (or IDs) and associated position data are created within the cameras. This data – also called metadata – can be streamed independently or along with video over a network to work in conjunction with rules or filters (such as virtual borderlines) defined in application software to perform actions such as initiating alarms or beginning to record. This rules-based processing can minimize server workload, network bandwidth, and storage requirements. In addition, a number of other convenient features have been incorporated into these cameras to meet your needs such as, a Day/Night function, Voice Alert, Privacy Zone Masking, and wireless capability.

With their built-in intelligence and rich features, the Sony multi-codec cameras are ideal for a wide variety of surveillance and monitoring applications.

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[1] Intelligent video analytics is available when these cameras are used in conjunction with the Sony Network Recorders the NSR Series Ver. 4.0 or higher, the Sony Intelligent Monitoring Software IMZ-RS400 Series Ver. 4.0 or higher, or third party hardware and software designed to operate with these cameras to perform video analytics.

SNC-RX Series

The SNC-RX Series has a high-speed 360° endless panning (or rotation) capability, which allows users to precisely capture almost any object surrounding the camera. In addition, by employing a 1/4-type Exwave HAD™ CCD, the camera delivers exceptional picture quality for any remote monitoring application, even in low-light conditions.

SNC-RZ50

The SNC-RZ50 is a compact PTZ network camera that allows users to monitor a wide viewing area thanks to pan and tilt ranges of 340° and 115°, respectively. The camera also has an image-flip function for desktop use and supports the Dynamic Domain Name System (DDNS) for use over the Internet – making it ideal for a number of different monitoring applications.

SNC-CS50

The SNC-CS50 is a fixed-type network camera that incorporates the latest 1/3-type CCD with SuperExwave™ Technology. The minimum illumination is 0.4 lx in color and 0.04 lx in black and white (B/W), providing high-contrast images even in low-light conditions. The camera also comes equipped with a vari-focal zoom lens that covers a wide range of horizontal viewing angles (35° to 94°).
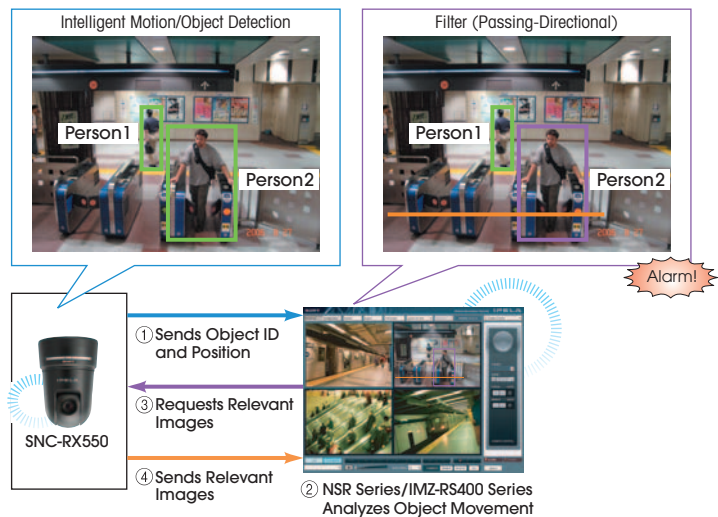
FEATURES

The DEPA Platform – Intelligent Video Analytics

The DEPA™ solution is a combined function of the camera intelligence incorporated in the SNC-RX Series, SNC-RZ50, and SNC-CS50 and the rules or filters on the recorder or software to determine what is to be recorded or when to trigger an alarm. When the network cameras perform IMD or IOD, 'tagged' objects and their associated metadata, including object position data, are sent to the NSR Series or the IMZ-RS400 Series. These products then use the metadata, together with filters, to analyze any object movement. This method of distributed processing minimizes the server workload, network bandwidth, and storage requirements.

Intelligent Motion/Object Detection

Person1
Person2

Filter (Passing-Directional)

Person1
Person2

Alarm!

SNC-RX550

① Sends Object ID and Position

③ Requests Relevant Images

④ Sends Relevant Images

② NSR Series/IMZ-RS400 Series Analyzes Object Movement

Distributed Enhanced Processing Architecture (DEPA)

High-Quality Images

High Frame Rate

These cameras support a maximum frame rate of 30 fps (NTSC)/25 fps (PAL) when the image size is VGA (640 x 480) in both MPEG-4 and JPEG modes, resulting in clear and smooth-moving images. The frame rate can be set to meet your specific network environment and system requirements.

Dynamic Frame Integration

These cameras incorporate Dynamic Frame Integration (DFI) technology to reproduce clear images for both still and moving objects within an image.
DFI technology detects movement within the image and reproduces those areas with minimal blurring, while areas in the image with little or no movement are displayed naturally with minimal jagged edges. This unique algorithm also takes advantage of the interlaced-scanning CCD, which is inherently more sensitive than progressive-scan CCDs and can provide clear images even under low-lighting conditions.

Sony Multi-codec
Camera Image

Conventional
Camera Image

Image Comparison Between a Sony
Multi-codec Camera and a Conventional Camera

JPEG Picture Quality Settings With Constant Bitrate Algorithm

Users can preset the JPEG picture quality from among ten levels. In addition, because these cameras incorporate a constant bitrate algorithm, they limit the data bitrate while maintaining high-quality images. This is useful for calculating the required storage capacity and bandwidth during installation.

Image Stabilizer

The image stabilizer function of these cameras minimizes the appearance of shaky images caused by low-frequency vibration to provide stable and sharp images. This function is useful for outdoor surveillance and traffic monitoring applications when environmental vibration effects such as wind are common.

Wide Dynamic Range With DynaView Technology

SNC-RX570

The SNC-RX570 incorporates DynaView™ technology, which dramatically improves camera dynamic range by 128 times when compared to conventional cameras. This results in clear image reproduction, even in extreme high-contrast environments. The camera captures the same image twice – first with a normal shutter speed, and then with a high shutter speed. The dark areas captured at normal shutter speed and the bright areas captured at high shutter speed are then combined into one image using an advanced DSP LSI. Additionally, as these high-contrast scenes may have different lighting conditions, two white balance circuits are employed – one for normal shutter speed and the other for high shutter speed. This advanced technique reproduces high-contrast images with proper color.

\<Normal Shutter Speed\>   \<High Shutter Speed\>

\<SNC-RX570 Camera Image\>   (simulated images)

DynaView Technology

Powerful and Versatile Zoom Capability

SNC-RX Series   SNC-RZ50

The SNC-RX570 incorporates a powerful 36x optical zoom lens, allowing for a zoom capability of up to 432x when used in combination with its 12x digital zoom. The SNC-RX550 and SNC-RZ50 incorporate a 26x optical zoom lens and the SNC-RX530 incorporates an 18x optical zoom lens.
Users can choose a camera that has the appropriate zoom ratio for their specific application requirements.

36x Optical Zoom

(simulated images)

4

Operational Flexibility

Selectable JPEG, MPEG-4, H.264 Compression Formats

These multi-codec cameras support three compression formats, JPEG, MPEG-4, and H.264. The "industry standard" JPEG compression format can be selected when high-quality still images are preferred. MPEG-4 provides clear moving images efficiently over networks when bandwidth is limited. For more efficient compression, when bandwidth is even more limited, the H.264 compression format, which is approximately twice as efficient as MPEG-4, is also available.

Dual Encoding Capability

With a dual encoding capability, these cameras can generate both MPEG-4 and JPEG images simultaneously. For example, you can set up your system to transfer MPEG-4 images over a WAN or an Internet VPN, where network bandwidth is limited, while storing high-resolution JPEG images on a server configured on the LAN.

Local Area Network (LAN)

JPEG & MPEG-4 Images → ROUTER → MPEG-4 → WAN/VPN → MPEG-4

JPEG

SNC-RX550

IMZ-RS Series Monitoring Software installed PC

Monitoring PC

Wireless Capability

These cameras support IEEE802.11g[2] and IEEE802.11b compliant Wireless LAN Cards. In addition, the optional SNCA-AN1 External Antenna can be used to transmit wireless signals over a longer distance. A wireless system configuration can save you time and money during installation.

[2] When the SNCA-CFW5 (IEEE802.11g/11b Wireless LAN Card) is used with the SNC-RX Series and SNC-CS50, the typical transfer rate is approximately 3 Mb/s. When used with the SNC-RZ50, the typical transfer rate is approximately 9 Mb/s when using the CF Card slot and approximately 3 Mb/s when using the PC Card slot.

"Day/Night" Function

These cameras can switch from day mode (Color) to night mode (B/W) by replacing the camera's infrared cut filter with a clear filter. Users can toggle between the two modes, manually, on a predefined schedule, using an external sensor, or automatically in response to surrounding light conditions. When these cameras are in night mode, they are sensitive to near-IR illuminators, allowing them to operate even in zero lx[3] conditions.

[3] Zero lx means absence of visible light to the naked eye.

Bi-Directional Audio

Users can connect an external microphone to these cameras in order to pick up audio from a preferred location. These cameras are also equipped with a speaker output, enabling users to send an alert or make an announcement from a remote location – significantly expanding the possibilities of their monitoring applications.

Voice Alert

The Voice Alert function allows users to upload up to three pre-recorded audio files to these cameras, for playback upon an alarm trigger or on a pre-specified time schedule.

High Level of Security

Intelligent Motion Detection

The built-in IMD function can trigger a variety of actions such as the storage and transfer of images or can trigger an external device through its output relays. False alarms caused by noise and repeated motion patterns are minimized thanks to an advanced Sony algorithm. Plus, when used in conjunction with DEPA-enabled recorders or software, a multitude of filter functions is available to actuate triggers based on more specific movement.

Intelligent Object Detection[4]

These cameras can detect objects that have been abandoned or have become stationary for a specified duration. Up to four detection ares can be designnated. This feature is useful for detecting suspicious objects left in public places, or for detecting stalled cars or accidents on the road. Like IMD, filters can be used when configured with DEPA-enabled products.

[4] The intelligent object detection function and the intelligent motion detection function cannot be used simultaneously.

Sensor IN/Alarm OUT Ports

Equipped with two sensor inputs, these cameras can receive triggers from external sensors. Two alarm outputs can also be used to trigger other devices to perform a variety of actions.

Pre-/Post-Alarm Image Storage

These cameras are capable of storing both pre-and post-alarm images on 16 MB of built-in memory or on removable storage media.

Image Transfer Using FTP/SMTP[5]

All of the pre-/post-alarm images stored at the time of an alarm event can be transferred to an FTP server for viewing at a later time. Also, a still image generated at the time of an alarm event can be sent to a designated e-mail address.

[5] All images transferred using SMTP are in JPEG format.

Network Features

Adaptive Rate Control

In order to control QoS (Quality of Service) levels over a network, these cameras employ an adaptive rate control (ARC) function. ARC automatically varies the video bit-transfer rate to meet changing network conditions and selects the most appropriate frame rates, thus preventing video breakup.

Simultaneous Access

Up to 20 users can simultaneously access these cameras and monitor images separately.

Multicasting Capability

When configured with a multicast router, these cameras can efficiently stream MPEG-4 and H.246 video and audio to a large number of users.

DDNS Support*6

SNC-RZ50

Because the SNC-RZ50 supports DDNS, a unique host name can be assigned to the camera when using a dynamic IP address over the Internet.

*6 Requires registration at the following site: www.snccam.net

Network Security Features

IEEE802.1X Compliant

These cameras support IEEE802.1X port-based network access control. This means they can be integrated to a network environment that uses the IEEE802.1X client-authorization protocol for security purposes. This feature can be used on both wired- and wireless-connections.

SSL Compliant

SNC-RZ50

The SNC-RZ50 supports the SSL protocol for encrypting data, to enable secure data transmission over networks.

Versatile Interfaces

Analog Composite Video Output

These cameras can output an analog composite video signal via the BNC connector. This feature is ideal for local video recording or monitoring. Also, the analog composite video signal provides a high-horizontal resolution ranging from 450 to 540 TV lines depending on the model, delivering amazingly clear and detailed images.

RS-232C Interface
Transparency Function:

These cameras have a transparency function that allows external equipment connected via the RS-232C interface to be controlled or monitored, by a PC over a network.

VISCA™ Protocol:

SNC-RX Series   SNC-RZ50

The SNC-RX Series and the SNC-RZ50 can interface with external control equipment using the Sony VISCA protocol. This configuration allows for local control of Pan/Tilt/Zoom and adjustment of camera settings.

Other Convenient Features

Date/Time Superimposition

The date and time of recorded images can be superimposed on the video while it is being monitored and recorded. This feature is ideal not only for easily identifying the exact date and time of an event during playback, but because the information becomes part of the video image, it is also useful when providing video evidence to authorities.

File Export to Various Removable Media

The SNC multi-codec cameras are equipped with a PC card slot and/or other removable media slots, allowing users to store images on removable media as required.

Privacy Zone Masking Functions*7
Spherical Privacy Zone Masking:

SNC-RX Series   SNC-RZ50

This technology allows masked areas to be interlocked with the camera's Pan/Tilt/Zoom movements regardless of the camera angle or even if it is circling. Up to eight unwanted or prohibited areas within an image can be masked precisely and appropriately.

Privacy Zone Masking:

SNC-CS50

Up to seven unwanted or prohibited areas within an image can be masked.

*7 Supplied "SNC Privacy Masking Tool" software is required to set masking areas.

Mechanical "Auto-Flip" Function

SNC-RX Series

The SNC-RX Series combines a 90-degree tilt capability with 360-degree rotation to track subjects passing beneath it. First, the camera tilts down 90 degrees until the subject is directly beneath it. Then it rotates 180 degrees, and tilts back up to track the subject as it moves away. This combination of moves is known as the Auto-Flip function.

24 V AC, 12 V DC, or PoE Operation

SNC-CS50

The SNC-CS50 offers a choice of three types of power: 24 V AC, 12 V DC, or PoE (Power-over-Ethernet, IEEE 802.3af). The camera automatically adapts to the applied power source for fast and effective operation.

OPTIONAL ACCESSORIES

SNCA-CFW5 [*8]
IEEE802.11g/11b
Wireless LAN Card

SNC-RX Series

SNC-RZ50

SNC-CS50

[*8] The SNCA-CFW5 is
not available in
some areas.
For more details,
please contact your
nearest Sony dealer.

SNCA-CFW1
IEEE802.11b
Wireless LAN Card

SNC-RX Series

SNC-RZ50

SNC-CS50

SNCA-AN1
Wireless LAN
Antenna
(Optional accessory
for the SNCA-CFW5/
SNCA-CFW1)

SNC-RX Series

SNC-RZ50

SNC-CS50

YT-ICB550/T
In-ceiling
Mount Kit
(Tinted dome)

SNC-RX Series

SNC-RZ50

YT-ICB550/C
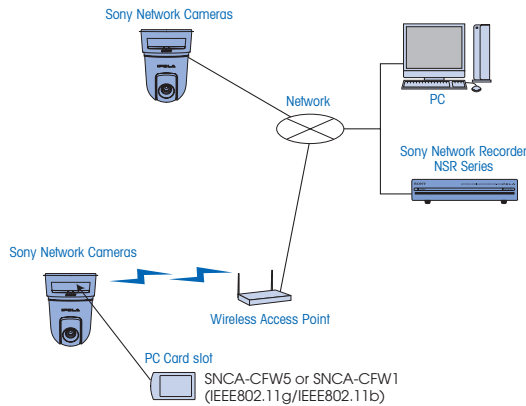In-ceiling
Mount Kit
(Clear dome)

SNC-RX Series

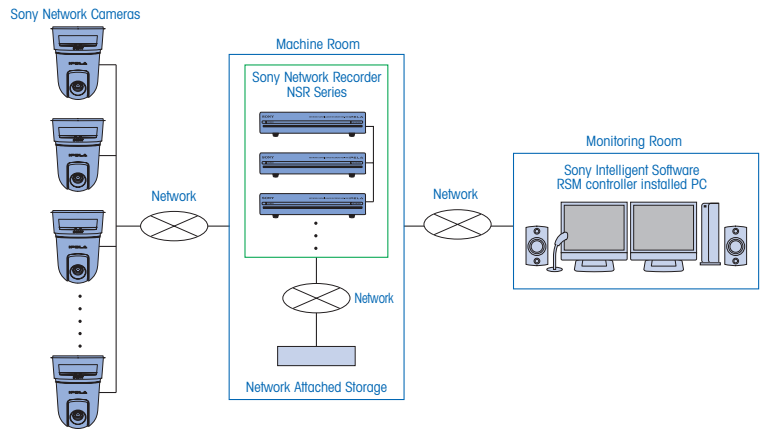SNC-RZ50

YT-MA550
Adaptor for the
YT-ICB550

SNC-RZ50

SYSTEM CONFIGURATIONS

Stand-alone Configuration
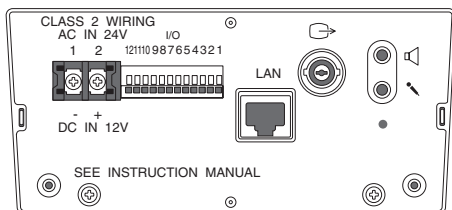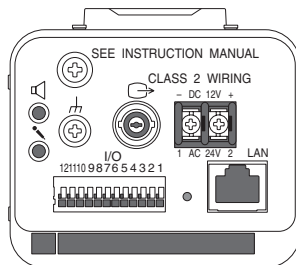

Client-server Configuration

* The SNC-RX Series and SNC-CS50 requires a PC card adaptor to
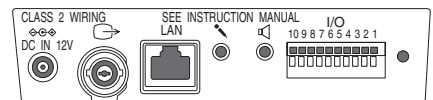 use the SNCA-CFW5/SNCA-CFW1.

REAR PANELS

SNC-RX Series

SNC-CS50

SNC-RZ50

SPECIFICATIONS

	SNC-RX570N	SNC-RX570P	SNC-RX550N	SNC-RX550P	SNC-RX530N	SNC-RX530P	SNC-RZ50N	SNC-RZ50P	SNC-CS50N	SNC-CS50P
Camera										
Image device	1/4-type CCD with Exwave HAD technology						1/4-type Super HAD CCD		1/3-type CCD with SuperExwave technology	
Number of effective pixels	380,000 (768 x 494)	440,000 (752 x 582)	380,000 (768 x 494)	440,000 (752 x 582)	380,000 (768 x 494)	440,000 (752 x 582)	340,000 (711 x 485)	400,000 (702 x 575)	380,000 (768 x 494)	440,000 (752 x 582)
Electronic shutter	1 to 1/10,000 s								1/60 to 1/10,000 s	1/50 to 1/10,000 s
Gain control	Auto/Manual (-3 to +28 dB)								Auto/Manual (0 dB to +24 dB)	
Exposure control	Auto/Full auto/Shutter-priority/Iris-priority/Manual/EV compensation/Backlight compensation								Auto/Manual/EV compensation/Backlight compensation	
White balance mode	Auto/Indoor/Outdoor/One-push WB/ATW/Manual								ATW/ATW PRO/One-push WB	
Lens type	Auto-focus zoom lens								Vari-focal zoom lens	
Zoom ratio	36x optical zoom (432x with digital zoom)		26x optical zoom (312x with digital zoom)		18x optical zoom (216x with digital zoom)		26x optical zoom (312x with digital zoom)		2.7x	
	*Vignetting may occur at wide viewing angles under low light conditions (SNC-RX550 Series only).									
Horizontal viewing angle	1.7 to 57.8 degrees		2.2 to 54.2 degrees		2.8 to 48.0 degrees		1.7 to 42.0 degrees		35 to 94 degrees	
Focal length	f=3.4 to 122.4 mm		f=3.5 to 91.0 mm		f=4.1 to 73.8 mm		f=3.5 to 91.0 mm		f=2.9 to 8.0 mm	
F-number	F1.6 (wide), F4.5 (tele)		F1.6 (wide), F3.8 (tele)		F1.4 (wide), F3.0 (tele)		F1.6 (wide), F3.8 (tele)		F0.95 (wide), F1.6 (tele)	
Minimum object distance	320 mm (wide),1,500 mm (tele)				290 mm (wide), 800 mm (tele)		320 mm (wide),1,500 mm (tele)		300 mm	
Pan angle	360 degrees endless rotation						-170 to +170 degrees		–	
Pan speed	300 degrees/s (max.)								–	
Tilt angle	-90 to 0 degrees						-90 to +25 degrees		–	
Tilt speed	300 degrees/s (max.)								–	
Image										
Image size (H x V)	640 x 480, 320 x 240, 160 x 120 (JPEG, MPEG-4, H.264)									
Compression format	JPEG, MPEG-4, H.264									
Maximum frame rate JPEG/MPEG-4	30 fps (640 x 480)	25 fps (640 x 480)	30 fps (640 x 480)	25 fps (640 x 480)	30 fps (640 x 480)	25 fps (640 x 480)	30 fps (640 x 480)	25 fps (640 x 480)	30 fps (640 x 480)	25 fps (640 x 480)
H.264	10 fps (640 x 480)	8 fps (640 x 480)	10 fps (640 x 480)	8 fps (640 x 480)	10 fps (640 x 480)	8 fps (640 x 480)	10 fps (640 x 480)	8 fps (640 x 480)	10 fps (640 x 480)	8 fps (640 x 480)
Audio										
Audio compression	G.711/G.726 (40, 32, 24, 16 Kb/s)									
Network										
Protocols	TCP/IP, HTTP, SSL (https)*, ARP, ICMP, FTP, SMTP, DHCP, DNS, NTP, SNMP (MIB-2), RTP/RTCP *SSL is supported by the SNC-RZ50 only.									
Number of clients	20									
Authentication	IEEE802.1X									
Interface										
Ethernet	10Base-T/100Base-TX (RJ-45)									
Serial interface	RS-232C (Transparency function or VISCA protocol)								RS-232C (Transparency function)	
Card slots	PC card x1, Memory Stick™ x1						PC card x1, CF card x1		PC card x1	
Analog video output	BNC x1, 1.0 Vp-p, 75 Ω									
I/O port	Sensor in x 2, Alarm out x 2									
External microphone input	Mini-jack (monaural, 2.2 KΩ 2.5 V plug-in power)									
Audio line output	Mini-jack (monaural), max output level: 1 Vrms									
Analog video output										
Signal system	NTSC (Composite)	PAL (Composite)	NTSC (Composite)	PAL (Composite)	NTSC (Composite)	PAL (Composite)	NTSC (Composite)	PAL (Composite)	NTSC (Composite)	PAL (Composite)
Horizontal resolution	530 TV lines		470 TV lines	460 TV lines	470 TV lines	460 TV lines	450 TV lines		540 TV lines	
S/N ratio	more than 50 dB									
Min. illumination Color	1.4 lx (50IRE, F1.6, AGC ON)		1 lx (50IRE, F1.6, AGC ON)		0.7 lx (50IRE, F1.4, AGC ON)		2.2 lx (50IRE, F1.6, AGC ON)		0.4 lx (50IRE, F0.95, AGC ON)	
B/W	0.15 lx (50IRE, F1.6, AGC ON)		0.15 lx (50IRE, F1.6, AGC ON)		0.15 lx (50IRE, F1.4, AGC ON)		0.3 lx (50IRE, F1.6, AGC ON)		0.04 lx (50IRE, F0.95, AGC ON)	
General										
Weight	4 lb 13 oz (2.2 kg)						2 lb 10 oz (1.2 kg)		1 lb 10 oz (750 g) excl. cover equipment / 1 lb 15 oz (880 g) incl. cover equipment	
Dimensions (W x H x D)	6 3/8 x 6 3/8 x 9 1/8 inches (160 x 160 x230 mm)						5 5/8 x 6 5/8 x 5 5/8 inches (140 x 166 142 mm)		3 3/8 x 2 3/4 x 7 3/4 inches (84 x 69 196 mm) excl. cover equipment / 3 3/8 x 2 3/4 x 10 1/2 inches (84 x 69 x 265 mm) incl. cover equipment	
Body color	Black/White						White			
Power requirements	AC 24 V/DC 12 V						DC 12 V		AC 24 V, DC 12 V, PoE	
Power consumption	27 W max.		25 W max.		24 W max.		20 W max.		9 W max. (AC 24V)	
Operating temperature	32 to 122 °F (0 to 50 °C)						32 to 104 °F (0 to 40 °C)		32 to 122 °F (0 to 50 °C)	
Storage temperature	-4 to 140 °F (-20 to 60 °C)									
Supplied accessories										
	Ceiling-mount bracket (A), Ceiling-mount bracket (B), Screws x6, Wire rope, CD-ROM (setup software, user's guide), Installation manual						Ceiling-mount bracket (A), Ceiling-mount bracket (B), Screws x6, Wire rope, AC Adaptor, AC Cable, Mount bracket cover, Shoulder screw, Plug retainer, Rubber feet x4, CD-ROM (setup software, user's guide), Installation manual		Front cover, Cable cover, Lens cable cover, Screw for front cover, Shoulder screw, Wire rope, CD-ROM (setup software, user's guide), Installation manual	
System requirements										
Operating system	Microsoft Windows® 2000/XP									
Processor	CPU: Intel Pentium® IV 1.5 GHz or higher									
Memory	RAM: 256 MB or more									
Web browser	Microsoft Internet Explorer® Ver. 6.0 or later									

*The SNC-RZ50 includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)

*The SNC-RZ50 includes cryptographic software written by Eric Young (eay@cryptsoft.com).