i-PRO **SmartHD**
5 Series NEW

ONVIF | S G

VIQS
Variable Image Quality on Specified area

H.264 JPEG

FULL HD Full High Definition 1080/30p

day/night ICR

IR LED

HLC

Fog sand Compensation

Auto Back Focus

IP66 standard

i-VMD (Optional) **Type2**

*i-VMD Type2 : Intruder Detection / Loitering Detection / Direction Detection / Scene Change Detection / Object Detection / Cross Line Detection

Full HD / 1,920 x 1,080 30 fps H.264 Weatherproof Network Camera

Key Features

- **1,080p Full HD** images up to **30 fps**
- Approximate 1/3 inches, high sensitivity MOS image sensor
- **Multiple H.264 (High profile) streams (max. 4 streams)** and JPEG streams ensure simultaneous real time monitoring and high resolution recording.
- Wide Dynamic Range and ABS (Adaptive Black Stretch) technologies deliver wider dynamic range compared with conventional cameras.
- **Smart coding Technology : Group of Pictures (GOP) control** function removes unnecessary information from the frame for realizing efficient encoding. **Auto VIQS** (Variable Image Quality on Specified area) function recognizes the no movement area in a video automatically and lowering the resolution of it to reduce the data size. With the latest bit rate reducing technology, **GOP control, Auto VIQS, 3D-MNR** (Multi process Noise Reduction) and **FDF** (Frequency Divided Filter), the network bandwidth and the disk space of recorder can be saved.
- High sensitivity with Day/Night (ICR*) function : 0.07 lx (Color), 0.01 lx (B/W) at F1.6 *ICR: IR Cut filter Removal
- **IR LED** equipped : The equipped infrared LED makes it possible to take pictures at zero lx.
- **IR LED** is controlled to match the environment, thereby the camera provides clear images of human faces without white blur.
- **ABF (Auto Back Focus)** ensures easy installation.
- Newly developed lens with aperture control function realizes the best focus in any environment.
- **VIQS** (Variable Image Quality on Specified area) technology allows the designated **eight areas** to retain higher image quality while the excluded area will have a decreased image quality, which enables to use lower image file size and bit rate.
- Cropping function enables to provide whole image and the part image simultaneously. Up to 4 image capture areas can be specified, and it is also possible to control the sequence.
- Face Wide Dynamic Range technology ensures clear face image.
- Lens distortion compensation for the distorted images can be adjusted 256 steps.
- Electronic sensitivity enhancement : Auto (Up to 16/30s) / OFF
- Selectable light control modes : **Outdoor scene,Indoor scene (50 Hz) / Indoor scene (60 Hz), Fix shutter** Indoor scene (50 Hz/60 Hz) : Flicker caused by fluorescent lightning will be automatically compensated.

- 3x extra optical zoom at 640 x 360 resolution
- 2x, 4x digital zoom controlled by browser
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size.
- Privacy Zone can mask up to 8 private areas, such as house windows and entrances/exits.
- Camera title display : Up to 20 alphanumeric characters on the browser
- JPEG Image compression ratio can be changed by alarm so that higher quality image can be provided.
- Prioritized stream control : One of the video streams can be prioritized when multiple recorders or client PCs are accessing the camera so that the recorder or the client PC can maintain the frame rate.
- **SDXC/SDHC/SD Memory card slot** for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (H.264 / JPEG). Realize long-term recording and auto backup function.
- Face detection function detects the position of human face and the information is sent by XML or video stream. (Extension Software)
- Can be added new intelligent extension software in addition to built-in VMD (Video Motion Detection), alarm function.
- **Fog compensation function** equipped as standard.
- **HLC (High Light Compensation)** technology reduces strong light sources such as vehicle headlights to prevent camera being blinded.
- **SCC (Super Chroma Compensation)** function realizes a better color reproducibility even in low illumination.
- H.264 max. bit rate/client and Total bit rate control allows flexible network traffic management. Frame rate priority mode controls bit rate and compression ratio to provide the specified frame rate.
- Internet mode : H.264 images can be transmitted over HTTP protocol.
- Multi-language : English / Italian / French / German / Spanish / Portuguese / Russian / Chinese / Japanese
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- ONVIF compliant model
- IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard,Type 4X(UL50), NEMA 4X compliant.
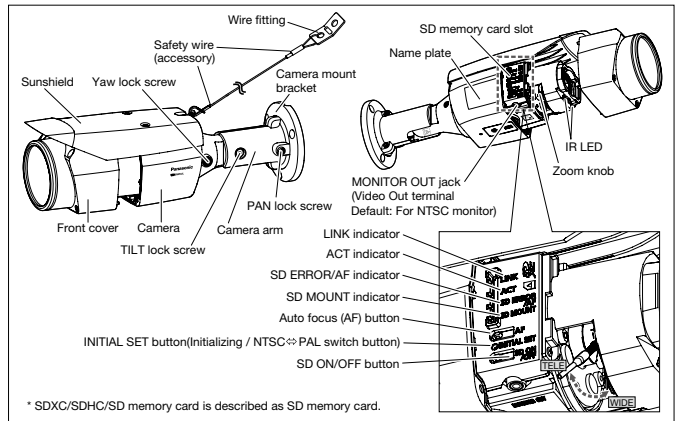
Specifications

Camera		
	Image Sensor	Approx. 1/3 type MOS image sensor
	Scanning Mode	Progressive scan
	Scanning Area	5.35 mm (H) x 3.34 mm(V) {7/32 inches (H) x 1/8 inches (V)}
	Minimum Illumination	Color : 0.07 lx, BW : 0.01 lx (F1.6, Maximum shutter : Max. 1/30s, Gain : On(High)) BW : 0 lx (F1.6, Maximum shutter : Off(1/30 s), Gain : High, when the IR LED is lit) Color : 0.005 lx, BW : 0.0007 lx (F1.6, Maximum shutter : Max. 16/30s, Gain : On(High)) *1
	IR LED Light	Off / Auto(High / Mid / Low)
	IR LED irradiation distance	Approx. 30 m {98.43 feet}
	White Balance	AWC (2,000 - 10,000 K), ATW1 (2,700 - 6,000 K), ATW2 (2,000 - 6,000 K)
	Light Control Mode	Outdoor scene / Indoor scene (50 Hz) / Indoor scene (60 Hz) / Fix shutter
	Shutter Speed	OFF(1/30), 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	Wide Dynamic Range	On / Off
	Face wide dynamic range	On / Off (only when Wide Dynamic Range : On)
	Adaptive Black Stretch	On / Off (only when Wide Dynamic Range : Off)
	Fog compensation	On / Off (only when Wide Dynamic Range / Adaptive black stretch : Off)
	High light compensation(HLC)	On / Off (only when Wide Dynamic Range / Adaptive black stretch : Off)
	AGC	On (Low) / On(Mid), On(High) / Off
	Maximum shutter	max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/100 s, max. 1/60 s, max. 2/100 s, max. 2/120 s, max. 1/30 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s
	Day/Night (ICR)	Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC)
	Digital Noise Reduction	High / Low
	Video Motion Detection	4 areas, Sensitivity : 15 steps, Detection size : 10 steps
	Privacy Zone	Up to 8 zones
	VIQS	Up to 8 zones
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks)
	Focus Adjustment	ABF / MANUAL (Html only)
	Lens Distortion Compensation	256 steps
Lens	Vari Focal Length	2.8 mm – 10 mm {1/8 inches – 13/32 inches}
	Angular Field of View	[16 : 9 mode] Horizontal : 31 ° (TELE) - 112 ° (WIDE) Vertical : 17 ° (TELE) - 60 ° (WIDE) [4 : 3 mode] Horizontal : 26 ° (TELE) - 91 ° (WIDE) Vertical : 19 ° (TELE) - 67 ° (WIDE)
	Maximum Aperture Ratio	1 : 1.6 (WIDE) - 1 : 3.4 (TELE)
	Focusing Range	0.3 m - ∞
Adjusting Angle (Camera mount bracket)	Ceiling mounting	Horizontal : ±180° (PAN rotation part) Vertical : 0° to 90° (TILT rotation part) Yaw : -190° to +100° (YAW rotation part)
	Wall mounting	Horizontal : ±90° (TILT rotation part)* Vertical : ±90° (TILT rotation part)* Yaw : -190° to +100° (YAW rotation part)
Browser GUI	Cropping	Off / JPEG(1) / JPEG(2) / JPEG(3) / H.264(1) / H.264(2) / H.264(3) / H.264(4) / H.264(all) Alarm action On/ Off
	Camera Control	Brightness, AUX On / Off
	Display Mode	Spot, Quad : Image from 16 cameras can be displayed in 4 different Quad screens or 16 split screen (JPEG only). 20 characters camera title available.
	Digital Zoom	1x, 2x, 4x controlled by browser GUI
	Camera Title	Up to 20 alphanumeric characters
	Clock Display	Time : 12H/24H, Date : 5 formats on the browser, Summer time (Manual)
	Alarm Control	Reset
	One Shot Capture	A still picture will be displayed on a newly opened window.
	SD Memory Data Download	Still or motion Images recorded in the SDXC/SDHC/SD memory card can be downloaded.
	GUI / Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese
	System Log	Up to 100 (Internal) Up to 4,000 (SDXC/SDHC/SD memory when the recording format is set to JPEG.) error logs
	Supported OS *2	Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7,Microsoft® Windows Vista®
	Supported Browser	Windows® Internet Explorer® 11 (32 bit), Windows® Internet Explorer® 10 (32 bit), Windows® Internet Explorer® 9 (32 bit), Windows® Internet Explorer® 8 (32 bit), Windows® Internet Explorer® 7 (32 bit), Safari, Google Chrome, Mozilla Firefox
Network	Network IF	10Base-T / 100Base-TX, RJ45 connector
	Image Resolution	•2 mega pixel [16 : 9](30 fps mode) H.264(1), H.264(2) 1,920 x 1,080 / 1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90 H.264(3), H.264(4) 1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90 •2 mega pixel [4 : 3](30 fps mode) H.264(1), H.264(2) 1,600 x 1,200 / 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120 H.264(3), H.264(4) 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120 •3 mega pixel [4 : 3](30 fps mode) * Used by super resolution technology H.264(1), H.264(2) 2,048 x 1,536 / 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120 H.264(3), H.264(4) 1,280 x 960 / 800 x 600 / VGA / 400 x 300 / QVGA / 160 x 120

	H.264 *3	Transmission Mode	Constant bit rate / Variable bit rate / Framerate priority / Best effort / Advanced VBR
		Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps
		Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 / 10,240 / 12,288 / 14,336 / 16,384 / 20,480 / 24,576 / 30,720*/ 40,960* kbps
		Image Quality (Constant bit rate/Best effort)	Low(Motion priority) / Normal / Fine(Image quality priority)
		Smart Coding mode	On (Low / Mid / High) / Off (Only when "Variable bit rate" is selected)
		Refresh interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5s
		Transmission Type	Unicast / Multicast
	JPEG	Image Quality	10 steps
		Refresh interval	0.1 fps - 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)
		Transmission Type	Pull / Push
	Total Bit Rate		64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps / Unlimited
	Supported Protocol		IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, MLD, ICMP, ARP IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP,FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP

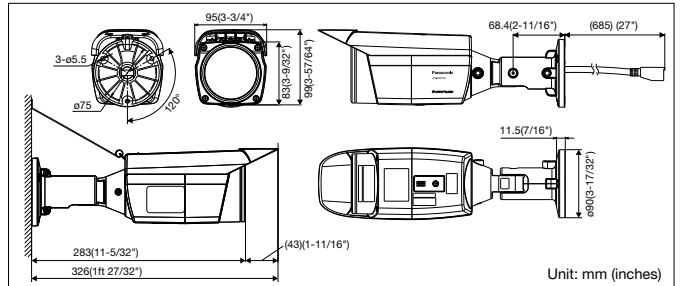| **Network**	FTP Client	Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SDXC/SDHC/SD memory card is available.)
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)
	SDXC/SDHC/SD Memory Card (Option) * Manufactured by Panasonic (SD speed class 4 or higher) * Use the SD memory card that complies with UHS-1 (Ultra High Speed-1) in the case of SD Speed Class 10.	H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure Compatible (JPEG only) JPEG recording : Manual REC / Alarm REC (Pre/Post) / Backup upon network failure Compatible SD (SDHC/SDXC) card: Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)
	Cellular Phone Compatibility	JPEG image, AUX control (by access level)
	Mobile Terminal Compatibility	iPad, iPhone, iPod touch (iOS 4.2.1 or later), Android™ mobile terminal
Alarm	Alarm Source	VMD, Command alarm
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification Indication on browser, FTP image transfer, Panasonic protocol output
	Alarm Log	With SDXC/SDHC/SD memory card : Up to 50,000 logs for each SD memory card
	Schedule	Alarm / VMD / Access permission / H.264 recording / Scene file
Input/ Output	Monitor Output (for adjustment)	VBS : 1.0 V [p-p]/75 Ω, composite, RCA jack An NTSC or PAL signal can be outputted from camera (either press the INITIAL SET switch quickly (within 1 second) or use software to select either NTSC or PAL signal).
General	Safety	UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1
	EMS	FCC (Part15 ClassA), ICES003 ClassA, EN55022 ClassB, EN55024
	Power Source and Power Consumption	When IR LED is On PoE (IEEE802.3af compliant) : DC 48 V / 190 mA / Approx. 9.12 W (Class 0 device)
	Ambient Operating Temperature	–30 °C to +50 °C (–22 °F to 122 °F)
	Ambient Operating Humidity	10 to 90 % (no condensation)
	Water and Dust Resistance	IP66, IEC60529 measuring standard compatible, Type 4X(UL50), NEMA 4X compliant
	Dimensions * Installing using the base bracket	95 mm (W) x 99 mm (H) x 326 mm (L) {3-3/4 inches (W) x 3-57/64 inches (H) x 1ft 27/32 inches (L)}
	Mass (approx.)	Approx. 1.4 kg {3.1 lbs}
	Finish	Main body : Aluminum die cast, light gray Front cover section clear part : Clear polycarbonate resin

*1 Converted value
*2 Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8 / Windows® 8.1" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 8.1 or Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*3 Transmission for 4 streams can be individually set.

Part Names and Functions

* SDXC/SDHC/SD memory card is described as SD memory card.

Appearance

Unit: mm (inches)

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Important
– Safety Precaution: Carefully read the Important Information, Installation Guide and operating instructions before using this product.
– Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

• Masses and dimensions are approximate. • Specifications are subject to change without notice.

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