Panasonic

Preliminary

i-PRO SmartHD

4K ULTRA HD ENGINE

VIQS
Variable Image Quality on Specified area   H.264 JPEG

day/night   Auto Back Focus   i-VMD (Optional)

ULTRA 360

High resolution, sensitivity, and built-in intelligent features

Key Features

- 360° monitoring with a wide variety of transmission modes : Panorama, Double Panorama, Quad PTZ, Single PTZ, and Quad streams (H.264)
- **9M** images up to 15 fps.
- **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. Only for fisheye image.
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by new **4K ULTRA HD engine**.
- Smooth PTZ operation without mechanical action
- Built-in distortion correction function
- A fisheye lens control function realizes intelligible screen operation intuitively.
- Smartphone monitoring : Direct camera control from smartphone
- *Wide dynamic range* and ABS (Adaptive Black Stretch) technologies deliver wider dynamic range.
- High sensitivity with Day/Night (Electrical) function : 0.3 lx (Color), 0.2 lx (B/W) at F1.9
- **Built-in ABF** enables automatic focus adjustment for sharp image both in color and B/W modes.
- Digital Noise Reduction: 3D-DNR ensures noise reduction in various conditions.
- Progressive scan ensures clear images with less motion blur and no tearing even when the subject is moving.
- Superior color reproduction by primary (RGB) color filter.
- Electronic sensitivity enhancement: Auto (Up to 16x) / OFF
- Selectable light control modes : Indoor scene (50 Hz) / Indoor scene (60 Hz) / ELC (maximum exposure time)
  Indoor scene (50 Hz/60 Hz) : Flicker caused by fluorescent lightning will be automatically compensated.
  ELC (maximum exposure time) : The lightning control will be automatically performed by adjusting shutter speed in the range of ELC.
- VMD (Video Motion Detector) 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.
  Configurable only on the fisheye image.
- Camera title display: Up to 20 alphanumeric characters on the browser
- Alarm sources including 3 terminal input, VMD and Panasonic alarm command can trigger actions such as SDXC/ SDHC/SD memory recording, FTP image transfer, E-mail notification, Indication on browser, Alarm terminal output, HTTP notification, and Panasonic protocol output.

- Full duplex bi-directional audio allows interactive communication between camera site and monitoring site.
- 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 (JPEG)
- 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 (Extension software) in addition to built- in VMD (Video Motion Detection), alarm function.
- **Intelligent function** (Extension software) such as Intruder / Loitering / Direction / Scene change / Object / Cross line detection, People Count (Cross line), MOR(Moving Object Remover) Function, Heat map (High Traffic Zone / Long-stay Zone)
- Super Chroma Compensation function realizes a better color
- 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.
- Operating temperature
  : −10°C ~ +50°C (14°F ~ 122°F) (Ceiling / Wall / Camera mount bracket)
  : −10°C ~ +40°C (14°F ~ 104°F) (Desktop/ Tripod)
- Low profile design for discrete installation
- Onvif compliant model

Optional Accessory

Ceiling Mount Bracket
WV-Q105A

(Use when installing the WV-SFN480 on weak ceiling boards, etc.)

Specifications

Camera			
	Image Sensor	1/2 type MOS image sensor	
	Effective Pixels	Approx. 12.4 mega pixels	
	Scanning Mode	Progressive	
	Scanning Area	5.54 mm(H) × 5.54mm (V) {3/16 inches (H) × 3/16 inches (V)}	
	Minimum Illumination	Color : 0.3 lx (F1.9, Auto slow shutter : Off (1/30 s), Gain : On(High)) Color : 0.02 lx(F1.9, Maximum shutter : max. 16/30 s, AGC : High)*1 BW : 0.2 lx (F1.9, Auto slow shutter : Off (1/30 s), Gain : On(High)) BW : 0.01 lx(F1.9, Maximum shutter : max. 16/30 s, AGC : High)*1	
	White Balance	AWC (2,000 ~ 10,000 K), ATW1 (2,700 ~ 6,000 K), ATW2 (2,000 ~ 6,000 K)	
	Light Control Mode	Indoor scene (50 Hz / 60 Hz) / ELC	
	Maximum shutter	With Wide dynamic range : On Max 1/30 s, Max 2/30 s, Max 4/30 s, Max 6/30 s, Max 10/30 s, Max 16/30 s With Wide dynamic range : Off Max.1/10000s, Max.1/4000s, Max.1/2000s, Max.1/1000s, Max.1/500s, Max.1/250s, Max.1/120s, Max.2/120s, Max.3/120s, Max.1/100s, Max.2/100s, Max.3/100s, Max.1/30s, Max.2/30s, Max.4/30s, Max.6/30s, Max.10/30s, Max.16/30s	
	Wide dynamic range	On/Off	
	Adaptive Black Stretch	On/ Off (only when Wide Dynamic range : Off)	
	AGC	On(High) / On(Mid) / On(Low) / Off	
	Day & Night (electrical)	Off / Auto	
	Digital Noise Reduction	High / Low	
	Video Motion Detection	4 areas, Sensitivity : 15 steps, Detection size : 10 steps	
	Auto mode	Auto pan/ Preset sequence Auto mode can only be used when the image type is Quad PTZ or Single PTZ.	
	Self return	10 s / 20 s / 30 s / 1 min / 2 min / 3 min / 5 min / 10 min / 20 min / 30 min / 60 min Self return can only be used when the image type is Quad PTZ or Single PTZ.	
	Privacy Zone	Up to 8 zones Configurable only on the fisheye image.	
	VIQS	On/Off (Up to 8 zones) Only for fisheye image.	
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks) On/Off	
	Focus adjustment	ABF / MANUAL(Html only)	
	Video analytics	Optional Alarm : Intruder detection, Object detection, Cross line detection, Loitering detection, Scene change detection Others: Heat map, Object count, Streaming which doesn't include any moving body * Alarm and others don't work as the same time.	
	Rotation	mechanical : -45°~ 45°, electrical : Panorama/Double Panorama : 90°,180°, 270°, Fisheye : N/A	

Lens		
	Focal Length	1.342 mm {1/16 inches}
	Angular Field of View	Horizontal : 180° Vertical : 180°
	Maximum Aperture Ratio	1 : 1.9 (Fixed)
	Image rotation	Mechanical Image rotation, about every 3.3°

Network			
	Network IF	10Base-T / 100Base-TX, RJ45 connector	
	Resolution: H.264 JPEG (MJPEG)	<Ceiling> <Wall>	9M Fisheye mode max.15 fps 2992×2992 / 1280×1280 / 640×640 / 320×320 4M Fisheye mode (Factory default mode) max.30 fps 2048×2048 / 1280×1280 / 640×640 / 320×320
		<Ceiling>	Double Panorama mode max.15 fps 2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180 Quad PTZ / Single PTZ mode max.15 fps 2560×1920 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / 640×480 / 320×240 8M Fisheye + Double Panorama mode max.7.5 fps (Fisheye) 2816×2816 / 1280×1280 / 640×640 / 320×320 (Double Panorama)1280×720 / 640×360 4M Fisheye + Double Panorama mode max.15 fps (Fisheye) 2048×2048 / 1280×1280 / 640×640 / 320×320 (Double Panorama)1280×720 / 640×360 8M Fisheye + Quad PTZ mode max.7.5 fps (Fisheye) 2816×2816 / 1280×1280 / 640×640 / 320×320 (Quad PTZ) 1280×960 / 800×600 / 640×480 4M Fisheye + Quad PTZ mode max.15 fps (Fisheye)2816×2816 / 1280×1280 / 640×640 / 320×320 (Quad PTZ) 1280×960 / 800×600 / 640×480 Quad streams mode (H.264 only) (Ch1 - Ch4) 1280×960 / 800×600 / 640×480 / 320×240 max.15 fps (Quad PTZ) 2560×1920 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / 640×480 / 320×240 max.5 fps
		<Wall>	Panorama mode max.15 fps 2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180 Quad PTZ / Single PTZ mode max.15 fps 2560×1920 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / 640×480 / 320×240 8M Fisheye + Panorama mode max.7.5 fps (Fisheye) 2816×2816 / 1280×1280 / 640×640 / 320×320 (Panorama) 1280×720 / 640×360 4M Fisheye + Panorama mode max.15 fps (Fisheye) 2048×2048 / 1280×1280 / 640×640 / 320×320 (Panorama) 1280×720 / 640×360

Image compression method	H.264*2	Transmission Mode	Constant bit rate / VBR / Frame rate / Best effort / Advanced VBR
		Frame Rate	<When VBR / Frame rate / Advanced VBR is selected> 1 fps/ 3 fps/ 5 fps*/ 7.5 fps*/ 10 fps*/ 12 fps*/ 15 fps*/ 20 fps*/ 30 fps* * "Frame rate*" is limited to "Bit rate". When a value with an asterisk (*) on the right of it is selected, the actual frame rate may be lower that the value selected.
		Bit Rate/Client	64 kbps / 128 kbps* / 256 kbps* / 384 kbps* / 512 kbps* / 768 kbps* / 1,024 kbps* / 1536 kbps* / 2048 kbps* / 3072 kbps* / 4096 kbps* / 6144 kbps* / 8192 kbps* / 10240 kbps* / 12288 kbps* / 14336 kbps* / 16384 kbps* / 20480 kbps* / 24576 kbps* / 30720 kbps* * The available range of the H.264 bit rate varies depending on the setting selected for "Image capture size".
		Image Quality	<When Constant bit rate/ Best effort is selected> Low/ Normal/ Fine <When VBR is selected> 0 SUPER FINE / 1 FINE / 2 / 3 / 4 / 5 NORMAL / 6 / 7 / 8 / 9 LOW
		Transmission Type	Unicast / Multicast
	JPEG (MJPEG)	Image Quality	0 SUPER FINE / 1 FINE / 2 / 3 / 4 / 5 NORMAL / 6 / 7 / 8 / 9 LOW (10 steps : 0-9)
		Transmission Type	Pull / Push
		Transmission interval	0.1 fps - 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)

Network			
	Audio Compression	G.726 (ADPCM) 32 kbps/16 kbps, G.711 64 kbps / AAC-LC*3 64kbps / 96kbps / 128kbps	
	Total Bit Rate	Unlimited / 64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps	
	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	
	FTP Client	Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SD memory card is available.)	
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)	
	SDXC/SDHC/SD Memory Card (Option)	SD (SDHC/SDXC) card: Panasonic 2 GB*, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 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 terminals	

Input/ Output			
	Monitor output (for adjustment)	VBS : 1.0 V [p-p]/75 Ω, composite, ø3.5 mm mini jack (monaural) Switching with AUDIO OUT (software switching)*4 An NTSC or PAL monitor can be connected to the camera (use the software to select the monitor type).	
	Microphone	Built-in microphone	
	Audio Output	ø3.5 mm stereo mini jack (monaural output) Output impedance : Approx. 600 Ω (unbalanced) Output level : –20 dBV (can switch to monitor output)	
	External I/O Terminals	ALARM IN1, ALARM IN2(ALARM OUT), ALARM IN3(AUX OUT)	

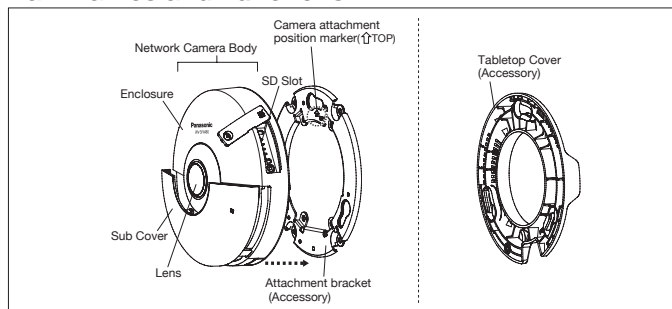| General			
	Mounting method	Ceiling/Wall/Camera Mount bracket/Desktop/Tripod	
	Safety	UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1	
	EMS	FCC (Part15 ClassA), ICES003 ClassA, EN55022 ClassB, EN55024	
	Power Source and Power Consumption	12 V DC, PoE (IEEE802.3af compliant) / DC12 V : 910 mA / Approx. 10.9 W PoE DC 48 V : 200 mA / Approx. 9.6 W (Class 0 device)	
	Ambient Operating Temperature	–10 °C ~ +50 °C {14 °F ~ 122 °F} (Ceiling / Wall / Camera mount bracket) –10 °C ~ +40 °C {14 °F ~ 104 °F} (Desktop / Tripod)	
	Ambient Operating Humidity	10% ~ 90 % (no condensation)	
	Dimensions	Installing on a wall or a ceiling directly using the attachment plate : ø150 mm × 52.1 mm (H) {ø5-29/32 inches × 2-3/64 inches (H)} When using the desktop cover : ø150 mm × 63.0 mm (H) {ø5-29/32 inches × 2-15/32 inches (H)}	
	Mass (approx.)	When using the camera and attachment plate : Approx. 450 g {0.99 lbs} When using the camera and desktop cover : Approx. 400 g {0.88 lbs}	
	Finish	Main body : ABS resin, sail white	

*1 Converted value
*2 Transmission for 2 streams can be individually set.
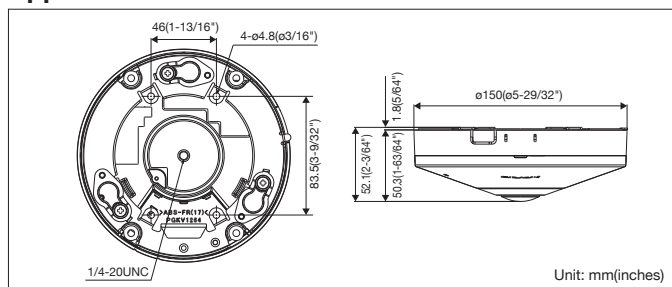*3 When recording audio on an SD memory card, only AAC-LC (Advanced Audio Coding - Low Complexity) can be used.
*4 There are cases when you cannot switch Audio output to Monitor output depending on the mode. Refer to the Installation Guide for further information.

Part Names and Functions

Appearance

Unit: mm(inches)

Trademarks and registered trademarks
– iPad, iPhone and iPod touch are registered trademarks of Apple Inc.
– "i-PRO SmartHD" logo is trademarks or registered trademarks of Panasonic Corporation.
– All other trademarks identified herein are the property of their respective owners.
– ONVIF and the ONVIF logo are trademarks of ONVIF Inc.

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

• Masses and dimensions are approximate.   • All product pictures are NTSC models.
• Specifications are subject to change without notice.