Panasonic

i-PRO SmartHD

MEGA Super Dynamic

Onvif

VIQS — Variable Image Quality on Specified area

H.264 JPEG

FULL HD — Full High Definition 1080

day/night

360-degree Network Camera featuring *Super Dynamic*

Key Features

- 360° monitoring with a wide variety of transmission modes: Panorama, Double Panorama, Quad PTZ, Single PTZ, and Quad streams (H.264/VGA)
- 1080p Full HD images up to 30 fps.
- Combining enhanced "UniPhier®", Panasonic's proprietary System LSI platform and *2 areas VIQS* (Variable Image Quality on Specified area) function can decrease maximum 50%[*1] network bandwidth.
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by enhanced "UniPhier®".
- 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
- *Super Dynamic* and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared to conventional cameras.
- High sensitivity with Day/Night (Electrical) function:1.5 lx (Color), 1.2 lx (B/W) at F2.4
- Digital Noise Reduction: 3D-DNR ensures noise reduction in various conditions.
- With the Intelligent Resolution technology, 3 areas - outlines, detailed texture areas and soft gradation areas - are automatically detected and optimum signal processes are performed to each area. Apart from the uniform enhancement of sharpness, the innovative technology Intelligent Resolution precisely performs signal processing pixel by pixel in the most effective way for it. As a result, images are naturally clear and crisp suitable for all surveillance applications.
- 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/60Hz): 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 4 private areas, such as house windows and entrances/exits.
- 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)
- 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 / 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

*1 Compared with WV-NP502, reduction effect is decreased by object and image quality setting conditions

Standard Accessories

- Installation Guide........................... 1 pc.
- CD-ROM[*1]................................... 1 pc.
- Code label[*2] .... 1 pc.

The following is used during installation procedures:
- Camera attachment....................... 1 pc.
- Audio cable................................... 1 pc.
- Power cord plug .... 1 pc.
- External I/O terminal plug.............. 1 pc.
- Installation template label.............. 1 pc.
- Cable tie .... 2 pcs. (incl. 1 spare)
- Safety wire lug .... 1 pc.
- Safety wire................................... 1 pc.
- Desktop cover .... 1 pc.

*1 The CD-ROM contains the operating installations and installation guide (PDF).
*2 This label may be required for network management. The network administrator shall retain the code label.

Optional Accessory

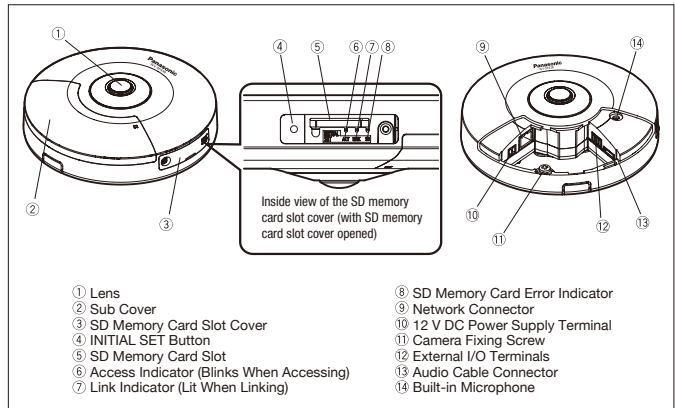**Ceiling Mount Bracket**
WV-Q105

Specifications

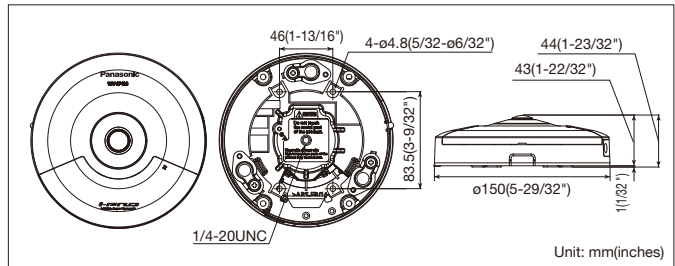| TV System		NTSC	PAL
Camera	Image Sensor	1/3 type MOS Sensor	
	Effective Pixels	Approx. 3.1 megapixels	
	Scanning Mode	Progressive	
	Scanning Area	4.51 mm (H) × 3.38 mm (V) {3/16 inches (H) x 1/8 inches (V)}	
	Minimum Illumination	Color: 1.5 lx (F2.4, Auto slow shutter: Off (1/30s), Gain:On(High)) Color: 0.1 lx (F2.4, Auto slow shutter: Max. 16/30s, Gain:On(High)) [1] BW: 1.2 lx (F2.4, Auto slow shutter: Off (1/30s), Gain:On(High)) BW: 0.08 lx (F2.4, Auto slow shutter: Off (16/30s), Gain:On(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	

	Shutter Speed	With Super Dynamic On
		  ELC (1/30 s)
		With Super Dynamic Off
		  ELC (1/30 s), ELC (3/100 s), ELC (3/120 s), ELC (2/100 s), ELC (2/120 s),
		  ELC (1/100 s), ELC (1/120 s), ELC (1/250 s), ELC (1/500 s), ELC (1/1,000 s),
		  ELC (1/2,000 s), ELC (1/4,000 s), ELC (1/10,000 s)	

	Super-Dynamic	ON / OFF	
	Dynamic Range	52 dB typ. (only at Super-Dynamic On)	
	Adaptive Black Stretch	On/Off (only at Super-Dynamic Off)	
	AGC	ON (HIGH) / ON (MID) / ON (LOW) / OFF	
	Electronic Sensitivity UP	OFF (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(electrical)	OFF / AUTO	
	Digital Noise Reduction	HIGH / LOW	
	Video Motion Detection	ON / OFF, 4 areas available	
	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	ON / OFF (up to 4 zones available)	
	VIQS	On/Off (up to 2 areas available) However, the VIQS function is not supported when "Quad PTZ", "Single PTZ" or "Quad streams" are selected.	
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks) , On/Off However, you can specify characters to be displayed on each of the four screens when "Quad streams" is selected.	
Lens	Focal Length	0.837 mm	
	Angular Field of View	Horizontal: 188 °, Vertical: 181 °	
	Maximum Aperture Ratio	1:2.4 (Fixed)	
	Focusing Range	0.3 m ~ ∞	
Browser GUI	Camera Control	Pan/Tilt/Digital Zoom, Preset, Auto Mode, Self Return, Fisheye 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 (Panorama, Double Panorama, Fisheye mode) 1x ~4x (Quad PTZ or Single PTZ mode)	
	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.	
	Audio	Mic (Line) Input: ON / OFF Volume adjustment: Low / Middle / High, Audio Output: ON / OFF Volume adjustment: Low / Middle / High	
	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, 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] [3]	Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3	
	Supported Browser	Windows® Internet Explorer®10.0 (32 bit), Windows® Internet Explorer® 9.0 (32 bit), Windows® Internet Explorer® 8.0 (32 bit), Windows® Internet Explorer® 7.0 (32 bit), Microsoft® Internet Explorer® 6.0 SP3	
Network	Network IF	10Base-T / 100Base-TX, RJ-45 connector (female)	
	Image Resolution [4] — 2M Panorama[16:9]/ 2M Double Panorama [16:9]:	H.264(1): 1920x1080 / 640x360 / 320x180, up to 30 fps H.264(2): 640x360 / 320x180, up to 30 fps JPEG: 1920x1080 / 640x360 / 320x180, up to 30 fps	
	1M Panorama [16:9]/ 1M Double Panorama [16:9]:	H.264(1): 1280x720 / 640x360 / 320x180, up to 30 fps H.264(2): 640x360 / 320x180, up to 30 fps JPEG: 1280x720 / 640x360 / 320x180, up to 30 fps	
	Panorama + Quad PTZ/ Panorama + Single PTZ/ Double Panorama + Quad PTZ/ Double Panorama + Single PTZ:	• When using distribution of "Panorama" or "Double panorama" H.264(1): 1920x1080 / 640x360 / 320x180, up to 15 fps JPEG: 1920x1080 / 640x360 / 320x180, up to 15 fps • When using distribution of "Quad PTZ" or "Single PTZ" H.264(2): 1280x960 /640x480 / 320x240, up to 15 fps JPEG: 1280x960 / 640x480 / 320x240, up to 15 fps	
	VGA Quad streams	Ch1-Ch4 640x480 max.30 fps * Only for H.264 images. * There are specification limitations such as the SD memory card function being unavailable.	
	3M Fisheye [4:3]:	H.264(1): 1280x960, up to 15 fps JPEG: 2048x1536, up to 15 fps	
	1.3M Fisheye [4:3]:	H.264(1): 1280x960 / 640x480 / 320x240, up to 30 fps H.264(2): 640x480 / 320x240, up to 30 fps JPEG: 1280x960 / 640x480 / 320x240, up to 30 fps	
	H.264 — Transmission Mode	Constant bitrate / 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 / 8,192 / 10,240 / 12,288 / 14,336 kbps	
	Image Quality	LOW / NORMAL / FINE	
	Refresh Interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5 s	
	Transmission Type	UNICAST / MULTICAST	
	JPEG — Image Quality	10 steps	
	Refresh Interval	0.1 fps ~ 30 fps	
	Transmission Type	PULL / PUSH	
	Audio Compression	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps	
	Audio Mode	OFF / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)	
	Authentication for Audio	Level 1 only / Level 2 higher / All users	
	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	
	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)	H.264 recording: Manual REC / Alarm REC (Pre/Post) / Schedule REC JPEG recording: Manual REC / Alarm REC (Post) / Backup upon network failure Compatible SD (SDHC/SDXC) card: Panasonic 1 GB, 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)	

TV System		NTSC	PAL
Network	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	
Alarm	Alarm Source	3 terminals input, VMD, Command alarm	
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output, HTTP notification	
	Alarm Log	With SDXC/SDHC/SD memory card: 5,000 logs, without SDXC/SDHC/SD memory card: 1,000 logs	
	Schedule	Alarm / VMD / Access permission / H.264 recording	
Input/ Output	Microphone/Line Input	Internal microphone, ø3.5 mm monaural mini jack, Input impedance: Approx. 2 kΩ	
	— For microphone input	Applicable microphone: Plug-in power type, Supply voltage: 2.5 V ±0.5 V	
	— For line input	Input level: Approx. –10 dBV	
	Audio Output	ø3.5 mm stereo mini jack (monaural output), Output impedance: Approx. 600 Ω, Line level	
	External I/O Terminals	ALARM IN 1, ALARM IN 2/ ALARM OUT, ALARM IN 3/ AUX OUT (x1 for each)	
General	Mounting method	Ceiling / Wall / Camera mount bracket / Desktop / Tripod	
	Safety/EMC Standard	UL (UL60950-1), FCC (Part15 ClassA), C-UL (CAN/CSA C22.2 No.60950-1), DOC (ICES003 ClassA)	CE, IEC60950-1 (EN55022 ClassB, EN55024)
	Power Source and Power Consumption	12V DC, PoE (IEEE802.3af compliant) 12 V DC*: 540 mA/ 6.5 W PoE 48 V: 125 mA/ 6.0 W (Class 2 devices) * FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY.	
	Ambient Operating Temperature	–10 °C to +50 °C {14 °F to 122 °F} (Ceiling / Wall / Camera mount bracket) –10 °C to +40 °C {14 °F to 104 °F} (Desktop / Tripod)	
	Ambient Operating Humidity	Less than 90 % (no condensation)	
	Dimensions	ø150 mm x 44 mm (H) {ø5-29/32 inches x 1-23/32 inches (H)}	
	Mass (approx.)	Main body: Approx. 370 g {0.82 lbs} Camera attachment: Approx. 90 g {0.20 lbs} Desktop cover: Approx. 50 g {0.11 lbs}	
	Finish	Main body: ABS resin, sail white	

*1 Converted value
*2 Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*3 When using IPv6 for communication, use Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*4 Transmission for 2 streams can be individually set in the same compression method.

Part Names and Functions

Inside view of the SD memory card slot cover (with SD memory card slot cover opened)

① Lens
② Sub Cover
③ SD Memory Card Slot Cover
④ INITIAL SET Button
⑤ SD Memory Card Slot
⑥ Access Indicator (Blinks When Accessing)
⑦ Link Indicator (Lit When Linking)
⑧ SD Memory Card Error Indicator
⑨ Network Connector
⑩ 12 V DC Power Supply Terminal
⑪ Camera Fixing Screw
⑫ External I/O Terminals
⑬ Audio Cable Connector
⑭ Built-in Microphone

Appearance

46(1-13/16")   4-ø4.8(5/32~ø6/32")   44(1-23/32")
43(1-22/32")
83.5(3-9/32")
ø150(5-29/32")   1(1/32")
1/4-20UNC
Unit: mm(inches)