# Panasonic
## ideas for life

**Preliminary**



*i-PRO* SmartHD

MEGA *SuperDynamic*

Vandal Resistant · day/night · VIQS · H.264 JPEG · FULL HD Full High Definition 1080 · Face Detection

# 360 degree Vandal Resistant Network Camera featuring *Super Dynamic*

## Key Features

- 360° monitoring with a wide variety of transmission modes: Wall 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 fish-eye 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.
- 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
- Face detection function detects the position of human face and the information is sent by XML or video stream.
- 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, 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.
- Vandal resistant mechanism for high reliability
- Operating temperature –10 °C ~ +50 °C (–14 °F ~ 122 °F)
- Low profile design for discrete installation
- Mechanical shutter:
  The Mechanical shutter is situated above the lens and can be opened and closed as necessary.
  When the Mechanical shutter is closed, a black image is transmitted to protect privacy.

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

## Standard Accessories

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

The following is used during installation procedures:

| | | | |
|---|---|---|---|
| • Camera attachment | 1 pc. | • Installation template label | 1 pc. |
| • Audio cable | 1 pc. | • Cable tie | 2 pcs. (incl. 1 spare) |
| • Power cord plug | 1 pc. | • Bit for tamperproof screw | 1 pc. |
| • External I/O terminal plug | 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
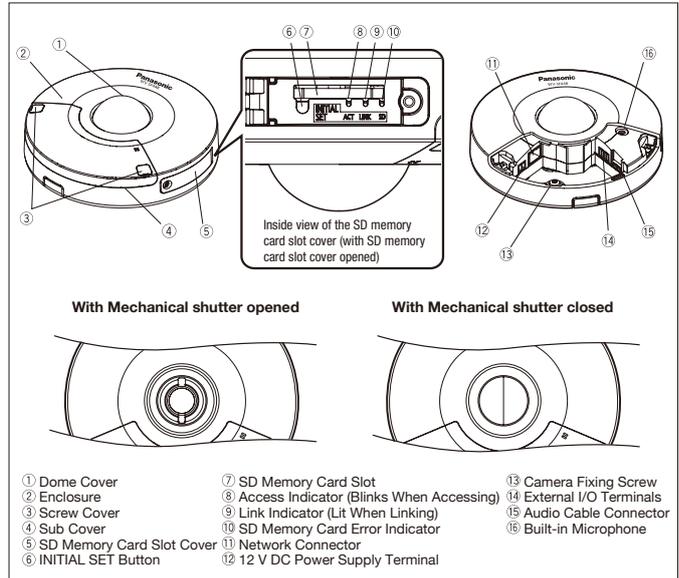
Ceiling Mount Bracket
**WV-Q105**
(E models only)

# Specifications

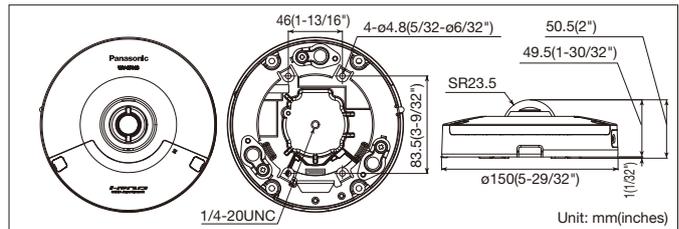| TV System | | NTSC | PAL |
|---|---|---|---|
| Camera | Image Sensor | 1/3 type MOS Sensor | |
| | Effective Pixels | Approx. 3.1 megapixels | |
| | Scanning Mode | Progressive | |
| | Scanning Area | 4.51 mm (H) × 3.38 mm (V) {3/16 inches (H) x 1/8 inches (V)} | |
| | Minimum Illumination | Color: 1.5 lx (F2.4, Auto slow shutter: Off (1/30s), Gain:On(High))<br>Color: 0.1 lx (F2.4, Auto slow shutter: Max. 16/30s, Gain:On(High)) *1<br>BW: 1.2 lx (F2.4, Auto slow shutter: Off (1/30s), Gain:On(High))<br>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<br>   ELC (1/30 s)<br>With Super Dynamic Off<br>   ELC (1/30 s), ELC (3/100 s), ELC (3/120 s), ELC (2/100 s), ELC (2/120 s),<br>   ELC (1/100 s), ELC (1/120 s), ELC (1/250 s), ELC (1/500 s), ELC (1/1,000 s),<br>   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 | |
| | Video analytics Face Detection | Off/On with face frame display<br>However, face detection is not supported when "Fisheye" or "Quad streams" is selected for the image type. | |
| | Auto mode: | Auto pan/ Preset sequence<br>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<br>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) | |
| | Mechanical shutter | OPEN / CLOSE | |
| | VIQS | On/Off (up to 2 areas available)<br>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<br>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: 182 °, Vertical: 176 ° | |
| | 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 (Quad PTZ or Single PTZ mode)<br>1x ~4x (Panorama, Double Panorama, 3M Fisheye 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,<br>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® 7, Microsoft® Windows Vista®,Microsoft® Windows® XP SP3 | |
| | Supported Browser | 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<br>H.264(2): 640x360 / 320x180, up to 30 fps<br>JPEG: 1920x1080 / 640x360 / 320x180, up to 30 fps | |
| | 1.3M Panorama [16:9]/ 1.3M Double Panorama [16:9]: | H.264(1): 1280x720 / 640x360 / 320x180, up to 30 fps<br>H.264(2): 640x360 / 320x180, up to 30 fps<br>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 "Wall Panorama" or "Double panorama"<br>H.264(1): 1920x1080 / 640x360 / 320x180, up to 15 fps<br>JPEG: 1920x1080 / 640x360 / 320x180, up to 15 fps<br>• When using distribution of "Quad PTZ" or "Single PTZ"<br>H.264(2): 1280x960 / 640x480 / 320x240, up to 15 fps<br>JPEG: 1280x960 / 640x480 / 320x240, up to 15 fps | |
| | VGA Quadstreams | Ch1-Ch4 640x480 max.30 fps   * Only for H.264 images.<br>* 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<br>JPEG: 2048x1536, up to 15 fps | |
| | H.264 — Transmission Mode | Constant bitrate / Best effort | |
| | 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 | 1 fps ~ 30 fps | |
| | 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<br>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<br>(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) | Manufactured by Panasonic<br>SDXC memory card: 64 GB<br>SDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB<br>SD memory card: 1 GB, 2 GB<br>(except miniSD card and microSD card) | |
| | Face Detection | ON / OFF (with XML notification)<br>**"3M Fisheye [4:3]", "1.3M Fisheye [4:3]", and "VGA Quad streams" modes cannot use the Face Detection function. | |

| 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)<br>Android™ mobile terminals | |
| Alarm | Alarm Source | VMD, Command alarm | |
| | Alarm Actions | SDXC/SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output | |
| | Alarm Log | With SDXC/SDHC/SD memory card: 5,000 logs, without SDXC/SDHC/SD memory card: 1,000 logs | |
| | Schedule | VMD | |
| 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: 600 Ω, Line level | |
| | External I/O Terminals | ALARM IN 1/ PRIVACY ACTION IN, ALARM IN 2/ ALARM OUT,ALARM IN 3/ AUX OUT (x1 for each) | |
| General | Mounting method | Ceiling/ Wall/ Tripod | |
| | Safety/EMC Standard | UL (UL60950-1), FCC (Part15 ClassA),<br>C-UL (CAN/CSA C22.2 No.60950-1),<br>DOC (ICES003 ClassA) | CE, IEC60950-1<br>(EN55022 ClassB, EN55024) |
| | Power Source and Power Consumption | 12V DC, PoE (IEEE802.3af compliant)<br>12 V DC*: 610 mA/ 7.3 W<br>PoE 48 V: 140 mA/ 6.7 W (Class 0 devices)<br>* FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC<br>  CLASS 2 POWER SUPPLY. | |
| | Ambient Operating Temperature | –10 °C to +50 °C {14 °F to 122 °F} | |
| | Ambient Operating Humidity | Less than 90 % (no condensation) | |
| | Shock Resistance | Compliant with 20 J (IEC 60068-2-75)/IK10 (IEC 62262) | |
| | Dimensions | ø150 mm x 50.5 mm (H) {ø5-29/32 inches x 2 inches (H)} | |
| | Mass (approx.) | Main body: Approx. 590 g {1.30 lbs}<br>Camera attachment: Approx. 90 g {0.20 lbs} | |
| | Finish | Main body: Aluminum die cast, sail white<br>Dome section: Clear polycarbonate resin | |

*1 Converted value
*2 Refer to "Notes on Windows Vista® / Windows® 7" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*3 When using IPv6 for communication, use Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*4 Transmission for 2 streams can be individually set in the same compression method.
* When the camera is faced toward spot light or other bright lights and light reflecting objects ghost may appear.

## Part Names and Functions



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

With Mechanical shutter opened       With Mechanical shutter closed

① Dome Cover
② Enclosure
③ Screw Cover
④ Sub Cover
⑤ SD Memory Card Slot Cover
⑥ INITIAL SET Button
⑦ SD Memory Card Slot
⑧ Access Indicator (Blinks When Accessing)
⑨ Link Indicator (Lit When Linking)
⑩ SD Memory Card Error Indicator
⑪ Network Connector
⑫ 12 V DC Power Supply Terminal
⑬ Camera Fixing Screw
⑭ External I/O Terminals
⑮ Audio Cable Connector
⑯ Built-in Microphone

## Appearance



46(1-13/16")   4-ø4.8(5/32-ø6/32")   50.5(2")
49.5(1-30/32")
SR23.5
83.5(3-9/32")
1/4-20UNC
ø150(5-29/32")
11(1/32")

Unit: mm(inches)

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**Important**
– Safety Precaution: carefully read the operating instructions and installation manual before using this product.
– Panasonic can not be responsible for network performance and/or other manufacturer products that reside on the network.

• Masses and dimensions are approximate.
• Specifications are subject to change without notice.
• These products may be subject to export control regulations.
• All product pictures are NTSC models.

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