# Panasonic
## ideas for life

**Super Dynamic Full HD Vandal Resistant Dome Network Camera**

# WV-SF549
# WV-SF548



WV-SF549    WV-SF548

*i-PRO SmartHD*

MEGA *SuperDynamic*

**Onvif**

VIQS — Variable Image Quality on Specified area

H.264 JPEG

Vandal Resistant

day/night IR removable (WV-SF549)

day/night (WV-SF548)

FULL HD Full High Definition 1080

Face Detection

Auto Back Focus

## Full HD / 1,920 x1,080 H.264 Vandal Resistant Network Camera featuring Super Dynamic

### Key Features

- Super high resolution at Full HD/1,920 x 1,080 created by 3.1Megapixel high sensitivity MOS Sensor.
- 1080p Full HD images up to 30 fps and 360p image up to 30fps simultaneously.
- 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.
- Cropping function enables to provide whole image (1,920 x 1,080) and the part image (640 x 360) simultaneously.
  Up to 4 image capture areas can be specified, and it is also possible to control the sequence.
- Picture in picture function: A cropping image or an alarm image can be added to an image and transmitted.
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by enhanced "UniPhier®".
- *Super Dynamic* and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared to conventional cameras.
- Face Super Dynamic Range technology ensures clear face image.
- High sensitivity with Day & Night (IR) function:0.5 lx (Color), 0.06 lx (B/W) at F1.3 (WV-SF549)
- High sensitivity with Day & Night (Electrical) function:0.5 lx (Color), 0.3 lx (B/W) at F1.3 (WV-SF548)
- Using Panasonic distinctive LDC (Lens Distortion Compensation) function, natural image without distortion can be monitored though using wide angle lens.
- ABF (Auto Back Focus) ensures easy installation.
- ABF ensures stable focus in both color and B/W modes. (WV-SF549)
- 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: Outdoor scene / Indoor scene (50 Hz) / Indoor scene (60 Hz) / Fixed electronic shutter
  Outdoor scene: Electronic shutter and ALC lens iris control are automatically controlled depending on the mode and luminance level.
  Indoor scene (50 Hz / 60 Hz): Flicker caused by fluorescent lightning will be automatically compensated.
  Fixed electronic shutter: Up to 1/10,000 fixed electronic shutter can be selectable.
- 3x Extra optical zoom at 360p resolution. (Picture Mode : 2 Mega pixel [16:9] )
- VMD (Video Motion Detection) 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 video stream.
- Privacy Zone can mask up to 2 private areas, such as house windows and entrances/exits.
- 2x, 4x digital zoom controlled by browser.

- 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(WV-SF549), FTP image transfer, E-mail notification, Indication on browser, Alarm terminal output, and Panasonic alarm protocol output.
- Full duplex bi-directional audio allows interactive communication between camera site and monitoring site. (WV-SF549)
- 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) (WV-SF549)
- 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 the Internet.
- Onvif compliant model
- Vandal resistant mechanism for high reliability
- 2.8 ~ 10.0 mm, 3.6x Varifocal Auto Iris Lens

[1] Compared with WV-NP502. Reduction effect may vary depending on object and image quality setting conditions.

### Standard Accessories

- Installation Guide .......................... 1 pc.
- CD-ROM[1] .................................... 1 pc.
- Code Label[2] ............................... 1 pc.
The followings are for installation.
- Power Cord Plug .......................... 1 pc.
- External I/O Terminal Plug............ 1 pc.
- Installation Template Label .......... 1 pc.

- Cable Tie .............. 2 pcs. (incl. 1 spare)
- Bit for Tamperproof Screw .......... 1 pc.

[1] The CD-ROM contains the operating instructions (PDFs) and different kinds of tool software programs.
[2] This label may be required for network management. The network administrator shall retain the code label.

### Optional Accessories



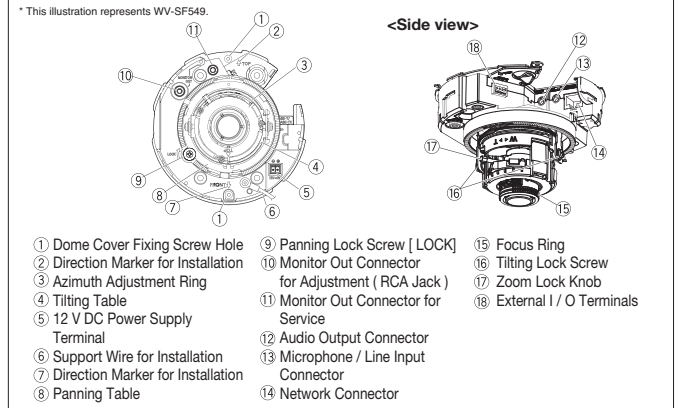Ceiling Mount Bracket
**WV-Q105**
(PAL only)

# Specifications

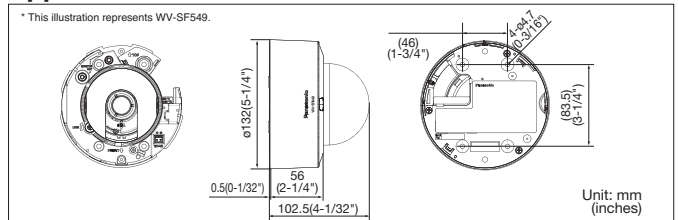| TV System | | | NTSC | PAL |
|---|---|---|---|---|
| Camera | Image Sensor | | 1/3 type MOS Sensor | |
| | Effective Pixels | | Approx. 3.1 megapixel | |
| | Scanning Mode | | Progressive scan | |
| | Scanning Area | | 4.51 mm (H) x 3.38 mm (V) {3/16 inches (H) x 1/8 inches (V)} | |
| | Minimum Illumination | | WV-SF549: Color: 0.5 lx, BW: 0.06 lx (F1.3, Auto slow shutter: Off (1/30s), Gain:On(High)) Color: 0.03 lx, BW: 0.004 lx (F1.3, Auto slow shutter: Max. 16/30s, Gain:On(High)) *1 WV-SF548: Color: 0.5 lx, BW: 0.3 lx (F1.3, Auto slow shutter: Off (1/30s), Gain:On(High)) Color: 0.03 lx, BW 0.02 lx (F1.3, Auto slow shutter: Max. 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 | | Outdoor scene: Automatic integration of ALC Indoor scene [50 Hz]: Automatic integration of ALC (up to 1/100 s) Indoor scene [60 Hz]: Automatic integration of ALC (up to 1/120 s) | |
| | Shutter Speed | | Fix shutter: 1/30, 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000 (only at Super Dynamic Off) | |
| | Super Dynamic | | ON / OFF | |
| | Dynamic Range | | 52 dB typ. (Super Dynamic: ON) | |
| | Face Super Dynamic | | ON / OFF (Only at Super Dynamic: ON) | |
| | Adaptive Black Stretch | | ON / OFF (Only at Super Dynamic: OFF) | |
| | AGC | | ON (LOW, MID, HIGH) / OFF | |
| | Electronic Sensitivity UP | | OFF / AUTO (Max. 2x (2/30 s), 4x (4/30 s), 6x (6/30 s), 10x (10/30 s), 16x (16/30 s)) | |
| | Day & Night | | WV-SF549: IR Mode: AUTO1 / AUTO2 / ON / OFF, Level:High / Low, with external control WV-SF548: Electrical Mode: OFF / AUTO | |
| | Digital Noise Reduction | | High / Low | |
| | Video Motion Detection | | 4 areas, Sensitivity: 15 steps, Detection size: 10 steps | |
| | Privacy Zone | | Up to 2 zones, Gray | |
| | Upside Down | | ON / OFF | |
| | VIQS | | Up to 2 zones | |
| | Camera Title (OSD) | | Up to 20 characters (alphanumeric characters, marks) | |
| | Focus Adjustment | | ABF/MANUAL | |
| | Lens Distortion Conpensation | | 256 steps | |
| Lens | Focal Length | | 2.8 mm - 10 mm, 3.6x (8.4 mm - 30 mm 10.8x with Extra optical zoom (at 360P)) | |
| | Angular Field of View*2 | | H: 24.2 °(TELE) ~ 80.6 °(WIDE) | |
| | Maximum Aperture Ratio | | 1 : 1.3 (WIDE) ~ 1 : 3.0 (TELE) | |
| | Focusing Range | | 0.3 m ~ ∞ | |
| Adjusting Angle | | | Horizontal: 180 ° (clockwise), 170 ° (counterclockwise), Vertical: ±75 °, Image tilt adjustment range: ±100 ° | |
| Browser GUI | Cropping | | H.264(2) / JPEG(VGA or 640 x 360) / JPEG(QVGA or 320 x 180) Up to 4 image capture areas can be specified | |
| | Camera Control | | Brightness, AUX ON / OFF, Zoom (1x, 2x 4x) | |
| | 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. | |
| | Audio | | Mic (Line) Input: ON / OFF Volume adjustment: Low / Middle / High, Audio Output: ON / OFF Volume adjustment: Low / Middle / High  (Only at WV-SF549) | |
| | SD Memory Data Download | | Still or motion Images recorded in the SDXC/SDHC/SD memory card can be downloaded. (Only at WV-SF549) | |
| | GUI/Setup Menu Language | | English, Japanese, Italian, French, German, Spanish, Chinese, Russian | |
| | System Log | | Up to 100 (Internal)  Up to 4,000 (SDXC/SDHC/SD memory when the recording format is set to JPEG.) error logs (Only at WV-SF549) | |
| | Supported OS *3 *4 | | 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 | |
| | Image Resolution | Image Capture Mode: 2 mega pixel [16:9] | H.264: 1,920 x 1,080 / 640 x 360 / 320 x 180, up to 30 fps JPEG (MJPEG): 1,920 x 1,080 / 640 x 360 / 320 x 180, up to 30 fps | |
| | | Image Capture Mode: 1.3 mega pixel [16:9] | H.264: 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps JPEG (MJPEG): 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps | |
| | | Image Capture Mode: 1.3 mega pixel [4:3] | H.264: 1,280 x 960 / VGA(640 x 480) / QVGA(320 x 240), up to 30 fps JPEG (MJPEG): 1,280 x 960 / VGA(640 x 480) / QVGA(320 x 240), up to 30 fps | |
| | | Image Capture Mode: 3 mega pixel [4:3] | H.264: 1,280 x 960, up to 15 fps JPEG (MJPEG): 2,048 x1,536, up to 15 fps | |
| | H.264 *5 | Transmission Mode | Constant bitrate / Framerate priority / Best effort | |
| | | Frame Rate | 1 / 3 / 5 / 7.5 / 12 / 10 / 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  *Only at WV-SF549 | | G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps | |
| | Audio Mode  *Only at WV-SF549 | | OFF / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex) | |
| | Authentication for Audio  *Only at WV-SF549 | | 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,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 SDXC/SDHC/SD memory card is available. *)  *Only at WV-SF549 | |
| | No. of Simultaneous Users | | Up to 14 users (Depends on network conditions) | |
| | SDXC/SDHC/SD Memory Card (Option) *Only at WV-SF549 | | 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*, 64GB** model *SDHC card, ** SDXC card   (except miniSD card and microSD card) | |
| | Cellular Phone Compatibility | | JPEG image | |

| TV System | | NTSC | PAL |
|---|---|---|---|
| Network | Mobile Terminal Compatibilty*6 | iPad, iPhone, iPod touch (iOS 4.2.1 or later) , Android™ mobile terminals | |
| | Face Detection | ON / OFF (with XML notification) | |
| Alarm | Alarm Source | WV-SF549 3 terminals input, VMD, Command alarm WV-SF548 1 terminal input, VMD, Command alarm | |
| | Alarm Actions | SDXC/SDHC/SD memory recording*, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output   *Only at WV-SF549 | |
| | Alarm Log | With SDXC/SDHC/SD memory card*: 5,000 logs, without SDXC/SDHC/SD memory card: 1000 logs *Only at WV-SF549 | |
| | Schedule | Alarm / VMD / Access permission / H.264 recording | |
| Input/ Output | Monitor Output (for adjustment) | VBS: 1.0 V [p-p]/75 Ω, NTSC composite, RCA Jack | VBS: 1.0 V [p-p]/75 Ω, PAL composite, RCA Jack |
| | Microphone/Line Input *Only at WV-SF549 | MIC IN and Line IN are selectable. ø3.5 mm stereo mini jack (monaural input) (Applicable microphone: Plug-in power type) Supply voltage: 2.5 V ±0.5 V Input impedance: approx. 2 kΩ | |
| | Audio Output *Only at WV-SF549 | ø3.5 mm stereo mini jack (monaural output) Line level | |
| | External I/O Terminals | WV-SF549 ALARM IN 1/DAY/NIGHT IN, ALARM IN 2/ALARM OUT, ALARM IN 3/AUX OUT WV-SF548 ALARM IN 1, ALARM OUT, AUX OUT | |
| General | 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 | WV-SF549 12V DC: 530 mA *, PoE (IEEE802.3af compliant) / PoE 48 V: 120 mA (Class 2 device) WV-SF548 12V DC: 510 mA *, PoE (IEEE802.3af compliant) / PoE 48 V: 115 mA (Class 2 device) * FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY. | |
| | Ambient Operating Temperature | -10 °C ~ +50 °C (14 °F ~ 122 °F) | |
| | Ambient Operating Humidity | Less than 90 % (no condensation) | |
| | Shock Resistance | Compliant with 20J IEC60068-2-75/ IEC 62262 IK10 | |
| | Dimensions | ø132 mm x 102.5 mm (H) {ø5-3/16 inches x 4-1/32 inches (H)} | |
| | Mass (approx.) | 710g (1.57 lbs) | |
| | Finish | Main body: Aluminum die cast, sail white Dome section: Clear polycarbonate resin | |

*1 Converted value
*2 If "1.3 megapixel [4:3]" is selected for the imaging mode, the viewing angle will become narrower.
*3 Refer to "Notes on 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®.
*4 When using IPv6 for communication, use Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*5 Transmission for 2 streams can be individually set in the same compression method.
*6  For further information about compatible devices, refer to our website (http://panasonic.net/pss/security/support/info.html).

## Part Names and Functions

* This illustration represents WV-SF549.



<Side view>

① Dome Cover Fixing Screw Hole
② Direction Marker for Installation
③ Azimuth Adjustment Ring
④ Tilting Table
⑤ 12 V DC Power Supply Terminal
⑥ Support Wire for Installation
⑦ Direction Marker for Installation
⑧ Panning Table
⑨ Panning Lock Screw [ LOCK]
⑩ Monitor Out Connector for Adjustment ( RCA Jack )
⑪ Monitor Out Connector for Service
⑫ Audio Output Connector
⑬ Microphone / Line Input Connector
⑭ Network Connector
⑮ Focus Ring
⑯ Tilting Lock Screw
⑰ Zoom Lock Knob
⑱ External I / O Terminals

## Appearance

* This illustration represents WV-SF549.



ø132(5-1/4")
0.5(0-1/32")
56 (2-1/4")
102.5(4-1/32")
(46) (1-3/4")
(83.5) (3-1/4")

Unit: mm (inches)