



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
- 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
- Fog compensation

^{*1} Compared with WV-NP502. Reduction effect may vary depending on object and image quality setting conditions.

Standard Accessories

- | | | | |
|----------------------------------|-------|-----------------------------------|------------------------|
| • Installation Guide | 1 pc. | • Cable Tie | 2 pcs. (incl. 1 spare) |
| • CD-ROM ^{*1} | 1 pc. | • Bit for Tamperproof Screw | 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. |
- ^{*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



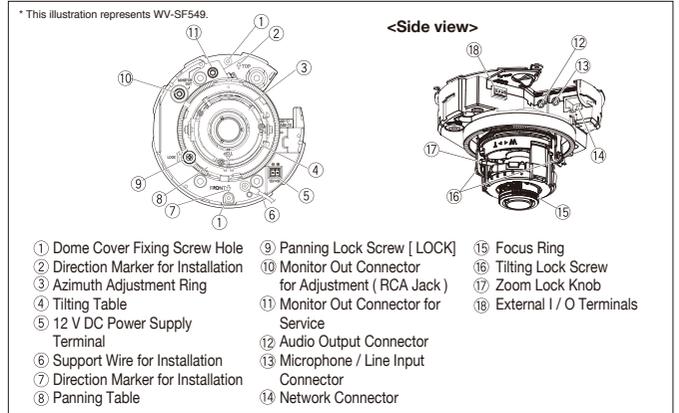
Specifications

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 Compensation	256 steps			
Lens	Focal Length	2.8 mm - 10 mm, 3.6x (8.4 mm - 30 mm 10.8x with Extra optical zoom (at 360°))		
	Angular Field of View ²	H: 24.2° (TELE) ~ 90.6° (WIDE) V: 13.50° (TELE) ~ 47.57° (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: Display 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		
	Supported OS ^{3 4}	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 Browser	Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3 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	
		Image Resolution	Image Capture Mode: 2 mega pixel [16:9] 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] 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] 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 x 1,536, up to 15 fps	
H.264 ^{4 5}		Transmission Mode: Constant bitrate / Framerate priority / Best effort / Advanced VBR 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		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, 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)		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)		
Cellular Phone Compatibility		JPEG image		

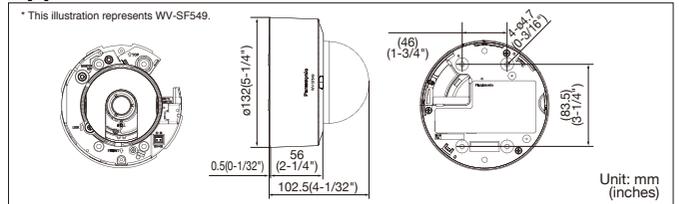
TV System	NTSC	PAL
Network	Mobile Terminal Compatibility ⁶ iPad, iPhone, iPod touch (iOS 4.2.1 or later) , Android™ mobile terminals	
Alarm	Alarm Source	WV-SF549 3 terminals input, VMD, Command alarm WV-SF548 1 terminal input, VMD, Command alarm
	Alarm Actions	SDXC/SDHC/SD memory recording*, E-mail notification, 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), CE, IEC60950-1 C-UL (CAN/CSA C22.2 No.60950-1), EN55022 ClassB, EN55024 DOC (ICES003 ClassA)
	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 Vista" / Windows® 7 / Windows® 8¹ 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®.
 *4 When using IPv6 for communication, use Microsoft® Windows® 8 or 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://security.panasonic.com/pss/security/support/info.html>).

Part Names and Functions



Appearance



Trademarks and registered trademarks
 - Microsoft, and Windows are registered trademarks of Microsoft Corporation in the U.S. and other countries.
 - iPad, iPhone and iPod touch are registered trademarks of Apple Inc.
 - UniPhier is a registered trademark of Panasonic Corporation.
 - "MEGA Super Dynamic" and "i-PRO SmartHD" logos are trademarks or registered trademarks of Panasonic Corporation.
 - ONVIF and the ONVIF logo are trademarks of ONVIF Inc.
 - All other trademarks identified herein are the property of their respective owners.
Important
 - Safety Precaution: Carefully read the operating instructions and installation manual before using this product.
 - Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

- All TV pictures are simulated.
- 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.

DISTRIBUTED BY:

Panasonic

<http://security.panasonic.com>

<http://www.facebook.com/PanasonicNetworkCamera>

Printed in Japan (2A-093CL)