Panasonic
BUSINESS

Super Dynamic HD Vandal Resistant & Waterproof Dome Network Camera
WV-SFV311A
WV-SFV310A

WV-SFV311A   WV-SFV310A

i-PRO SmartHD **3 Series NEW**

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SD | ENHANCED Super Dynamic | VIQS Variable Image Quality on Specified area | H.264 JPEG | HD High Definition 720/60p | day/night ICR (WV-SFV311A) | day/night (WV-SFV310A) | Vandal Resistant | NO HUMIDIFICATION | HLC | Fog sand Compensation | Auto Back Focus | i-VMD (Optional) Type2 | IP66 standard

*i-VMD Type2 : Intruder Detection / Loitering Detection / Direction Detection / Scene Change Detection / Object Detection / Cross Line Detection

HD / 1,280 x 720 60 fps H.264 Vandal Resistant Network Camera featuring *Super Dynamic*

Key Features

- **720p** HD images up to **60 fps**[*1]
- Approximate 1/3 inches, high sensitivity MOS image sensor
- Maximum Screen Size is 1,980 x 1,080* @30 fps, H.264
  * Used by super resolution technology
- **Multiple H.264 (High profile) streams (max. 4 streams)** and JPEG streams ensure simultaneous real time monitoring and high resolution recording.
- *Enhanced Super Dynamic*[*1] and ABS (Adaptive Black Stretch) technologies deliver **133 dB** wider dynamic range compared to conventional cameras.
- **Smart coding Technology : Group of Pictures (GOP) control** function removes unnecessary information from the frame for realizing efficient encoding. **Auto VIQS** (Variable Image Quality on Specified area) function recognizes the no movement area in a video automatically and lowering the resolution of it to reduce the data size.
  With the latest bit rate reducing technology, **GOP control, Auto VIQS, 3D-MNR** (Multi process Noise Reduction) and **FDF** (Frequency Divided Filter), the network bandwidth and the disk space of recorder can be saved.
- High sensitivity with Day/Night (ICR*: WV-SFV311A, Electrical: WV-SFV310A) function:
  WV-SFV311A : 0.01 lx (Color), 0.003 lx (B/W) at F1.6
  WV-SFV310A : 0.01 lx (Color), 0.008 lx (B/W) at F1.6
  *ICR: IR Cut filter Removal
- New camera attachment bracket allows an **easy camera installation** toward all four directions.
- **ABF (Auto Back Focus)** ensures easy installation.
- **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.
- Cropping function enables to provide whole image and the part image simultaneously. Up to 4 image capture areas can be specified, and it is also possible to control the sequence.
- *Face Super Dynamic* technology ensures clear face image.
- Lens distortion compensation for the distorted images can be adjusted 256 steps.
- Selectable light control modes:
  Outdoor scene,Indoor scene (50 Hz) / Indoor scene (60 Hz), Fix shutter Indoor scene (50 Hz/60Hz):
  Flicker caused by fluorescent lightning will be automatically compensated.
- 2x extra optical zoom at 640 x 360 resolution
- 2x, 4x digital zoom controlled by browser
- VMD (Video Motion Detection) 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.
- 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 alarm protocol output.
- Full duplex bi-directional audio allows interactive communication between camera site and monitoring site. (WV-SFV311A only)
- 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.
- Newly developed dome cover provides clearer images above the horizontal. Thereby, it expands the tilting range of the lens.
- Face detection function detects the position of human face and the information is sent by XML or video stream. (Optional)
- Can be added new intelligent extension software (Optional) in addition to built-in VMD (Video Motion Detection), alarm function.
- **Fog compensation function** equipped as standard.
- **HLC (High Light Compensation)** technology reduces strong light sources such as vehicle headlights to prevent camera being blinded.
- **SCC (Super Chroma Compensation)** function realizes a better color reproducibility even in low illumination.
- 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
- Supports SSL, DDNS (viewnetcam, RFC2136)
- IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard,Type 4X(UL50), NEMA 4X compliant.
- Dehumidification device for use with various weather conditions
- Vandal resistant mechanism for high reliability

*1 Super Dynamic function is automatically set off on 60 fps mode.

Optional Accessories

Ceiling Mount Bracket **WV-Q169A**	Smoke Dome Cover **WV-CW7S**	Sun Shade **WV-Q7118**
Ceiling Mount Bracket **WV-Q121B** (Use with the WV-Q124 (suspension mount bracket) to be able to install on a ceiling.)	Wall Mount Bracket **WV-Q122A** (Use with the WV-Q124 (suspension mount bracket) to be able to install on a wall.)	Mount Bracket **WV-Q124** (Use when installing the WV-SFV311A / WV-SFV310A using the WV-Q122A.)

Specifications

Camera	Image Sensor	Approx. 1/3 type MOS image sensor
	Scanning Mode	Progressive scan
	Scanning Area	4.86 mm (H) x 3.89 mm (V) {3/16 inches(H) x 5/32 inches(V)}
	Minimum Illumination	WV-SFV311A Color: 0.01 lx, BW: 0.003 lx (F1.6, Maximum shutter : Max. 1/30s, Gain : On(High)) Color: 0.0007 lx, BW: 0.0002 lx (F1.6, Maximum shutter : Max. 16/30s, Gain : On(High))[1] WV-SFV310A Color: 0.01 lx, BW: 0.008 lx (F1.6, Maximum shutter : Max. Off (1/30s), Gain : On(High)) Color: 0.0007 lx, BW: 0.0005 lx(F1.6, Maximum 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/ Indoor scene (50 Hz)/ Indoor scene (60 Hz)/ Fix shutter
	Shutter Speed	[1.3 mega pixel [16 : 9](60 fps mode)] Off(1/60), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000,1/10000 Other than [1.3 mega pixel [16 : 9](60 fps mode)] Off(1/30), 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250,1/500, 1/1000, 1/2000, 1/4000, 1/10000
	Super Dynamic[2]	On(High) / On(Normal) / Off
	Face Super Dynamic	On / Off (Only when Super Dynamic : On)
	Adaptive Black Stretch	On / Off (Only when Super Dynamic : Off)
	Fog compensation	On / Off (Only when Super Dynamic/ Adaptive black stretch: Off)
	AGC	On (Low, Mid, High) / Off
	Maximum shutter	max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 1/100 s, max. 2/120 s, max. 2/100 s, max. 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	WV-SFV311A : ICR Mode : Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC) WV-SFV310A : Electrical Mode : Off / AUTO
	Dynamic Range	133 dB typ. (Super Dynamic : On, Light Control Mode : indoor)
	Digital Noise Reduction	High / Low
	Video Motion Detection	4 areas, Sensitivity : 15 steps, Detection size : 10 steps
	Privacy Zone / VIQS	On/ Off (up to 8 zones available)
	Camera Title (OSD)	On / Off, Up to 20 characters (alphanumeric characters, marks)
	Electric Zoom	TELE / WIDE , Auto Coarse adjustment of Focus
	Focus Adjustment	ABF / MANUAL(Html only)
	Lens Distortion Compensation	256 steps
Lens	Vari Focal Length	2.8 – 10 mm {1/8 inches – 25/64 inches}

	Angular Field of View	[16 : 9 mode] Horizontal : 28° (TELE) – 99° (WIDE)
		              Vertical : 16° (TELE) – 54° (WIDE)
		[4 : 3 mode] Horizontal : 28° (TELE) – 99° (WIDE)
		              Vertical : 21° (TELE) – 72° (WIDE)

	Maximum Aperture Ratio	1 : 1.6 (WIDE) – 1 : 3.4 (TELE)
	Focusing Range	0.3 m – ∞
Adjusting Angle		Horizontal : ±180° Vertical : ±85° Slant : ±100°
Browser GUI	Cropping	H.264(1) / H.264(2) / H.264(3) / H.264(4) / JPEG(1) / JPEG(2) / JPEG(3) Up to 4 image capture areas can be specified
	Camera 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 / Camera Title	1x, 2x, 4x controlled by browser GUI / 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 (WV-SFV311A only)	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, Portuguese, 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[3]	Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®
	Supported Browser	Windows® Internet Explorer® 11 (32 bit), Windows® Internet Explorer® 10 (32 bit), Windows® Internet Explorer® 9 (32 bit), Windows® Internet Explorer® 8 (32 bit), Windows® Internet Explorer® 7 (32 bit) Safari, Google Chrome, Mozilla Firefox
Network	Network IF	10Base-T / 100Base-TX, RJ45 connector

	Image Resolution	•1.3 mega pixel [16 : 9] (30/60 fps)
		  1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90
		•1.3 mega pixel [4 : 3] (30 fps)
		  1,280 x 960 / 800 x 600 / 640 x 480 / 400 x 300 / 320 x 240 / 160 x 120
		•2 mega pixel [16 : 9] (30 fps) * Used by super resolution technology
		  1,920 x 1,080* / 640 x 360 / 320 x 180 / 160 x 90

	H.264[4] Transmission Mode	Constant bitrate / Variable bit rate / Framerate priority / Best effort / Advanced VBR
	Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 / 60 fps
	Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 / 10,240 / 12,288 / 14,336 / 16,384 / 20,480 / 24,576 / 30,720 / 40,960 kbps
	Image Quality	Low / Normal / Fine
	Smart Coding mode	On (Low / Mid / High) / Off (Only when "Variable bit rate" is selected)
	Refresh interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5s
	Transmission Type	Unicast / Multicast
	JPEG Image Quality	10 steps
	Refresh interval	0.1 fps - 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)
	Transmission Type	Pull / Push
	Audio Compression (WV-SFV311A only)	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps / AAC-LC
	Audio Mode (WV-SFV311A only)	Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)
	Authentication for Audio (WV-SFV311A only)	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 SDXC/SDHC/SD memory card is available.)
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)

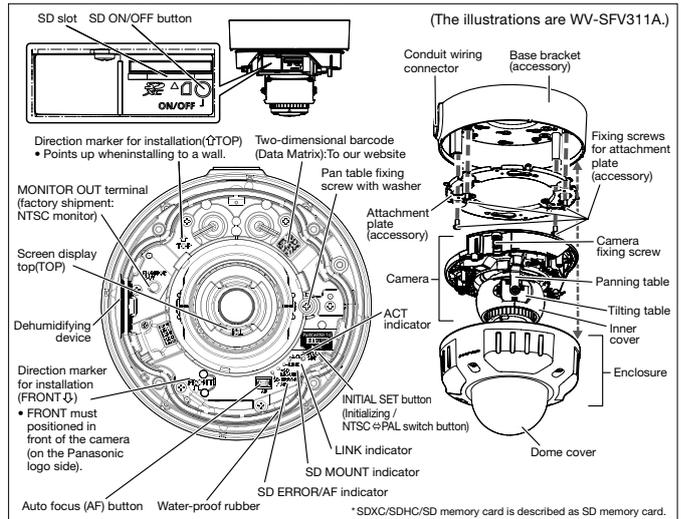| Network	SDXC/SDHC/SD
	Memory Card (Option)
	* Manufactured by Panasonic (SD speed class 4 or higher)
	* Use the SD memory card that complies with UHS-1 (Ultra High Speed-1) in the case of SD Speed Class 10.
		H.264 recording :
		  Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure
		JPEG recording :
		  Manual REC / Alarm REC (Pre/Post) / Backup upon network failure
		Compatible SD (SDHC/SDXC) card:
		  Panasonic 2 GB, 4 GB, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 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
Alarm	Alarm Source	3 terminals input, VMD, Command alarm, Audio detection alarm (WV-SFV311A only)
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP notification Indication on browser, FTP image transfer, Panasonic protocol output
	Alarm Log	With SDXC/SDHC/SD memory card : Up to 50,000 logs for each SD memory card
	Schedule	Alarm / VMD / Access permission / H.264 recording / Scene file
Input/ Output	Monitor Output (for adjustment)	VBS : 1.0 V [p-p] / 75 Ω, composite, ø3.5 mm monaural mini jack An NTSC or PAL signal can be outputted from camera (either press the INITIAL SET switch quickly (within 1 second) or use software to select NTSC or PAL signal).
	Microphone/Line Input (WV-SFV311A only)	ø3.5 mm monaural mini jack (monaural input) (Applicable microphone : Plug-in power type) Supply voltage : 2.5 V ±0.5 V Input impedance : Approx. 2 kΩ (unbalanced)
	Audio Output(WV-SFV311A only)	ø3.5 mm stereo mini jack (monaural output) Output impedance: Approx. 600 Ω (unbalanced)
	External I/O Terminals	ALARM IN 1 (DAY/NIGHT IN*, Auto time adjustment), ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT) *WV-SFV311A only
General	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	DC power supply : DC12 V / 710 mA / Approx. 8.5 W PoE (IEEE802.3af) : DC48 V / 200 mA / Approx. 9.6 W (Class 0 device)
	Ambient Operating Temperature	–40 °C to +50 °C (–40 °F to 122 °F)
	Ambient Operating Humidity	10 to 90 % (no condensation)
	Impact Protection	IEC 60068-2-75 test Eh, 50J / IEC 62262 IK10
	Water and Dust Resistance	IP66, IEC60529 measuring standard compatible, Type 4X(UL50), NEMA 4X compliant
	Shock Resistance	Compliant with 50J IEC60068-2-75
	Dimensions * Installing using the base bracket	ø164 mm x 139 mm (H) {ø6-15/32 inches x 5-15/32 inches (H)} Dome radius 42 mm {1-21/32 inches}
	Mass (approx.)	When using base bracket : 1.6 kg {3.53 lbs} When using attachment plate : 1.2 kg {2.65 lbs}
	Finish	Main body : Aluminum die cast, light gray Dome cover : Clear polycarbonate resin

*1 Converted value
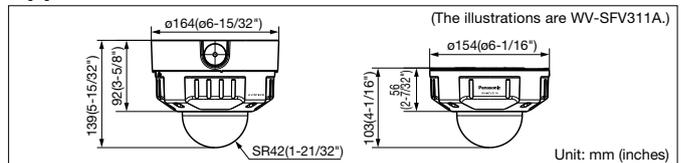*2 Super Dynamic function is automatically set off on 60 fps mode.
*3 Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8/ Windows® 8.1" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 8.1 or Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*4 Transmission for 4 streams can be individually set.

Part Names and Functions

(The illustrations are WV-SFV311A.)

SD slot SD ON/OFF button

Conduit wiring connector Base bracket (accessory)

Direction marker for installation(⇧TOP)
• Points up wheninstalling to a wall.

Two-dimensional barcode (Data Matrix):To our website

Fixing screws for attachment plate (accessory)

MONITOR OUT terminal (factory shipment: NTSC monitor)

Pan table fixing screw with washer

Attachment plate (accessory)

Screen display top(TOP)

Camera

Camera fixing screw

Panning table

Dehumidifying device

ACT indicator

Tilting table

Inner cover

Direction marker for installation (FRONT ⇩)
• FRONT must positioned in front of the camera (on the Panasonic logo side).

Enclosure

INITIAL SET button (Initializing / NTSC⇔PAL switch button)

LINK indicator

Dome cover

SD MOUNT indicator

SD ERROR/AF indicator

Auto focus (AF) button Water-proof rubber

*SDXC/SDHC/SD memory card is described as SD memory card.

Appearance

(The illustrations are WV-SFV311A.)

ø164(ø6-15/32")
139(5-15/32")
92(3-5/8")
SR42(1-21/32")

ø154(ø6-1/16")
103(4-1/16")
56(2-7/32")

Unit: mm (inches)

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