



*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-SFR311A, Electrical: WV-SFR310A) function:
WV-SFR311A : 0.01 lx (Color), 0.003 lx (B/W) at F1.6
WV-SFR310A : 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-SFR311A 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)
- Vandal resistant mechanism for high reliability

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

Optional Accessories

| | | |
|---|--|--|
| <p>Ceiling Mount Bracket WV-Q105A</p>  | <p>Ceiling Mount Bracket WV-Q174B</p>  | <p>Smoke Dome Cover WV-CR1S</p>  |
|---|--|--|

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-SFR311A | 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-SFR310A | 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-SFR311A : ICR Mode : Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC) WV-SFR310A : 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 | +120° to -240° | |
| | Vertical | ±85° | |
| Browser GUI | Cropping | H.264(1)/H.264(2)/H.264(3)/H.264(4)/H.264(all)/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-SFR311A 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 / Frame rate 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) |
| JPEG | | Refresh interval | 0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5s |
| | | Transmission Type | Unicast / Multicast |
| | | Image Quality | 10 steps |
| Audio Compression (WV-SFR311A only) | | 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-SFR311A only) | | G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps / AAC-LC | |
| Authentication for Audio (WV-SFR311A 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) | 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) |
| Alarm | Mobile Terminal Compatibility | iPad, iPhone, iPod touch (iOS 4.2.1 or later), Android™ mobile terminals |
| | Alarm Source | 3 terminals input, VMD, Command alarm, Audio detection alarm (WV-SFR311A only) |
| | Alarm Actions | SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm 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-SFR311A 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-SFR311A 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-SFR311A 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 / 370 mA / Approx. 4.5 W PoE (IEEE802.3af) : DC48 V / 90 mA / Approx. 4.3 W (Class 2 device) |
| | Ambient Operating Temperature | -10°C to +50°C (14 °F to 122 °F) |
| | Ambient Operating Humidity | 10 to 90 % (no condensation) |
| | Shock Resistance | Compliant with 20J IEC60068-2-75 / IEC 62262 IK10 |
| | Dimensions | ø129.5 mm x 102.5 mm (H) (ø5-3/32 inches x 4-1/32 inches (H)) Dome radius 41.5 mm (1-5/8 inches) |
| Mass (approx.) | 0.70 kg (1.54 lbs) | |
| Finish | Main body : Aluminum die cast, sail white / Dome cover : Clear polycarbonate resin | |

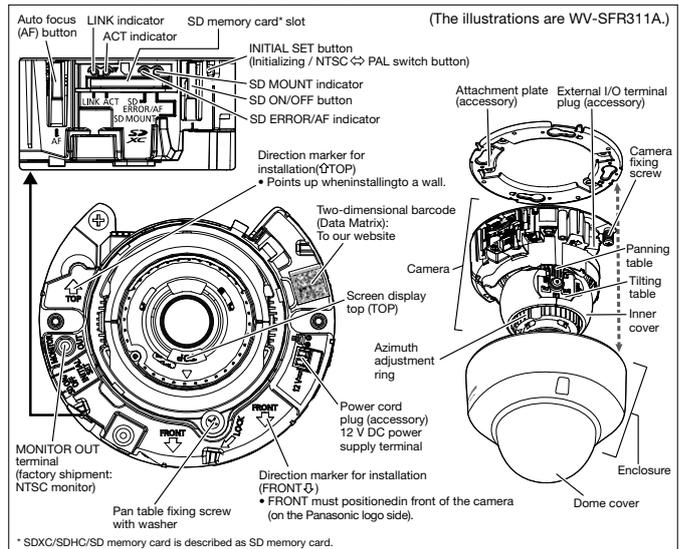
¹ Converted value

² Super Dynamic function is automatically set off on 60 fps mode.

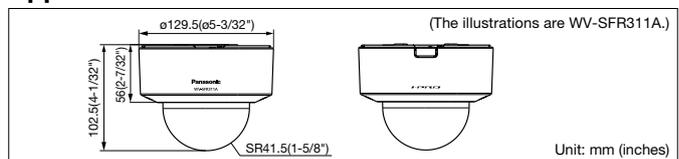
³ Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8 / Windows® 8.1" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 8.1 or Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.

⁴ Transmission for 4 streams can be individually set.

Part Names and Functions



Appearance



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Important

- Safety Precaution: Carefully read the Important, Installation Guide and operating instructions before using this product.
- Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

• Masses and dimensions are approximate. • Specifications are subject to change without notice.

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