# Panasonic

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

# WV-SFV631LT

i-PRO SmartHD **6** Series

Onvif G S

SD | ENHANCED Super Dynamic | VIQS (Variable Image Quality on Specified area) | H.264 JPEG | FULL HD Full High Definition 1080/60p | day/night IR removable | Vandal Resistant | NO HUMIDICATION | IR LED | HLC | Fog sand Compensation | Auto Back Focus | i-VMD (Optional) | IP66 standard

# Full HD / 1,920 x 1,080 60 fps H.264 Vandal Resistant Network Camera featuring *Super Dynamic*

## Key Features

- **1080p** Full HD / **720p** HD images up to **60 fps**[*1]
- Approximate 1/3 inches, high sensitivity MOS image sensor
- Super high resolution at Full HD/1,920 x 1,080 created by high sensitivity MOS Sensor.
- **Multiple H.264 (High profile) streams (max. 4 streams)** and JPEG streams ensure simultaneous real time monitoring and high resolution recording by new enhanced "UniPhier®", Panasonic's proprietary System LSI platform.
- Maximum Screen Size is 2,048 x 1,536* @30fps, H.264
  * Used by super resolution techniques
- *Enhanced Super Dynamic*[*1] and ABS (Adaptive Black Stretch) technologies deliver **133 dB** wider dynamic range compared to conventional cameras.
- **Multi process NR & 3D-DNR** ensures noise reduction in various conditions.
- High sensitivity with Day & Night (IR) function:0.06 lx (Color), 0.015 lx (B/W) at F1.6
- **IR LED** equipped: The equipped infrared LED makes it possible to take pictures at zero lx.
- **IR LED** is controlled to match the environment, thereby the camera provides clear images of human faces without white blur.
- New camera attachment bracket allows an **easy camera installation** toward all four directions.
- **High Speed ABF (Auto Back Focus) and Motorized Zoom** ensures easy installation.
- Newly developed lens with aperture control function realizes the best focus in any environment.
- **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.
- Electronic sensitivity enhancement: Auto (Up to 16/30s) / OFF
- 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.
- 3x 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.
- 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 alarm 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.
- **Double SDXC/SDHC/SD Memory card slots** for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (H.264 / JPEG). Realize long-term recording and auto backup function.
- 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.
- **Super Chroma Compensation** function realizes a better color.
- 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
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- Onvif compliant model
- 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 60fps mode.

## Optional Accessories
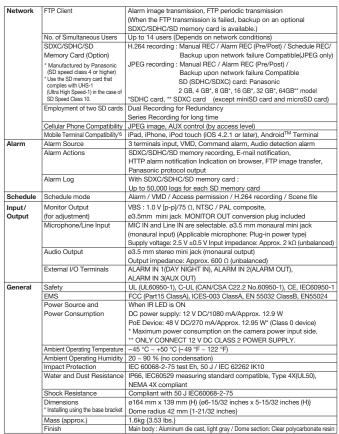
| Ceiling Mount Bracket | Smoke Dome Cover | Sun Shade |
|---|---|---|
| **WV-Q169A** | **WV-CW7S** | **WV-Q7118** |

# Specifications

| Camera | Image Sensor | Approx. 1/3  type MOS image sensor |
|---|---|---|
| | Effective Pixels | Approx. 2.4 mega pixels |
| | Scanning Mode | Progressive scan |
| | Scanning Area | 5.346 mm (H) x 3.336 mm (V) {7/32 inches (H) x 1/8 inches (V)} |
| | Minimum Illumination | Color: 0.06 lx, BW: 0.015 lx (F1.6, Maximum shutter : Max. 1/30s, Gain : On(High))<br>BW: 0 lx (F1.6, Maximum shutter: Off(1/30 s), Gain: High, when the IR LED is lit)<br>Color: 0.0045 lx, BW: 0.0011 lx (F1.6, Maximum shutter : Max. 16/30s, Gain : On(High)) *1 |
| | IR LED Light | Off/Auto(High/Mid/Low) |
| | IR LED irradiation distance | 33 m (108.24 feet) |
| | 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 and ELC<br>Indoor scene [50 Hz] : Automatic integration of ALC and ELC with flickerless<br>Indoor scene [60 Hz] : Automatic integration of ALC and ELC with flickerless |
| | Shutter Speed | [2 mega pixel [16:9](60 fps mode)/ 1.3 mega pixel [16:9](60 fps mode)]<br>OFF(1/60), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000,1/10000<br>Other than [2 mega pixel [16:9](60 fps mode)/ 1.3 mega pixel [16:9](60 fps mode)]<br>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)/ On (Mid)/ On (High)/ Off |
| | Maximum shutter | max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/100 s, max. 1/60 s,<br>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 (IR) | On/Off / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC) |
| | Dynamic Range | 133 dB typ. (Super Dynamic : On, Light Control Mode : indoor) |
| | Digital Noise Reduction | High / Low |
| | Video Motion Detection | On/Off, 4 areas, Sensitivity : 15 steps, Detection size : 10 steps |
| | Privacy Zone | On/Off (up to 8 zones available) |
| | 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 | 9.0 ~ 22 mm, 2.4x {23/64 inches - 7/8 inches} |
| | Angular Field of View | [16 : 9 mode]   Horizontal : 13.8° (TELE) – 33.0° (WIDE)<br>Vertical    :  7.7° (TELE) – 17.8° (WIDE)<br>[4 : 3 mode]   Horizontal : 11.5° (TELE) – 27.0° (WIDE)<br>Vertical    : 8.6° (TELE) – 19.9° (WIDE) |
| | Maximum Aperture Ratio | 1 : 1.6 (WIDE) ~ 1 : 3.0 (TELE) *with Smart DOF (Depth of Field) mode |
| | Focusing Range | 1 m ~ ∞ |
| Adjusting Angle | | Horizontal: ±180°, Vertical: 0-85°,<br>Image tilt adjustment range: -45° (Left) to +300° (Right) |
| Browser GUI | Cropping | H.264(1) / H.264(2) / H.264(3) / H.264(4) / H.264(all) / JPEG(1) / JPEG(2) / JPEG(3)<br>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 | 1x, 2x, 4x controlled by browser GUI |
| | 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, Portuguese, Russian, Chinese, Japanese |
| | System Log | Up to 100 (Internal)<br>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) |
| Network | Network IF | 10Base-T / 100Base-TX, RJ-45 connector |

| Network | Image Resolution | Image Capture Mode:<br>2 mega pixel [16:9] (30/60 fps) | 1,920 x 1,080 / 1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90 |
|---|---|---|---|
| | | Image Capture Mode:<br>2 mega pixel [4:3] (30fps) | 1,600 x 1,200 / 1,280 x 960 / 800 x 600 / 640 x 480 / 400 x 300 /<br>320 x 240 / 160 x 120 |
| | | Image Capture Mode:<br>3 mega pixel [4:3] (30fps) | 2,048 x 1,536* / 1,280 x 960 / 800 x 600 / 640 x 480 / 400 x 300 /<br>320 x 240 / 160 x 120   * Used by super resolution techniques |
| | H.264 *4 | Transmission Mode | Constant bitrate / 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 /<br>6,144 / 8,192 / 10,240 / 12,288 / 14,336 / 16,384 / 20,480 / 24,576 kbps |
| | | Image Quality | LOW / NORMAL / FINE |
| | | 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<br>(JPEG frame rate will be restricted when displaying both JPEG and H.264 images.) |
| | | Transmission Type | Pull / Push |
| | Audio Compression | | G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps / AAC-LC*5 |
| | 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, FTP, SMTP, DNS, NTP, SNMP,<br>DHCPv6, RTP, MLD, ICMP, ARP<br>IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP,FTP,<br>SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP |

| Network | FTP Client | Alarm image transmission, FTP periodic transmission<br>(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) |
| | SDXC/SDHC/SD<br>Memory Card (Option)<br>* Manufactured by Panasonic<br>(SD speed class 4 or higher)<br>* Use the SD memory card that complies with UHS-1<br>(Ultra High Speed-1) in the case of SD Speed Class 10. | H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC /<br>Backup upon network failure Compatible(JPEG only)<br>JPEG recording : Manual REC / Alarm REC (Pre/Post) /<br>Backup upon network failure Compatible<br>SD (SDHC/SDXC) card: Panasonic<br>2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64GB** model<br>*SDHC card, ** SDXC card   (except miniSD card and microSD card) |
| | Employment of two SD cards | Dual Recording for Redundancy<br>Series Recording for long time |
| | Cellular Phone Compatibility | JPEG image, AUX control (by access level) |
| | Mobile Terminal Compatibility*6 | iPad, iPhone, iPod touch (iOS 4.2.1 or later), Android™ Terminal |
| Alarm | Alarm Source | 3 terminals input, VMD, Command alarm, Audio detection alarm |
| | Alarm Actions | SDXC/SDHC/SD memory recording, E-mail notification,<br>HTTP alarm notification Indication on browser, FTP image transfer,<br>Panasonic protocol output |
| | Alarm Log | With SDXC/SDHC/SD memory card :<br>Up to 50,000 logs for each SD memory card |
| Schedule | Schedule mode | Alarm / VMD / Access permission / H.264 recording / Scene file |
| Input/<br>Output | Monitor Output<br>(for adjustment) | VBS : 1.0 V [p-p]/75 Ω, NTSC / PAL composite,<br>ø3.5mm  mini jack  MONITOR OUT conversion plug included |
| | Microphone/Line Input | MIC IN and Line IN are selectable. ø3.5 mm monaural mini jack<br>(monaural input) (Applicable microphone: Plug-in power type)<br>Supply voltage: 2.5 V ±0.5 V Input impedance: Approx. 2 kΩ (unbalanced) |
| | Audio Output | ø3.5 mm stereo mini jack (monaural output)<br>Output impedance: Approx. 600 Ω (unbalanced) |
| | External I/O Terminals | ALARM IN 1(DAY NIGHT IN), ALARM IN 2(ALARM OUT),<br>ALARM IN 3(AUX OUT) |
| General | Safety | UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1 |
| | EMS | FCC (Part15 ClassA), ICES-003 ClassA, EN 55032 ClassB, EN55024 |
| | Power Source and<br>Power Consumption | When IR LED is ON<br>DC power supply: 12 V DC/1080 mA/Approx. 12.9 W<br>PoE Device: 48 V DC/270 mA/Approx. 12.95 W* (Class 0 device)<br>* Maximum power consumption on the camera power input side.<br>** ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY. |
| | Ambient Operating Temperature | –45 °C ~ +50 °C {–49 °F ~ 122 °F} |
| | Ambient Operating Humidity | 20 ~ 90 % (no condensation) |
| | Impact Protection | IEC 60068-2-75 test Eh, 50 J / IEC 62262 IK10 |
| | Water and Dust Resistance | IP66, IEC60529 measuring standard compatible, Type 4X(UL50),<br>NEMA 4X compliant |
| | Shock Resistance | Compliant with 50 J IEC60068-2-75 |
| | Dimensions<br>* Installing using the base bracket | ø164 mm x 139 mm (H) {ø6-15/32 inches x 5-15/32 inches (H)}<br>Dome radius 42 mm {1-21/32 inches} |
| | Mass (approx.) | 1.6kg {3.53 lbs.} |
| | Finish | Main body : Aluminum die cast, light gray / Dome section: Clear polycarbonate resin |

*1 Converted value
*2 Super Dynamic function is automatically set off on 60fps mode.
*3 Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8" 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 Transmission for 4 streams can be individually set.
*5 AAC-LC (Advanced Audio Coding - Low Complexity) is only used when recording audio on an SD memory card.
*6 For further information about compatible devices, refer to our website(http://security.panasonic.com/pss/security/support/info.html).

## Part Names and Functions



*Depending on the scanning application used, the Data Matrix may not be able to be read correctly.
In this case, access the site by directly entering the following URL. http://security.panasonic.com/pss/security/support/qr_sp_select.html

## Appearance



Unit: mm (inches)

## Trademarks and registered trademarks
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– UniPhier is a registered trademark of Panasonic Corporation.
– "i-PRO SmartHD" logo is trademark or registered trademark of Panasonic Corporation.
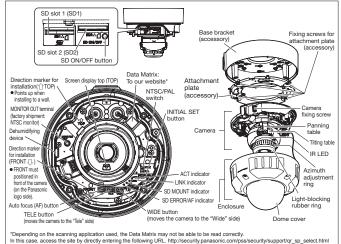– ONVIF and the ONVIF logo are trademarks of ONVIF Inc.

**Important**
– Safety Precaution: Carefully read the Important Information, 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.
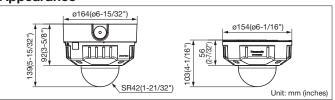
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