



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

#### Key Features

- IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard.
- Built-in Microphone
- Wide coverage : Horizontal: 100 °, Vertical: 81 °(3 megapixels [4:3])
- Low profile design for discrete installation
- **1080p** HD images up to 30 fps
- 3.1 Megapixel high sensitivity MOS Sensor
- Super high resolution at Full HD/1,920 x 1,080 created by 3.1Megapixel high sensitivity MOS Sensor
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by new "UniPhier®", Panasonic's proprietary System LSI platform.
- Full frame (Up to 30 fps) transmission at 1,920 x 1080 image size
- **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 (Electrical) function:1.2 lx (Color), 0.9 lx (B/W) at F2.2
- 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.
- Electronic sensitivity enhancement: Auto (Up to 16x) / OFF
- Selectable light control modes: Indoor scene (50 Hz) / Indoor scene (60 Hz) / ELC (maximum exposure time)  
Indoor scene (50 Hz/60 Hz): Flicker caused by fluorescent lightning will be automatically compensated.  
ELC (maximum exposure time): The lightning control will be automatically performed by adjusting shutter speed in the range of ELC.
- 3x extra zoom at 640 x 360 resolution
- 2x, 4x digital zoom controlled by browser
- **VIQS** (Variable Image Quality on Specified area) technology allows the designated **2 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(1920 x 1080) and the part image(640 x 480) simultaneously.  
Up to 4 image capture areas can be specified, and it is also possible to control the sequence.
- Fog and sandstorm compensation
- 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.

- Camera title display: Up to 20 alphanumeric characters on the browser
- Alarm sources including 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.
- 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)
- 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 Internet.
- Onvif compliant model
- "Railway applications – Electronics equipment used on rolling stock" compatible with EN50155
- Vandal resistant mechanism for high reliability

#### Standard Accessories

• Installation Guide .....	1 pc.	• CD-ROM*1 .....	1 pc.
• Important Safety Instructions.....	1 pc.	• Code Label*2 .....	1 pc.

The following parts are used during installation procedures.

• Fixing Screws (M4 x 8 mm).....	3 pcs.	• Tamperproof Screw Bit .....	1 pc.
• Installation Template Label .....	1 pc.	• Waterproof Tape .....	1 pc.
• Mount Bracket.....	1 pc.		

\*1 The CD-ROM contains the operating instructions 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

Smoke Dome Cover  
**WV-CW6SA**



# Specifications

<b>Camera</b>	Image Sensor	1/3 type MOS Sensor	
	Effective Pixels	Approx. 3.1 megapixels	
	Scanning Mode	Progressive scan	
	Scanning Area	4.51 mm(H) x 3.38 mm(V) {11/64 inches (H) x 9/64 inches (V)}	
	Minimum Illumination	Color: 1.2 lx, BW: 0.9 lx (F2.2, Auto slow shutter: Off (1/30s), Gain: On(High)) Color: 0.075 lx, BW 0.056 lx (F2.2, Auto slow shutter: Max. 16/30s, Gain: On(High)) <sup>*1</sup>	
	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 Indoor scene [50 Hz]: Automatic integration (up to 1/100 s) Indoor scene [60 Hz]: Automatic integration (up to 1/120 s) ELC: (up to 1/10,000 sec.)	
	Shutter Speed	Max 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	
	Face Super Dynamic	ON / OFF (Only at Super Dynamic: ON)	
	Adaptive Black Stretch	ON / OFF (Only at Super Dynamic: OFF)	
	Fog compensation	ON / OFF	
	AGC	ON (LOW, MID, HIGH) / OFF	
	Electronic Sensitivity UP	OFF / Max. 2x (2/30 s), 4x (4/30 s), 6x (6/30 s), 10x (10/30 s), 16x (16/30 s)	
	Day & Night (electrical)	OFF / Auto	
	Digital Noise Reduction	High / Low	
	Video Motion Detection	ON / OFF, 4 areas available	
	Privacy Zone	ON / OFF (up to 2 zones available)	
	VIQS	ON / OFF (up to 2 zones available)	
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks), ON / OFF	
Mirror Upside down	ON / OFF		
Lens Distortion Compensation	256 steps		
<b>Lens</b>	Focal Length	1.95 mm {5/64 inches}	
	Zoom Ratio	1x / Extra Zoom 3x (2 megapixels at 640 x 360 resolution)	
	Angular Field of View	Horizontal: 100° Vertical: 81° (3 megapixels [4:3]) Horizontal: 95° Vertical: 62° (2/1.3 megapixels [16:9]) Horizontal: 84° Vertical: 68° (1.3 megapixels [4:3])	
	Maximum Aperture Ratio	1 : 2.2	
	Focusing Range	0.5 m ~ ∞	
	Aperture Range	F2.2	
	<b>Adjusting Angle</b>	<ul style="list-style-type: none"> <li>• Ceiling installation Horizontal: -20° to +20° Vertical: -20° to +90°</li> <li>• Wall installation Horizontal: -80° to +80° Vertical: -90° to +20°</li> </ul>	
<b>Browser GUI</b>	Camera Control	Brightness	
	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 Input: 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, 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 <sup>*2,*3</sup>	Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3	
Supported Browser	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)		
<b>Network</b>	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 x 1,536, up to 15 fps
		H.264 <sup>*4</sup>	Transmission Mode Constant bitrate / Frame rate priority / Best effort / Advanced VBR
	H.264 <sup>*4</sup>	Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps
		Bit Rate/Client	Constant bit rate/Best effort: 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 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
	Cropping	2 megapixels [16:9]	H.264 640x360/320x180, Max. 30 fps MJPEG 640x360/320x180, Max. 30 fps 1.3 megapixels [16:9]
H.264 640x360/320x180, Max. 30 fps		H.264 640x360/320x180, Max. 30 fps MJPEG 640x360/320x180, Max. 30 fps 1.3 megapixels [4:3]	
H.264 640x360/320x180, Max. 30 fps		H.264 640x360/320x180, Max. 30 fps MJPEG 640x360/320x180, Max. 30 fps 1.3 megapixels [4:3]	
H.264 640x360/320x180, Max. 30 fps		H.264 640x360/320x180, Max. 30 fps MJPEG 640x360/320x180, Max. 30 fps	

<b>Network</b>	Audio Compression	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps for transmitting, AAC for audio recording and sound detection
	Audio Mode	OFF / Mic input
	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, MLD, ICMP, ARP IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, 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)
	SDXC/SDHC/SD	H.264 recording (Audio recording is enable): Manual REC / Alarm REC (Pre/Post) / Schedule REC
	Memory Card (Option)	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*, 64GB** model *SDHC card, **SDXC card (except miniSD card and microSD card)
	Cellular Phone Compatibility	JPEG image
Mobile Terminal Compatibility	iPad, iPhone, iPod touch (iOS 4.2.1 or later), Android™ mobile terminals	
<b>Alarm</b>	Alarm Source	VMD, Command alarm, Sound detection
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output
	Alarm Log	With SDXC/SDHC/SD memory card: 5,000 logs, without SDXC/SDHC/SD memory card: 1,000 logs
Schedule	Alarm / VMD / Access permission / H.264 recording / Sound detection	
<b>Input/ Output</b>	Microphone	Built-in microphone
<b>General</b>	Safety/EMC Standard	<Safety> UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1 <EMC> FCC Part15 Class A, ICES-003 Class A, EN55022 Class B, EN55024
	Power Source and Power Consumption	PoE (IEEE802.3af compliant) / PoE 48 V: 110 mA (Class 2 device)
	Ambient Operating Temperature	-30 °C to +50 °C (-22 °F to 122 °F)
	Ambient Operating Humidity	Less than 90 % (no condensation)
	Water and Dust Resistance	IP66, IEC60529 measuring standard compatible
	Shock Resistance	Compliant with 50 J IEC60068-2-75
	Railway Application	EN50155, EN50121
	Dimensions	ø109 mm x 47 (H) mm (ø4-9/32 inches x 1-27/32 inches (H)) With Mount Bracket: ø109 mm x 70 mm (H) (ø4-9/32" x 2-3/4" (H))
	Mass (approx.)	Approx. 350 g { 0.77 lbs}
	Finish	Main body: Aluminum die cast, light gray Dome cover: Clear polycarbonate resin

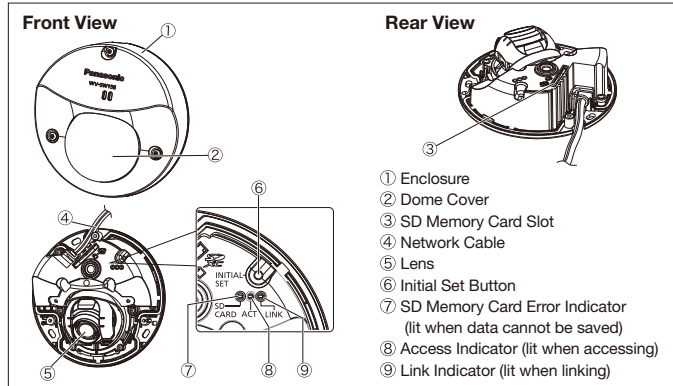
\*1 Converted value

\*2 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®.

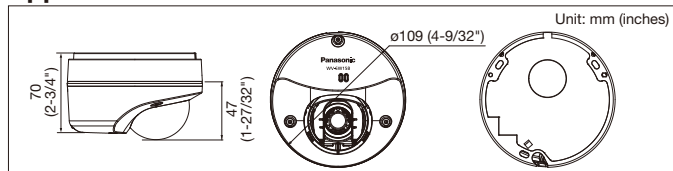
\*3 When using IPv6 for communication, use Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.

\*4 Transmission for 2 streams can be individually set in the same compression method.

## Part Names and Functions



## Appearance



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### 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.

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

- These products may be subject to export control regulations.

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