



HD / 1,280 x 720 H.264 Camera featuring 45x extra optical zoom and Super Dynamic

Key Features

- 720p HD images up to 30 fps
- Super high resolution at HD / 1,280 x 720 created by 2.4 Megapixel high sensitivity MOS image sensor
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by "UniPhier", Panasonic's proprietary System LSI platform.
- Full frame (Up to 30 fps) transmission at 1,280 x 960 image size
- **45x extra optical zoom at 1,280 x 720 (30x optical zoom)**
90x extra optical zoom at 640x360 resolution with 12x digital zoom enabling 1080x zoom.
- **Super Dynamic** and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared to conventional cameras.
- **Face Super Dynamic** technology ensures clear face image.
- High sensitivity with Day & Night (ICR)* function:
0.3 lx (Color), 0.04 lx (B/W) at F1.6
* ICR: IR Cut filter Removal
- **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.
VIQS can be set on preset position (1 to 8) and except preset.
- 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:
Outdoor scene / Indoor scene (50 Hz) / Indoor scene (60 Hz) / Fix shutter
Indoor scene (50 Hz / 60 Hz): Flicker caused by fluorescent lightning will be automatically compensated.
- **360 degrees endless Panning**
- Advanced auto tracking: The camera automatically pans and tilts to follow a moving subject and keep it in the center of the image.
- PTZ control can be taken very smoothly on the user friendly GUI with 16 speeds pan/tilt and "Drag and Zoom" operation enabling finer control. 256 speeds available for system with WV-CU950 system controller.
- Up to 256 preset positions
- 360 map shot: 8 thumbnail images at 45 deg. intervals make it simple to direct the camera easily by clicking on a thumbnail.
- Industrial grade Pan / Tilt / Zoom mechanism for high reliability
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Privacy Zone can mask up to 32 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.
- SDXC/SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (H.264 / 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 / 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
- **Fog compensation function** equipped as standard.
- Dust-resistant design: Minimize degradation of pan/tilt mechanism

Standard Accessories

• CD-ROM*1	1 pc.	The followings are for installation.	
• Installation Guide.....	1 pc.		
• Code Label*2	1 pc.		
		• Camera Mount Bracket	1 pc.
		• Camera Fixing Screw (M3)	2 pcs. (incl. 1 spare)
		• Decorative Cover.....	1 pc.
		• Power cable Plug	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-Q105A	Embedded Ceiling Mount Bracket WV-Q126A	Wall Mount Bracket WV-Q119	Smoke Dome Cover WV-CS5S	Clear Dome Cover WV-CS5C

* This catalog is provided for all over the world. Some accessories may not be available in some countries.

Specifications

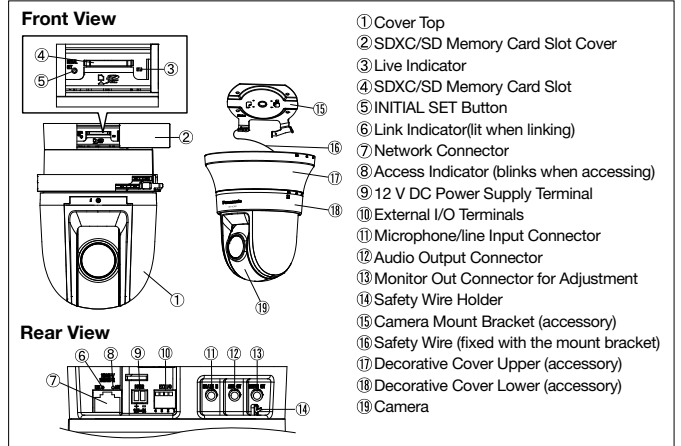
Camera	Image Sensor	Approx. 1/3 type MOS image sensor	
	Effective Pixels	Approx. 2.4 mega pixels	
	Scanning Mode	Progressive scan	
	Scanning Area	5.38 mm(H) x 3.02 mm(V) [7/32 inches(H) x 1/8 inches(V)]	
	Minimum Illumination	Color: 0.3 lx, BW: 0.04 lx (F1.6, Auto slow shutter: Off (1/30s), Gain: On(High)) Color: 0.019 lx, BW: 0.003 lx (F1.6, 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 and ELC Indoor scene [50 Hz]: Automatic integration of ALC and ELC (up to 1/100 s) Indoor scene [60 Hz]: Automatic integration of ALC and ELC (up to 1/120 s) Fix shutter	
	Shutter Speed	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	On / 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	
	Gain (AGC)	On (Low) / On (Mid) / On (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 (ICR)	Mode: AUTO1 / AUTO2 / AUTO3 / On / Off, Level: High / Low, with external control	
	Digital Noise Reduction	High / Low	
	Video Motion Detection	4 areas, Sensitivity: 15 steps, Detection size: 10 steps	
	Privacy Zone	Gray / Mosaic / Off (up to 32 zones available)	
	VIQS	Up to 2 zones at preset position 1-8 and except preset	
	Auto Image Stabilizer	On / Off	
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks)	
	Focus distance	Limited / Unlimited	
	Lens	Focal Length	4.3 mm to 129.0 mm (3/16 inches - 5-3/32 inches)
Zoom Ratio		30x / 45x with extra optical zoom (at 1280 x 720)	
Digital (Electrical) Zoom		12x (Max. 1080x combined with extra optical zoom at 640 x 360)	
Angular Field of View		H: 2.34° (TELE) - 65.1° (WIDE), V: 1.36° (TELE) - 38.4° (WIDE) [(16:9) mode] H: 1.6° (TELE) - 45.2° (WIDE), V: 1.2° (TELE) - 34.3° (WIDE) [(4:3) mode]	
Maximum Aperture Ratio		1 : 1.6 (WIDE) - 4.7 (TELE)	
Focusing Range		2.0 m - ∞	
Aperture Range		F1.6 - Close	
Panning Range		360° endless	
Panning Speed		Manual: approx. 0.0667/s - 120°/s, Up to 256 steps (depending on the controller) Preset: up to approx. 300°/s	
Tilting Range		-25° to 205° (upward-level-downward) Selectable tilting angle: 10° / 5° / 3° / 0° / -3° / -5° / -10° / -15° / -20° / -25°	
Tilting Speed	Manual: approx. 0.0667/s to 120°/s, Preset: up to approx. 300°/s		
Proportional Pan/Tilt Control	Yes		
Number of Preset Positions	256		
Auto Mode	Auto track/ Auto pan/ Preset sequence/ 360 map-shot/ Patrol		
Image Hold	On / Off		
PTZ Position Display	On / Off		
Self Return	10 s / 20 s / 30 s / 1 min / 2 min / 3 min / 5 min / 10 min / 20 min / 30 min / 60 min		
Map Shot	360° map shot / Preset map shot		
Browser GUI	Camera Control	Pan/Tilt (256 steps), Zoom, Focus, Click centering, Drag zoom, Iris, Preset position call and program, Auto mode	
	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.	
	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	
	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 ^{*2}	Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3	
	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, RJ45 connector
Image Resolution		Image Capture Mode:	H.264 : 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps 16:9 JPEG (MJPEG): 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps
		Image Capture Mode:	H.264 : 1,280 x 960 / 800 x 600 / 640 x 480 / 320 x 240, up to 30 fps 4:3 JPEG (MJPEG): 1,280 x 960 / 800 x 600 / 640 x 480 / 320 x 240, up to 30 fps
H.264 ^{*4}		Transmission Mode	Constant bitrate / Frame rate priority / Best effort / Advanced VBR
		Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps
		Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 kbps
		Image Quality	Low / Normal / Fine
JPEG		Refresh Interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5 s
		Transmission Type	Unicast / Multicast
Audio Compression		Image Quality	10 steps
		Refresh Interval	0.1 fps to 30 fps
Audio Mode		Transmission Type	Pull / Push
Authentication for Audio		G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps, AAC ^{*3}	
Total Bit Rate		Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)	
Supported Protocol		Level 1 only / Level 2 higher / All users	
FTP Client		IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTCP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, ICMP, ARP	
		IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP	
Maximum concurrent access number	Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SDXC/SDHC/SD memory card is available.)		
	Up to 14 users (Depends on network conditions)		

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

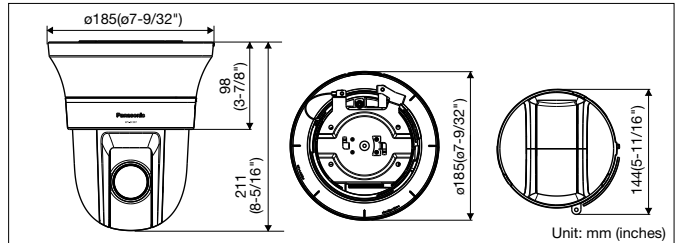
Network	SDXC/SDHC/SD Memory Card (Option)	H.264 recording (Audio recording is enable): Manual REC / Alarm REC(Pre/Post) / Schedule REC / Backup upon network failure JPEG recording: Manual REC / Alarm REC (Pre/Post) / Backup upon network failure Compatible SD (SDHC/SDXC) card: Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)
	Cellular Phone Compatibility	JPEG image_panning/tilting/zoom/focus control, 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 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
Input/ Output	Schedule	Alarm / VMD / Access permission / H.264 recording / Audio detection
	Monitor Output (for adjustment)	VBS: 1.0V[p-p] / 75Ω, NTSC / PAL composite, ø3.5 mm monaural mini jack
	Microphone/Line Input	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
General	Audio Output	ø3.5 mm stereo mini jack (monaural output) Line level
	External I/O Terminals	ALARM IN 1 (DAY/NIGHT IN), ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT)
Power Source and Power Consumption	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
	DC power supply: DC12 V / 1.0 A / 12 W PoE device: DC48 V / 250 mA / Approx. 12 W (Class 0 device) * FOR UL LISTED MODEL(S), ONLY CONNECT DC12 V CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).	
Ambient Operating Temperature	Ambient Operating Temperature	PoE: -10 °C to +55 °C (14 °F to 131 °F)
	Ambient Operating Humidity	Less than 90 % (no condensation)
Dimensions	Dimensions	ø185 mm x 211 mm (H) (ø7-9/32 inches x 8-5/16 inches (H)) (including the decorative covers)
	Mass (approx.)	Approx. 1.5 kg (3.31 lbs)
Finish	Camera	: ABS resin (Coating color: Black)
	Decorative cover: ABS resin (Resin color: Sail white)	

*1 Converted value
*2 For further information about PC system requirements and precautions for when using Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, or Windows® Internet Explorer®, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".
*3 AAC (Advanced Audio Coding) is only used when recording audio on an SD memory card.
*4 Transmission for 2 streams can be individually set.

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.
- Android is a trademark of Google Inc.
- UniPhier is a registered trademark of Panasonic Corporation.
- "MEGA Super Dynamic", "1-PRO SmartHD" logos are trademarks or registered trademarks 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.

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(2A-144A)



HD / 1,280 x 720 H.264 Weather Proof Camera featuring 45x extra optical zoom and Super Dynamic

Key Features

- 720p HD images up to 30 fps
- Super high resolution at HD / 1,280 x 720 created by 2.4 Megapixel high sensitivity MOS image sensor
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by "UniPhier®", Panasonic's proprietary System LSI platform.
- Full frame (Up to 30 fps) transmission at 1,280 x 960 image size
- **45x extra optical zoom at 1,280 x 720 (30x optical zoom)**
90x extra optical zoom at 640x360 resolution with 12x digital zoom enabling 1080x zoom.
- **Super Dynamic** and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared to conventional cameras.
- **Face Super Dynamic** technology ensures clear face image.
- High sensitivity with Day & Night (ICR) function:
0.3 lx (Color), 0.04 lx (B/W) at F1.6
*ICR: IR Cut filter Removal
- **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.
VIQS can be set on preset position (1 to 8) and except preset.
- 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:
Outdoor scene / Indoor scene (50 Hz) / Indoor scene (60 Hz) / Fix shutter
Indoor scene (50 Hz / 60 Hz): Flicker caused by fluorescent lightning will be automatically compensated.
- **360 degrees endless Panning**
- Advanced auto tracking: The camera automatically pans and tilts to follow a moving subject and keep it in the center of the image.
- PTZ control can be taken very smoothly on the user friendly GUI with 16 speeds pan/tilt and "Drag and Zoom" operation enabling finer control. 256 speeds available for system with WV-CU950 system controller.
- Up to 256 preset positions
- 360 map shot: 8 thumbnail images at 45 deg. intervals make it simple to direct the camera easily by clicking on a thumbnail.
- Industrial grade Pan / Tilt / Zoom mechanism for high reliability
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Privacy Zone can mask up to 32 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.
- SDXC/SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (H.264 / 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 / 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 in various weather conditions
- **Rain wash coating dome cover (WV-SW397A)**
- Ambient Operating Temperature : -50 °C to +55 °C (-58 °F to 131 °F)
- **Fog compensation function** equipped as standard.
- AEM (Auto Eyelid Mechanism) offers images that are more natural and easy to watch reducing doubled images when direction of the lens moved above the horizontal.

Standard Accessories

- CD-ROM*1 1 pc.
- Installation Guide..... 1 pc.
- Code Label*2 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.

The followings are for installation.

- Protection Cover 1 pc.
- RJ45 connector 1 pc.
- 8P Alarm Cable..... 1 pc.
- Connector Kit for 24 V AC 1 pc.
- Front/Rear Sun Shield 1 set
- Front/Rear Sun Shield Fixing Screws 2 pcs. (incl. 1 spare)

Optional Accessories

Ceiling Mount Bracket
WV-Q121B



Wall Mount Bracket
WV-Q122A



Specifications

Camera	Image Sensor	Approx. 1/3 type MOS image sensor		
	Effective Pixels	Approx. 2.4 mega pixels		
	Scanning Mode	Progressive scan		
	Scanning Area	5.38 mm (H) x 3.02 mm (V) (7/32 inches(H) x 1/8 inches(V))		
	Minimum Illumination	Color: 0.3 k, BW: 0.04 kx (F1.6, Auto slow shutter: Off (1/30s), Gain: On(High)) Color: 0.019 k, BW: 0.003 kx (F1.6, 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 and ELC Indoor scene [50 Hz]: Automatic integration of ALC and ELC (up to 1/100 s) Indoor scene [60 Hz]: Automatic integration of ALC and ELC (up to 1/120 s) Fix shutter		
	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		
	Face Super Dynamic	On / Off (Only when Super Dynamic: On)		
	Adaptive Black Stretch	On / Off (Only when Super Dynamic: Off)		
	Fog compensation	On / Off		
	Gain (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 (ICR)	Mode: AUTO1 / AUTO2 / AUTO3 / On / Off, Level: High / Low, with external control		
	Digital Noise Reduction	High / Low		
	Video Motion Detection	4 areas, Sensitivity: 15 steps, Detection size: 10 steps		
	Privacy Zone	Up to 8 zones / Up to 32 zones, Gray / Mosaic		
	Image Stabilizer	On / Off		
	VIQS	Up to 2 zones at preset position 1-8 and except preset		
	Double Image Reduction	On / Off		
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks)		
	Focus distance	Limited / Unlimited		
Lens	Focal Length	4.3 mm - 129.0 mm (3/16 inches - 5-3/32 inches)		
	Zoom Ratio	30x / 45x with extra optical zoom (at 1280 x 720)		
	Digital (Electrical) Zoom	12x (Max. 1080x combined with extra optical zoom at 640 x 360)		
	Angular Field of View	H: 2.6° (TELE) - 64.6° (WIDE), V: 1.6° (TELE) - 38.2° (WIDE) (116:9 mode) ¹ H: 1.4° (TELE) - 44.4° (WIDE), V: 1.1° (TELE) - 33.8° (WIDE) (4:3 mode)		
	Maximum Aperture Ratio	1 : 1.6 (WIDE) - 4.7 (TELE)		
	Focusing Range	2.0 m - ∞		
	Aperture Range	F1.6 - Close		
	Panning Range	360° endless		
	Panning Speed	Manual: approx. 0.065°/s to 120°/s, Up to 256 steps (depending on the controller) Preset : up to approx. 300°/s		
	Tilting Range	-15° to 195° (upward-level-downward) Auto Eyelid Mechanism (Double image reduction) Selectable tilting angle: 0° / -5° / -10° / -15°		
Tilting Speed	Manual: approx. 0.065°/s to 120°/s, Preset: up to approx. 300°/s			
Proportional Pan/Tilt Control	Yes			
Number of Preset Positions	256			
Auto Mode	Auto track/ Auto pan/ Preset sequence/ 360 map-shot/ Patrol			
Image Hold	On / Off			
PTZ Position Display	On / Off			
Self Return	10 s / 20 s / 30 s / 1 min / 2 min / 3 min / 5 min / 10 min / 20 min / 30 min / 60 min			
Map Shot	360° map shot / Preset map shot			
Browser GUI	Camera Control	Pan/Tilt (256 steps), Zoom, Focus, Click centering, Drag zoom, Iris, Preset position call and program, Auto mode		
	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.		
	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		
	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 ²	Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3		
	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, RJ45 connector	
		Image Resolution	Image Capture Mode:	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:	H.264 : 1,280 x 960 / 800 x 600 / 640 x 480 / 320 x 240, up to 30 fps JPEG (MJPEG): 1,280 x 960 / 800 x 600 / 640 x 480 / 320 x 240, up to 30 fps
H.264 ⁴		Transmission Mode	Constant bitrate / Frame rate priority / Best effort / Advanced VBR	
		Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps	
Image Quality		Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 kbps	
		Image Quality	Low / Normal / Fine	
Refresh Interval		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 to 30 fps	
Audio Compression		Transmission Type	Pull / Push	
		Audio Compression	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps, AAC ³	
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, RTSP, RTP, RTCP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, ICMP, ARP IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, 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.) Up to 14 users (Depends on network conditions)			
Maximum concurrent access number	Up to 14 users (Depends on network conditions)			

Network	SDXC/SDHC/SD Memory Card (Option)	H.264 recording (Audio recording is enable): 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*, 64GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)
	Cellular Phone Compatibility	JPEG image_panning/tilting/zoom/focus control, 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
Input/ Output	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
General	Schedule	Alarm / VMD / Access permission / H.264 recording / Audio detection
	Monitor Output (for adjustment)	VBS : 1.0V(p-p) / 75Ω, NTSC / PAL composite, BNC Jack
Input/ Output	Microphone/Line Input	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	ø3.5 mm stereo mini jack (monaural output) Line level
General	External I/O Terminals	ALARM IN 1 (DAY/NIGHT IN), ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT)
	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	Power Source and Power Consumption	AC24 V : 3.5 A, 55 W PoE+ DC54 V: 470 mA, 25 W (IEEE802.3at compliant) POE injector (60 W) DC54 V : 1.0 A, 50 W
	Ambient Operating Temperature	AC24 V and Tested PoE Injector (60 W) : -50 °C to +55 °C (-58 °F to 131 °F) * with limitations POE+ : -30 °C to +55 °C (-22 °F to 131 °F)
Ambient Operating Humidity	Ambient Operating Humidity	Less than 90 % (no condensation)
	Shock Resistance	Compliant with IK10 (IEC62262)
Water and Dust Resistance	Water and Dust Resistance	Main body : IP66 (IEC60529), Type 4X (UL50), NEMA 4X compliant
	Dimensions	ø229 mm x 392 mm(H) (ø9-1/32 inches x 15-7/16 inches(H)) diameter of the dome 160 mm(6-5/16 inches)
Mass (approx.)	Mass (approx.)	Approx. 5.0 kg { 11.02 lbs}
	Finish	Main body : Aluminum die cast, Natural silver Sunshields : ASA resin coating, Natural silver Dome section : Clear polycarbonate resin (Rain wash coating) [SW397A] Clear polycarbonate resin [SW397]

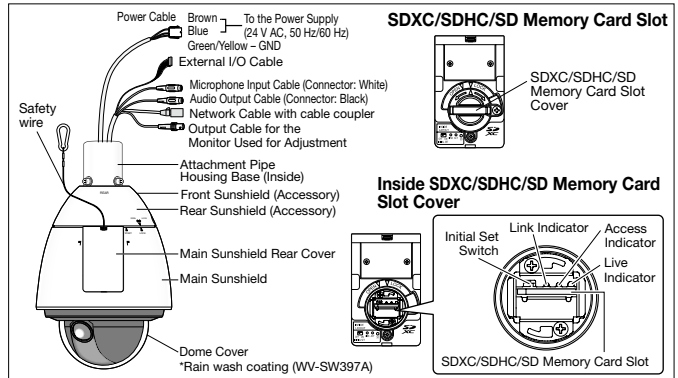
¹ Converted value

² For further information about PC system requirements and precautions for when using Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, or Windows Internet Explorer, click "Manual" - "Open" from the supplied CD-ROM with refer to "Notes on Windows® / Internet Explorer® versions".

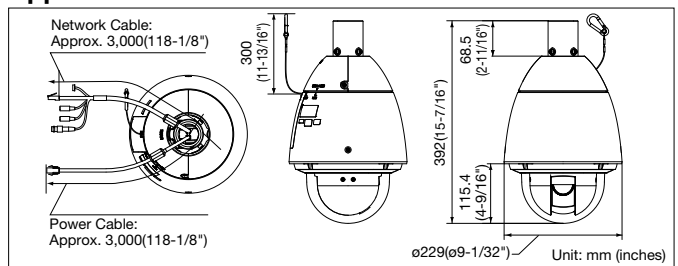
³ AAC (Advanced Audio Coding) is only used when recording audio on an SD memory card.

⁴ Transmission for 2 streams can be individually set.

Part Names and Functions



Appearance



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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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