



## HD/1,280 x 960 H.264 Dome Network Camera featuring Super Dynamic

### Key Features

- 720p HD images up to 30 fps
- Newly developed 1.3 Megapixel double speed 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
- 18x optical zoom with 12x digital zoom enabling 216x zoom.  
36x extra optical zoom at VGA resolution with 12x digital zoom enabling 432x zoom.
- **Super Dynamic** and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared with conventional cameras.
- **Face Super Dynamic** technology ensures clear face image.
- H.264 and MPEG-4 are selectable for system migration.
- High sensitivity with Day/Night (ICR\*) function : 0.5 lx (Color), 0.06 lx (B/W) at F1.6 (Wide)  
\* ICR: IR Cut filter Removal
- Adaptive Digital Noise Reduction : 2D-DNR and 3D-DNR integration ensures reduced noise and motion blur in various conditions.
- Superior color reproduction by primary (RGB) color filter
- Electronic sensitivity enhancement : Auto (Up to 16x) / OFF
- Selectable light control modes : Outdoor / Indoor / Fixed electronic shutter  
Outdoor / Indoor : Electronic shutter and ALC lens iris control are automatically controlled depending on the mode and luminance level.  
Fixed electronic shutter : Up to 1/10,000 fixed electronic shutter can be selectable.
- Panning with auto flip function can be performed 0 to 360 degrees.
- 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 on the user friendly GUI with 16 speeds pan/tilt and new "Drag and Zoom" operation enabling finer control. 256 speeds available for system with WV-CU950 system controller.
- Up to 64 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 Detector) 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 1 terminal input, VMD and Panasonic alarm command can trigger actions such as SDHC/SD memory recording, FTP image transfer, E-mail notification, Indication on browser, Alarm terminal output, and Panasonic 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.
- SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (JPEG)
- H.264/MPEG-4 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.
- Multi-language GUI and setup menu : English, French, Italian, Spanish, German, Russian (PAL) / English, French (NTSC) \* Installation required except for English
- IPv4/IPv6 protocol supported
- Analog Monitor output for easier installation
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- Onvif compliant model
- Fog compensation

### Standard Accessories

• CD-ROM*1.....1 pc.	• Decorative Cover.....1 pc.
• Installation Guide.....1 pc.	• Power Cord Plug.....1 pc.
	• Code Label*2.....1 pc.
The followings are for installation.	
• Camera Mount Bracket (w/safety wire) .....1 pc.	
• Camera Fixing Screw ..... 2 pcs. (incl. 1 spare)	
*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 <b>WV-Q105A</b>		Inner Dome Cover <b>WV-Q157</b>	
Wall Mount Brackets <b>WV-Q154C</b> (Clear) <b>WV-Q154S</b> (Smoke)		Embedded Ceiling Mount Brackets <b>WV-Q155C</b> (Clear) <b>WV-Q155S</b> (Smoke)	
		Surface Ceiling Mount Brackets <b>WV-Q156C</b> (Clear) <b>WV-Q156S</b> (Smoke)	
	(Smoke Type)	(Smoke Type)	(Smoke Type)

\* Not compatible with optional accessories of conventional cameras

# Specifications

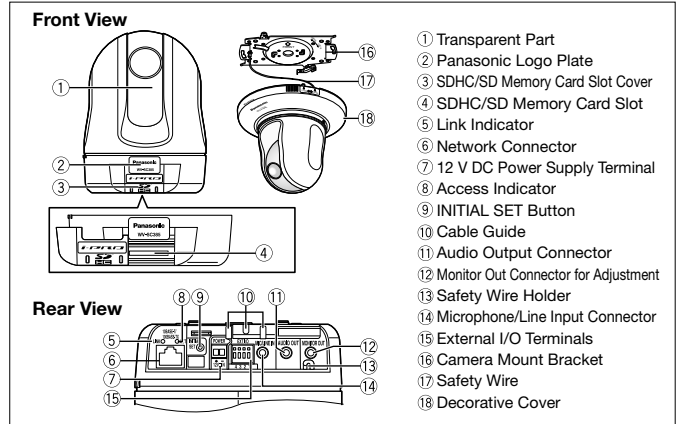
TV System	NTSC	PAL
<b>Camera</b>		
Image Sensor	1/3 type MOS image sensor	
Effective Pixels	Approx. 1.3 mega pixels	
Scanning Mode	Progressive scan	
Scanning Area	4.8 mm (H) x 3.6 mm (V)	
Minimum Illumination	Color : 0.5 lx, B/W : 0.06 lx at F1.6 (Shutter : 1/30 s, AGC : High), Color : 0.031 lx, B/W : 0.004 lx at F1.6 (Shutter : 16/30 s, AGC : High)	
White Balance	AWC (2,000 - 10,000 K), ATW1 (2,700 - 6,000 K), ATW2 (2,000 - 6,000 K)	
Light Control Mode	Indoor scene (50 Hz / 60 Hz) / Outdoor scene / Fix shutter	
Shutter Speed	Fix shutter : Off (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	
Super Dynamic	On / Off	
Face Super Dynamic	On / Off (only when Super Dynamic : On)	
Dynamic Range	102 dB typical (Super Dynamic : On, Light Control mode : Indoor)	
Adaptive Black Stretch	On / Off	
AGC	On (Low) / On(Mid), On(High) / Off	
Electronic Sensitivity UP	Off, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s	
Black and White Mode	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, Gray / Mosaic	
Up Side Down	On (desktop) / Off (ceiling)	
Auto Image Stabilizer	On / Off	
Camera Title (OSD)	Up to 20 alphanumeric characters (3 selectable character sizes)	
<b>Lens</b>		
Focal Length	4.7 mm - 84.6 mm	
Zoom Ratio	18x / 36x with extra optical zoom (at VGA)	
Digital (Electronic) Zoom	12x (Max. 432x combined with extra optical zoom at VGA)	
Angular Field of View	H : 3.2° (Tele) - 55.2° (Wide), V : 2.4° (Tele) - 42.1° (Wide)	
Maximum Aperture Ratio	1 : 1.6 (Wide) - 2.8 (Tele)	
Focusing Range	1.5 m - ∞	
Aperture Range	F1.6 - 22, Close	
Panning Range	0° - 350° (With Pan-Flip : 0° - 360°)	
Panning Speed	Manual : approx. 0.5°/s - 100°/s, Up to 256 steps (depending on the controller) Preset : up to approx. 300°/s	
Tilting Range	-30° - 90°(upward-level-downward) (With Tilt-Flip : -30° - 210°) Tilting angle limit : 10° / 5° / 3° / 0° / -3° / -5° / -10° / -15° / -20° / -25° / -30°	
Tilting Speed	Manual : approx.0.5°/s - 100°/s, Up to 256 steps (depending on the controller) Preset : up to approx. 100°/s	
Proportional Pan/Tilt Control	Yes	
Number of Preset Positions	64	
Auto Mode	Off / preset sequence / auto pan / auto track	
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	
360 Pan-Flip	On / Off	
Map Shot	360° map shot / preset map shot	
<b>Browser GUI</b>		
Camera Control	Pan/Tilt (16 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/AUTO)	
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 SDHC/SD memory card can be downloaded.	
GUI/Setup Menu Language	English, French (Installation required for French)	
System Log	Up to 100 (Internal), Up to 4,000 (SDHC/SD memory when the recording format is set to JPEG.) error logs	
Supported OS	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) Microsoft® Internet Explorer® 7 (32 bit)	
<b>Network</b>		
Network IF	10Base-T / 100Base-TX, RJ45 connector	
Image Resolution *1 *2	Aspect ratio: [4 : 3]	H.264 : 1,280 x 960 / 800 x 600 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps MPEG-4 : VGA (640 x 480) / QVGA (320 x 240), up to 30 fps JPEG (MJPEG) : 1,280 x 960 / 800 x 600 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps
	Aspect ratio: [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
H.264/ MPEG-4 *1	Transmission Mode	Constant bitrate / Framerate priority / Best effort / Advanced VBR
	Frame Rate	1 / 3 / 5 / 7.5 / 10 / 15 / 20 / 30 fps   1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps
	Bit Rate/Cient	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 8,192 kbps / Unlimited * H.264 mode only
	Image Quality	Low / Normal / Fine
	Refresh Interval	0.2 s / 0.33 s / 0.5 s / 1 s / 2 s / 3 s / 4 s / 5 s
JPEG (MJPEG)	Image Quality	10 steps
Audio Compression	Transmission Type	Pull / Push
Audio Mode	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps	
Authentication for Audio	Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)	
Total Bit Rate	Level 1 only / Level 2 higher / All users	
Supported Protocol	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps / Unlimited	
	IPV6 : TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, ICMP, ARP	
	IPV4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP	

- All TV pictures are simulated.
- Masses and dimensions are approximate.
- Specifications are subject to change without notice.
- All product pictures are NTSC models.

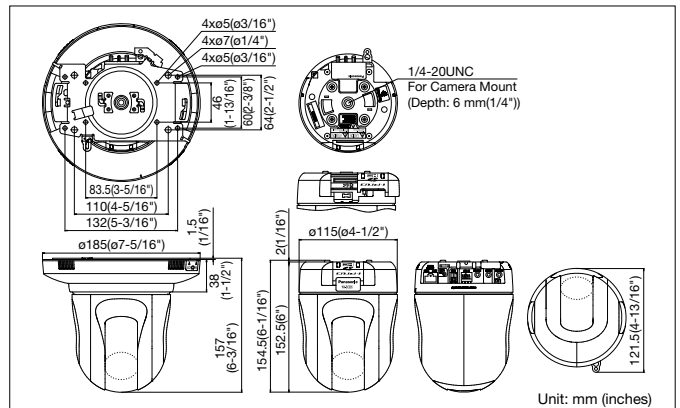
TV System	NTSC	PAL
<b>Network</b>		
FTP Client	Alarm image transfer, Periodic image transfer (When the FTP periodic transmission is failed, backup on an optional SDHC/SD memory card is available.)	
No. of Simultaneous Users	Up to 14 users (Depends on network conditions)	
SDHC/SD Memory Card (Option)	H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC JPEG recording : Manual REC / Alarm REC (Post) / Backup upon network failure Compatible SD (SDHC) card : Panasonic 256 MB, 512 MB, 1 GB, 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB* model * SDHC card	
Cellular Phone Compatibility	JPEG image, panning/tilting/zoom control, AUX control (by access level)	
<b>Alarm</b>		
Alarm Source	3x Terminal inputs, VMD, Command alarm	
Alarm Actions	SD memory recording, E-mail notification, Indication on browser, Camera positioning, Preset position 1 ~ 64, FTP image transfer, Terminal output, Panasonic protocol output, Auto track	
Alarm Log	With SD memory card : 5,000 logs, Without SD memory card : 1,000 logs	
Schedule	Alarm / VMD / Access permission, Preset position call, Position refresh, H.264 recording	
<b>Input / Output</b>		
Monitor Output (for adjustment)	1.0 V [p-p] / 75 Ω, NTSC composite, ø3.5 mm mini jack	1.0 V [p-p] / 75 Ω, PAL composite, ø3.5 mm mini jack
Microphone/Line Input	MIC IN and Line IN are selectable. ø3.5 mm monaural mini jack (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	
External I/O Terminals	ALARM IN 1 (DAY/NIGHT IN), ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT)	
<b>General</b>		
Safety/EMC Standard	UL (UL60065), FCC (Part15 ClassA), C-UL (CAN/CSA C22.2 No.60065), DOC (ICES003 ClassA)	CE (EN60065, EN55022 ClassB, EN55024), GOST (GOST R 51558)
Power Source/Consumption	12 V DC : approx. 1,000 mA, PoE : approx.12.0 W (IEEE802.3af compliant, Class 0 device)	
Ambient Operating Temperature/Humidity	-10 °C to +50 °C (14 °F to 122 °F), 90 % or less (without condensation)	
Dimensions	ø115 mm x 155 mm (H) (ø14-17/32" x 6-3/32" (H) (excluding the 12 V DC power cord plug)	
Mass (approx.)	900 g (1.99 lbs.)	

\*1 H.264 and MPEG-4 are alternative.  
\*2 [4 : 3] and [16 : 9] are alternative.

## 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.
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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.

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