

**Preliminary**

## H.265 AI Network Camera

WV-X2233L has onboard AI functionality. AI-based high precision analysis helps surveillance operations and crime prevention operations more efficiently, whereas these operations previously required dedicated manpower.

There are 3 AI functions available through the camera: detecting suspicious changes in captured scenes, optimizing the image settings of the camera (based on captured scene analysis) for better image usability, and optimizing video compression through captured scenes to save bandwidth at 50%\* lower than existing cameras while maintaining image quality.

\*Compared to Smart Coding OFF with H.265

### Optimization of image quality and data compression using AI

- AI detects, identifies and determines movement.
- AI determines human faces and captures them in the most visible state.
- AI determines moving objects, identifies where there is no movement, and performs efficient data compression.

### 3rd party relationship

- To enable 3rd party companies to develop their applications using SDK.
- Users can freely combine applications and introduce analysis software that is the best match for their requirements.

### Easy installation

- AI analysis automatically applies optimal settings, allowing you to capture high-quality images effortlessly.
- Connect the network cable to the camera body simply by opening a part of the packaging, saving you time and working space.

### Key Features

- Full HD 1080p 30fps
- AI Intelligent Auto
- Color night vision (0.00075 to 0.012 lx)
- H.265 Smart Coding

### Industry examples

- Airport (Passport control / Security checkpoint / Ticket counter)
- Retail / Bank / Education / Hospital / Building



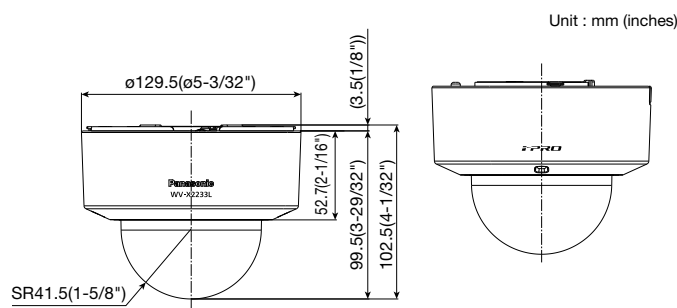
## Specifications

<b>Camera</b>	Image Sensor	1/2.8 type CMOS image sensor <b>(TBD)</b>
	Minimum Illumination	Color : 0.012 lx, BW : 0.01 lx (50IRE, F1.3, Maximum shutter : Off (1/30s), AGC : 11) BW : 0 lx (50IRE, F1.3, Maximum shutter : Off (1/30 s), AGC : 11, when the IR LED is lit) Color : 0.00075 lx, BW : 0.00065 lx (50IRE, F1.3, Maximum shutter : max. 16/30s, AGC : 11) *1 <b>(TBD)</b>
	White Balance	ATW1/ATW2/AWC
	Shutter Speed	1/30 Fix to 1/10000 Fix
	AI Intelligent Auto	On / Off
	Super Dynamic	On / Off, the level can be set in the range of 0 to 31.
	Dynamic Range	Max. 132 dB (Super Dynamic : On, Level : 30 or more, 15fps *2)
	Adaptive Black Stretch	The level can be set in the range of 0 to 255.
	Back light compensation / High light compensation	BLC (Back light compensation) / HLC (High light compensation) / Off The level can be set in the range of 0 to 31. (only when Super dynamic / AI Intelligent Auto : Off)
	Fog compensation	On / Off, The level can be set in the range of 0 to 8 (only when AI Intelligent auto / auto contrast adjust : Off)
	Maximum gain	The level can be set in the range of 0 to 11.
	Color/BW (ICR)	Off / On (IR Light Off) / On (IR Light On) / Auto1 (IR Light Off) / Auto2 (IR Light On) / Auto3 (SCC)
	IR LED Light	High / Middle / Low / Off, Maximum irradiation distance : 40 m (Approx. 131 ft)
	Digital Noise Reduction	The level can be set in the range of 0 to 255.
	Video Motion Detection (VMD)	On / Off, 4 areas available
	Scene Change Detection (SCD)	On / Off, 1 area available
	Privacy Zone	On / Off (up to 8 zones available)
	Image rotation <sup>3,4</sup>	0 ° (Off) / 90 ° / 180 ° (Upside-down) / 270 °
	Camera Title (OSD)	On / Off Up to 20 characters (alphanumeric characters, marks)
	<b>Lens</b>	Optical zoom
Extra optical zoom		3.1x - 9.3 (when resolution is 640x360)
Digital (electronic) zoom		Choose from 3 levels of x1, x2, x4
Focal length		2.9 mm - 9 mm (1/8 inches - 11/32 inches)
Maximum Aperture Ratio		1 : 1.3 (WIDE) - 1 : 2.5 (TELE)
Focus range		0.3 m (11-13/16 inches) - ∞
Angular Field of View		<b>[16 : 9 mode]</b> * [4:3 mode] is not supported. Horizontal : 36° (TELE) - 114° (WIDE), Vertical : 20° (TELE) - 60° (WIDE) <b>(TBD)</b>
<b>Adjusting Angle</b>		Horizontal (PAN) angle : ±180°, Vertical (TILT) angle : -30 to +85°, Azimuth (YAW) angle : ±100°
<b>Browser GUI</b>	Camera Control	Brightness, AUX On / Off
	Audio	Mic (Line) Input : On / Off Volume adjustment : Low / Middle / High Audio Output : On / Off Volume adjustment : Low / Middle / High
	GUI / Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese
<b>Network</b>	Network IF	10Base-T / 100Base-TX, RJ45 connector
	Resolution <sup>5</sup>	<b>[16 : 9 mode]</b> * [4:3 mode] is not supported. 1920×1080, 1280×720, 640×360, 320×180
	H.265/ H.264/ JPEG (MJPEG)	Constant bit rate / VBR / Frame rate / Best effort
	H.265/ H.264 % Transmission Mode	Unicast / Multicast
	H.264 % Transmission Type	10 steps
	JPEG Image Quality	<b>Smart Facial Coding</b> : On (Smart Facial Coding) / On (Auto VIQS) / Off *Smart Facial Coding is only available with Stream(1). <b>GOP (Group of pictures) control</b> : On (Frame rate control) / On (Advanced) / On (Mid) / On (Low) / Off *On (Frame rate control) and On (Advanced) are only available with H.265.

<b>Network</b>	Audio Compression	G.726 (ADPCM) : 16 kbps / 32 kbps G.711 : 64 kbps AAC-LC <sup>7</sup> : 64 kbps / 96 kbps / 128 kbps
	Audio transmission mode	Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)
	Supported Protocol	IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTSP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)
	SDXC/SDHC/SD Memory Card	H.265 / 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 SDXC/SDHC/SD Memory Card: Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 GB**, 256 GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)
	Mobile Terminal Compatibility	iPad, iPhone, Android™ terminals
<b>Alarm</b>	Alarm Source	3 terminals input, VMD alarm, Command alarm
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification, Indication on browser, FTP image transfer, Panasonic alarm protocol output
<b>Input/ Output</b>	Monitor Output (for adjustment)	VBS : 1.0 V [p-p] / 75 Ω, composite, ø3.5 mm mini jack An NTSC or PAL signal can be outputted from camera
	Audio input	ø3.5 mm stereo mini jack For microphone input : Recommended applicable microphone : Plug-in power type (Sensitivity of microphone : -48 dB±3 dB (0 dB=1 V/Pa, 1 kHz)) Input impedance : Approx. 2 kΩ (unbalanced) Supply voltage : 2.5 V ±0.5 V
	For line input :	Input level : Approx. -10 dBV
	Audio Output <sup>8</sup>	ø3.5 mm stereo mini jack (Audio output is monaural.) Output impedance : Approx. 600 Ω (unbalanced) Output level : -20 dBV
	External I/O Terminals	ALARM IN 1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1) ALARM IN 2 (Alarm input 2/ ALARM OUT) (x1), ALARM IN 3 (Alarm input 3/ AUX OUT) (x1)
	<b>General</b>	Safety EMC UL (UL60950-1), c-UL (CSA C22.2 No.60950-1), CE, IEC60950-1 FCC (Part15 ClassA), ICES003 ClassA, EN55032 ClassB, EN55024 Power Source and Power Consumption DC power supply : DC 12 V 890 mA/Approx. 10.7 W <b>(TBD)</b> PoE (IEEE802.3af compliant) Device : DC48 V 230 mA/ Approx. 11.0 W (Class 0 device) <b>(TBD)</b> Ambient Operating Temperature -10 °C to +50 °C (+14 °F to +122 °F) Ambient Operating Humidity 10 to 90 % (no condensation) Shock Resistance IK10 (IEC 62262) 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. 830 g (1.83 lbs) Finish Main body : Aluminum die cast, i-PRO white Dome cover : Polycarbonate resin, Clear

- \*1 Converted value  
\*2 The frame rate is limited to 15 fps for level 30 or higher. The dynamic range is 108 dB tv / 30 fps for level 29 or lower.  
\*3 90° and 270° are invalid only in the 320×180 resolution.  
\*4 Following the setting angle of the rotated image, the analog output of the MONITOR OUT terminal rotates.  
\*5 H.265/H.264 can be selected for each stream.  
\*6 Transmission for 4 streams can be individually set.  
\*7 When recording audio on an SD memory card, only use AAC-LC (Advanced Audio Coding - Low Complexity).  
\*8 The audio output can be switched to the monitor output. Refer to the Operating Instructions on the our support web site for descriptions of how to switch the output.

## Appearance



### Trademarks and registered trademarks

- iPad and iPhone are trademarks of Apple Inc., registered in the U.S. and other countries.
- Android is a trademark of Google LLC.
- All other trademarks identified herein are the property of their respective owners.

### Important

- Safety Precaution : Carefully read the Basic 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.

## Optional Accessories

### Mount Bracket / Dome Cover

Ceiling Mount Bracket <b>WV-Q105A</b>	Ceiling Mount Bracket (Embedded) <b>WV-QEM100-W</b> (i-PRO white)	Dome Cover (Smoke Type) <b>WV-CR1S</b>
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