

Panasonic

BUSINESS

Security Systems Network Surveillance Solutions

June 2018



i-PRO

EXTREME



**EXTREME
Visibility**

**EXTREME
Compression**

**EXTREME
Data Security**

**EXTREME
Reliability**

**i-PRO
EXTREME**

**EXTREME
Analytics**

Extreme performance under Extreme conditions

ACTIVE SENSING

Capture data with
strong sensing devices

ACTIVE ANALYTICS

Transform DATA
into INFORMATION



Public safety



Transportation



Logistics



Retail



Factory



Bank

Four repositionable lenses minimize blind spots and allows the camera to adjust to the various shaped intersections and monitoring areas found in cities.

**i-PRO
EXTREME**

Multi-Sensor Camera 4 x 4K(33MP)

WV-X8570N

4K ULTRA HD **TRUE 4K**

Multi-Sensor Camera 4 x FHD(8MP)

WV-S8530N

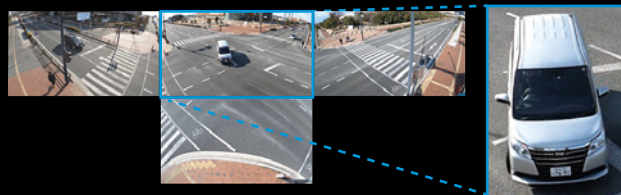


WV-X8570N

WV-X8570N : with Base Bracket

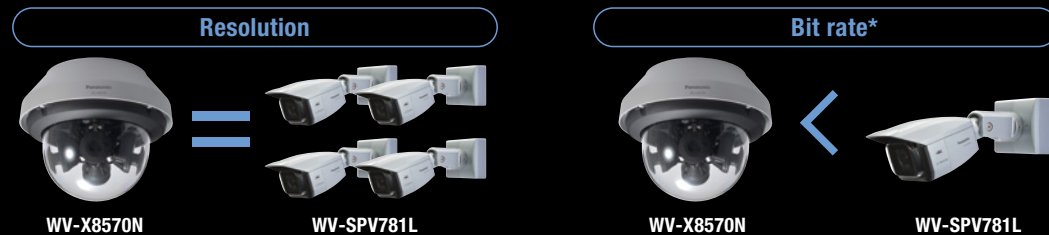
4 x True 4K high resolution

- Can identify vehicles 100 feet diagonal from intersection corners at three lane streets (WV-X8570N)



Combining H.265 compression with Smart Coding technology

- In spite of the high resolution of 4 x 4 K, it achieved the bit rate lower than the bit rate of one 4K camera of H.264.



Wide range tilt angle adjustment mechanism



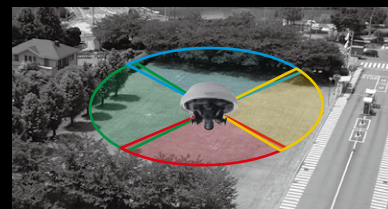
270-degree view (Full intersection view)

- One multi sensor camera at intersection corner. It enables monitoring with minimized blind spots
- Enables to monitoring even if bottom view angle



360-degree view

- One multi-sensor camera enables monitor the park by minimize blind spots



Recognizes those who don't want to be recognized

Our world leading* deep learning facial recognition technology triggers even when the subject is wearing sunglasses.

**i-PRO
EXTREME**

Facial Recognition Server Software

WV-ASF950

Additional Camera Kit

1ch : WV-ASFE901

4ch : WV-ASFE904

Registration Face Extension Kit

10,000 face : WV-ASFE951

Extension software

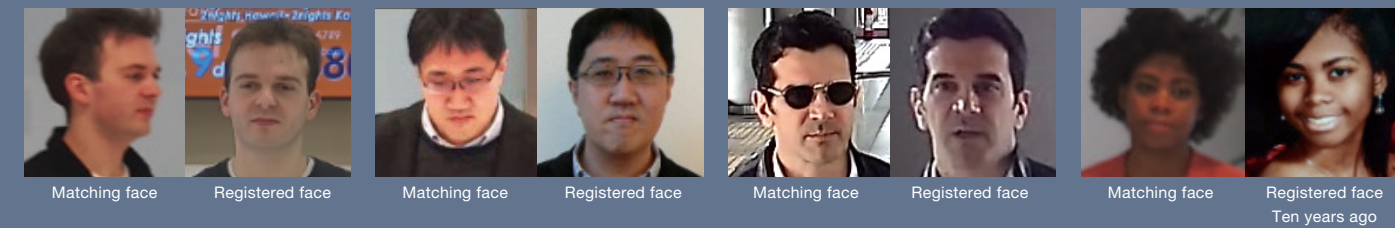
WV-ASE231 for WV-ASM970/WV-ASM300



Facial recognition server software using deep learning technology

High performance facial recognition

- High performance Deep Learning facial recognition function distinguishes face orientation, sunglasses, facial aging change



Horizontal range : $\pm 45^\circ$

Vertical range : $\pm 30^\circ$

Sunglasses

Facial aging change

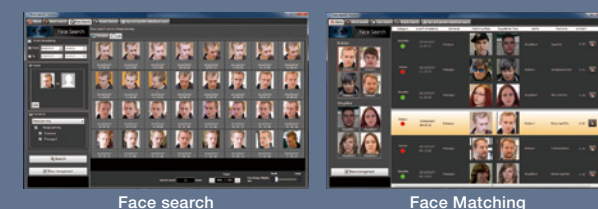
Face search and face matching functions

- Face matching speed is very fast. Its speed is only 1 second(*1) with 30,000 faces.
- This system can register max.30,000(*2) faces for face matching.
- The face search function of this system can search 5 million faces of database in 3 seconds(3*).

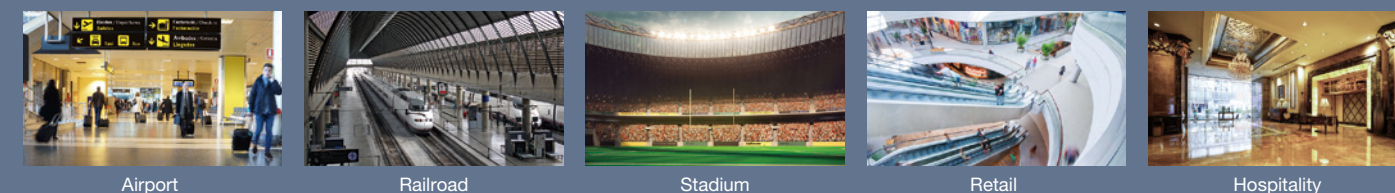
*1 From receiving the face thumbnail to matching in face matching server.

*2 Two Additional Face Registration Kits WV-ASFE951 are necessary.

*3 The best case when the time range is narrowed down and the number of search result is 100 faces. Depending on the search conditions, the search time may take several minutes.



Industry examples



* In April 2017, the product achieved the highest level of face recognition performance in the world in a comparison test (IJB-A Face Verification Challenge Performance Report/IJB -A Face Identification Challenge Performance Report) of NIST (National Institute of Standards and Technology) of the United States, one of the most authoritative institutes in the world.

Delivering sharper images with higher sensitivity. Featuring a more intelligent solution. Introducing the 360-degree Network Camera!

i-PRO EXTREME

360-degree Vandal Resistant Outdoor Dome
9 Megapixel Network Camera

WV-X4571L / WV-X4571LM



WV-X4571L

WV-X4571L : with Base Bracket

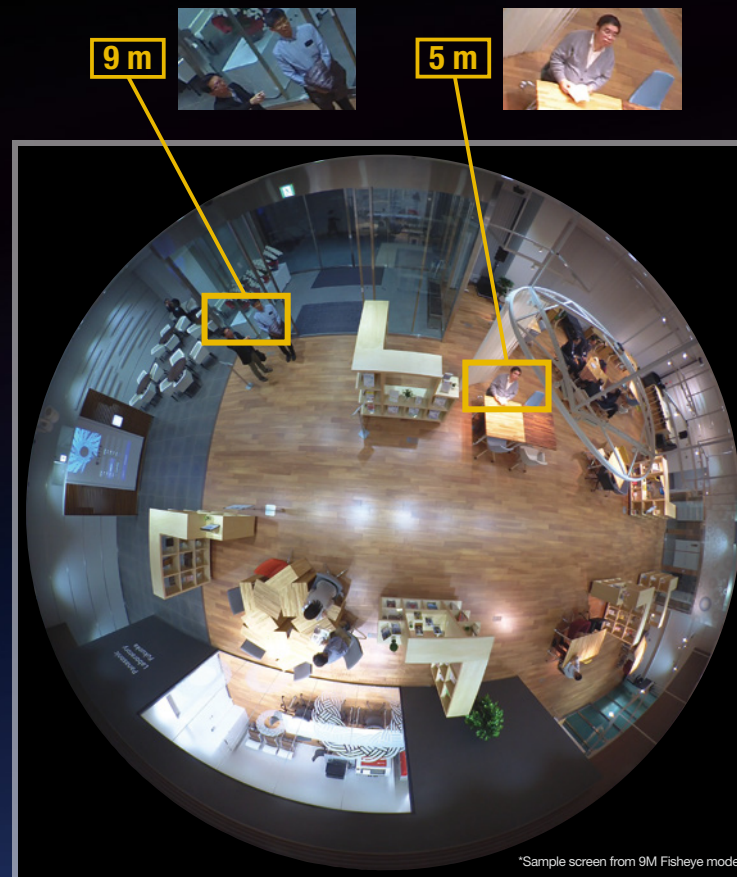
360-degree Indoor Dome
9 Megapixel Network Camera

WV-X4171 / WV-X4170



WV-X4171

WV-X4170



*Sample screen from 9M Fisheye mode

High-quality images allow evidence to be captured even under challenging conditions

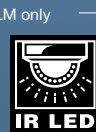
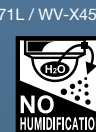
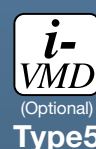
- Stereographic projection lens provides low distortion images.
- Dynamic and sharp images capture objects even in varied lighting conditions.
- Auto back focus captures clear images by adjusting focal length automatically.
- IR-LED provides clear black and white images even in dark environments of 0 lux.
- These cameras meet railway standard EN50155, water resistance standard IP66, and impact resistance standard IK10.

Extreme H.265 video compression with new Smart Coding

- H.265 video compression reduces the amount of data while still maintaining video quality.
- Smart Coding reduces the amount of data according to the motion of the video.

Complete with powerful intelligent functions

- These cameras have Intelligent Video Motion Detection (VMD) functionality and other various Intelligent functions can be added by installing extension software WV-SAE200.



WV-X4571L / WV-X4571LM only

New Aerodynamic PTZ with EXTREME PERFORMANCE - under - EXTREME CONDITIONS

AeroPTZ

Suitable for mission critical tough operations under arctic-to-desert weather, salty gust winds, and heavy vibrations



- Hybrid image stabilizer
- Wind Resistant
Operation : 216 km/h (135 mph)*
* Upright position
Non-destructive : 288 km/h (180 mph)
- Salt Air Resistance (ISO 14993 compliant)
- Waterproof IP66 & IP67 Standard
- Vandal Resistant (Meets IK10 Standards)



With optional IR LED Unit

Anti-severe weather
PTZ network camera
WV-SUD638
(Natural silver)

-H (Gray)

-T (Brown)



IR LED Unit
WV-SUD6FRL1 (Natural silver)
WV-SUD6FRL-H (Gray), **-T** (Brown)



Wiper & Washer

The Wiper & Washer removes water and dirt that may blur images.
Always monitor crisp and clear images.



Capture High-Resolution, Smooth & Natural Images



Full HD (1920 × 1080),
60fps



Easily Adjust the Direction of the Camera

Use the 360°endless pan and tilt functions to easily adjust the direction of the lens, automatically survey a preset area, or combine the camera with an external sensor to automatically adjust the direction of the lens towards a detected abnormality. Even monitor directly under the camera.

(Front Tilt 45° to Monitor Directly Under the Camera)



Ultra-high 4K picture quality for detailed, wide-area monitoring with a single camera.

Fewer cameras also means a substantially lower total cost of ownership.

4K

ULTRA HD

4K Vandal Resistant
Weatherproof Dome Network Camera
WV-SFV781L

with Base Bracket

WV-SFV781L / WV-SPV781L

4K Vandal Resistant
Weatherproof Network Camera
WV-SPV781L



Ultra high-definition, 4K picture quality

Ultra HD 4K cameras offer 27 times the resolution of conventional analog cameras (VGA), nine times that of standard HD (1,280 x 720) and four times that of Full HD (1,920 x 1,080). This means that the finer details of images remain clear even when you need to magnify only a part of the image. The high performance lens used by Panasonic's 4K cameras provides uniformly high-resolution images from the center out to the edges.



Cropping Function

A given area within a single image can be selected, cropped and displayed. For example, areas with high monitoring priority, such as a parking garage entrance or a hallway, can be selected and displayed for easy viewing. You can still keep an eye on the overall image while also focusing on specific areas. With PTZ cameras, when the lens is pointed in a single direction, other areas go out of view during that time, but with a 4K camera you can monitor the entire area while also watching specific areas requiring more focused monitoring.



Wide-Area Monitoring

A single 4K camera can effectively monitor a wider area, which allows you to reduce the total number of cameras while also eliminating blind spots. Monitoring can be performed not only at vertical and horizontal angles, but for deeper depths as well. And, even when monitoring within the same area, 4K's increased range means that the number of units required is reduced substantially compared to that of conventional cameras. This translates into reduced costs for the cameras themselves, less installation time and labor, and lower maintenance costs. 4K-ready monitors can also reduce the number of monitors needed in the control room.



Low Light Ready

The camera's ultra-high 4K resolution allows it to capture color images in dim, low-light conditions. In even darker conditions, the camera can use its monochrome inversion function to switch to black-and-white images, and in zero-light conditions it can accurately display what is happening in front of it using infrared LED vision.

Light near subject : 1 lux



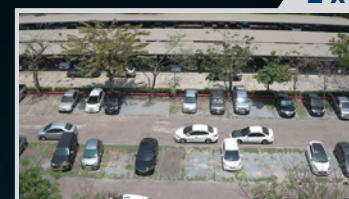
High-power 6x zoom lens with an ultra-wide angle of 100°

An optical 6x zoom lens comes standard. The viewing angle range and zoom power can be set in line with conditions where the camera is installed. Using a proprietary 3-drive lens system, Panasonic has developed a high-power 6x zoom lens with an ultra-wide viewing angle of 100°, a type of lens that is extremely difficult to produce using conventional optical design methods. The lens is capable of capturing an extremely wide area, allowing effective 4K coverage of outdoor areas.

Zoom

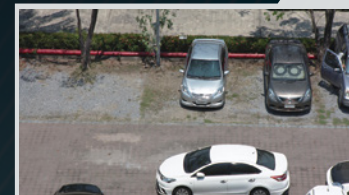
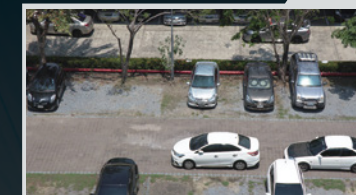
1 x

2 x



4 x

6 x



- **Ultra-wide-angle 100°** : Wide-angle monitoring of parking lots, stadiums etc. utilizing 4K resolution
- **Telephoto 17°** : Monitoring of individuals or crowds from a distance.

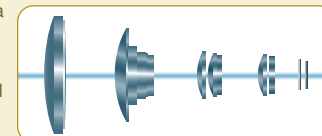
This is the Panasonic difference!

Panasonic's "True 4K Technology"



• Panasonic's Proprietary 3-Drive Lens System

The i-PRO TRUE 4K NW Camera is equipped with Panasonic's proprietary 3-drive lens system, which simultaneously drives two zoom lenses and one focus lens. Having three lenses all driven independently allows them to be smaller and their drive areas reduced, and has thus enabled us to make the camera compact enough to fit in a standard camera body while providing a high-power 6x zoom with high 4K picture quality viewed from an ultra-wide-angle of 100°.



• Refined Resolution and Superior Contrast for a Higher Level of Video Imaging

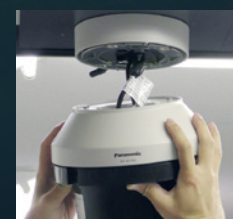
In order to create a sharp, clear texture, 12 lenses in four groups are used to provide the ultra-high resolution expected of 4K in every part of the image, from center to edge. Both a higher level of representational precision and a more compact lens system are achieved. Plus, all lenses are glass, while aspheric lenses are also used extensively to reduce aberrations to the ultimate degree. The clear depiction, sharp resolution and beautiful color reproduction necessary for true 4K monitoring have all been successfully achieved.

Easy Installation

Various design features have been added to shorten installation times. The camera has also been designed to be capable of pointing in the preferred direction at the preferred location.

Dome Type WV-SFV781L

When attached to the mounting plate, the camera's direction can be easily changed at intervals of 90°. Rotating the viewing area around the lens further allows the lens to be pointed in the desired direction. The combination of a 6x optical zoom and autofocus also shortens the amount of time required for fine tuning the installation.



Box Type WV-SPV781L

A total of three adjustment points on the camera base and arms enables its position to be fine tuned to allow accurate pointing.



EXTREME Visibility

Enables automatic capture of evidence at the highest quality under dynamic and challenging surveillance environments.

Intelligent Auto Mode (iA)



Advanced image stabilization is used to prevent capturing blurry images, and intelligent sensitivity automatically is used to adjust the camera's gain and shutter speed according to brightness levels and movement of the object.

Auto Scene Detection



Parameter Settings

Applications: City safety, traffic, transportation

	Conventional	iA Mode
Velocity Detection		
Day & Night Detection		

iA provides sharp images of moving vehicles with blur control

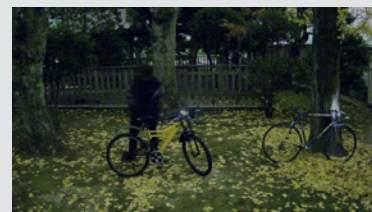
Automatic reflection control provides more detail during difficult nighttime scenarios

Color Night Vision

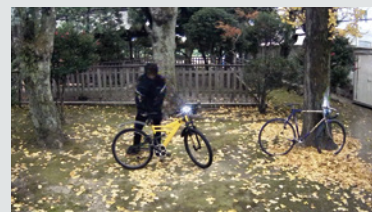


Color Night Vision technology transforms a standard 1/3 inch sensor camera into an effective, low-light capable camera, enabling it to produce an extremely high-quality image even in the most challenging lighting conditions.

Applications: City safety, ports, perimeter security



Ordinary Camera 0.6 lx



Color Night Vision 0.6 lx

0 lux Pitch Dark Locations



Cameras with a IR LED can be used to monitor environments that are completely dark. This enables areas without the level of illumination required to be monitored to prevent graffiti, illegal dumping, and property destruction.

IR LED can illuminate a wide area so that monitoring is not limited to a specific part of the image.

The built-in IR LED of the outdoor model can capture subjects up to 40 meters away.

Light levels are automatically adjusted for blown out highlights and screen whitening when the IR LED shines on a subject close-by. The IR LED is covered to make it difficult to detect from the outside or to know which way the lens is pointing.



IR LED : OFF



IR LED : ON

EXTREME Visibility

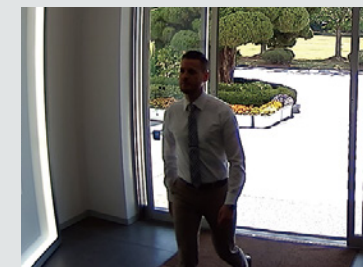
144dB EXTREME Super Dynamic



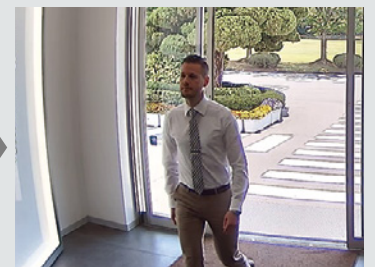
Combined with the new 144dB enhanced SD capabilities, this high-performance face detection technology can clearly and automatically identify an individual's face.

It offers optimal facial recognition and can capture evidence even in dynamic scenes or heavily backlit conditions.

Applications: Entrances of shopping malls and buildings



Super Dynamic : OFF



Super Dynamic : 144dB

Intelligent Zoom Stabilization



High-power, 40x optical zoom lens allows for higher resolution images

of objects at a distance.

The advanced image stabilization function can stabilize high-power zoom images by absorbing vibrations.



Intelligent Zoom Stabilization : OFF



Intelligent Zoom Stabilization : ON

Visibility Enhancement Technology (OP Software)



i-PRO Management Software is not only used for removing fog but also snow, rain, and other natural conditions that can harm video quality. Besides real-time image processing during monitoring, post-processing is also possible after the images are saved to the recorder.



Before Correction



After Correction

ClearSight coating



Water drops stick to the dome cover on conventional cameras and hinder the shooting of clear images. Our ClearSight coating models are coated to repel water drops in order that the camera captures clear images when it is raining.

This coating is also effective at repelling dirt, which reduces the frequency of needing to clean the dome cover.

The hydrophilic coating can also be touched without special equipment and improves the ease of maintaining the equipment.

Coated areas are resistant to water droplets	Coated areas are resistant to dirt	IR Surveillance in the Rain
Non-coated ClearSight coated	Non-coated ClearSight coated	Non-coated ClearSight coated

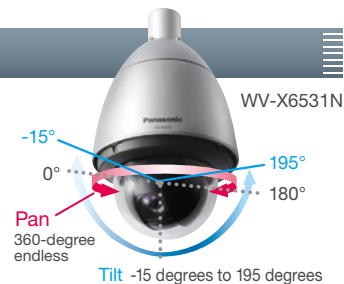
EXTREME Visibility

PTZ (Pan-Tilt-Zoom) cameras and omnidirectional cameras enable wide-area monitoring. Multiple cameras can be combined for more efficient monitoring and to eliminate blind spots.

PTZ Camera for Wide Range Monitoring and a High Zoom Ratio

Normal fixed lens cameras can only monitor in a certain direction, but the lens of a PTZ camera can be operated remotely to switch to the direction you want to view. Detailed areas can also be zoomed in to a maximum of 40x.

Since the cameras can be infinitely rotated 360 degrees at a high speed of 300 degrees/sec, you will not miss the subjects you want to monitor.

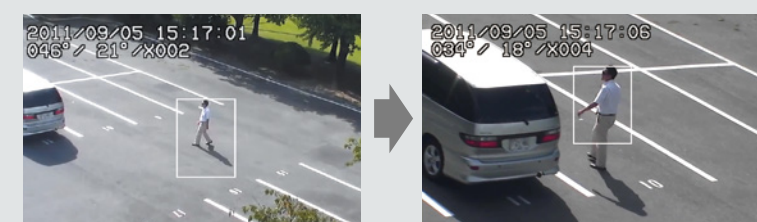


Advanced Auto Tracking



The pan, tilt, and zoom functions can be combined for automatically tracking the movement of a subject.

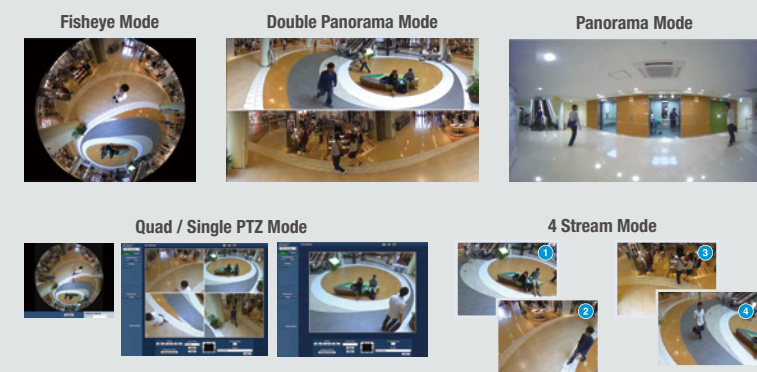
If the tracked subject moves out of the camera's shootable range, notification is sent to other cameras so that the tracking process can be carried on without interruption.



360-degree Monitoring

The 360-degree Network Camera can capture images around the camera lens in all directions.

Available modes include Fisheye, Double Panorama, Panorama, Quad PTZ, and 4 Stream, and the camera can output video images based on the selected video mode for reduced loads on the viewing system.



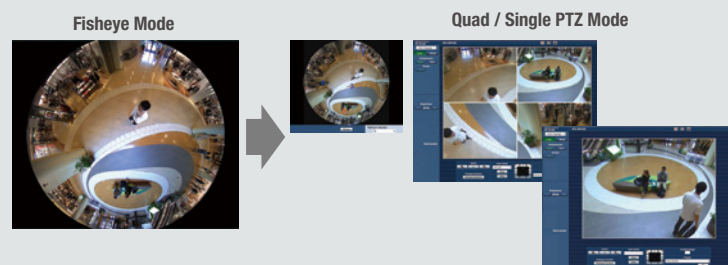
De-warping

The 360-degree Network Camera can generate and output video images for each mode within the camera unit. Also, the Network Disk Recorder (WJ-NX400/WJ-NX300/WJ-NX200/WJ-NV300) or i-PRO Management Software (WV-ASM300) can be used on 360° omnidirectional images captured by Fisheye Mode to convert to a format that is easier to view, such as Quad PTZ. Because the 360° omnidirectional video image is stored in the recorder, nothing is missed within the viewing area.

In addition, the area that you want to view can be selected using a controller or mouse to allow you to automatically move the viewing spot for patrolling the area.

Even during patrolling, areas not visible on the screen are all stored in the recorder in Fisheye Mode so that nothing is left unseen.

The Pan-Tilt of the 360-degree Network Camera does not use mechanical components, and so provides a smooth movement without the mechanized wear that could adversely affect camera longevity.



EXTREME Compression

Compression of high-resolution image data is used to reduce network bandwidth, data storage, and server load costs, while maintaining high quality.

H.265 Compression + Smart Coding Technology



Combining H.265 Compression with Panasonic Smart Coding Technology reduces bandwidth by maximum 95%* of conventional H.264 Compression. This security system maintains the quality of moving images while reducing bandwidth and storage costs.

*Value in Advanced mode with Smart Facial Coding. It depends on the scene.

H.265 (HEVC)



Smart Coding

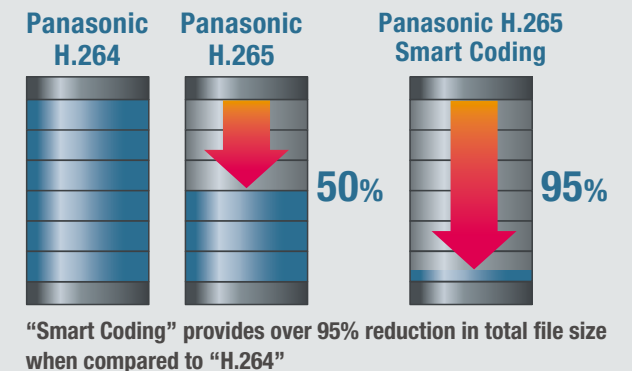
GOP Control



Auto VIQS



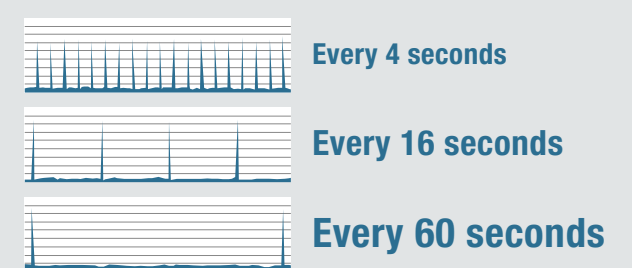
Face Compression



GOP Control

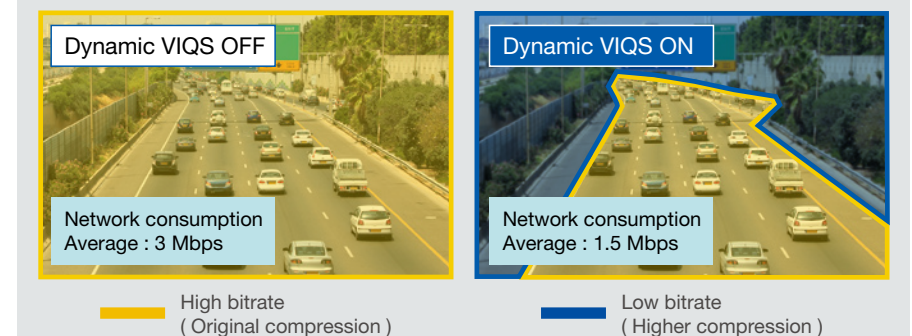
The GOP (group of pictures) control can reduce the total transmitted data of images with little motion by controlling the transmission interval of I-Frame, which is heavy in data.

If the motion is significantly low, the transmission interval can be set to 60 seconds to drastically reduce the total data transmitted.



Auto VIQS

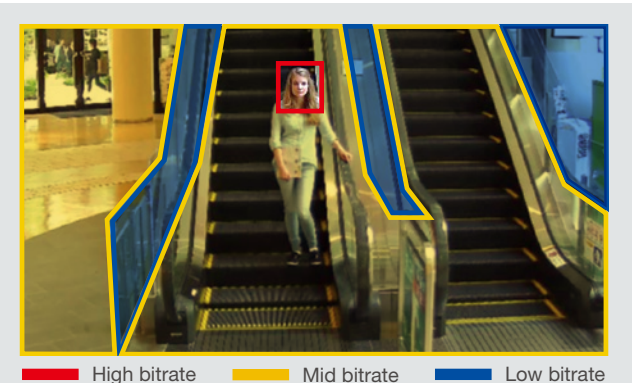
Auto VIQS detects movement within the image and compresses areas with little motion to reduce transmitted data while maintaining the quality of the image.



Face Compression

The camera automatically distinguishes the sections of the images that are important such as moving objects and people's faces. The quality of unimportant areas is reduced without compromising the quality of important sections, therefore optimizing the data size of the footage.

On top of integrating Smart Coding into the conventional GOP Controls, the improved compression efficiency through Auto VIQS and Long-Term Compression combined with Smart Facial Coding, which detects faces and maintains the quality of only faces, can compress the file drastically to reduce the data size.



EXTREME Data Security

In addition to Data encryption and communication encryption, provide secure network access between trusted devices through device certification then prepare for the threat of advanced cyber attacks.

End-to-End Data Protection Solution

End-to-End Secured System



End-to-End Data Encryption

- Support encryption communication
- Camera-encrypted recording at the edge



Pre-installed Symantec Device Certification

- Communication encryption
- Video tampering detection

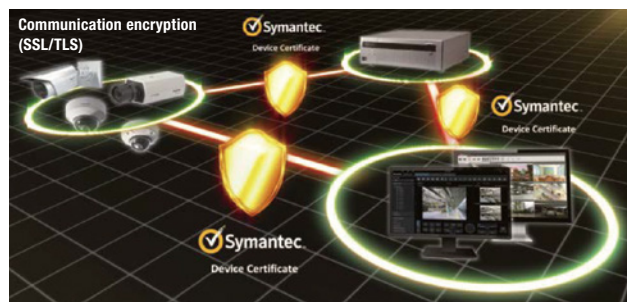


FIPS140-2 Level 1 CAVP* compliant

(Federal Information Processing Standardization)

- For federal/public safety usage

*Evaluated by WV-TW370P



Data encryption

The data encryption function encrypts data to prevent information leakage due to unauthorized access to the camera and theft of the SD card.

If you confirm streams with data encryption set to "On" on the "Live" page, password entry for decryption is displayed. If you correctly enter the "Encryption password" that was set, you will be able to view images.



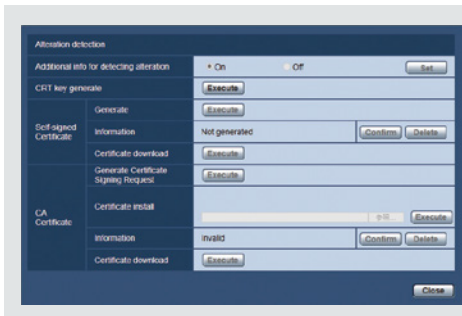
SD Memory Card Recording

Without using a network, footage can be saved directly to the camera by inserting a SD memory card (SD, SDHC, or SDXC) in the camera. Settings can be adjusted to only record images to the SD memory card when the alarm is triggered. Inserting SD memory cards also works as a backup system when there is an issue with the network. Images will be saved onto the memory cards while the network is down and will be transmitted to the recorder when the network reconnects.



Detect Alterations to the SD Memory Card

Turn on the Alteration Detection and record images to the SD memory card to be able to verify whether or not the recorded images have been altered. Playback the images recorded onto the SD memory card with a computer and utilize the Integrity Verifier Tool to analyze the raw data and confirm that the recorded images have not been altered. Download the Integrity Verifier Tool for free from our "Useful Tool" download page. <https://security.panasonic.com/download/tools/#iv>



EXTREME Reliability

Achieves high endurance and long life in storing information even under harsh environments.

HDD Dynamic Power Control

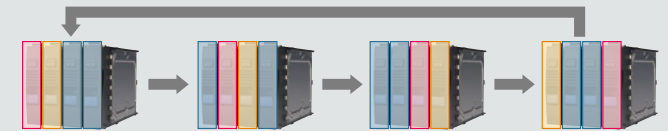
Long life and high reliability is achieved through technology that individually controls access to the HDD. If a recorder needs to recover crashed data, it can do so in a short amount of time.

Individually-managed HDD

WJ-NX400 manages the status of each HDD, using the following three states:

- 1 Active state:** Currently being accessed by the WJ-NX400. **2 Idle state:** Ready to be accessed **3 Stand-by state:** Halted motor

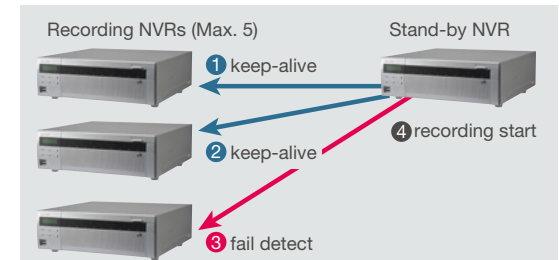
Active	: Motor – On; Head – Read/Write
Idle	: Motor – On; Head – Home Position (ready for next access to a HDD)
Stand-by	: Motor – Off; Head – Home Position



Auto Failover Recording

NVR has an Auto Failover Recording function to reduce the loss of recorded data due to NVR failure. In the case of an NVR failure, the stand-by NVR will begin recording automatically.

The standby NVR will record instead of the failed NVR, without the need for management software.



High Performance and Flexibility with TURBO-RAID

WJ-NX400 RAID is a specialized hardware RAID (TURBO-RAID).

WJ-NX400 RAID, equipped with TURBO-RAID, maintains the throughput performance of a non RAID configuration. TURBO-RAID can provide guaranteed reliability of data and high-performance throughput.

The recorder can recover data quickly in the event of a crash.

*To use TURBO-RAID with WJ-NX300, Additional RAID Kit is required.

Heavy Salt Damage Resistance, Compliant with ISO14993

Heavy salt damage resistance, with film thickness of 100 micrometers or more, provides protection from salty wind corrosion.

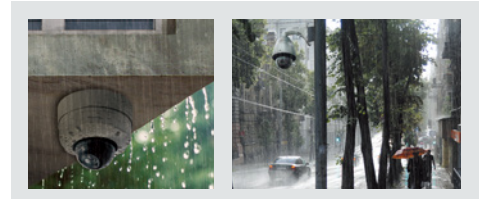
The use of screws with an anti-salt surface treatment prevents trouble occurring from corroded screws in the product.



Rainwater Protection



The outdoor models have waterproof and dustproof structures that are rated IP66 for exterior installations, eliminating the need for special housing and/or waterproof protection.



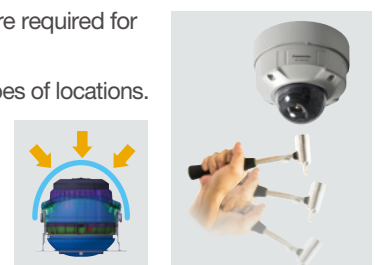
Vandal Resistant



When installed in locations that are prone to vandalism and tampering, measures are required for preventing damage to the camera. Models featuring the Vandal Resistant mechanism are ideal for installation in these types of locations.

Vandal resistant mechanism

Models featuring the Vandal Resistant mechanism include a shock absorber around the internal lens. Even if the dome cover is subjected to a potentially damaging impact, the shock absorber will absorb this impact to protect the internal structure from damage.



EXTREME Analytics

Identifies and acquires important information, improves accuracy and efficiency of the entire system, reduces system load, and lowers costs and hurdles. Anyone can take advantage of Analytics.

Facial Recognition System

When the camera detects a face, it sends only the facial image data to the server. This greatly reduces the load on the system's main server and enables one system to accommodate up to 20 cameras. The accommodation of so many cameras makes it possible to have multiple-camera coverage extending across a wide area, thereby enabling people-flow paths to be determined and easily tracked in real time.

Face search and face matching functions

The Facial Recognition System takes the camera-captured facial images and compares them with registered faces, sounding a real-time alarm and displaying comparison results on a screen when a match is found.

By using the comparison results to do a facial-image search, it is possible to display the results from each camera as a time series to identify and track a person's movement.

In addition, it is possible to filter recorded images using camera name and date/time, and then determine a subject person's movement by using the alarm history list to replay recorded images linked to an alarm.

System expandability - Integrated into video surveillance system



Vehicle Incident Detection

The Vehicle Incident Detection function detects incidents such as wrong-way driving and stopped vehicles, and then alerts the Traffic Management System.

While it is difficult for a single human operator to physically detect vehicle accidents on multiple camera monitors, such monitoring is made possible with the Vehicle Incident Detection system.

*Extension software WV-XAE100W is required.



Intelligent VMD



Video motion detection

The camera itself features intelligent functionality for notifying the administrator about changes to situations or dangers using a variety of methods. This eliminates the need to constantly watch the screen in the control room for reducing the TCO. *Extension software WV-SAE200 is required.

Intruder

Type1 / Type2 / Type3 / Type4 / Type5

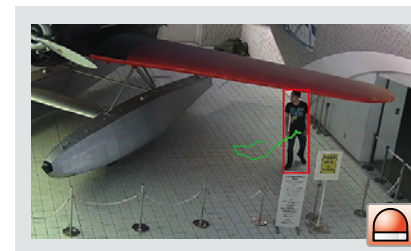
It is possible to issue an alarm when a moving object enters the area. Up to 8 objects, or 32 objects (Type3 / Type5 only) can be detected simultaneously per channel.



Loitering

Type1 / Type2 / Type3 / Type4 / Type5

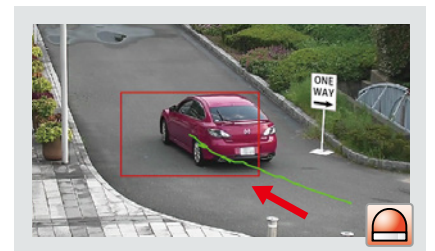
It is possible to issue an alarm when a moving object enters the area and stays for the specified period. Up to 8 objects, or 32 objects (Type3 / Type5 only) can be detected simultaneously per channel.



Direction

Type1 / Type2 / Type4

It is possible to issue an alarm when a moving object enters the area and moves to the specified direction. Up to 8 objects, or 32 objects can be detected simultaneously per channel.



Cross line

Type2 / Type3 / Type4 / Type5

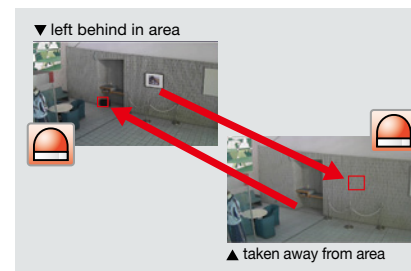
It is possible to issue an alarm when an object moving to the specified direction crossed the line. Up to 8 objects, or 32 objects (Type3 / Type5 only) can be detected simultaneously per channel.



Object

Type2 / Type3 / Type4 / Type5

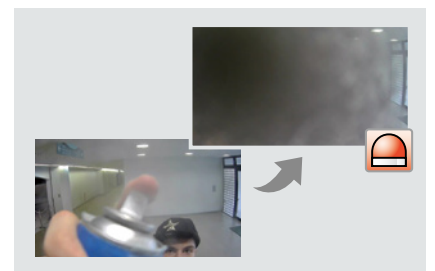
It is possible to issue an alarm if an object (suspicious object, etc.) is left behind in the area or taken away from the area. Up to 8 objects, or 24 objects (Type3 / Type5 only) can be detected simultaneously per channel.



Scene change

Type1 / Type2 / Type3 / Type4 / Type5

It is possible to issue an alarm when a camera is covered with something or the camera direction is changed to shoot a different subject.

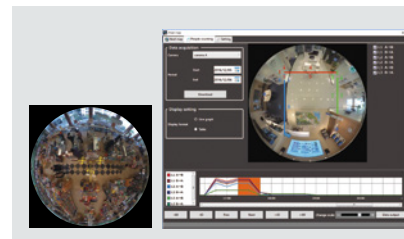


People Counting

Type3 / Type5



It provides function of counting the number of people who crossed the line in a certain direction which is set with "Line".

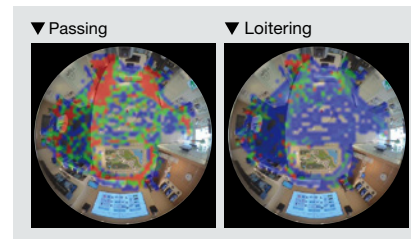


Heat-map

Type3 / Type5



Heat-map provides statistical information of traffic lines. Counts up both passing and loitering in the shooting area.



MOR (Moving Object Remover)

Type3 / Type5



MOR is a privacy-conscious function which removes people from the image and only send the background image.



Support for Various Installation Environments

Panasonic network cameras are available in a full lineup of products custom-tailored for a wide range of installation environments.

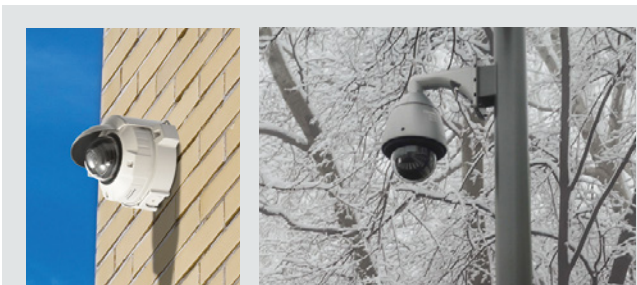
Their specialized design also helps to reduce the work required for installation.

• Select the Specialized Model for Your Installation Environment

Temperature protection for outdoor installations

Models can be selected to match your specific installation conditions and can be installed in environments with temperatures ranging from +60°C to -50°C.

*The supported temperature range varies depending on the specific model.

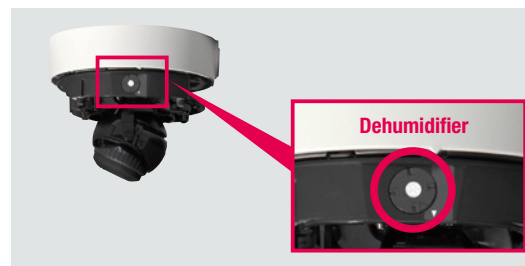


Dehumidification Device



The network camera outdoor models have a built-in dehumidifier device to lower the internal humidity for preventing cloudiness due to condensation.

This eliminates blurry video images caused by clouding of the camera dome cover when installed in locations with high humidity or extreme temperature changes over the course of the day.



Easy Installation

The Easy Kitting Package makes setting up the camera easy.

Users do not even need to remove the camera from the box to setup the camera.

This packaging helps reduce the time and effort it requires to install multiple cameras.

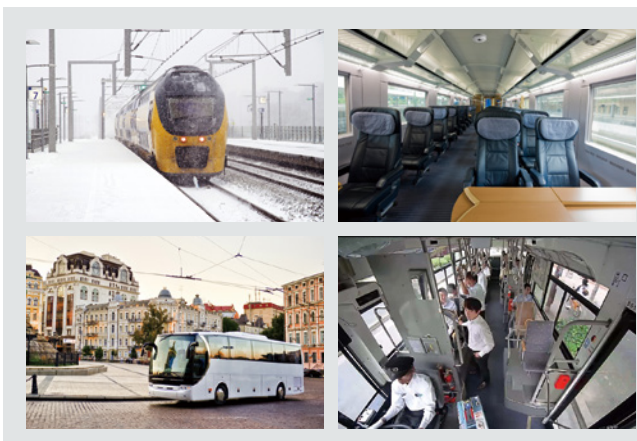
On outdoor models, the RJ45 Joint Connector removes the need of using waterproof tape and reduces the time it takes to install the camera.



Onboard Model

A lineup of network cameras is also available with anti-vibration and other specific features for installation in cars, buses, and other vehicles.

The WV-SBV131M, WV-SBV111M, WV-SFV130(M), WV-SFV110(M), WV-X4571L(M), WV-S4550L(M), WV-SW458MA, and WV-SFV481 are compliant with the EN50155 European railway standards.



Support for Various Installation Environments

Mount on the Outside of the Vehicle

The rugged mobile network camera WV-SBV131M, WV-SBV111M meets the United States Department of Defense Military Standards MIL-STD-810G to withstand even the harshest of environments.

Also meeting the highest International Protection Standards IP6K9K, the camera is dust tight and waterproof.

Meeting such standards allows the camera to be mounted on the outside of busses and trains, which are constantly shaking and rained on.

The lenses' hard coated surface allows the vehicle to be put through a carwash.

Capable of withstanding temperatures ranging from -40 °C and up to +60 °C (-40 °F and up to 140 °F) the camera is highly versatile.



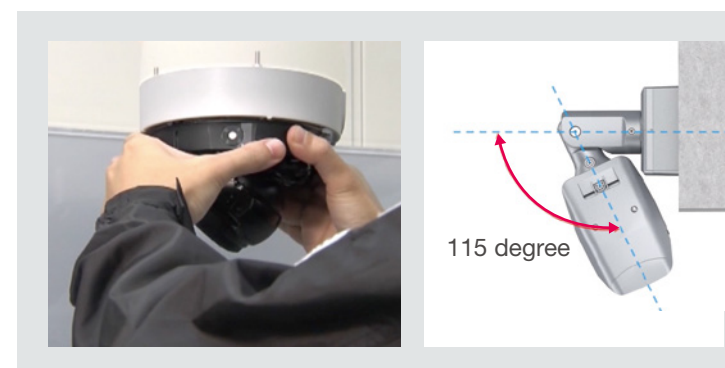
Reduced Installation Time

The i-PRO Series cameras include a number of features for reducing the time required for installation.

If you want to change the camera direction after installation, the camera direction can be changed in 90° steps without removing the base (EXTREME models).

The dome cover can also be easily removed to change the direction of the lens.

For Outdoor Box type cameras (EXTREME models), the stay can be bent to one of two levels to allow installation with a high degree of freedom.



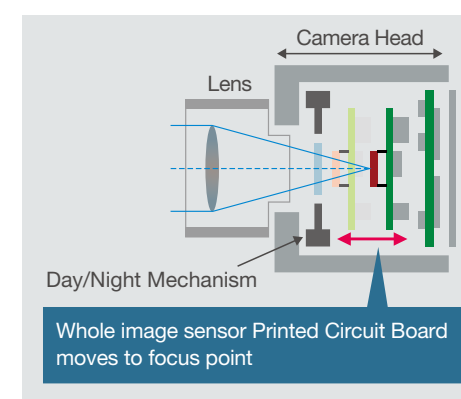
ABF (Auto back Focus)



The ABF feature automatically adjusts the image sensor position when changing from color to B/W mode, optimize the back focus required for clear, sharp images.

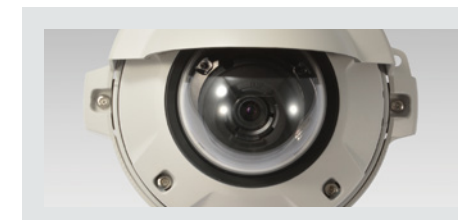
In addition, the one-push Auto Back Focus feature sharply reduces the time required to focus cameras during installation, allowing focus to be set using the optional system controller.

The ABF function can also automatically sense and adjust to slight focal length changes due to parts warping caused by temperature changes in the area where the camera is installed.



Special Screws for Added Security

Specially-shaped screws are used to secure the cover to prevent tampering with the camera or theft of the SD memory card.



EXTREME Concept

New Products

Function Introduction

Network Camera Comparison Chart

Multi-Sensor

PTZ

Fixed Dome

360-degree Dome

Box

Pan/Tilt

Network products

20

Network Camera Comparison chart

Multi-Sensor

Indoor / Outdoor		Outdoor	
Model Name		WV-X8570N	WV-S8530N
Appearance			

Network Camera Comparison chart		PTZ		
Indoor / Outdoor		Outdoor		
Model Name		WV-X6531N / WV-X6531NS	WV-X6511N	WV-S6530N
Appearance		  Onvif® S G Heavy Salt damage resistance	 Onvif® S G	 Onvif® S G
Sensor		1/2.8 MOS	1/2.8 MOS	1/2.9 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4
	JPEG multi stream	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR
	Smart Coding	Yes	Yes	Yes
Max. Resolution	16 : 9	1920 x 1080	1280 x 720	1920 x 1080
	4 : 3	2048 x 1536 (*1)	1280 x 960	2048 x 1536 (*1)
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (720p)	60fps (1080p)
	JPEG	30fps (3 MP)	30fps (1.3 MP)	30fps (3 MP)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		Auto Focus	Auto Focus	Auto Focus
Min. Illumination	Color	0.015 lx @F1.6	0.011 lx @F1.6	0.015 lx @F1.6
	Color (Sens up)	0.001 lx (16x)	0.0007 lx (16x)	0.001 lx (16x)
	B/W	0.006 lx @F1.6	0.005 lx @F1.6	0.006 lx @F1.6
	B/W (Sens up)	0.0004 lx (16x)	0.0003 lx (16x)	0.0004 lx (16x)
Lens		f = 4.25 to 170 mm, F1.6 Motorized	f = 4.25 to 170 mm, F1.6 Motorized	f = 4.0 to 84.6 mm, F1.6 Motorized
Angular field of view	16 : 9	H : 2.1 to 65 deg. V : 1.2 to 39 deg.	H : 2.1 to 65 deg. V : 1.2 to 39 deg.	H : 3.4 to 73 deg. V : 2.0 to 42 deg.
	4 : 3	H : 1.6 to 51 deg. V : 1.2 to 39 deg.	H : 1.6 to 51 deg. V : 1.2 to 39 deg.	H : 2.9 to 61 deg. V : 2.2 to 46 deg.
Pan	Range	Endless	Endless	0 to +350 deg.
	Speed	300 deg/sec.	300 deg/sec.	300 deg/sec.
Tilt	Range	-15 to +195 deg.	-15 to +195 deg.	-30 to +90 deg.
	Speed	300 deg/sec.	300 deg/sec.	100 deg/sec.
360 Pan-Flip		—	—	Yes
Number of Preset Positions		256	256	256
Patrol		Yes	Yes	Yes
Auto Tracking		Yes (advanced)	Yes (advanced)	Yes (advanced)
Optical Zoom		40x	40x	21x
Digital Zoom		16x	16x	16x
Image Stabilizer		Yes	Yes	Yes
Corridor Mode		—	—	—
iA (Intelligent Auto)		Yes	Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)
Max. Connection		14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—	—
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)
	Audio Detection Alarm	Yes	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes
External I/O		Yes (3) (*3)	Yes (3) (*3)	Yes (3) (*3)
Monitor Out		—	—	Yes (mini-jack) (*4)
Vandal Resistant		IK10	IK10	IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4
Temperature		-50 to +60 deg. (24 V / 60 W PoE) (*5) -30 to +60 deg. (PoE+)	-50 to +60 deg. (24 V / 60 W PoE) (*5) -30 to +60 deg. (PoE+)	-40 to +60 deg.(24 V) -30 to +60 deg. (PoE+)
Power Source		24 V AC / PoE+ / PoE injector	24 V AC / PoE+ / PoE injector	24 V AC / PoE+
Dehumidification device		Yes	Yes	Yes
Other Functions		Easy setup package, Built-in heater, ClearSight coating, WV-X6531NS: ISO14993(Heavy Salt damage resistance)	Easy setup package, Built-in heater, ClearSight coating	Easy setup package, Built-in heater, ClearSight coating

(*)1 : w/Super resolution

(*)2 : Only for SD REC

(*)3 : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each)

(*)4 : For adjustment, the audio output can be switched to the monitor output.

(*)5 : Tested PoE injector

★ Products that can be purchased is vary according to the locality.

21

Network Camera Comparison chart			PTZ		
Indoor / Outdoor			Indoor		
Model Name			WV-S6131	WV-S6111	WV-S6130
Appearance					
Sensor			1/2.8 MOS	1/2.8 MOS	1/2.9 MOS
Codec and Transmission	Video Codec		H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream		4	4	4
	JPEG multi stream		3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR	VBR	VBR
	Smart Coding		Yes	Yes	Yes
Max. Resolution	16 : 9		1920 x 1080	1280 x 720	1920 x 1080
	4 : 3		2048 x 1536 (*1)	1280 x 960	2048 x 1536 (*1)
Max. FPS @Max. Resolution	H.265 / H.264		60fps (1080p)	60fps (720p)	60fps (1080p)
	JPEG		30fps (3 MP)	30fps (1.3 MP)	30fps (3 MP)
Super Dynamic / WDR / BLC			Enhanced SD	Enhanced SD	Enhanced SD
Color/BW			Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			Auto Focus	Auto Focus	Auto Focus
Min. Illumination	Color		0.015 lx @F1.6	0.011 lx @F1.6	0.015 lx @F1.6
	Color (Sens up)		0.001 lx (16x)	0.0007 lx (16x)	0.001 lx (16x)
	B/W		0.006 lx @F1.6	0.005 lx @F1.6	0.006 lx @F1.6
	B/W (Sens up)		0.0004 lx (16x)	0.0003 lx (16x)	0.0004 lx (16x)
Lens			f = 4.25 to 170 mm, F1.6 Motorized	f = 4.25 to 170 mm, F1.6 Motorized	f = 4.0 to 84.6 mm, F1.6 Motorized
Angular field of view	16 : 9		H : 1.9 to 66 deg. V : 1.1 to 39 deg.	H : 1.9 to 66 deg. V : 1.1 to 39 deg.	H : 3.5 to 74 deg. V : 2.0 to 42 deg.
	4 : 3		H : 1.4 to 51 deg. V : 1.1 to 39 deg.	H : 1.4 to 51 deg. V : 1.1 to 39 deg.	H : 3.0 to 61 deg. V : 2.3 to 46 deg.
Pan	Range		Endless	Endless	0 to +350 deg.
	Speed		300 deg/sec.	300 deg/sec.	300 deg/sec.
Tilt	Range		-25 to +205 deg.	-25 to +205 deg.	-30 to +90 deg.
	Speed		300 deg/sec.	300 deg/sec.	100 deg/sec.
360 Pan-Flip			—	—	Yes
Number of Preset Positions			256	256	256
Patrol			Yes	Yes	Yes
Auto Tracking			Yes (advanced)	Yes (advanced)	Yes (advanced)
Optical Zoom			40x	40x	21x
Digital Zoom			16x	16x	16x
Image Stabilizer			Yes	Yes	Yes
Corridor Mode			—	—	—
iA (Intelligent Auto)			Yes	Yes	Yes
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS			Yes (8-areas)	Yes (8-areas)	Yes (8-areas)
Max. Connection			14	14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)		—	—	—
	Codec		G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)
	Audio Detection Alarm		Yes	Yes	Yes
SD memory Card	Slot		Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection		Yes	Yes	Yes
	Audio REC		Yes	Yes	Yes
External I/O			Yes (3) (*3)	Yes (3) (*3)	Yes (3) (*3)
Monitor Out			Yes (mini-jack) (*4)	Yes (mini-jack) (*4)	Yes (mini-jack)
Vandal Resistant			—	—	—
Water and Dust Resistance			—	—	—
Temperature			-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg. (Ceiling / Camera mount bracket) -10 to +40 deg. (Desktop / Tripod)
Power Source			12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device			—	—	—
Other Functions			Easy setup package, Dome less	Easy setup package, Dome less	Easy setup package

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each)
(*4) : For adjustment, the audio output can be switched to the monitor output.

Network Camera Comparison chart			Fixed Dome			
Indoor / Outdoor			Outdoor			
Model Name			WV-S2550L	WV-S2531LTN	WV-S2531LN	WV-S2511LN
Appearance						
Sensor			1/2.8 CMOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec		H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream		4	4	4	4
	JPEG multi stream		2 (Variable)	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR	VBR	VBR	VBR
	Smart Coding		Yes (*1)	Yes	Yes	Yes
Max. Resolution	16 : 9		3072 x 1728 (*2)	1920 x 1080	1920 x 1080	1280 x 720
	4 : 3		3072 x 2304 (*2)	2048 x 1536 (*3)	2048 x 1536 (*3)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264		30fps (5 MP)	60fps (1080p)	60fps (1080p)	60fps (720p)
	JPEG		30fps (5 MP)	30fps (3 MP)	30fps (3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC			Super Dynamic	Enhanced SD	Enhanced SD	Enhanced SD
Color/BW			Yes (ICR)	Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			Auto Focus	ABF	ABF	ABF
Min. Illumination	Color		0.07 lx @F1.3	0.015 lx @F1.7	0.012 lx @F1.6	0.008 lx @F1.6
	Color (Sens up)		0.0044 lx @F1.3	0.001 lx (16x)	0.0008 lx (16x)	0.0005 lx (16x)
	B/W		0.04 lx @F1.3	0.0 lx @F1.7 (w/IR)	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)
	B/W (Sens up)		0.003 lx @F1.3	—	—	—
Lens			f = 2.9 to 9 mm, F1.3 Motorized	f = 9 to 21 mm, F1.7 Motorized	f = 2.8 to 10 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6
Angular field of view	16 : 9		H : 33 to 103 deg. V : 19 to 55 deg.	H : 14 to 34 deg. V : 8 to 19 deg.	H : 30 to 108 deg. V : 17 to 58 deg.	H : 30 to 108 deg. V : 17 to 58 deg.
	4 : 3		H : 33 to 103 deg. V : 25 to 75 deg.	H : 12 to 28 deg. V : 9 to 21 deg.	H : 25 to 90 deg. V : 19 to 65 deg.	H : 25 to 90 deg. V : 19 to 65 deg.
Adjusting Angle	Pan		-180 to 180 deg.	-180 to +180 deg.	-180 to +180 deg.	-180 to +180 deg.
	Tilt		-30 to 85 deg.	-30 to +85 deg.	-30 to +85 deg.	-30 to +85 deg.
Optical Zoom			3.1 x	2.3x	3.6x	3.6x
Digital Zoom			4x	4x	4x	4x
Image Stabilizer			—	Yes	Yes	Yes
Corridor Mode			Yes	Yes	Yes	Yes
iA (Intelligent Auto)			Yes	Yes	Yes	Yes
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			—	Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS			Yes (8-areas)	—	—	—
Max. Connection			14	14	14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)		—	—	—	—
	Codec		G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)
	Audio Detection Alarm		—	Yes	Yes	Yes
SD memory Card	Slot		Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection		Yes	Yes	Yes	Yes
	Audio REC		Yes	Yes	Yes	Yes
External I/O			Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)
Monitor Out			Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant			50J, IK10	50J, IK10	50J, IK10	50J, IK10
Water and Dust Resistance			IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature			-40 to +60 deg. (*6)	-40 to +60 deg. (*6)	-40 to +60 deg. (*6)	-40 to +60 deg. (*6)
Power Source			12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device			—	Yes	Yes	Yes
Other Functions			Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED

(*1) : Smart Facial Coding is excluded (*2) : Used by super resolution techniques (*3) : w/Super resolution (*4) : Only for SD REC (*5) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each)
(*6) : When the IR LED is ON, the maximum temperature is 50 deg. ★ Products that can be purchased is vary according to the locality.

Network Camera Comparison chart		Fixed Dome			
Indoor / Outdoor		Indoor			
Model Name		WV-S2250L	WV-S2231L	WV-S2211L	WV-S2131L
Appearance					
Sensor		1/2.8 CMOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4	4
	JPEG multi stream	2 (Variable)	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR	VBR
	Smart Coding	Yes (*1)	Yes	Yes	Yes
Max. Resolution	16 : 9	3072 x 1728 (*2)	1920 x 1080	1280 x 720	1920 x 1080
	4 : 3	3072 x 2304 (*2)	2048 x 1536 (*3)	1280 x 960	2048 x 1536 (*3)
Max. FPS @Max. Resolution	H.265 / H.264	30fps (5 MP)	60fps (1080p)	60fps (720p)	60fps (1080p)
	JPEG	30fps (5 MP)	30fps (3 MP)	30fps (1.3 MP)	30fps (3 MP)
Super Dynamic / WDR / BLC		Super Dynamic	Enhanced SD	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		Auto Focus	ABF	ABF	ABF
Min. Illumination	Color	0.07 lx @F1.3	0.012 lx @F1.6	0.008 lx @F1.6	0.012 lx @F1.6
	Color (Sens up)	0.0044 lx @F1.3	0.0008 lx (16x)	0.0005 lx (16x)	0.0008 lx (16x)
	B/W	0.04 lx @F1.3	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)
	B/W (Sens up)	0.003 lx @F1.3	—	—	—
Lens		f=2.9 to 9 mm, F1.3 Motorized	f = 2.8 to 10 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6	f = 2.8 to 10 mm, F1.6 Motorized
Angular field of view	16 : 9	H : 33 to 105 deg. V : 19 to 56 deg.	H : 30 to 109 deg. V : 17 to 58 deg.	H : 30 to 109 deg. V : 17 to 58 deg.	H : 30 to 110 deg. V : 17 to 59 deg.
	4 : 3	H : 33 to 105 deg. V : 25 to 76 deg.	H : 25 to 90 deg. V : 19 to 65 deg.	H : 25 to 90 deg. V : 19 to 65 deg.	H : 25 to 90 deg. V : 19 to 66 deg.
Adjusting Angle	Pan	-240 to 120 deg.	-240 to +120 deg.	-240 to +120 deg.	-240 to +120 deg.
	Tilt	-30 to 85 deg.	-30 to +85 deg.	-30 to +85 deg.	-30 to +85 deg.
Optical Zoom		3.1 x	3.6x	3.6x	3.6x
Digital Zoom		4x	4x	4x	4x
Image Stabilizer		—	Yes	Yes	Yes
Corridor Mode		Yes	Yes	Yes	Yes
IA (Intelligent Auto)		Yes	Yes	Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS		Yes (8-areas)	—	—	—
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—	—	—
	Codec	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)
	Audio Detection Alarm	—	Yes	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes	Yes
External I/O		Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant		IK10	IK10	IK10	—
Water and Dust Resistance		—	—	—	—
Temperature		-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device		—	—	—	—
Other Functions		Easy setup package Built-in IR LED	Easy setup package, Built-in IR LED	Easy setup package, Built-in IR LED	Easy setup package, Built-in IR LED

(*1) : Smart Facial Coding is excluded (*2) : Used by super resolution techniques (*3) : w/Super resolution (*4) : Only for SD REC
(*5) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each) ★ Products that can be purchased is vary according to the locality.

Network Camera Comparison chart		Fixed Dome			
Indoor / Outdoor		Indoor			
Model Name		WV-S2131	WV-S2130	WV-S2111L	WV-S2110
Appearance					
Sensor		1/3 MOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4	4
	JPEG multi stream	3 (Variable)	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR	VBR
	Smart Coding	Yes	Yes	Yes	Yes
Max. Resolution	16 : 9	1920 x 1080	1920 x 1080	1280 x 720	1280 x 720
	4 : 3	2048 x 1536 (*1)	2048 x 1536 (*1)	1280 x 960	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (1080p)	60fps (720p)	60fps (720p)
	JPEG	30fps (3 MP)	30fps (3 MP)	30fps (1.3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Day/Night (Electrical)	Yes (ICR)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	ABF	ABF
Min. Illumination	Color	0.012 lx @F1.6	0.012 lx @F1.6	0.008 lx @F1.6	0.008 lx @F1.6
	Color (Sens up)	0.0008 lx (16x)	0.0008 lx (16x)	0.0005 lx (16x)	0.0005 lx (16x)
	B/W	0.006 lx @F1.6	0.01 lx @F1.6	0.0 lx @F1.6 (w/IR)	0.007 lx @F1.6
	B/W (Sens up)	0.0004 lx (16x)	0.0007 lx (16x)	—	0.00044 lx (16x)
Lens		f = 2.8 to 10 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6	f = 2.8 to 10 mm, F1.6	f = 2.8 to 10 mm, F1.6
Angular field of view	16 : 9	H : 30 to 110 deg. V : 17 to 59 deg.	H : 30 to 110 deg. V : 17 to 59 deg.	H : 30 to 110 deg. V : 17 to 59 deg.	H : 30 to 110 deg. V : 17 to 59 deg.
	4 : 3	H : 25 to 90 deg. V : 19 to 66 deg.	H : 25 to 90 deg. V : 19 to 66 deg.	H : 25 to 90 deg. V : 19 to 66 deg.	H : 25 to 90 deg. V : 19 to 66 deg.
Adjusting Angle	Pan	-240 to +120 deg.	-240 to +120 deg.	-240 to +120 deg.	-240 to +120 deg.
	Tilt	-85 to +85 deg.	-85 to +85 deg.	-30 to +85 deg.	-85 to +85 deg.
Optical Zoom		3.6x	3.6x	3.6x	3.6x
Digital Zoom		4x	4x	4x	4x
Image Stabilizer		Yes	Yes	Yes	Yes
Corridor Mode		Yes	Yes	Yes	Yes
IA (Intelligent Auto)		Yes	Yes	Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type4)	Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS		—	—	—	—
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	— / —	Yes / Yes	— / —
	In (Built-in MIC)	—	Yes	—	Yes
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)
	Audio Detection Alarm	Yes	Yes	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	—	Yes (SDXC)	—
	Password & Alter Detection	Yes	—	Yes	—
	Audio REC	Yes	—	Yes	—
External I/O		Yes (3) (*3)	—	Yes (3) (*3)	—
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant		—	—	—	—
Water and Dust Resistance		—	—	—	—
Temperature		-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.
Power Source		12 V DC / PoE	PoE	12 V DC / PoE	PoE
Dehumidification device		—	—	—	—
Other Functions		Easy setup package	Easy setup package	Easy setup package, Built-in IR LED	Easy setup package

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each)

EXTREME Concept		i-PRO EXTREME Series	
New Products			
Function Introduction			
Network Camera Comparison Chart			
Multi-Sensor			
PTZ			
Fixed Dome			
360-degree Dome			
Box			
Pan/Tilt			
Network products			
Network Camera Comparison chart		360-degree Dome	
Indoor / Outdoor		Outdoor	
Model Name		WV-X4571L / WV-X4571LM(*1)	WV-S4550L / WV-S4550LM(*1)
Appearance			
Sensor		1/2 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	2	2
	JPEG multi stream	2	2
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR
	Smart Coding	Yes	Yes
Max. Resolution	16 : 9	2560 x 1440	1920 x 1080
	4 : 3	2560 x 1920 2992 x 2992 (1 : 1)	1600 x 1200 2192 x 2192 (1 : 1)
Max. FPS @Max. Resolution	H.265 / H.264	30fps (9 MP)	30fps (5 MP)
	JPEG	30fps (9 MP)	30fps (5 MP)
Super Dynamic / WDR / BLC		Super Dynamic	Super Dynamic
Color/BW		Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	—
Min. Illumination	Color	0.3 lx @F1.9	0.3 lx @F2.4
	Color (Sens up)	0.02 lx (16x)	0.02 lx (16x)
	B/W	0.0 lx @F1.9 (w/IR)	0.0 lx @F2.4 (w/IR)
	B/W (Sens up)	—	—
Lens		f = 1.4 mm, F1.9	f = 0.84 mm, F2.4
Angular field of view	1 : 1	H : 183 deg. V : 183 deg.	H : 186 deg. V : 186 deg.
Adjusting Angle	Pan	-5°, 0°, +5°	-5°, 0°, +5°
	Tilt	—	—
Optical Zoom		—	—
Digital Zoom		Choose from x1, x2, x4	Choose from x1, x2, x4
Image Stabilizer		—	—
Corridor Mode		—	—
iA (Intelligent Auto)		Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type5)	Yes (Type5)
VIQS		—	—
Max. Connection		14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)
	Audio Detection Alarm	—	—
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes
	Audio REC	Yes	Yes
External I/O		Yes (3) (*3)	Yes (3) (*3)
Monitor Out		Yes (mini-jack) (*4)	Yes (mini-jack) (*4)
Vandal Resistant		50J, IK10	50J, IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-40 to +60 deg. (*5)	-40 to +60 deg. (*5)
Power Source		12 V DC / PoE	12 V DC / PoE
Dehumidification device		Yes	Yes
Other Functions		360° monitoring, EN45545 compliant (WV-X4571LM only), EN50155-TX Built-in IR LED	360° monitoring, EN45545 compliant (WV-S4550LM only), EN50155-TX Built-in IR LED

(*1) : WV-X4571L/WV-S4550L : 10BASE-T/100BASE-TX, RJ45 connector, WV-X4571LM/WV-S4550LM : 10BASE-T/100BASE-TX, M12 connector (*2) : Only for SD REC (*3) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each) (*4) : For adjustment, the audio output can be switched to the monitor output. (*5) : When the IR LED is ON, the maximum temperature is 50 deg.

Network Camera Comparison chart			360-degree Dome		
Indoor / Outdoor			Indoor		
Model Name			WV-X4171	WV-X4170	WV-S4150
Appearance			 Onvif® S G	 Onvif® S G	 Onvif® S G
Sensor			1/2 MOS	1/2 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG		H.265 / H.264 / JPEG	
	H.265 / H.264 multi stream	2		2	
	JPEG multi stream	2		2	
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR		VBR	
	Smart Coding	Yes		Yes	
Max. Resolution	16 : 9	2560 x 1440		1920 x 1080	
	4 : 3	2560 x 1920 2992 x 2992 (1 : 1)		1600 x 1200 2192 x 2192 (1:1)	
Max. FPS @Max. Resolution	H.265 / H.264	30fps (9 MP)		30fps (5 MP)	
	JPEG	30fps (9 MP)		30fps (5 MP)	
Super Dynamic / WDR / BLC			Super Dynamic	Super Dynamic	Super Dynamic
Color/BW			Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			ABF	ABF	—
Min. Illumination	Color	0.3 lx @F1.9		0.3 lx @F1.9	
	Color (Sens up)	0.02 lx (16x)		0.02 lx (16x)	
	B/W	0.2 lx @F1.9		0.2 lx @F1.9	
	B/W (Sens up)	0.01 lx (16x)		0.013 lx (16x)	
Lens			f = 1.4 mm, F1.9	f = 1.4 mm, F1.9	f = 0.84 mm, F2.4
Angular field of view	1 : 1	H : 183 deg. V : 183 deg.		H : 183 deg. V : 183 deg.	
Adjusting Angle	Pan	-5°, 0°, +5°		-5°, 0°, +5°	
	Tilt	—		—	
Optical Zoom			—	—	—
Digital Zoom			Choose from x1, x2, x4	Choose from x1, x2, x4	Choose from x1, x2, x4
Image Stabilizer			—	—	—
Corridor Mode			—	—	—
iA (Intelligent Auto)			Yes	Yes	Yes
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			Yes (Type5)	Yes (Type5)	Yes (Type5)
VIQS			—	—	—
Max. Connection			14	14	14
Audio	In (Line) / Out	Yes / Yes		— / —	
	In (Built-in MIC)	Yes		—	
	Codec	G.711 / G.726 / AAC (*1)		—	
	Audio Detection Alarm	—		—	
SD memory Card	Slot	Yes (SDXC)		Yes (SDXC)	
	Password & Alter Detection	Yes		Yes	
	Audio REC	Yes		Yes	
External I/O			Yes (3) (*2)	—	Yes (3) (*2)
Monitor Out			Yes(mini-jack) (*3)	—	Yes(mini-jack) (*3)
Vandal Resistant			—	—	—
Water and Dust Resistance			—	—	—
Temperature			-10 to +50 deg.	0 to +40 deg.	-10 to +50 deg.
Power Source			12 V DC / PoE	PoE	12 V DC / PoE
Dehumidification device			—	—	—
Other Functions			360° monitoring	360° monitoring	360° monitoring

(*1) : Only for SD REC (*2) : ALARM IN1 (Alarm input 1/ Auto time adjustment input), ALARM IN2 (Alarm input 2/ ALARM OUT), ALARM IN3 (Alarm input 3/ AUX OUT) (x1 for each) (*3) : For adjustment, the audio output can be switched to the monitor output.

i-PRO EXTREME Series

Network Camera Comparison chart		Box			
Indoor / Outdoor		Outdoor			
Model Name		WV-S1550L	WV-S1531LTN	WV-S1531LN / WV-S1531LNS	WV-S1511LN
Appearance				 Heavy Salt damage resistance	
Sensor		1/2.8 CMOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4	4
	JPEG multi stream	2 (Variable)	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR	VBR
	Smart Coding	Yes (*1)	Yes	Yes	Yes
Max. Resolution	16 : 9	3072 x 1728 (*2)	1920 x 1080	1920 x 1080	1280 x 720
	4 : 3	3072 x 2304 (*2)	2048 x 1536 (*3)	2048 x 1536 (*3)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	30fps (5 MP)	60fps (1080p)	60fps (1080p)	60fps (720p)
	JPEG	30fps (5 MP)	30fps (3 MP)	30fps (3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Super Dynamic	Enhanced SD	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		Auto Focus	ABF	ABF	ABF
Min. Illumination	Color	0.07 lx @F1.3	0.015 lx @F1.7	0.012 lx @F1.6	0.008 lx @F1.6
	Color (Sens up)	0.0044 lx @F1.3	0.001 lx (16x)	0.0008 lx (16x)	0.0005 lx (16x)
	B/W	0.04 lx @F1.3	0.0 lx @F1.7 (w/IR)	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)
	B/W (Sens up)	0.003 lx @F1.3	—	—	—
Lens		f=2.9 to 9 mm, F1.3 Motorized	f = 9 to 21 mm, F1.7 Motorized	f = 2.8 to 10 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6
Angular field of view	16 : 9	H : 34 to 106 deg. V : 19 to 57 deg.	H : 14 to 34 deg. V : 8 to 19 deg.	H : 31 to 112 deg. V : 17 to 60 deg.	H : 31 to 112 deg. V : 17 to 60 deg.
	4 : 3	H : 34 to 106 deg. V : 25 to 77 deg.	H : 12 to 28 deg. V : 9 to 21 deg.	H : 26 to 91 deg. V : 19 to 67 deg.	H : 26 to 91 deg. V : 19 to 67 deg.
Adjusting Angle	Pan	-180 to 180 deg.	-180 to +180 deg.	-180 to +180 deg.	-180 to +180 deg.
	Tilt	0 to 100 deg.	0 to +100 deg.	0 to +100 deg.	0 to +100 deg.
Optical Zoom		3.1 x	2.3x	3.6x	3.6x
Digital Zoom		4x	4x	4x	4x
Image Stabilizer		—	Yes	Yes	Yes
Corridor Mode		Yes	Yes	Yes	Yes
IA (Intelligent Auto)		Yes	Yes	Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS		Yes (8-areas)	—	—	—
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—	—	—
	Codec	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)
	Audio Detection Alarm	—	Yes	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes	Yes
External I/O		Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)	Yes (3) (*5)
Monitor Out		Yes (RCA)	Yes (RCA)	Yes (RCA)	Yes (RCA)
Vandal Resistant		IK10	IK10	IK10	IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-40 to +60 deg. (*6)	-40 to +60 deg. (*6)	-40 to +60 deg. (*6)	-40 to +60 deg. (*6)
Power Source		12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device		—	Yes	Yes	Yes
Other Functions		Easy setup package, Built-in heater, Built-in IR LED	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED WV-S1531LNS: ISO14993 (Heavy Salt damage resistance)	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED

(*1) : Smart Facial Coding is excluded (*2) : Used by super resolution techniques (*3) : w/Super resolution (*4) : Only for SD REC (*5) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each) (*6) : When the IR LED is ON, the maximum temperature is 50 deg. ★ Products that can be purchased is vary according to the locality.

i-PRO EXTREME Series

Network Camera Comparison chart		Box			
Indoor / Outdoor		Indoor			
Model Name		WV-S1132	WV-S1131	WV-S1112	WV-S1111
Appearance		 Lens not included	 Lens not included	 Lens not included	 Lens not included
Sensor		1/2.8 MOS	1/2.8 MOS	1/2.8 MOS	1/2.8 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4	4
	JPEG multi stream	3 (Variable)	3 (Variable)	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR	VBR
	Smart Coding	Yes	Yes	Yes	Yes
Max. Resolution	16 : 9	1920 x 1080	1920 x 1080	1280 x 720	1280 x 720
	4 : 3	2048 x 1536 (*1)	2048 x 1536 (*1)	1280 x 960	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (1080p)	60fps (720p)	60fps (720p)
	JPEG	30fps (3 MP)	30fps (3 MP)	30fps (1.3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	ABF	ABF
Min. Illumination	Color	0.01 lx @F1.4	0.01 lx @F1.4	0.007 lx @F1.4	0.007 lx @F1.4
	Color (Sens up)	0.0007 lx (16x)	0.0007 lx (16x)	0.0005 lx (16x)	0.0005 lx (16x)
	B/W	0.004 lx @F1.4	0.004 lx @F1.4	0.003 lx @F1.4	0.003 lx @F1.4
	B/W (Sens up)	0.0003 lx (16x)	0.0003 lx (16x)	0.0002 lx (16x)	0.0002 lx (16x)
Lens		CS Mount	CS Mount	CS Mount	CS Mount
Angular field of view	16 : 9	—	—	—	—
	4 : 3	—	—	—	—
Adjusting Angle	Pan	—	—	—	—
	Tilt	—	—	—	—
Optical Zoom		—	—	—	—
Digital Zoom		4x	4x	4x	4x
Image Stabilizer		Yes	Yes	Yes	Yes
Corridor Mode		Yes	Yes	Yes	Yes
IA (Intelligent Auto)		Yes	Yes	Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type4)	Yes (Type4)	Yes (Type4)	Yes (Type4)
VIQS		—	—	—	—
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—	—	—
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)
	Audio Detection Alarm	Yes	Yes	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes	Yes
External I/O		Yes (3) (*3)	Yes (3) (*3)	Yes (3) (*3)	Yes (3) (*3)
Monitor Out		Yes (RCA)	Yes (RCA)	Yes (RCA)	Yes (RCA)
Vandal Resistant		—	—	—	—
Water and Dust Resistance		—	—	—	—
Temperature		-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.	-10 to +50 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device		—	—	—	—
Other Functions		Easy setup package, RS485 serial port	Easy setup package	Easy setup package, RS485 serial port	Easy setup package

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : ALARM IN1(Alarm input 1/ Black & white input/ Auto time adjustment input), ALARM IN2(Alarm input 2/ ALARM OUT), ALARM IN3(Alarm input 3/ AUX OUT)(x1 for each) ★ Products that can be purchased is vary according to the locality.

Network Camera Comparison chart			PTZ			
Indoor / Outdoor			Outdoor			
Model Name			WV-SUD638(Natural silver), -H(Gray), -T(Brown)	WV-SW598A	WV-SW397B	WV-SW395 / WV-SW395A
Appearance			 Onvif® S	 Onvif® S G	 Onvif® S G	 Onvif® S
Sensor			1/3 MOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec		H.264 / JPEG	H.264 / JPEG	H.264 / JPEG	H.264 / MPEG-4 / JPEG
	H.265 / H.264 multi stream		4	2	2	2
	JPEG multi stream		3	6	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR / AVBR	VBR / AVBR	VBR / AVBR	AVBR (V1.80)
	Smart Coding		Yes	Yes	Yes	—
Max. Resolution	16 : 9		1920 x 1080	1920 x 1080	1280 x 720	1280 x 720
	4 : 3		1280 x 960	1280 x 960	1280 x 960	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264		60fps (1080p)	30fps (1080p)	30fps (1.3 MP)	30fps (1.3 MP)
	JPEG		60fps (1080p)	30fps (1080p)	30fps (1.3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC			Super Dynamic	Super Dynamic	Super Dynamic	Super Dynamic
Color/BW			Yes (ICR)	Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			Auto Focus	Auto Focus	Auto Focus	Auto Focus
Min. Illumination	Color		0.06 lx @F1.6	0.15 lx @F1.6	0.1 lx @F1.6	0.5 lx @F1.6
	Color (Sens up)		0.004 lx (16x)	0.009 lx (16x)	0.007 lx (16x)	0.03 lx (16x)
	B/W		0.02 lx @F1.6	0.018 lx @F1.6	0.013 lx @F1.6	0.06 lx @F1.6
	B/W (Sens up)		0.001 lx (16x)	0.001 lx (16x)	0.001 lx (16x)	0.004 lx (16x)
Lens			f = 4.3 to 129 mm, F1.6 Motorized	f = 4.3 to 129 mm, F1.6	f = 4.3 to 129 mm, F1.6	f = 4.7 to 84.6 mm, F1.6
Angular field of view	16 : 9		H : 2.3 to 64 deg. V : 1.3 to 38 deg.	H : 2.6 to 63 deg. V : 1.5 to 37 deg.	H : 2.6 to 63 deg. V : 1.5 to 37 deg.	H : 3.2 to 55.2 deg. V : 1.9 to 31.9 deg.
	4 : 3		H : 1.8 to 50 deg. V : 1.3 to 38 deg.	H : 1.9 to 46 deg. V : 1.5 to 37 deg.	H : 1.9 to 46 deg. V : 1.5 to 37 deg.	H : 3.2 to 55.2 deg. V : 2.4 to 42.1 deg.
Pan	Range		Endless	Endless	Endless	0 to +350 deg.
	Speed		200 deg/sec	300 deg/sec	300 deg/sec	300 deg/sec
Tilt	Range		Upright : -45° to +90°, Forward tilt : -90° to +90° Hanging : +30° to -90°	-15 to +195 deg.	-15 to +195 deg.	-30 to +90 deg.
	Speed		200 deg/sec	300 deg/sec	300 deg/sec	100 deg/sec
360 Pan-Flip			—	—	—	Yes
Number of Preset Positions			256	256	256	64
Patrol			Yes	Yes	Yes	—
Auto Tracking			Yes (advanced)	Yes (advanced)	Yes (advanced)	Yes
Optical Zoom			30x (45x with Extra Zoom at HD)	30x (45x with Extra Zoom at HD)	30x (45x with Extra Zoom at HD)	18x
Digital Zoom			4x	12x	12x	12x
Image Stabilizer			Yes (Hybrid)	Yes	Yes	Yes
Corridor Mode			—	—	—	—
iA (Intelligent Auto)			—	—	—	—
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			—	—	—	—
VIQS			Yes (8-areas)	Yes (2-areas)	Yes (2-areas)	—
Max. Connection			14	14	14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)		—	—	—	—
	Codec		G.711 / G.726 / AAC	G.711 / G.726 / AAC (*1)	G.711 / G.726 / AAC (*1)	G.711 / G.726
	Audio Detection Alarm		—	Yes	Yes	—
SD memory Card	Slot		—	Yes (SDXC)	Yes (SDXC)	Yes (SDHC)
	Password & Alter Detection		—	—	—	—
	Audio REC		—	Yes	Yes	—
External I/O			Yes (3) (*2)	Yes (3) (*2)	Yes (3) (*2)	Yes (3) (*2)
Monitor Out			—	Yes (BNC)	Yes (BNC)	Yes (BNC)
Vandal Resistant			IK10	IK10	IK10	IK10
Water and Dust Resistance			IP66 / IP67 / NEMA 4X	IP66 / NEMA 4X	IP66	IP66
Temperature			-50 to +60 deg. (*3) (AC100 to 240 V) -30 to +60 deg. (*3) (PoE) (*4)	-50 to +55 deg. (24 V / 60 W PoE) (*4) -30 to +55 deg. (PoE+)	-50 to +55 deg. (24 V) -30 to +55 deg. (PoE+)	-40 to +50 deg. (24 V) -30 to +50 deg. (PoE+)
Power Source			100 to 240 V AC / PoE Injector	24 V AC / PoE+	24 V AC / PoE+	24 V AC / PoE+
Dehumidification device			Yes	Yes	Yes	Yes
Other Functions			Optional IR LED, Built-in wiper and defroster, ISO14993(Salt damage resistance)	Built-in heater, RainWash coating, Auto Eyelid Mechanism	Built-in heater, RainWash coating, Auto Eyelid Mechanism	Built-in heater, WV-SW395A: RainWash coating

(*1) : Only for SD REC (*2) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)
(*3) : Natural Silver model only. Gray & Brown model up to +55deg. When using the tested PoE injector and IR LED unit at the same time : -20 °C to +55 °C (-4 °F to 131 °F)) (*4) : Tested PoE injector

Network Camera Comparison chart			PTZ			
Indoor / Outdoor			Indoor			
Model Name			WV-SC588A	WV-SC387A	WV-SC385	WV-SC384
Appearance			 Onvif® S G	 Onvif® S G	 Onvif® S	 Onvif® S
Sensor			1/3 MOS	1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec		H.264 / JPEG	H.264 / JPEG	H.264 / MPEG-4 / JPEG	H.264 / MPEG-4 / JPEG
	H.265 / H.264 multi stream		2	2	2	2
	JPEG multi stream		6	6	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR / AVBR	VBR / AVBR	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding		Yes	Yes	—	—
Max. Resolution	16 : 9		1920 x 1080	1280 x 720	1280 x 720	1280 x 720
	4 : 3		1280 x 960	1280 x 960	1280 x 960	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264		30fps (1080p)	30fps (1.3 MP)	30fps (1.3 MP)	30fps (1.3 MP)
	JPEG		30fps (1080p)	30fps (1.3 MP)	30fps (1.3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC			Super Dynamic	Super Dynamic	Super Dynamic	WDR
Color/BW			Yes (ICR)	Yes (ICR)	Yes (ICR)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			Auto Focus	Auto Focus	Auto Focus	Auto Focus
Min. Illumination	Color		0.15 lx @F1.6	0.1 lx @F1.6	0.5 lx @F1.6	0.6 lx @F1.6
	Color (Sens up)		0.009 lx (16x)	0.007 lx (16x)	0.03 lx (16x)	0.038 lx (16x)
	B/W		0.018 lx @F1.6	0.013 lx @F1.6	0.06 lx @F1.6	0.5 lx @F1.6
	B/W (Sens up)		0.001 lx (16x)	0.001 lx (16x)	0.004 lx (16x)	0.03 lx (16x)
Lens			f = 4.3 to 129 mm, F1.6	f = 4.3 to 129 mm, F1.6	f = 4.7 to 84.6 mm, F1.6	f = 4.7 to 84.6 mm, F1.6
Angular field of view	16 : 9		H : 2.3 to 64 deg. V : 1.3 to 38 deg.	H : 2.3 to 64 deg. V : 1.3 to 38 deg.	H : 3.2 to 55.2 deg. V : 1.9 to 31.9 deg.	H : 3.2 to 55.2 deg. V : 1.9 to 31.9 deg.
	4 : 3		H : 1.7 to 46 deg. V : 1.3 to 38 deg.	H : 1.7 to 46 deg. V : 1.3 to 38 deg.	H : 3.2 to 55.2 deg. V : 2.4 to 42.1 deg.	H : 3.2 to 55.2 deg. V : 2.4 to 42.1 deg.
Pan	Range		Endless	Endless	0 to +350 deg.	0 to +350 deg.
	Speed		300 deg/sec	300 deg/sec	300 deg/sec	300 deg/sec
Tilt	Range		-25 to +205 deg.	-25 to +205 deg.	-30 to +90 deg.	-30 to +90 deg.
	Speed		300 deg/sec	300 deg/sec	100 deg/sec	100 deg/sec
360 Pan-Flip			—	—	Yes	Yes
Number of Preset Positions			256	256	64	64
Patrol			Yes	Yes	—	—
Auto Tracking			Yes (advanced)	Yes (advanced)	Yes	—
Optical Zoom			30x (45x with Extra Zoom at HD)	30x (45x with Extra Zoom at HD)	18x	18x
Digital Zoom			12x	12x	12x	8x
Image Stabilizer			Yes	Yes	Yes	—
Corridor Mode			—	—	—	—
iA (Intelligent Auto)			—	—	—	—
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			—	—	—	—
VIQS			Yes (2-areas)	Yes (2-areas)	—	—
Max. Connection			14	14	14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)		—	—	—	—
	Codec		G.711 / G.726 / AAC (*1)	G.711 / G.726 / AAC (*1)	G.711 / G.726	G.711 / G.726
	Audio Detection Alarm		Yes	Yes	—	—
SD memory Card	Slot		Yes (SDXC)	Yes (SDXC)	Yes (SDHC)	Yes (SDHC)
	Password & Alter Detection		—	—	—	—
	Audio REC		Yes	Yes	—	—
External I/O			Yes (3) (*2)	Yes (3) (*2)	Yes (3) (*2)	Yes (3) (*3)
Monitor Out			Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant			—	—	—	—
Water and Dust Resistance			—	—	—	—
Temperature			-10 to +55 deg.	-10 to +55 deg.	-10 to +50 deg.	-10 to +50 deg.
Power Source			12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device			—	—	—	—
Other Functions			Dome less	Dome less	—	—

(*1) : Only for SD REC (*2) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each) (*3) : Alarm In1, Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart		Fixed Dome		
Indoor / Outdoor		Outdoor		
Model Name		WV-SFV781L	WV-SFV631LT	WV-SFV531
Appearance		 Onvif® S G	 Onvif® S G	 Onvif® S G
Sensor		1/1.7 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4
	JPEG multi stream	2	6 (Variable)	6 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR (V1.52) / AVBR	VBR / AVBR
	Smart Coding	Yes	Yes	Yes
Max. Resolution	16 : 9	3840 x 2160	1920 x 1080	1920 x 1080
	4 : 3	4000 x 3000	2048 x 1536 (*1)	2048 x 1536 (*1)
Max. FPS @Max. Resolution	H.265 / H.264	30fps (4K)	60fps (1080p)	60fps (1080p)
	JPEG	15fps (12 MP)	30fps (3 MP)	30fps (3 MP)
Super Dynamic / WDR / BLC		WDR	Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	ABF
Min. Illumination	Color	0.3 lx @F1.6	0.06 lx @F1.6	0.07 lx @F1.6
	Color (Sens up)	0.02 lx (16x)	0.0045 lx (16x)	0.005 lx (16x)
	B/W	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)	0.01 lx @F1.6
	B/W (Sens up)	—	—	0.0007 lx (16x)
Lens		f = 4.2 to 25.2 mm, F1.6 Motorized	f = 9 to 22 mm, F1.6 Motorized	f = 2.8 to 9.5 mm, F1.6
Angular field of view	16 : 9	H : 17 to 96 deg. V : 9.3 to 54 deg.	H : 13.8 to 33.0 deg. V : 7.7 to 17.8 deg.	H : 31 to 109 deg. V : 18 to 59 deg.
	4 : 3	H : 17 to 100 deg. V : 13 to 75 deg.	H : 11.5 to 27.0 deg. V : 8.6 to 19.9 deg.	H : 26 to 89 deg. V : 20 to 66 deg.
Adjusting Angle	Pan	-180 to +180 deg.	-180 to +180 deg.	-180 to +180 deg.
	Tilt	0 to +85 deg.	0 to +85 deg.	-85 to +85 deg.
Optical Zoom		6x	2.4x	3.3x
Digital Zoom		4x	4x	4x
Image Stabilizer		—	—	—
Corridor Mode		—	—	—
IA (Intelligent Auto)		—	—	—
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	Yes (Type2)	Yes (Type2)
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)
Max. Connection		14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—	—
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC	G.711 / G.726 / AAC
	Audio Detection Alarm	—	Yes	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC x 2)	Yes (SDXC)
	Password & Alter Detection	—	Yes (V1.52)	Yes
	Audio REC	Yes	Yes	Yes
External I/O		Yes (3) (*3)	Yes (3) (*4)	Yes (3) (*4)
Monitor Out		Yes (RCA)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant		IK10	50J, IK10	50J, IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-45 to +50 deg.	-45 to +50 deg.	-40 to +50 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device		Yes	Yes	Yes
Other Functions		Built-in heater, RainWash coating, Built-in IR LED	Smart-DoF, Built-in heater, Built-in IR LED	Built-in heater

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out, Black & White Out) (x1 for each) (*4) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart		Fixed Dome		
Indoor / Outdoor		Outdoor		
Model Name		WV-SFV130 / WV-SFV130M	WV-SFV110 / WV-SFV110M	WV-SW155
Appearance		 Onvif® S G	 Onvif® S G	 Onvif® S
Sensor		1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	4	4	2
	JPEG multi stream	6 (Variable)	6 (Variable)	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR / AVBR	VBR / AVBR (V2.20)
	Smart Coding	Yes	Yes	—
Max. Resolution	16 : 9	1920 x 1080	1280 x 720	1280 x 720
	4 : 3	2048 x 1536 (*1)	1280 x 960	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	30fps (1080p)	30fps (720p)	30fps (1.3 MP)
	JPEG	30fps (1080p)	30fps (720p)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Super Dynamic	Super Dynamic	Super Dynamic
Color/BW		Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		—	—	—
Min. Illumination	Color	0.1 lx @F2.3	0.04 lx @F2.3	0.8 lx @F2.2
	Color (Sens up)	0.007 lx (16x)	0.003 lx (16x)	0.05 lx (16x)
	B/W	0.08 lx @F2.3	0.03 lx @F2.3	0.6 lx @F2.2
	B/W (Sens up)	0.005 lx (16x)	0.002 lx (16x)	0.04 lx (16x)
Lens		f = 2.8 mm, F2.3	f = 2.8 mm, F2.3	f = 1.95 mm, F2.2
Angular field of view	16 : 9	H : 108 deg. V : 60 deg.	H : 100 deg. V : 55 deg.	H : 104 deg. V : 68 deg.
	4 : 3	H : 89 deg. V : 66 deg.	H : 100 deg. V : 73 deg.	H : 104 deg. V : 85 deg.
Adjusting Angle	Pan	-20 to +20 deg.	-20 to +20 deg.	-20 to +20 deg.
	Tilt	-20 to +90 deg.	-20 to +90 deg.	-20 to +90 deg.
Optical Zoom		—	—	—
Digital Zoom		4x	4x	4x
Image Stabilizer		—	—	—
Corridor Mode		—	—	—
IA (Intelligent Auto)		—	—	—
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type2)	Yes (Type2)	—
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (1-area)
Max. Connection		14	14	14
Audio	In (Line) / Out	— / —	— / —	— / —
	In (Built-in MIC)	Yes	Yes	—
	Codec	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	—
	Audio Detection Alarm	—	—	—
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDHC)
	Password & Alter Detection	Yes	Yes	—
	Audio REC	Yes	Yes	—
External I/O		—	—	—
Monitor Out		—	—	—
Vandal Resistant		50J, IK10	50J, IK10	50J, IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-40 to +60 deg.	-40 to +60 deg.	-30 to +50 deg.
Power Source		PoE	PoE	PoE
Dehumidification device		—	—	—
Other Functions		EN50155-T3, EN50121, EN45545, EN50498, ECE-R10(WV-SFV130M)	EN50155-T3, EN50121, EN45545, EN50498, ECE-R10(WV-SFV110M)	EN50155-T3, EN50121, EN45545, DIN5510

(*1) : w/Super resolution (*2) : Only for SD REC

Network Camera Comparison chart		Fixed Dome		
Indoor / Outdoor		Outdoor		
Model Name		WV-SW115	WV-SBV131M	WV-SBV111M
Appearance		 Onvif® S	 Onvif® S G	 Onvif® S G
Sensor		1/3 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	2	4	4
	JPEG multi stream	6	6 (Variable)	6 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	AVBR	VBR / AVBR	VBR / AVBR
	Smart Coding	—	Yes	Yes
Max. Resolution	16 : 9	1280 x 720	1920 x 1080	1280 x 720
	4 : 3	1280 x 960	2048 x 1536 (*1)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	30fps (1.3 MP)	30fps (1080p)	30fps (720p)
	JPEG	30fps (1.3 MP)	30fps (3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Super Dynamic	WDR	WDR
Color/BW		Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		—	—	—
Min. Illumination	Color	0.8 lx @F2.2	0.1 lx @F2.2	0.04 lx @F2.2
	Color (Sens up)	0.05 lx (16x)	0.007 lx (16x)	0.003 lx (16x)
	B/W	0.6 lx @F2.2	0.06 lx @F2.2	0.03 lx @F2.2
	B/W (Sens up)	0.04 lx (16x)	0.004 lx (16x)	0.002 lx (16x)
Lens		f = 1.95 mm, F2.2	f = 1.95 mm, F2.2	f = 1.95 mm, F2.2
Angular field of view	16 : 9	H : 104 deg. V : 68 deg.	H : 109 deg. V : 73 deg.	H : 104 deg. V : 69 deg.
	4 : 3	H : 104 deg. V : 85 deg.	H : 97 deg. V : 79 deg.	H : 104 deg. V : 85 deg.
Adjusting Angle	Pan	-30 to +30 deg.	-170 to +170 deg.	-170 to +170 deg.
	Tilt	-30 to +30 deg.	-90 to +90 deg.	-90 to +90 deg.
Optical Zoom		—	—	—
Digital Zoom		4x	4x	4x
Image Stabilizer		—	—	—
Corridor Mode		—	—	—
IA (Intelligent Auto)		—	—	—
VMD (Video Motion Detection)		Yes	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	—	—
VIQS		Yes (1-area)	Yes (8-areas)	Yes (8-areas)
Max. Connection		14	14	14
Audio	In (Line) / Out	— / —	— / —	— / —
	In (Built-in MIC)	—	—	—
	Codec	—	—	—
	Audio Detection Alarm	—	—	—
SD memory Card	Slot	Yes (SDHC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	—	—	—
	Audio REC	—	—	—
External I/O		—	—	—
Monitor Out		—	—	—
Vandal Resistant		IK10	IK10	IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP6K9K / IP66 / NEMA 4X	IP6K9K / IP66 / NEMA 4X
Temperature		-30 to +50 deg.	-40 to +60 deg.	-40 to +60 deg.
Power Source		PoE	PoE	PoE
Dehumidification device		—	—	—
Other Functions		EN50155, EN50121	MIL-STD-810G EN50155-T3, EN50121, EN45545, EN50498, ECE-R10	MIL-STD-810G EN50155-T3, EN50121, EN45545, EN50498, ECE-R10

(*1) : with Simple Full-HD mode(tentative name)

Network Camera Comparison chart		Fixed Dome				
Indoor / Outdoor		Indoor				
Model Name		WV-SFN631L	WV-SFN531	WV-SFN130	WV-SFN110	WV-SF132
Appearance		 Onvif® S G	 Onvif® S G Limited quantity	 Onvif® S G	 Onvif® S G	 Onvif® S
Sensor		1/3 MOS	1/3 MOS	1/3 MOS	1/3 MOS	1/5 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4	4	2
	JPEG multi stream	6 (Variable)	6 (Variable)	6 (Variable)	6 (Variable)	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR (V1.52) / AVBR	VBR / AVBR	VBR / AVBR	VBR / AVBR	AVBR (V1.80)
	Smart Coding	Yes	Yes	Yes	Yes	—
Max. Resolution	16 : 9	1920 x 1080	1920 x 1080	1920 x 1080	1280 x 720	640 x 360
	4 : 3	2048 x 1536 (*1)	2048 x 1536 (*1)	2048 x 1536 (*1)	1280 x 960	640 x 480
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (1080p)	30fps (1080p)	30fps (720p)	30fps (VGA)
	JPEG	30fps (3 MP) (*1)	30fps (3 MP) (*1)	30fps (1080p)	30fps (720p)	30fps (VGA)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD	Super Dynamic	Super Dynamic	BLC
Color/BW		Yes (ICR)	Yes (ICR)	Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	—	—	—
Min. Illumination	Color	0.04 lx @F1.3	0.07 lx @F1.6	0.1 lx @F2.3	0.04 lx @F2.3	2.0 lx @F2.9
	Color (Sens up)	0.003 lx (16x)	0.005 lx (16x)	0.007 lx (16x)	0.003 lx (16x)	0.3 lx (16x)
	B/W	0.0 lx @F1.3 (w/IR)	0.01 lx @F1.6	0.08 lx @F2.3	0.03 lx @F2.3	1.3 lx @F2.9
	B/W (Sens up)	—	0.0007 lx (16x)	0.005 lx (16x)	0.002 lx (16x)	0.16 lx (16x)
Lens		f = 2.8 to 10 mm, F1.3 Motorized	f = 2.8 to 9.5 mm, F1.6	f = 2.8 mm, F2.3	f = 2.8 mm, F2.3	f = 1.95 mm, F2.9
Angular field of view	16 : 9	H : 29.3 to 104.1 deg. V : 16.2 to 56.8 deg.	H : 32 to 110 deg. V : 18 to 60 deg.	H : 108 deg. V : 60 deg.	H : 100 deg. V : 55 deg.	H : 104 deg. V : 68 deg.
	4 : 3	H : 24.0 to 85.5 deg. V : 18.0 to 63.3 deg.	H : 27 to 91 deg. V : 20 to 66 deg.	H : 89 deg. V : 66 deg.	H : 100 deg. V : 73 deg.	H : 68 deg. V : 53 deg.
Adjusting Angle	Pan	-180 to +180 deg.	-240 to +120 deg.	-20 to +20 deg.	-20 to +20 deg.	-20 to +20 deg.
	Tilt	0 to +85 deg.	-85 to +85 deg.	-20 to +90 deg.	-20 to +90 deg.	-20 to +90 deg.
Optical Zoom		3.6x	3.3x	—	—	—
Digital Zoom		4x	4x	4x	4x	4x
Image Stabilizer		—	—	—	—	—
Corridor Mode		—	—	—	—	—
IA (Intelligent Auto)		—	—	—	—	—
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type2)	Yes (Type2)	Yes (Type2)	Yes (Type2)	—
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)	Yes (8-areas)	Yes (1-area)
Max. Connection		14	14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	— / —	— / —	— / —
	In (Built-in MIC)	—	—	Yes	Yes	—
	Codec	G.711 / G.726 / AAC	G.711 / G.726 / AAC	G.711 / G.726 / AAC (*2)	G.711 / G.726 / AAC (*2)	—
	Audio Detection Alarm	Yes	Yes	Yes	Yes	—
SD memory Card	Slot	Yes (SDXC x 2)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	—
	Password & Alter Detection	Yes (V1.52)	Yes	Yes	Yes	—
	Audio REC	Yes	Yes	Yes	Yes	—
External I/O		Yes (3) (*3)	Yes (3) (*3)	—	—	—
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	—	—	—
Vandal Resistant		—	—	—	—	—
Water and Dust Resistance		—	—	—	—	—
Temperature		-10 to +50 deg.	-10 to +50 deg.	0 to +40 deg.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	PoE	PoE	PoE
Dehumidification device		—	—	—	—	—
Other Functions		Smart-DoF, Built-in IR LED	—	—	—	—

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart			360-degree Dome	
Indoor / Outdoor			Outdoor	
Model Name			WV-SFV481	WV-SW458 / WV-SW458MA(*1)
Appearance			 Onvif® S G	 Onvif® S
Sensor			1/2 MOS	1/3 MOS
Codec and Transmission	Video Codec		H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream		2	2
	JPEG multi stream		2	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR / AVBR	AVBR (V1.40)
	Smart Coding		Yes	—
Max. Resolution	16 : 9		2560 x 1440	1920 x 1080
	4 : 3		2560 x 1920 2992 x 2992 (1 : 1)	H.264 : 1280 x 960 2048 x 1536
Max. FPS @Max. Resolution	H.265 / H.264		30fps (4 M)	30fps (1080p)
	JPEG		30fps (4 M)	15fps (3 MP) / 30fps (1080p)
Super Dynamic / WDR / BLC			WDR	Super Dynamic
Color/BW			Yes (ICR)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			ABF	—
Min. Illumination	Color		0.3 lx @F1.9	1.5 lx @F2.4
	Color (Sens up)		0.02 lx (16x)	0.1 lx (16x)
	B/W		0.04 lx @F1.9	1.2 lx @F2.4
	B/W (Sens up)		0.003 lx (16x)	0.08 lx (16x)
Lens			f = 1.38 mm, F1.9	f = 0.837 mm, F2.4
Angular field of view	1 : 1		H : 180 deg. V : 180 deg.	H : 182 deg. V : 176 deg.
Adjusting Angle	Pan		±45 deg.	—
	Tilt		±45 deg.	—
Optical Zoom			—	—
Digital Zoom			4x	4x
Image Stabilizer			—	—
Corridor Mode			—	—
iA (Intelligent Auto)			—	—
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			Yes (Type3)	—
VIQS			Yes (8-areas)	Yes (2-areas)
Max. Connection			14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes
	In (Built-in MIC)		—	—
	Codec		G.711 / G.726 / AAC	G.711 / G.726
	Audio Detection Alarm		—	—
SD memory Card	Slot		Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection		—	—
	Audio REC		Yes	—
External I/O			Yes (3) (*2)	Yes (3) (*3)
Monitor Out			Yes (RCA)	—
Vandal Resistant			50J, IK10	50J, IK10
Water and Dust Resistance			IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature			-40 to +50 deg.	-40 to +50 deg.
Power Source			12 V DC / PoE	12 V DC / PoE
Dehumidification device			Yes	Yes
Other Functions			360° monitoring, EN50155-T3, EN50121, DIN5510, EN50121, DIN5510	360° monitoring, EN50155-T3, EN50121, DIN5510, ECE-R10(WV-SW458MA)

(*1) : WV-SW458 : 10BASE-T/100BASE-TX, RJ45 connector, WV-SW458MA : 10BASE-T/100BASE-TX, M12 connector (*2) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)
(*3) : Alarm In1, Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart			360-degree Dome		
Indoor / Outdoor			Indoor		
Model Name			WV-SFN480	WV-SF448	WV-SF438
Appearance			 Onvif® S G	 Onvif® S	 Onvif® S
Sensor			1/2 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec		H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream		2	2	2
	JPEG multi stream		2	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)		VBR / AVBR	AVBR (V1.40)	AVBR (V1.40)
	Smart Coding		Yes	—	—
Max. Resolution	16 : 9		2560 x 1440	1920 x 1080	1920 x 1080
	4 : 3		2560 x 1920 2992 x 2992 (1 : 1)	H.264 : 1280 x 960 2048 x 1536	H.264 : 1280 x 960 2048 x 1536
Max. FPS @Max. Resolution	H.265 / H.264		30fps (4 M)	30fps (1080p)	30fps (1080p)
	JPEG		30fps (4 M)	15fps (3 MP) / 30fps (1080p)	15fps (3 MP) / 30fps (1080p)
Super Dynamic / WDR / BLC			WDR	Super Dynamic	Super Dynamic
Color/BW			Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist			ABF	—	—
Min. Illumination	Color		0.3 lx @F1.9	1.5 lx @F2.4	1.5 lx @F2.4
	Color (Sens up)		0.02 lx (16x)	0.1 lx (16x)	0.1 lx (16x)
	B/W		0.2 lx @F1.9	1.2 lx @F2.4	1.2 lx @F2.4
	B/W (Sens up)		0.01 lx (16x)	0.08 lx (16x)	0.08 lx (16x)
Lens			f = 1.38 mm, F1.9	f = 0.837 mm, F2.4	f = 0.837 mm, F2.4
Angular field of view	1 : 1		H : 180 deg. V : 180 deg.	H : 182 deg. V : 176 deg.	H : 188 deg. V : 181 deg.
Adjusting Angle	Pan		±45 deg.	—	—
	Tilt		±45 deg.	—	—
Optical Zoom			—	—	—
Digital Zoom			4x	4x	4x
Image Stabilizer			—	—	—
Corridor Mode			—	—	—
iA (Intelligent Auto)			—	—	—
VMD (Video Motion Detection)			Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)			Yes (Type3)	—	—
VIQS			Yes (8-areas)	Yes (2-areas)	Yes (2-areas)
Max. Connection			14	14	14
Audio	In (Line) / Out		Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)		Yes	Yes	Yes
	Codec		G.711 / G.726 / AAC	G.711 / G.726	G.711 / G.726
	Audio Detection Alarm		—	—	—
SD memory Card	Slot		Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection		—	—	—
	Audio REC		Yes	—	—
External I/O			Yes (3) (*1)	Yes (3) (*2)	Yes (3) (*1)
Monitor Out			Yes (RCA)	—	—
Vandal Resistant			—	IK10	—
Water and Dust Resistance			—	—	—
Temperature			Ceiling / Wall /Mount bracket : -10 to +50 deg. Desktop / Tripod : -10 to +40 deg.	-10 to +50 deg.	-10 to +50 deg.
Power Source			12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device			—	—	—
Other Functions			360° monitoring	360° monitoring, Mechanical shutter	360° monitoring

(*1) : Alarm In1, Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each) (*2) : Alarm In1(Privacy action in), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart		Box		
Indoor / Outdoor		Outdoor		
Model Name		WV-SPV781L	WV-SPW532L	WV-SPW312L
Appearance		 Onvif® S G	 *Only sold in certain areas Onvif® S G	 *Only sold in certain areas Onvif® S G
Sensor		1/1.7 MOS	1/3 MOS	1/3 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	4	4	4
	JPEG multi stream	2	6 (Variable)	6 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR / AVBR	VBR / AVBR
	Smart Coding	Yes	Yes	Yes
Max. Resolution	16 : 9	3840 x 2160	1920 x 1080	1280 x 720
	4 : 3	4000 x 3000	2048 x 1536	1920 x 1080 (*1)
Max. FPS @Max. Resolution	H.265 / H.264	30fps (4K)	30fps (1080p)	30fps (720p)
	JPEG	15fps (12 MP)	30fps (3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		WDR	WDR	WDR
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	ABF
Min. Illumination	Color	0.3 lx @F1.6	0.07 lx @F1.6	0.02 lx @F1.6
	Color (Sens up)	0.02 lx (16x)	0.005 lx (16x)	0.0013 lx (16x)
	B/W	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)
	B/W (Sens up)	—	—	—
Lens		f = 4.2 to 25.2 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6	f = 2.8 to 10 mm, F1.6
Angular field of view	16 : 9	H : 17 to 97 deg. V : 9.4 to 55 deg.	H : 31 to 112 deg. V : 17 to 60 deg.	H : 28 to 102 deg. V : 16 to 55 deg.
	4 : 3	H : 18 to 101 deg. V : 13 to 76 deg.	H : 26 to 91 deg. V : 19 to 67 deg.	H : 28 to 102 deg. V : 21 to 74 deg.
Adjusting Angle	Pan	—	-180 to +180 deg.	-180 to +180 deg.
	Tilt	—	0 to +90 deg.	0 to +90 deg.
Optical Zoom		6x	3.6x	3.6x
Digital Zoom		4x	4x	4x
Image Stabilizer		—	—	—
Corridor Mode		—	—	—
iA (Intelligent Auto)		—	—	—
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	Yes (Type2)	Yes (Type2)
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)
Max. Connection		14	14	14
Audio	In (Line) / Out	Yes / Yes	— / —	— / —
	In (Built-in MIC)	—	—	—
	Codec	G.711 / G.726 / AAC (*2)	—	—
	Audio Detection Alarm	—	—	—
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	—	Yes	Yes
	Audio REC	Yes	—	—
External I/O		Yes (3) (*3)	—	—
Monitor Out		Yes (RCA)	Yes (RCA)	Yes (RCA)
Vandal Resistant		IK10	—	—
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-45 to +50 deg.	-30 to +50 deg.	-30 to +50 deg.
Power Source		12 V DC / PoE	PoE	PoE
Dehumidification device		Yes	—	—
Other Functions		Built-in heater, RainWash coating, Built-in IR LED	Built-in heater, Built-in IR LED	Built-in heater, Built-in IR LED

(*1) : w/Super resolution (*2) : Only for SD REC (*3) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out, Black & White Out) (x1 for each)

Network Camera Comparison chart		Box / Cylinder			
Indoor / Outdoor		Indoor			
Model Name		WV-SPN631	WV-SPN531A	WV-SP105	WV-SP102
Appearance		 Limited quantity Lens not included Onvif® S G	 Limited quantity Lens not included Onvif® S G	 Onvif® S	 Onvif® S
Sensor		1/3 MOS	1/3 MOS	1/3 MOS	1/5 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	4	4	2	2
	JPEG multi stream	6 (Variable)	6 (Variable)	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR / AVBR	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding	Yes	Yes	—	—
Max. Resolution	16 : 9	1920 x 1080	1920 x 1080	1280 x 720	640 x 360
	4 : 3	2048 x 1536 (*1)	2048 x 1536	1280 x 960	640 x 480
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (1080p)	30fps (1.3 MP)	30fps (VGA)
	JPEG	30fps (3 MP) (*1)	30fps (3 MP)	30fps (1.3 MP)	30fps (VGA)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD	BLC	BLC
Color/BW		Yes (ICR)	Yes (ICR)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF	—	—
Min. Illumination	Color	0.04 lx @F1.4	0.04 lx @F1.4	0.8 lx @F2.2	2.0 lx @F2.0
	Color (Sens up)	0.003 lx (16x)	0.003 lx (16x)	0.05 lx (16x)	0.3 lx (8x)
	B/W	0.01 lx @F1.4	0.01 lx @F1.4	0.4 lx @F2.2	1.3 lx @F2.0
	B/W (Sens up)	0.0007 lx (16x)	0.0007 lx (16x)	0.03 lx (16x)	0.16 lx (8x)
Lens		CS Mount	CS Mount	f = 3.54 mm, F2.2	f = 2 mm, F2.0
Angular field of view	16 : 9	—	—	H : 70.3 deg. V : 42.6 deg.	H : 66.9 deg. V : 39.2 deg.
	4 : 3	—	—	H : 70.3 deg. V : 55.4 deg.	H : 66.9 deg. V : 52.3 deg.
Adjusting Angle	Pan	—	—	—	—
	Tilt	—	—	—	—
Optical Zoom		—	—	—	—
Digital Zoom		4x	4x	4x	4x
Image Stabilizer		—	—	—	—
Corridor Mode		—	—	—	—
iA (Intelligent Auto)		—	—	—	—
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)	Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type2)	Yes (Type2)	—	—
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (1-area)	Yes (1-area)
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	— / —	— / —
	In (Built-in MIC)	—	—	—	—
	Codec	G.711 / G.726 / AAC	G.711 / G.726 / AAC	—	—
	Audio Detection Alarm	Yes	Yes	—	—
SD memory Card	Slot	Yes (SDXC x 2)	Yes (SDXC)	—	—
	Password & Alter Detection	Yes	Yes	—	—
	Audio REC	Yes	Yes	—	—
External I/O		Yes (3) (*2)	Yes (3) (*3)	—	—
Monitor Out		Yes (RCA)	Yes (RCA)	—	—
Vandal Resistant		—	—	—	—
Water and Dust Resistance		—	—	—	—
Temperature		-10 to +50 deg.	-10 to +50 deg.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	12 V DC / PoE	12 V DC / PoE
Dehumidification device		—	—	—	—
Other Functions		Optional Extension Unit	—	—	—

(*1) : w/Super resolution (*2) : Alarm In1(Black & white In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each) (*3) : Alarm In1(Black & white In, Auto time adjustment), Alarm In 2(Alarm Out), Alarm In 3(AUX Out) (x1 for each)

Network Camera Comparison chart		Pan / Tilt		
Indoor / Outdoor		Outdoor		
Model Name		WV-SW175	WV-SW174W	WV-SW172
Appearance		 ONVIF® S	 ONVIF® S	 ONVIF® S
Sensor		1/4 MOS	1/4 MOS	1/4 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	2	2	2
	JPEG multi stream	6	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding	—	—	—
Max. Resolution	16 : 9	1280 x 720	1280 x 720	640 x 360
	4 : 3	1280 x 960	1280 x 960	800 x 600
Max. FPS @Max. Resolution	H.265 / H.264	30fps (1.3 MP)	30fps (1.3 MP)	30fps (SVGA)
	JPEG	30fps (1.3 MP)	30fps (1.3 MP)	30fps (SVGA)
Super Dynamic / WDR / BLC		WDR	WDR	WDR
Color/BW		Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		—	—	—
Min. Illumination	Color	0.6 lx @F2.2	0.6 lx @F2.2	0.6 lx @F2.2
	Color (Sens up)	0.038 lx (16x)	0.038 lx (16x)	0.038 lx (16x)
	B/W	0.5 lx @F2.2	0.5 lx @F2.2	0.5 lx @F2.2
	B/W (Sens up)	0.03 lx (16x)	0.03 lx (16x)	0.03 lx (16x)
Lens		f = 1.95 mm, F2.2	f = 1.95 mm, F2.2	f = 1.95 mm, F2.2
Angular field of view	16 : 9	H : 85 deg. V : 53 deg.	H : 85 deg. V : 53 deg.	H : 85 deg. V : 53 deg.
	4 : 3	H : 85 deg. V : 68 deg.	H : 85 deg. V : 68 deg.	H : 85 deg. V : 68 deg.
Pan	Range	-47.5 to +47.5 deg.	-47.5 to +47.5 deg.	-47.5 to +47.5 deg.
	Speed	80 deg/sec	80 deg/sec	80 deg/sec
Tilt	Range	-45 to +10 deg.	-45 to +10 deg.	-45 to +10 deg.
	Speed	80 deg/sec	80 deg/sec	80 deg/sec
360 Pan-Flip		—	—	—
Number of Preset Positions		64	64	64
Patrol		—	—	—
Auto Tracking		—	—	—
Optical Zoom		—	—	—
Digital Zoom		8x	8x	8x
VMD (Video Motion Detection)		Yes	Yes	Yes
i-VMD (Intelligent VMD) (w/optional extension software)		—	—	—
VIQS		—	—	—
Max. Connection		14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	Yes	Yes	Yes
	Codec	G.711 / G.726	G.711 / G.726	G.711 / G.726
	Audio Detection Alarm	—	—	—
SD memory Card	Slot	Yes (SDHC)	—	Yes (SDHC)
	Password & Alter Detection	—	—	—
	Audio REC	—	—	—
External I/O		Yes (3) (*1)	Yes (3) (*1)	Yes (3) (*1)
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	Yes (mini-jack)
Vandal Resistant		—	—	—
Water and Dust Resistance		IP55	IP55	IP55
Temperature		-20 to +50 deg.	-20 to +50 deg.	-20 to +50 deg.
Power Source		12 V DC / PoE	12 V DC	12 V DC / PoE
Dehumidification device		—	—	—
Other Functions		—	Wireless (11 n/b/g)	—

(*1) : Alarm In1, Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Network Camera Comparison chart		Pan / Tilt			
Indoor / Outdoor		Indoor			
Model Name		WV-ST165	WV-ST162	BL-VT164W	BL-VT164
Appearance		 ONVIF® S	 ONVIF® S	 ONVIF® S	 ONVIF® S
Sensor		1/4 MOS	1/4 MOS	1/4 MOS	1/4 MOS
Codec and Transmission	Video Codec	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG	H.264 / JPEG
	H.265 / H.264 multi stream	2	2	2	2
	JPEG multi stream	6	6	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding	—	—	—	—
Max. Resolution	16 : 9	1280 x 720	640 x 360	1280 x 720	1280 x 720
	4 : 3	1280 x 960	800 x 600	800 x 600	800 x 600
Max. FPS @Max. Resolution	H.265 / H.264	30fps (1.3 MP)	30fps (SVGA)	30fps (1 MP)	30fps (1 MP)
	JPEG	30fps (1.3 MP)	30fps (SVGA)	30fps (1 MP)	30fps (1 MP)
Super Dynamic / WDR / BLC		WDR	WDR	BLC	BLC
Color/BW		Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		—	—	—	—
Min. Illumination	Color	0.6 lx @F2.2	0.6 lx @F2.2	0.9 lx @F2.8	0.9 lx @F2.8
	Color (Sens up)	0.038 lx (16x)	0.038 lx (16x)	0.06 lx (16x)	0.06 lx (16x)
	B/W	0.5 lx @F2.2	0.5 lx @F2.2	0.6 lx @F2.8	0.6 lx @F2.8
	B/W (Sens up)	0.03 lx (16x)	0.03 lx (16x)	0.04 lx (16x)	0.04 lx (16x)
Lens		f = 1.95 mm, F2.2	f = 1.95 mm, F2.2	f = 3.6 mm, F2.8	f = 3.6 mm, F2.8
Angular field of view	16 : 9	H : 85 deg. V : 53 deg.	H : 85 deg. V : 53 deg.	H : 57 deg. V : 34 deg.	H : 57 deg. V : 34 deg.
	4 : 3	H : 85 deg. V : 68 deg.	H : 85 deg. V : 68 deg.	H : 44 deg. V : 34 deg.	H : 44 deg. V : 34 deg.
Pan	Range	-47.5 to +47.5 deg.	-47.5 to +47.5 deg.	-41 to +41 deg.	-41 to +41 deg.
	Speed	80 deg/sec	80 deg/sec	50 deg/sec	0.5 to 50 deg/sec
Tilt	Range	-45 to +10 deg.	-45 to +10 deg.	-32 to +10 deg.	-32 to +10 deg.
	Speed	80 deg/sec	80 deg/sec	50 deg/sec	0.5 to 50 deg/sec
360 Pan-Flip		—	—	—	—
Number of Preset Positions		64	64	64	64
Patrol		—	—	—	—
Auto Tracking		—	—	—	—
Optical Zoom		—	—	—	—
Digital Zoom		8x	8x	8x	8x
VMD (Video Motion Detection)		Yes	Yes	Yes	Yes
i-VMD (Intelligent VMD) (w/optional extension software)		—	—	—	—
VIQS		—	—	—	—
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	— / Yes (*1)	— / Yes (*1)
	In (Built-in MIC)	Yes	Yes	Yes	Yes
	Codec	G.711 / G.726	G.711 / G.726	G.711 / G.726	G.711 / G.726
	Audio Detection Alarm	—	—	—	—
SD memory Card	Slot	Yes (SDHC)	Yes (SDHC)	—	—
	Password & Alter Detection	—	—	—	—
	Audio REC	—	—	—	—
External I/O		Yes (3) (*2)	Yes (3) (*2)	Yes (3) (*2)	Yes (3)(*2)
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	—	—
Vandal Resistant		—	—	—	—
Water and Dust Resistance		—	—	—	—
Temperature		0 to +40 deg.	0 to +40 deg.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	12 V DC / PoE	9 V DC	9 V DC
Dehumidification device		—	—	—	—
Other Functions		—	—	Wireless (11 b/g) WPS, Body heat Sensor, AC Adapter	Body heat Sensor, AC Adapter

(*1) : Built-in speaker (*2) : Alarm In1, Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)

Optional Accessories Compatibility with Network Cameras									
Outdoor Indoor	Bracket				Dome Cover		Other		
	Wall Mount Bracket	Ceiling Mount Bracket	Other Mount Bracket	Ceiling Mount Bracket (Embedded)	Smoke	Clear			
WV-X8570N (Light gray)	WV-Q187 (Light gray) 		Pole Mount Bracket WV-Q182 (Light gray) (*2) WV-Q188 (Fine silver) (*3)   Light gray Fine silver						
WV-S8530N (Light gray)	WV-Q185 (Light gray) (*1) WV-Q122A (Fine silver) (*1) 		Corner Mount Bracket WV-Q183 (Light gray) (*2) WV-Q189 (Fine silver) (*3)   Light gray Fine silver						
WV-SFV781L (Light gray)	Light gray 		Light gray Fine silver						
WV-X6531NS (Metallic silver)	WV-Q122AS (Heavy salt damage resistance)	WV-Q121BS (Heavy salt damage resistance)							
WV-X6531N (Natural silver)	WV-Q185 (Light gray) WV-Q122A (Fine silver)	WV-Q121B 	Pole Mount Bracket WV-Q182 (Light gray) (*2) WV-Q188 (Fine silver) (*3)   Light gray Fine silver						
WV-X6511N (Natural silver)			Corner Mount Bracket WV-Q183 (Light gray) (*2) WV-Q189 (Fine silver) (*3)   Light gray Fine silver						
WV-S6530N (Natural silver)									
WV-SW598A (Natural silver)	Light gray 								
WV-SW397B (Natural silver)									
WV-SW395(A) (Natural silver)	Fine silver 			Light gray Fine silver					
WV-S6131 (Sail white)	WV-Q119 			WV-Q126A 	WV-CS5S 	WV-CS5C 			
WV-S6111 (Sail white)									
WV-SC588A (Sail white)									
WV-SC387A (Sail white)									
	WV-Q158S (Smoke) WV-Q158C (Clear)  Smoke type	WV-Q105A 		WV-Q159S (Smoke) WV-Q159C (Clear)  Smoke type	WV-Q160S (Smoke) WV-Q160C (Clear)  Smoke type		Inner Cover WV-Q161 		
WV-SC385 (Fine silver)	WV-Q154S (Smoke) WV-Q154C (Clear) 			WV-Q155S (Smoke) WV-Q155C (Clear)  Smoke type	WV-Q156S (Smoke) WV-Q156C (Clear)  Smoke type		Inner Cover WV-Q157 		
WV-SC384 (Fine silver)	Smoke type 								
WV-S2550L (Light gray)	WV-Q186 (Light gray) (*2) WV-Q124 (Fine silver) (*3)   Light gray Fine silver	WV-Q186 (Light gray) WV-Q124 (Fine silver)  Fine silver	Pole Mount Bracket WV-Q182 (Light gray) (*2)(*5) WV-Q188 (Fine silver) (*3)(*6)   Light gray Fine silver	WV-Q169A (*4) 	WV-CW7S WV-CW7SN (ClearSight coating) 	WV-CW7CN (ClearSight coating) 			
WV-S2531LTN (Light gray)	WV-Q185 (Light gray) (*5) WV-Q122A (Fine silver) (*6)	WV-Q121B 	Corner Mount Bracket WV-Q183 (Light gray) (*2)(*5) WV-Q189 (Fine silver) (*3)(*6)   Light gray Fine silver				Sun Shade WV-Q7118 		
WV-S2531LN (Light gray)									
WV-S2511LN (Light gray)	Light gray 	WV-Q105A (*4) 							
WV-SFV631LT (Light gray)									
WV-SFV531 (Light gray)	Fine silver 								
WV-SUD638 (Natural silver)								IR LED unit WV-SUD6FRL1 (Natural silver) WV-SUD6FRL-H (Gray) WV-SUD6FRL-T (Brown)  Natural silver	
WV-SUD638-H (Gray)									
WV-SUD638-T (Brown)									

(*1) : This bracket requires WV-Q187. (*2) : This bracket requires WV-Q185. (*3) : This bracket requires WV-Q122A. (*4) : For Indoor installation only (*5) : This bracket requires WV-Q186. (*6) : This bracket requires WV-Q124.

Optional Accessories Compatibility with Network Cameras									
Outdoor Indoor	Bracket				Dome Cover		Other		
	Wall Mount Bracket	Ceiling Mount Bracket	Other Mount Bracket	Ceiling Mount Bracket (Embedded)	Smoke				
WV-S2250L (Sail white)		WV-Q105A 					WV-CR1S 		
WV-S2231L (Sail white)									
WV-S2211L (Sail white)									
WV-S2131L (Sail white)									
WV-S2131 (Sail white)							WV-Q174B 		
WV-S2130 (Sail white)							WV-CF5SA 		
WV-S2111L (Sail white)									
WV-S2110 (Sail white)									
WV-SFN631L (Sail white)									
WV-SFN531 (Sail white)									
WV-SFV130(M) (Light gray)									
WV-SFV110(M) (Light gray)									
WV-SW155 (Light gray)							WV-CW6SA 		
WV-SFN130 (Sail white)									
WV-SFN110 (Sail white)									
WV-SF132 (Sail white)									
WV-X4571L (Light gray)	WV-Q186 (Light gray) (*2) WV-Q124 (Fine silver) (*3)   Light gray Fine silver	WV-Q186 (Light gray) WV-Q124 (Fine silver)  Fine silver	Pole Mount Bracket WV-Q182 (Light gray) (*2)(*5) WV-Q188 (Fine silver) (*3)(*6)   Light gray Fine silver						
WV-S4550L (Light gray)	WV-Q185 (Light gray) (*5) WV-Q122A (Fine silver) (*6)   Light gray Fine silver	WV-Q121B 	Corner Mount Bracket WV-Q183 (Light gray) (*2)(*5) WV-Q189 (Fine silver) (*3)(*6)   Light gray Fine silver						
WV-SFV481 (Light gray)	Light gray  Fine silver 								
WV-SW458 (Light gray)									
WV-X4171 (Sail white)		WV-Q105A 							
WV-X4170 (Sail white)									
WV-S4150 (Sail white)									
WV-SFN480 (Sail white)									
WV-SF448 (Sail white)									
WV-SF438 (Sail white)									
WV-S1550L (Metallic silver)			Pole Mount Bracket WV-Q188 (Fine silver)  Fine silver						Front Panel WV-CW8CN (Clear, ClearSight coating) 
WV-S1531LTN (Metallic silver)									
WV-S1531LN (Metallic silver)									
WV-S1511LN (Metallic silver)			Corner Mount Bracket WV-Q189 (Fine silver)  Fine silver						
WV-SPV781L (Metallic silver)									
WV-SPW532L (Light gray)									
WV-SPW312L (Light gray)									
WV-SPN631 (Sail white)							IR LED unit WV-SPN6FRL1 		

★ WV-Q185, WV-Q122A, WV-Q186, WV-Q124, WV-Q182, WV-Q188, WV-Q183, WV-Q189 : The brackets are available in two colors, fine Silver and light gray. It is possible to use them in the different color combination.

Network Products

Network Video Recorders

i-PRO EXTREME

TURBO-RAID Network Disk Recorder

WJ-NX400

(120 V AC: NTSC, 220-240 V AC: PAL)

Additional Camera kits : **WJ-NXE40, WJ-NXE40W**

- **64 ch. expandable to 128 ch.** camera input. Support **H.265 / H.264** mixed recordings.
- **640 Mbps** total through put (including **384 Mbps** recording bandwidth)
- (9) integrated drive-bays **RAID 1 / 5 / 6**
- External storage expansion up to **324 TB**
- Redundant fail-over using 2nd recorder to enable mission-critical recording* *KMS registration is necessary for activation.
- NVR backup important data to NAS devices.* *KMS registration is necessary for activation.
- Symantec device certificates pre-installed *Secure Communication Kits are necessary.
- Built-in GUI and Dual HDMI (4K/FHD) outputs

Example of a Basic Connection System



Optional Accessory

Hard Disk Extension Unit
WJ-HXE400

Power Source	120 V AC, 60 Hz (NTSC) 220 - 240 V AC, 50 Hz (PAL)
Power Consumption	approx. 85 W
Dimensions	430 mm (W) x 132 mm (H) x 413 mm (D) (From Rack Mount Bracket 400 mm) (16-15/16" (W) x 5-3/16" (H) x 16-1/4" (D)) (From Rack Mount Bracket 15-3/4") (excluding rubber feet and projections)
Weight	11 kg (24.3 lbs.) (When no HDD exist) 19.5 kg (43 lbs.) (When 9 HDDs are installed)

i-PRO EXTREME

TURBO-RAID Network Disk Recorder

WJ-NX300

[WJ-NX300K (120 V AC): NTSC] [WJ-NX300K/G (220 - 240 V AC): PAL]

Additional Camera Kits : **WJ-NXE30, WJ-NXE30W**Additional RAID Kits : **WJ-NXR30, WJ-NXR30W**

- 16 ch. expandable to 32 ch. camera input.
Support **H.265 / H.264** mixed recordings.
- 512 Mbps total through put (including 256 Mbps recording bandwidth)
- (4) integrated drive-bays **RAID 1 / 5 / 6**
*Additional RAID Kit license is necessary to use the RAID feature.
- **TURBO-RAID** for quick RAID recovery without sacrificing recording bandwidth and performance
- Built-in GUI and Dual HDMI (4K / FHD) outputs

Optional Accessories

Hard Disk Extension Unit
WJ-HXE400Power Source
120 V AC, 60 Hz (NTSC),
220 - 240 V AC, 50 Hz (PAL)

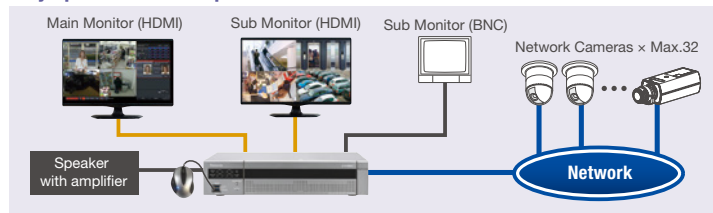
Power Consumption approx. 85 W

Dimensions 430 mm (W) x 132 mm (H) x 413 mm (D) (From Rack Mount Bracket 400 mm)
(16-15/16" (W) x 5-3/16" (H) x 16-1/4" (D)) (From Rack Mount Bracket 15-3/4")
(excluding rubber feet and projections)

Weight 11 kg (24.3 lbs.) (When no HDD exist), 19.5 kg (43 lbs.) (When 9 HDDs are installed)

Rack Mount Bracket
WV-Q202

Easy Operation and Setup without PC

**i-PRO EXTREME**

Network Disk Recorder

WJ-NX200

[WJ-NX200K (120 V AC): NTSC] [WJ-NX200K/G (220 - 240 V AC): PAL]

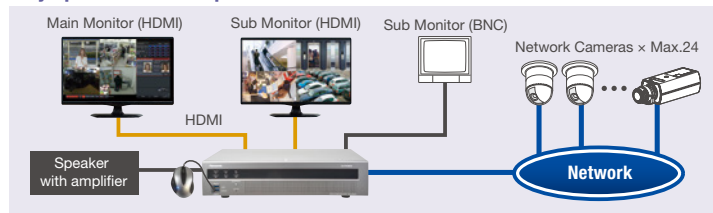
Additional Camera kits : **WJ-NXE20, WJ-NXE20W**

- Significant reduction of storage space usage through **H.265 and Smart Coding**.
- 9 ch. expandable to 16(WJ-NX200K) / 32(WJ-NX200K/G) ch. camera input.
Supports **H.265 / H.264** mixed recordings.
- Quick setup by automatic camera detection and simple setup wizard without the use of PC
- **High-speed copy to USB storage**
- Built-in GUI and Dual HDMI (4K/FHD) outputs

Optional Accessory

Rack Mount Bracket
WV-Q202

Easy Operation and Setup without PC

Secure Communication Kits **WJ-NXS01(W), WJ-NXS04(W), WJ-NXS16(W), WJ-NXS32(W)**

The Secure Communication Kits are license kits to use the security function of the network disk recorder.
Each Secure Communication Kit allows the following number of cameras to be registered.

WJ-NXS01, WJ-NXS01W	WJ-NXS04, WJ-NXS04W	WJ-NXS16, WJ-NXS16W	WJ-NXS32, WJ-NXS32W
1 camera	4 cameras	16 cameras	32 cameras

Network Products

Network Video Recorders

Limited quantity

Network Disk Recorder

WJ-ND400

(120 V AC: NTSC, 220-240 V AC: PAL)



- Up to 64 network cameras can be connected and recorded (Video and Audio)
- Various Recording Mode: Manual, Schedule including Event (Pre/Post), Emergency
- VMD search (works with i-PRO cameras)
- Up to 54 HDD slots with 9 HDD slots in the main unit and five WJ-HDE400 optional Extension Units each with 9 HDD slots
- RAID5 / 6, Embedded OS, Data encryption for reliability

Optional Accessory

Hard Disk Extension Unit
WJ-HDE400

Power Source	120 V AC, 60 Hz (NTSC) 220 - 240 V AC, 50 Hz (PAL)
Power Consumption	approx. 130 W
Dimensions	430 mm (W) x 132 mm (H) x 400 mm (D) (16-15/16" (W) x 5-3/16" (H) x 15-12/16" (D)) (excluding rubber feet and projections)
Weight	13.5 kg (29.8 lbs.) (When no HDD exist), 20 kg (44.1 lbs.) (When 9 HDDs are installed)

Network Disk Recorder

WJ-NV300

(120 V AC: NTSC, 220 V - 240 V AC: PAL)

Additional Camera kit : **WJ-NVE30**

- 16(NTSC) / 9(PAL) network cameras can be connected and recorded as default.
Up to 32* network cameras can be connected and recorded.
- Quick setup by automatic camera detection and simple setup wizard without the use of PC
- Simple mouse operation by new GUI without the use of PC
- HDD capacity is expandable up to 20 HDD slots (2 HDD slots in the main unit and 2 optional WJ-HDE400 Hard Disk Extension Units each with 9 HDD slots).

*Two Additional Camera Kits WJ-NVE30 are necessary.(NTSC) Three Additional Camera Kits WJ-NVE30 are necessary.(PAL)

Optional Accessories

Hard Disk Extension Unit
WJ-HDE400Rack Mount Bracket
WV-Q202

Limited quantity

Network Disk Recorder

WJ-NV200

(120 V AC: NTSC, 220 V - 240 V AC: PAL)



Optional Accessory

Rack Mount Bracket
WV-Q202

Network Products

Additional Business Intelligence Kits

i-PRO EXTREME

Additional Business Intelligence Kit

WJ-NXF02, WJ-NXF02W

Additional Business Intelligence Kits WJ-NXF02, WJ-NXF02W are license kits intended to improve the usefulness of Network Disk Recorder WJ-NX300 / WJ-NX200.

Additional Business Intelligence Kit

WJ-NVF30, WJ-NVF20

Additional Business Intelligence Kits WJ-NVF30, WJ-NVF20 are a license kits intended to improve the usefulness of Network Disk Recorder WJ-NV300 / WJ-NV200.



*To use this product, it is necessary to register the license (Registration Key) for Additional Business Intelligence Kit into the WJ-NX300/WJ-NX200/WJ-NV300/WJ-NV200 in use.

- **New statistical processing functions such as "People counting" and "Face matching / Age & Gender judgment"**
- The number of detected human faces can be displayed on a statistical chart separated by age & gender for a single day or a specified time period.
- Age distribution groups are displayed by separate colors.
- The statistical data can be saved as a CSV file¹ on a USB² or SDHC/SD memory card³, or on a PC connected over a network.

¹: CSV file: A file that can be edited using a spreadsheet software such as Microsoft® Office Excel®²: WJ-NXF02, WJ-NXF02W ³: WJ-NVF30, WJ-NVF20

Network Products

Network Video Decoder

Multi Channel High Definition Video Decoder

WJ-GXD400

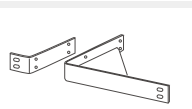
(12 V DC, 100 V ~240 V AC adapter attached)



- Up to 256 cameras, including cameras connected to the i-Pro Network Video Encoder (WJ-GXE500), can be registered
- HDMI interface supporting 1,920 x 1,080 display size
- 1x 4VGA image with 2x VGA images or 6x VGA images can be displayed in multiscreen mode
- Each of VGA images can be displayed at 25 frames/s.
- Up to 64 camera groups can be registered and called up in response to power on, group sequence and schedule program.

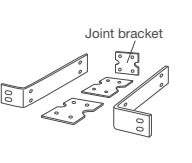
Optional Accessories

EIA 48.26 cm (19 inch)
Rack Mount Bracket
WV-Q204/1S
(for mounting one WJ-GXD400)



EIA 48.26 cm (19 inch)
Rack Mount Bracket
WV-Q204/2S
(for mounting two WJ-GXD400)

*Only 3 pieces of joint brackets are necessary.
One piece of joint bracket will be unnecessary.



Network Products

360-degree Network Microphone

WV-SMR10

(12V DC or PoE)



360-degree Network Microphone
WV-SMR10 with 360-degree
Network Camera WV-SF438

WV-SMR10N3



* WV-SMR10N3 is only sold in certain areas.
Please contact the sales company for details.

Optional Accessories

Ceiling mount bracket
WV-Q105A



Ceiling pendant type
mount bracket
WV-Q117A



- 360-degree audio monitoring**
With microphone arrays, 360-degree audio monitoring from a specified direction is possible.
- Specifying a desired direction on a camera image**
While watching the 360-degree Network Camera image, audio from the desired location can be freely specified by clicking on that location.
- Synchronizing with the Network Disk Recorder**
After recording audio to a Network Disk Recorder*, the sound collecting direction can be specified while playing back the recorded image of the 360-degree Network Camera.
*Models WJ-NX400, WJ-NX300, WJ-NX200, WJ-NV300 and WJ-ND400 are supported
- Can be installed with a 360-degree Network Camera as one unit**
The microphone can be neatly installed in one place by integrating it with a Panasonic 360-degree Network Camera.

System Example



Network Products

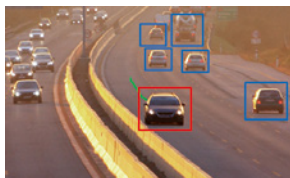
Plug-in Software

Plug-in Software for Vehicle Incident Detection

WV-XAE100W

Camera detects vehicle incidents on the road with video analytics technology.

The camera detects incidents such as wrong-way-driving and stopped vehicles, and then notifies the Traffic Management System of such occurrences by alarm. This enables prompt recognition of incidents without the need for round-the-clock monitoring of multiple camera images.



Wrong-way detection
*The photo is for illustrative purposes only



- Compatible models: WV-X6531NS, WV-X6531N, WV-X6511N

Network Products

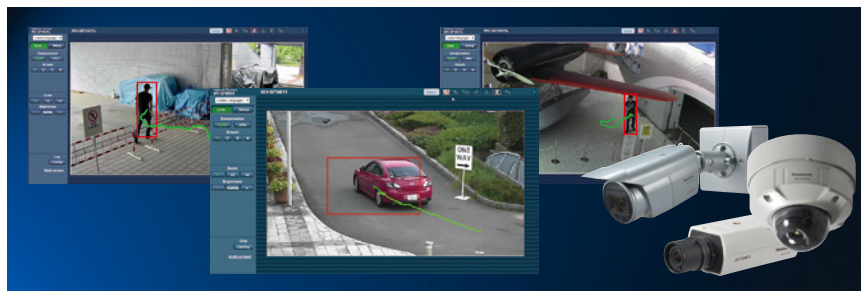
Plug-in Software

Plug-in Software for i-VMD

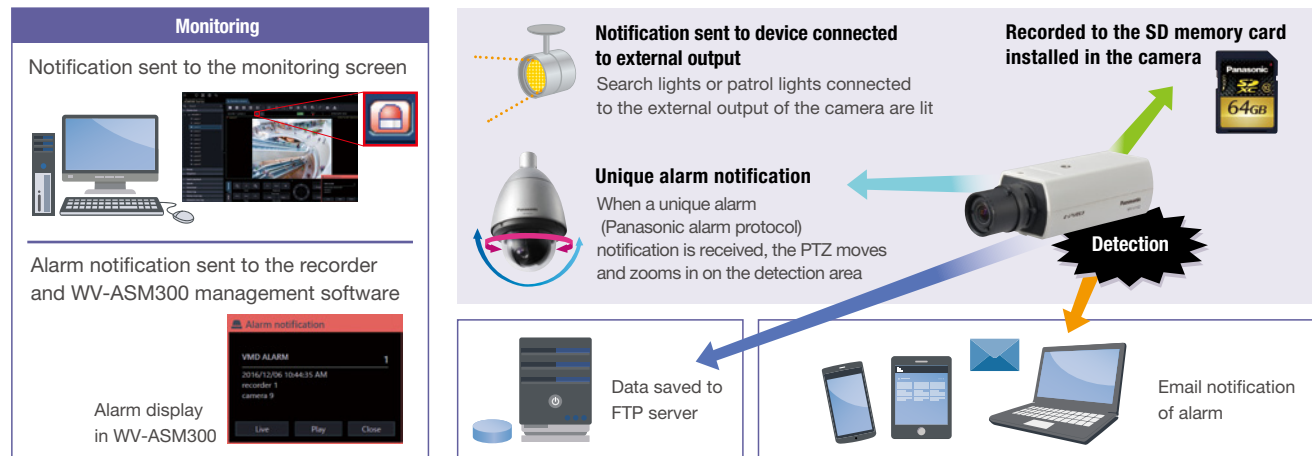
WV-SAE200



WV-SAE200 is plug-in software for activating the i-VMD(Intelligent video motion detection) function and Face Detection function.
Intelligent Video Motion Detection(i-VMD) is possible to detect objects in the specified area by advanced video analysis technology.



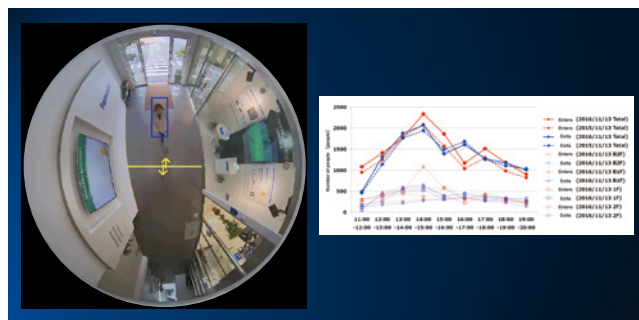
Actions When an Alarm is Detected

**NEW** Extension Software
WV-SAE303W

*This product cannot be used at the same time as i-VMD extension software WV-SAE200W.

Software for solving marketing problems with a 360-degree Dome Camera

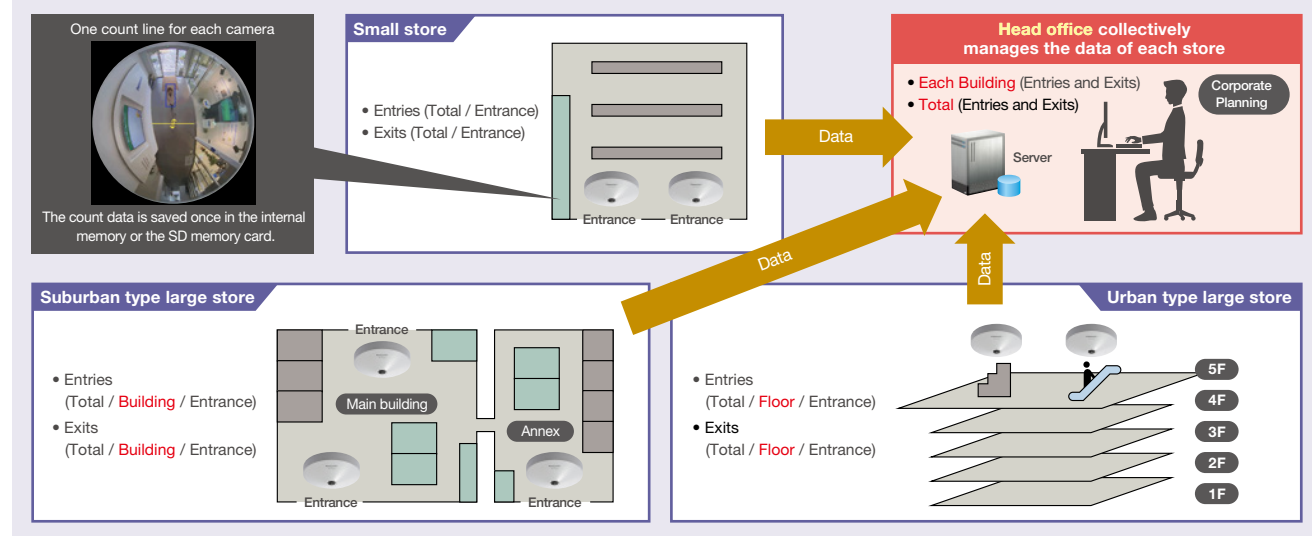
Extension Software WV-SAE303W supports marketing in addition to security and surveillance.
By installing WV-SAE303W in 360-degree Dome Camera, it counts the number of people passing through the line set on the fisheye mode image. It is not necessary to install the surveillance camera and the number counting device individually.
Since it can be realized with only the surveillance camera and WV-SAE303W, it reduces the cost of installation and operation.
The counted data can be automatically output by the People Count Output Tool.



*In some places where people frequently stop or where there is direct sunshine, the people number count accuracy may decrease.
*For other installation conditions, please visit the support website. <https://security.panasonic.com/kms/>

- Compatible models: WV-S4150, WV-X4171, WV-X4571L (Only when used outdoors and without IR-LED.)

- Algorithm development on phenomena particular to exit / entrance such as U-turn and improvement of measurement accuracy.
- Automatically acquires, totalizes, and outputs the people count results of up to 96 360-degree Dome Cameras with the People Count Output Tool.
- Reduction of setup time and high precision people count are realized by the People Count Setting Tool (browser-less setting) tailored exclusively for exit / entrance.



Network Products

Management Software

IP Matrix Server Software

WV-ASC970

IP Matrix Client Software

WV-ASM970

Extension Software

WV-ASE901*(Monitor the status of Fire Alarm System) / **ASE902** / **ASE903** / **ASE904** / **ASE905**

(The pictures above are only for images.)

Optional Accessory

Ethernet System Controller
with 3D-Joystick & Jog/Shuttle
WV-CU950

Easy and smooth integration from analog to IP system

WV-ASC970

- Flexible system design: Analog, IP, and Hybrid analog/IP
- Up to 64 recorders, 1,024 monitors, and 2,048 cameras (in case with encoder) can be registered
- Camera/Sequence/Monitor selection, Camera control and Recorder control can be made with the optional system controller WV-CU950
- Supported Recorders: WJ-NX400 series, WJ-ND400 series, WJ-NV200 series, WJ-NV300 series, WJ-HD616/716 series
- Redundant function supported (Redundant function can consist of 2 WV-ASC970 servers as Main server and Standby server)

Extension Software **WV-ASE901***

- Monitor the status of Fire Alarm System.
- Manually reset or acknowledge fire alarms and faults of Fire Alarm System.
- Search history of fire alarm, faults and interlocking of Fire Alarm System.

*WV-ASE901 is only sold in certain areas.
Please contact the sales company for details.

WV-ASM970

- Multi-Monitor option enables simultaneous use of Operation screen and Monitor screen (1 / 4 / 7 / 9 / 10 / 13 / 16 split) on a dedicated monitor. Two monitor operation is also available.
- Up to 30 ips/camera can be displayed in 16 split-screen in MPEG-4 2 Mbps mode (depending on the camera, camera setup and PC performance).
- Up to 30 ips/camera can be displayed in 16 split-screen in H.264 1.5 Mbps mode with VGA (depending on the camera, camera setup and PC performance).

Extension Software **WV-ASE902**

- Up to 4 live monitor
- Multi monitor function up to 5 PC monitors
- To display the operation window and 4 live windows simultaneously

Extension Software **WV-ASE904**

- Controlling Video Insight server

Extension Software **WV-ASE903**

- Visibility Enhancement Function
- *Same as WV-ASE205 below.

Extension Software **WV-ASE905**

- The cropping function of 4K video.

i-PRO Central Management Software

WV-ASM300

Extension Software

WV-ASE202 / **ASE203** / **ASE204** / **ASE205** / **ASE306**

(System Controller WV-CU950 and monitor displays are optional.)

Optional Accessory

Ethernet System Controller
with 3D-Joystick & Jog/Shuttle
WV-CU950

Easy setting : New WV-ASM300 software enable a whole setting from camera configuration to recorder configuration.

- Up to 100 recorders, 64 encoders and 256 directly connected cameras can be registered. Up to 6,400 cameras registered in the recorders and 256 cameras registered in the encoders are automatically registered in the WV-ASM300 (the number of the cameras depends on the recorder and encoder).
- Encryption of SSL and data encryption support latest "AES-256bit key" strong encryption
- MP4 data direct download from WJ-NX400, WJ-NX200
- When used with WJ-NX400 series, VMD, thumbnail search can be operated.

WV-ASE202

- Expand the maximum numbers of screens to 64.
- Up to 4 live windows.
- Multi-monitor function using up to 6 PC monitors.
- To display the operation window, the map window and the 4 map windows simultaneously.

WV-ASE203

- Expand the maximum numbers of registered recorders, encoders and cameras to 100, 64 and 256 respectively.
- Up to 4 licenses for the WV-ASE203 can be added.

WV-ASE204

- Decoder registration: Up to 10 decoders

WV-ASE205

- Visibility Enhancement Function

Spatial
Tonal CorrectionSnowfall and Rainfall
Noise ReductionMulti-frame Synthesis
Noise ReductionSpatial Tonal Correction ,
Snowfall and
Rainfall Noise ReductionExtension Software **WV-ASE306**

- Controlling Video Insight server

Network Products

Face Server

NEW

Facial Recognition Server Software

WV-ASF950

Additional Camera Kit

1ch : WV-ASFE901 / 4ch : WV-ASFE904

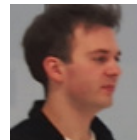
Registration Face Extension Kit

10,000 face : WV-ASF951

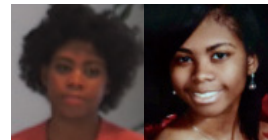
Facial recognition server software using deep learning technology

High performance facial recognition

- High performance Deep Learning facial recognition function distinguishes face orientation, sunglasses, facial aging change

Horizontal range
±45°Vertical range
±30°

Sunglasses



Facial aging change

	WV-ASF950
Range of angles*	Horizontal range : -45° to +45° Vertical range : -30° to +30°
Minimum size of the face image*	30 pixel (Eye Distance : 15 pixel)

*There might be a change of specification.

Cost advantage

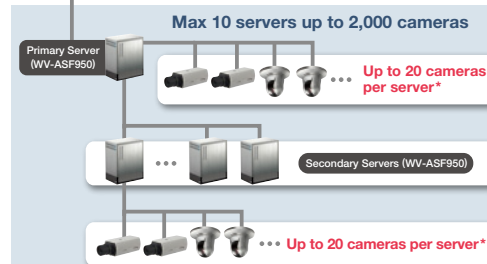
- Up to 20 cameras can be connected to one server. Reduce the system total cost such as server cost, network cost etc.

*The number of cameras that can be connected is determined by the number of people passing and the retention period of the face image.



System scalability

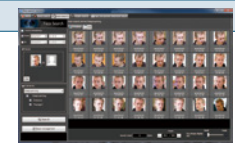
- Up to 30,000 faces can be registered and WV-ASF950 can be used in large facilities.



*The WV-ASF950 includes license for 4 network cameras. To connect more than 5 cameras to the WV-ASF950, purchase WV-ASFE901 or WV-ASFE904 sold separately.

Face search

- Face images that camera detected are stored, and it can be searched later.
- By searching the face database, you can display the result of each cameras in chronological order and find movement locus of persons.
- Specify camera or date in detected face images and display the result in the list in similarity order.



Face Matching

- When it is matched with registered people, alarm of face matching is output in real-time, and display an alarm history in the list.
- Specified screen image can be played back on control monitor with double-clicking on an alarm history.



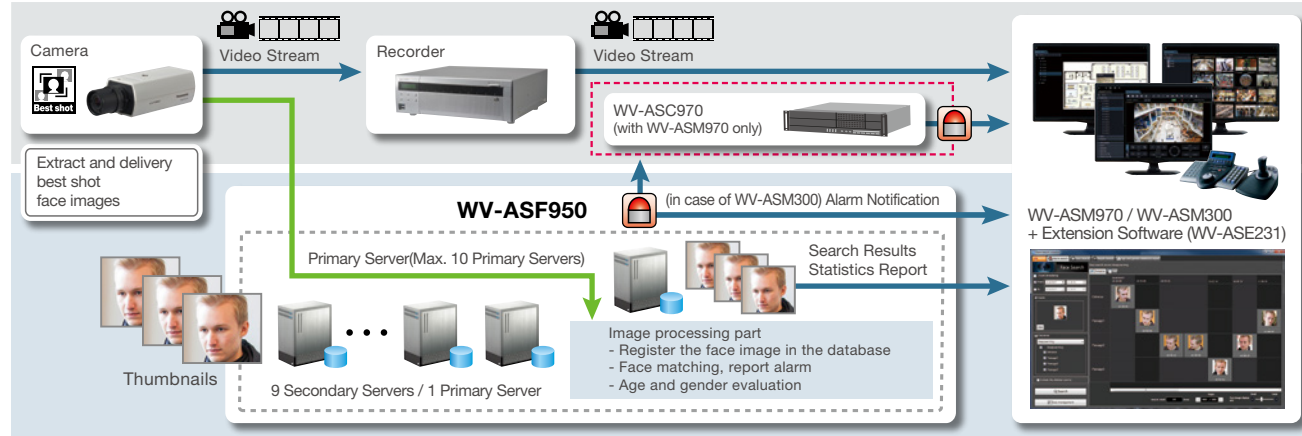
People counting, Age and Gender Statistics

- Count people of detected face and evaluate their age and gender
- Display the result on the screen with statistical graph
- The statistical data can be saved as a CSV file* for analytical use.



*CSV file: A file that can be edited using a spreadsheet software such as Microsoft® Office Excel®

Example of a Basic Connection System



Extension software

WV-ASE231

for WV-ASM970 / WV-ASM300

- To use the WV-ASF950, WV-ASM970, WV-ASM300 with extension software WV-ASE231 is required.
- Extension Software for Facial Recognition Analytics Platform (WV-ASF950)
- Face Matching / Face Search / People counting results display on WV-ASM970 / WV-ASM300 screen
- i-VMD (Intelligent Video Motion Detection) tracking path display on WV-ASM970 / WV-ASM300 screen



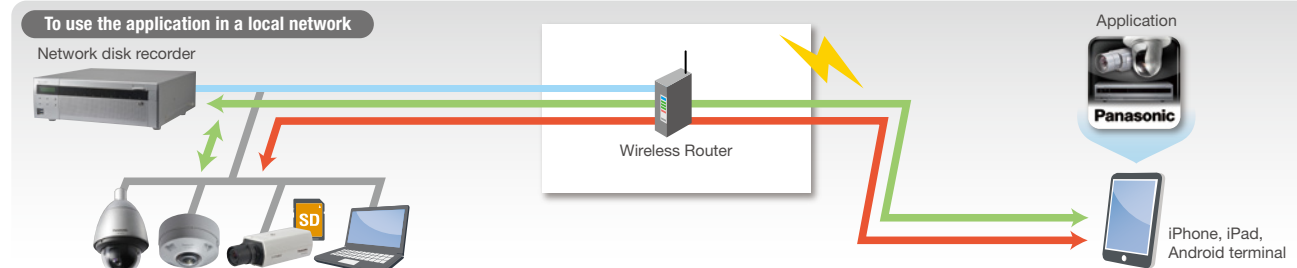
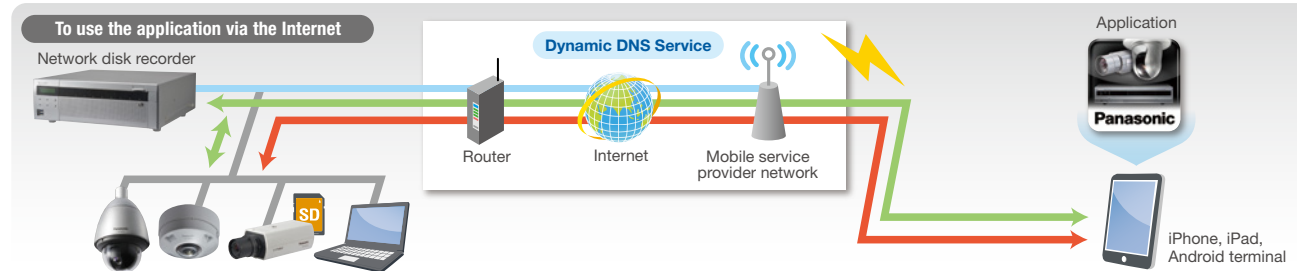
Panasonic Security Viewer

Introduction of the application

Panasonic Security Viewer is an application that can view the images from i-PRO Series Network Cameras, Network Disk Recorder. By connecting a terminal to a 3G/4G or wireless LAN (Wi-Fi), it is possible to view live images from cameras registered on the recorder and recorded images stored on recorders.

Preface

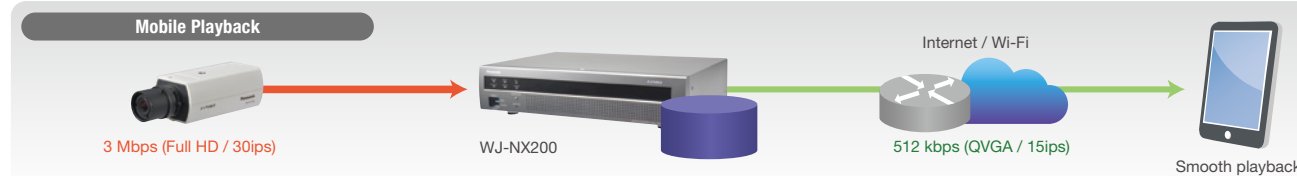
To use the **Panasonic Security Viewer** via the Internet, it is recommended to register in the Dynamic DNS (DDNS) service.



A PC is required to register a Dynamic DNS Service and configure the settings of the router.

Direct Camera connection
• Live monitoring • Playing back in SD memory card.

Via recorder
• Live monitoring • Playback



WJ-NX400 / WJ-NX300 / WJ-NX200 / WJ-NV300 can transcode image size/bit rate to fit the customers environment, and stream it. This mode can be used by WJ-NX400 / WJ-NX300 / WJ-NX200 / WJ-NV300 only.

- Download the Panasonic Security Viewer application on the Google play™ store, Apple App Store.

Features of the application

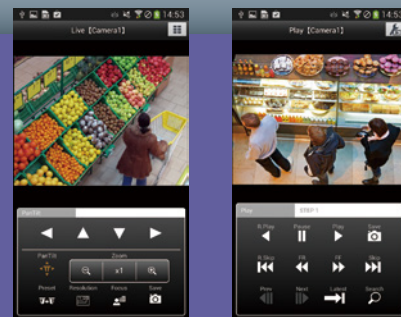
Network disk recorder

- Live image: Live images from the network cameras connected to the recorder
- Playing back recorded images: To play back the images stored on the recorder
- Mobile Playback feature (WJ-NX400 / WJ-NX300 / WJ-NX200 / WJ-NV300)
- Time & date search: To search the images to play back based on the time & date

Network camera

- Network camera control* (Resolution switchover, focus, panning / tilting, zoom, preset position switchover)
- Playing back recorded image in the SD memory card*

*Depends on the network camera functions.



Android™

Outline of the application

OS	Android™ OS 4.0 - 6.0
How to get the application	Download from the Google play™ store.
Operation check terminals	Galaxy S2, Galaxy S3, Galaxy S4, Xperia Z1, Xpeira Z5, Nexus5, Nexus5X, Nexus7, Nexus9, ASUS ZenPad

- Download the application from here.

Android™ <https://security.panasonic.com/android/>

iPhone / iPad

Outline of the application

OS	iOS 8 or later
How to get the application	Download from the App Store.
Operation check terminals	iPhone5, iPhone5S, iPhone6, iPhone6 Plus, iPhone6s, iPhone7, iPhone X, iPad Retina, iPad Air, iPad mini, iPad Pro

- Download the application from here.

iPhone / iPad <https://security.panasonic.com/ios/>

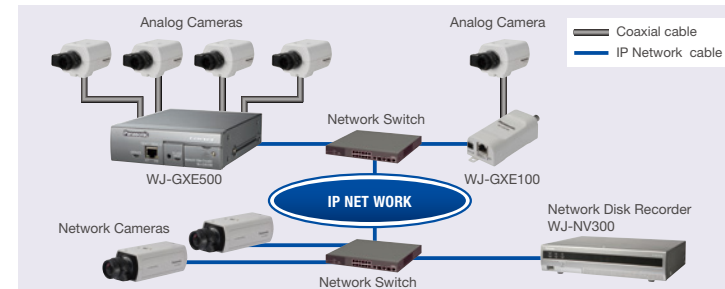
Easily migrate to an advanced IP system while still using the existing assets of your analog system

Effective utilization of analog cameras

Encoder

- Analog cameras can be connected to the IP network simply by connecting them to the encoder.
- A maximum of four analog cameras can be connected to the WV-GXE500, and one analog camera can be connected to the WV-GXE100.
- Video captured by analog cameras can be saved to a recorder installed on the IP network in the same way as network cameras.

Basic System Connection Example



4 CH H.264 Video Encoder

WJ-GXE500

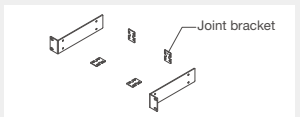
(12 V DC or PoE)

H.264 MPEG-4 JPEG



Optional Accessory

EIA 48.26 cm (19 inch)
Rack Mount Bracket
WV-Q204/2S
(for mounting three
WJ-GXE500)



1 CH H.264 Video Encoder

WJ-GXE100

(12 V DC or PoE)

H.264 JPEG OnVIF™

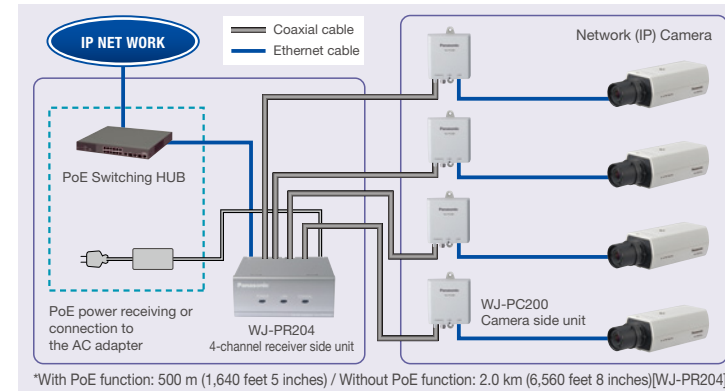


Effective utilization of cabling

Coaxial-LAN Converter

- The coaxial cables of existing analog cameras can be used for expanding the reach of the IP network.

Basic System Connection Example



*With PoE function: 500 m (1,640 feet 5 inches) / Without PoE function: 2.0 km (6,560 feet 8 inches)[WJ-PR204]

Coaxial LAN cables can be used up to distances of 2.0 km.[WJ-PR204]
Power can also be supplied to PoE cameras for distances of up to 500 m, PoE+ cameras for distances of up to 300 m.

*Distance will vary depending on the power supply environment. Please refer to the spec sheet for details.

Coaxial-LAN Converter with PoE function

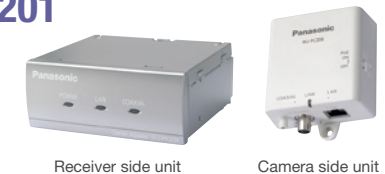
4-channel receiver side unit

WJ-PR204

1-channel receiver side unit

WJ-PR201

(Indoor use only)



Camera side unit
WJ-PC200

Optional Accessory

Rack Mount Connecting Fitting
BY-HCA10A
(for mounting three or
four Receiver side unit)

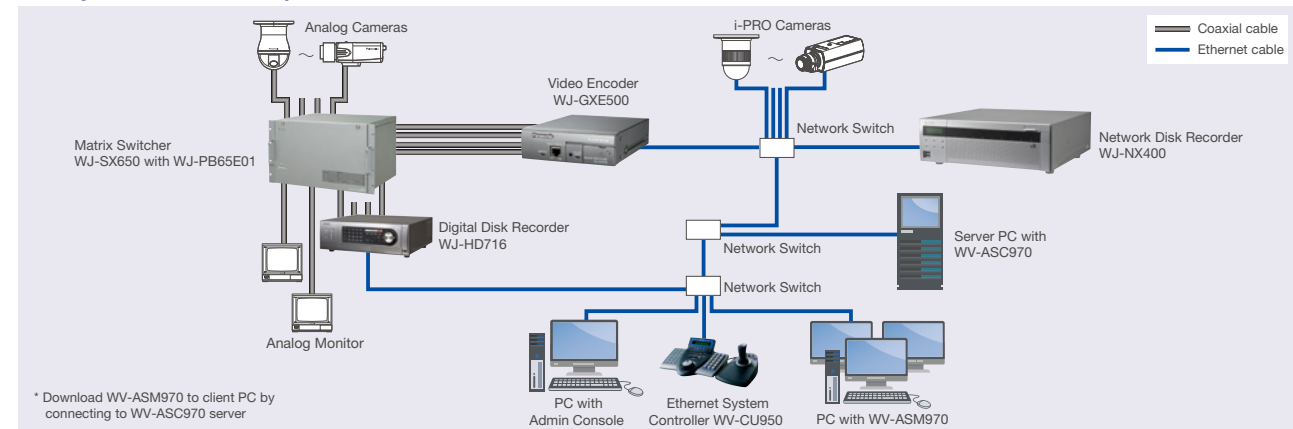
- For U.S. and Canada :
BY-HCA10A
- For Europe and other countries :
BY-HCA10CE



IP and analog integrated hybrid system

- The WV-ASC970/WV-ASM970 can be used to integrate management and operation of centralized systems that use both analog and IP system components.

Basic System Connection Example



* Download WV-ASM970 to client PC by connecting to WV-ASC970 server

This is the Panasonic difference!

With our proven track record of success in both analog and IP cameras, Panasonic can provide a one-stop equipment and system solution for successful migration from analog to IP.

Trademarks and registered trademarks

- "I-PRO EXTREME" logo is trademark or registered trademark of Panasonic Corporation.
- HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC.
- ONVIF and the ONVIF logo are trademarks of ONVIF Inc.
- Symantec, the Symantec Logo, the Checkmark Logo are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries.
- 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 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.
- The same catalog is provided for all countries. Some accessories may not be available in some countries.

Security Cautions

- When using the products in this catalog, take appropriate measures to avoid the following security breaches:
 - Disclosure of private information via the products.
 - Unauthorized use of products by a third party.
 - Interference or suspension of use of products by third party.

- All pictures are simulated.
- Design and specifications are subject to change without notice.

DISTRIBUTED BY :

Panasonic



<https://security.panasonic.com>
<http://www.facebook.com/PanasonicNetworkCamera>

(2B-017AA)