Panasonic

BUSINESS

Security Systems
Intelligent Network Surveillance
Solutions

i-PRO
EXTREME

EXTREME Compr ession

EXTREME Visibility

EXTREME Data Security

EXTREME Reliability

EXTREME Analytics

i-PRO EXTREME

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

EXTREME Concept

New Products

Function Introduction

Network Camera Comparison Chart

Multi-Sensor

PTZ

Fixed Dome

360-degree Dome

Box

Pan/Tilt

Network products

2

3

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

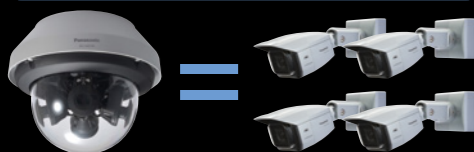## 4 x True 4K high resolution

• 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 × 4 K, it achieved the bit rate lower than the bit rate of one 4K camera of H.264.
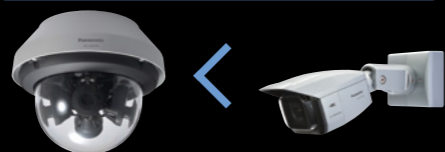
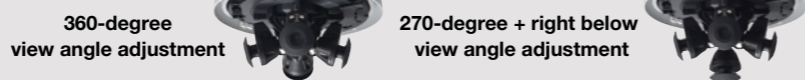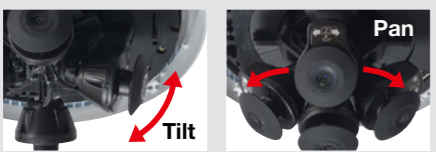| Resolution	Bit rate*

* "H.265 with Smart Coding" provides max.95% reduction in total file size when compared to "H.264 without Smart Coding" but it depends on a scene.

WV-X8570N   WV-SPV781L   WV-X8570N   WV-SPV781L

Wide range tilt angle adjustment mechanism

Tilt   Pan

360-degree view angle adjustment   270-degree + right below view angle adjustment
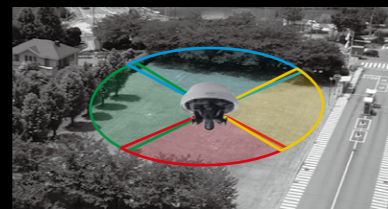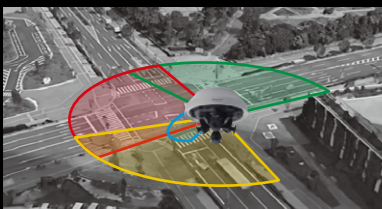
Four repositionable lenses enables to monitoring at minimize blind spots

◉ **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

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Suspicious vehicle can be searched by feature and narrowed down quickly

i-PRO EXTREME

Vehicle Search Server Software
WV-ASV100W

Client Plug-in Software (Genetec / VideoInsight)
WV-ASVC101W

Additional Camera Kit
## 1ch : WV-ASVE101W / 4ch : WV-ASVE104W

Update Software (1 year)
WV-ASVM111W

Searching vehicle from appearance information

• Search by date / time, location, vehicle type, vehicle color, direction, which is often provided by witness of crime or incident.

Time & Date
From   3/23/2018 12:10 PM
To   3/23/2018 12:30 PM
Position
AvonAve/South14thSt

Vehicle Appearance
Type
Color

© **OpenStreetMap** contributors
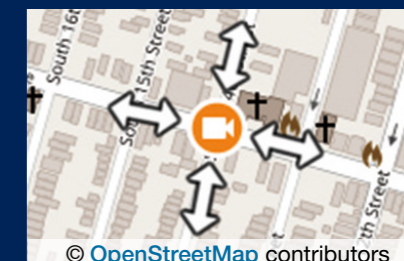
Narrow down from search result list

• 1 click on a thumbnail and Play high resolution image from VMS to confirm.
• The direction of the car is displayed on the map with the playback image and the thumbnail image.

Make out a report including direction information

• In the case management window, manage suspicious candidates and create the report for on-site officer to confirm with witness easily & quickly, such as, by email.

• Select and mark on any candidate. All selected items are easily checked in case management window.

AvonAve/South14thSt
3/23/2018 12:13:57 PM

EXTREME Concept

New Products

Function Introduction

Network Camera Comparison Chart

Multi-Sensor

PTZ

Fixed Dome

360-degree Dome

Box

Pan/Tilt

Network products

These new dome cameras feature EXTREME specs and a compact size perfect for installations with limited space.

i-PRO EXTREME

IR LED Outdoor Compact Dome Camera

WV-S3531L / WV-S3532LM
WV-S3511L / WV-S3512LM

IR LED Indoor Compact Dome Camera

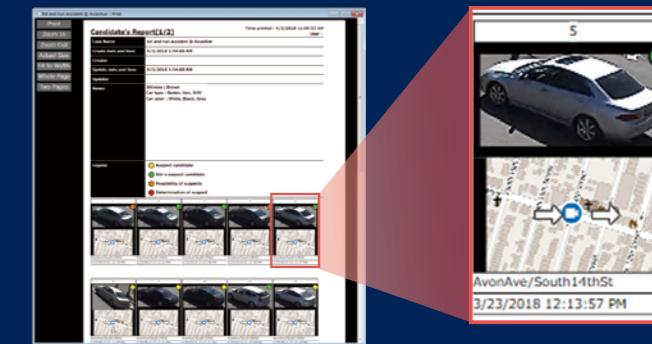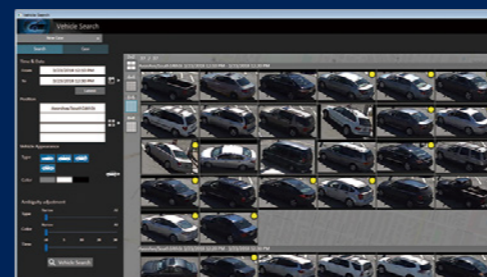## WV-S3131L / WV-S3111L

WV-S3531L   WV-S3131L

Compact & simple design

- Volume ratio 60%. Can be installed even in limited space. (As compared to indoor dome cameras)
- The small, inconspicuous design harmonizes with interiors.

ø109 mm(ø4-9/32˝)

53 mm(2-3/32˝)

SR27 mm (1-1/16˝)

Full-spec performance rivals standard dome cameras

- Performance level of standard dome cameras achieved with Intelligent Auto, Super Dynamic, Color Night Vision, etc.
- Data compression using H.265 + Smart Coding Technology makes it possible to reduce network load and expand recording time.
- The mounting of a 108° wide-angle lens (Full HD model) enables the monitoring of a wide range despite the unit's compact size.
- Even in a 0 lux environment, the movement of people and animals can be captured using an internal IR-LED Light providing even illumination up to a 15-meter field.
- For the horizontal direction of narrow corridors and passageways, Corridor Mode can record video optimized for the long perpendicular space.

Monitoring can be made suitable for corridors, aisles, etc. by setting the image to be monitored at an aspect ratio of 9:16.

9 : 16   Corridor mode   in Corridor

9 : 16   Corridor mode   Stairs in the lobby

Vandal resistance, waterproof protection, and vehicle-mounting standards (outdoor model)

- Durable housing meets IK10 and IP66
- Meets EN50155 and other vehicle-mounting standards so an excellent choice for monitoring inside trains and buses.
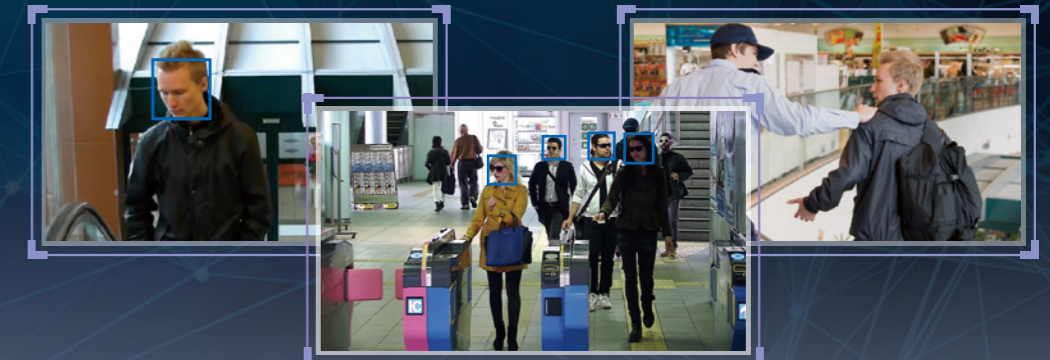
Recognizes those who don't want to be recognized

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

Additional Face Registration Kit
10,000 face : WV-ASFE951
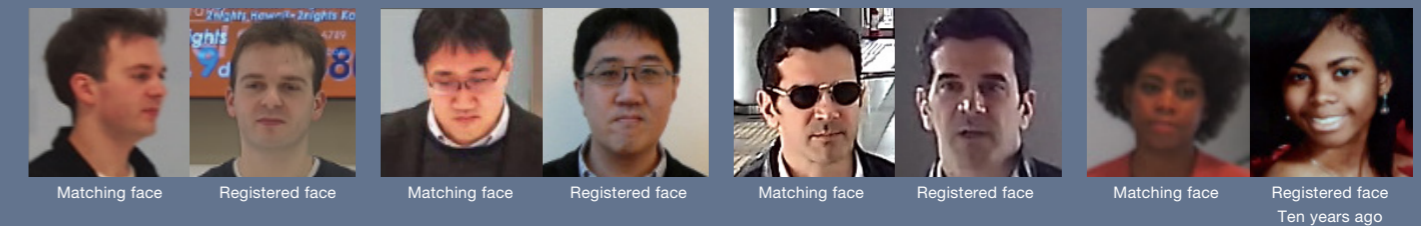
Extension software
WV-ASE231 for WV-ASM300

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

Matching face   Registered face   Matching face   Registered face   Matching face   Registered face   Matching face   Registered face
                                                                                                                      Ten years ago

Horizontal range : ±45°   Vertical range : ±30°   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.
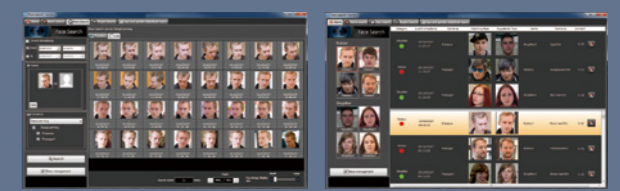
Face search   Face Matching

Industry examples
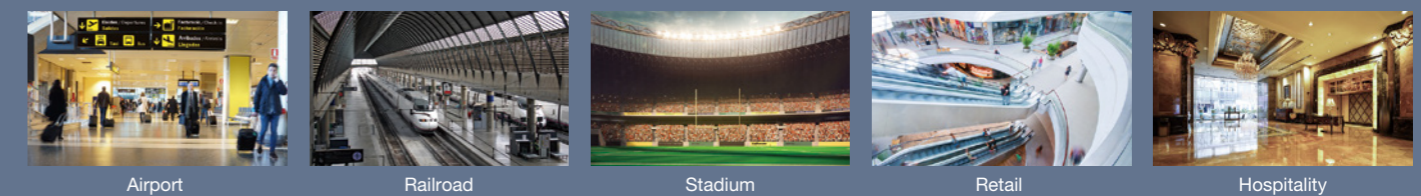
Airport   Railroad   Stadium   Retail   Hospitality

* 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.

EXTREME Concept

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Pan/Tilt

Network products

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

i-PRO EXTREME

9 m   5 m

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.
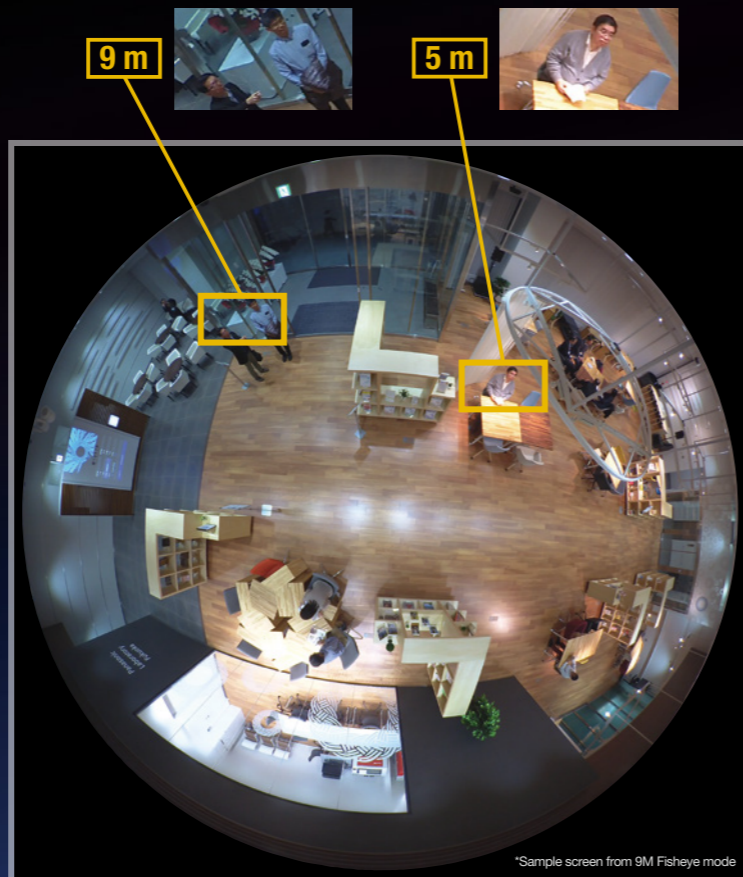- These cameras meet railway standard EN50155, water resistance standard IP66, and impact resistance standard IK10.

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 (i-VMD) functionality and other various
  Intelligent functions can be added by installing extension software WV-SAE200.

H.265 H.264 JPEG

Electrical
WV-X4171
WV-X4170

Auto Back Focus

i-VMD (Optional)
Type5

WV-X4571L / WV-X4571LM only

ICR   Vandal Resistant   NO HUMIDIFICATION   IR LED   IP66 standard

8

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)**

Vandal Resistant   NO HUMIDIFICATION   IP66 standard   IP67 standard

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.

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)

45°

Capture High-Resolution, Smooth & Natural Images

FULL HD
1080/60p
Full HD High Definition

Full HD (1920 × 1080),
60fps

Notice : Do not install this product in locations subject to continuous or large vibration. Failure to observe this may cause a drop resulting in injury or accident.

9

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

VIQS — Variable Image Quality on Specified area

H.264 JPEG

ICR | Vandal Resistant | RAIN WASH COATING | NO HUMIDIFICATION

IR LED | HLC | Fog sand Compensation | Auto Back Focus

IP66 standard

4K Vandal Resistant Weatherproof Network Camera
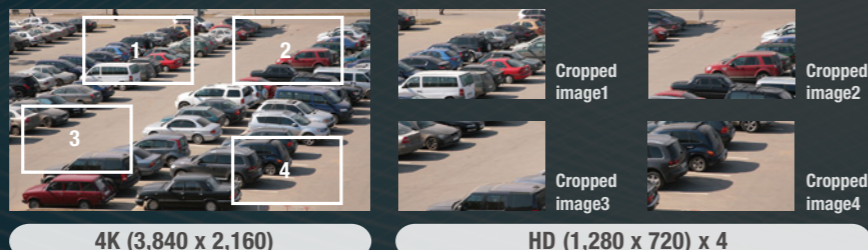
WV-SPV781L

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.

4K (3,840 x 2,160)
Full HD (1,920 x 1,080)
HD (1,280 x 720)
VGA (640 x 480)

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.

Cropped image1
Cropped image2
Cropped image3
Cropped image4

4K (3,840 x 2,160) | HD (1,280 x 720) x 4

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.

HD | 4K | Monitoring range of HD, 4K cameras
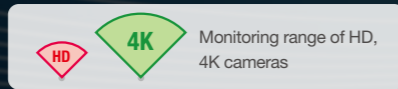
Low Light Ready

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"

TRUE 4K

• Panasonic's Propriety 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°.
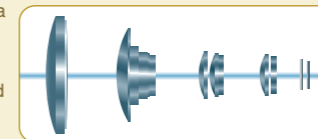
• Refined Resolution and Superior Contrast for a Higher Level of Video Imaging

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.
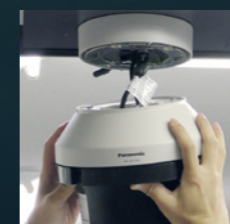
Box Type WV-SPV781L

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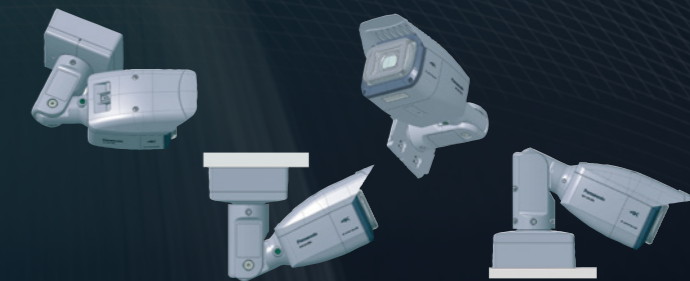
EXTREME Visibility

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

Industry examples: City safety, traffic, transportation

Conventional	iA Mode

Velocity Detection

> iA provides sharp images of moving vehicles with blur control

Day & Night Detection

> 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.
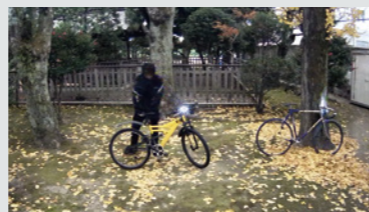
Industry examples: City safety, ports, perimeter security

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, making the right areas highly visible.
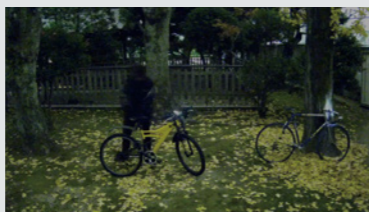The IR LED is covered to make it difficult to detect from the outside or to know which way the lens is pointing.

IR LED : OFF   IR LED : ON

144dB EXTREME Super Dynamic

SD EXTREME Super Dynamic 144dB

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.

Industry examples: Entrances of shopping malls and buildings
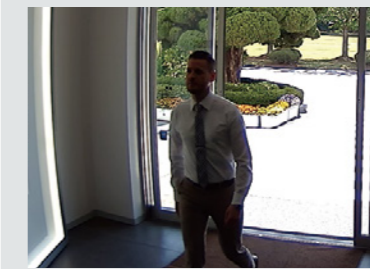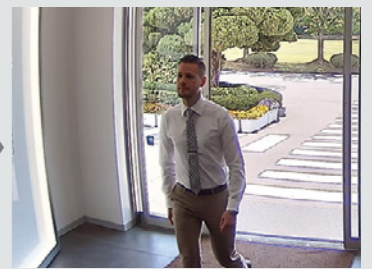
Super Dynamic : OFF   Super Dynamic : 144dB

Intelligent Zoom Stabilization

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)

Fog sand Compensation

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

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

Function Introduction

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.

WV-X6531N

-15°
0°
195°
180°
Pan
360-degree endless
Tilt -15 degrees to 195 degrees

Advanced Auto Tracking

Advanced Auto Tracking

The pan, tilt, and zoom functions can be combined for automatically tracking the movement of a subject.
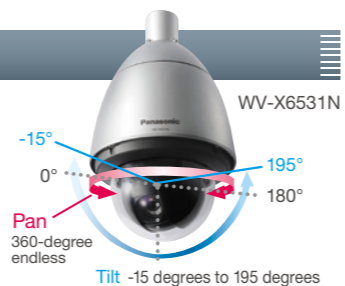If the tracked subject moves out of the camera's shootable range, notification is sent to other cameras so that the tracking process can be carried on without interruption.

2011/09/05 15:17:01 046° / 21° ZX002

2011/09/05 15:17:06 034° / 18° ZX004

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.

Fisheye Mode
Double Panorama Mode
Panorama Mode

Quad / Single PTZ Mode
4 Stream Mode
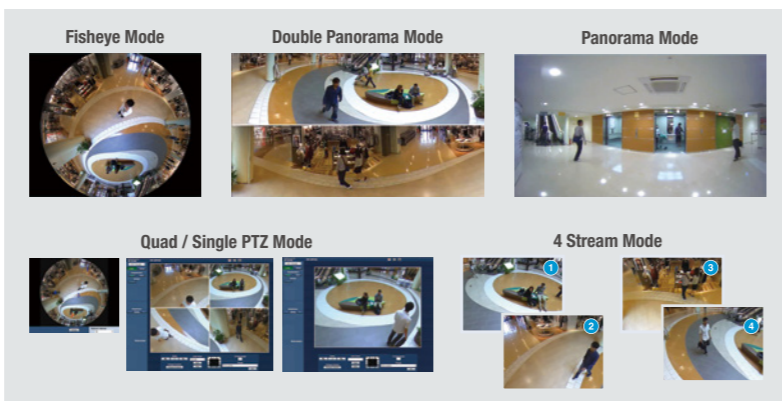
De-warping

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) 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.

Fisheye Mode
Quad / Single PTZ Mode

Function Introduction
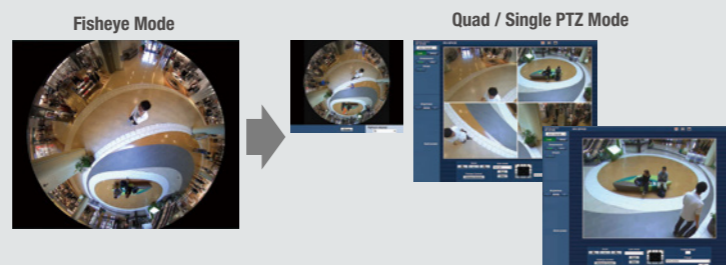
EXTREME Compression

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

Smart Coding

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

Panasonic H.264
Panasonic H.265
Panasonic H.265 Smart Coding

50%
95%

"Smart Coding" provides over 95% reduction in total file size when compared to "H.264"
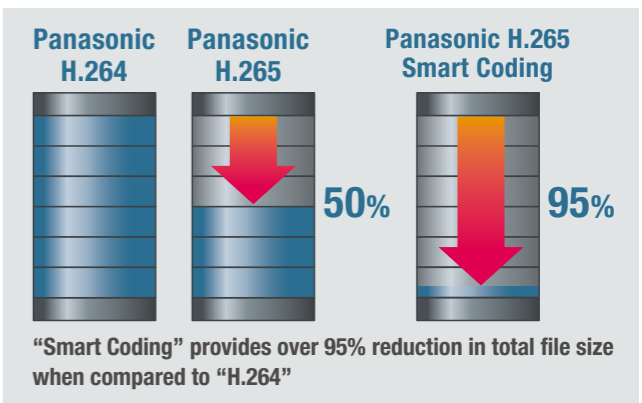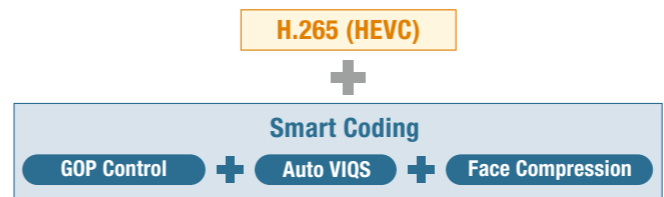
GOP Control

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.

Every 4 seconds
Every 16 seconds
Every 60 seconds
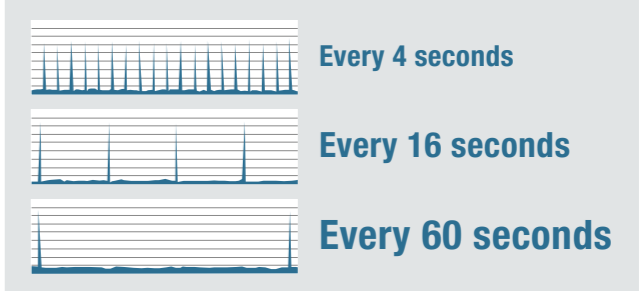
Auto VIQS

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

Dynamic VIQS OFF
Network consumption Average : 3 Mbps

Dynamic VIQS ON
Network consumption Average : 1.5 Mbps

High bitrate (Original compression)
Low bitrate (Higher compression)
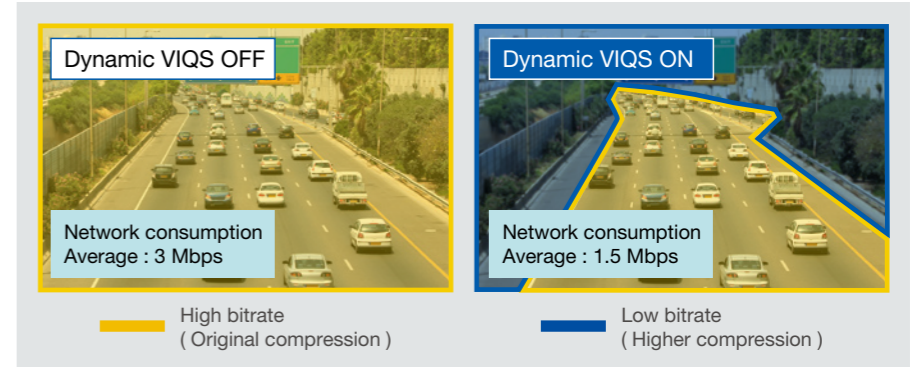
Face Compression

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.

High bitrate
Mid bitrate
Low bitrate

EXTREME Concept
New Products
Function Introduction
Network Camera Comparison Chart
Multi-Sensor
PTZ
Fixed Dome
360-degree Dome
Box
Pan/Tilt
Network products

Function Introduction
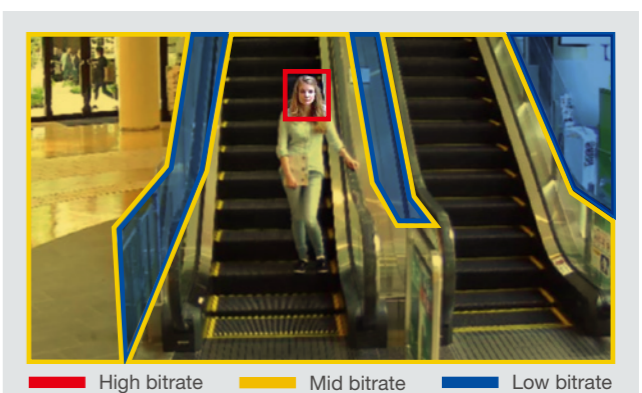
EXTREME Data Security

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 DigiCert (formerly 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

Communication encryption (SSL/TLS)
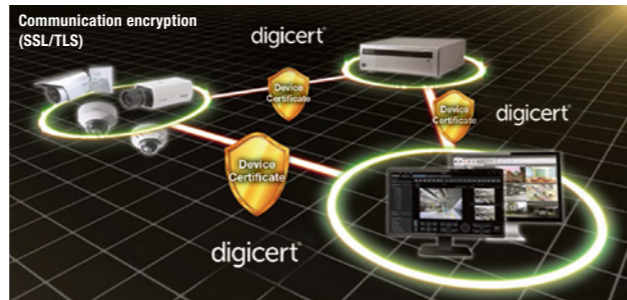
Data encryption

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.
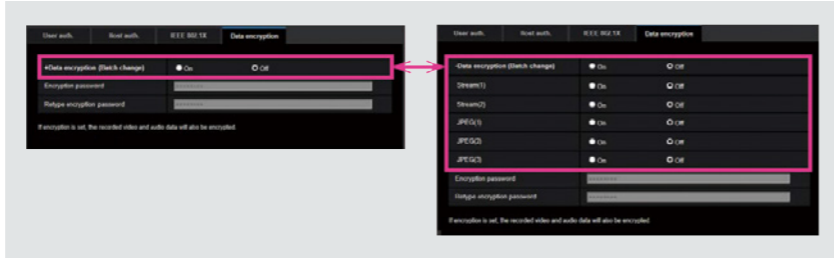
SD Memory Card Recording

Without using a network, footage can be saved directly to the camera by inserting an 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.
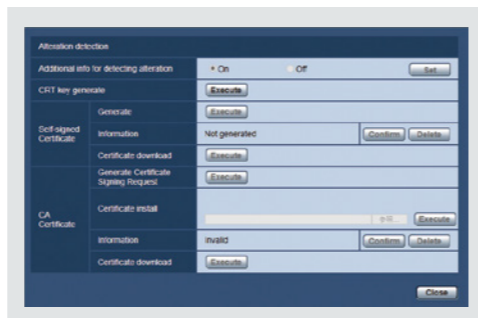**https://security.panasonic.com/support/technical/#tool**

Function Introduction

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	
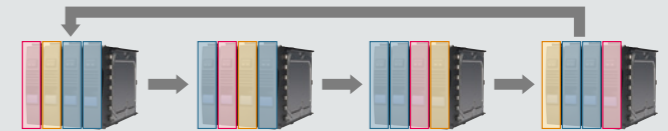
Auto Failover Recording

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.

Recording NVRs (Max. 5)   Stand-by NVR
1 keep-alive
2 keep-alive   4 recording start
3 fail detect
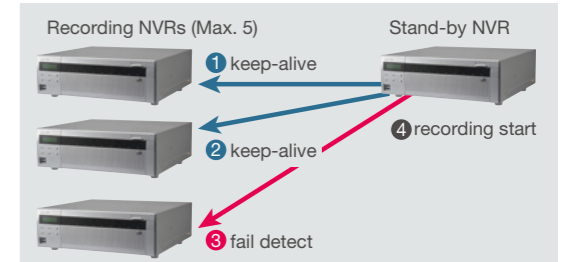
High Performance and Flexibility with TURBO-RAID

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

IP66 standard 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.
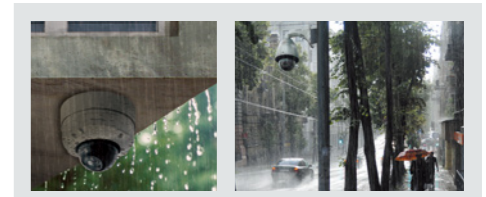
Vandal Resistant

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.

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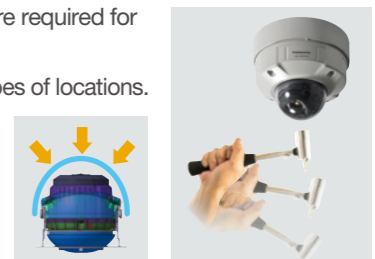
EXTREME Analytics

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

Integrated with i-PRO security system

Map | Live multi-screen | Main monitor
Face Match Alarm
Playback button

Notification | Map confirmation / Capture by other security cameras | Pursue and locate

Facial recognition system screen
Select face, search and show timeline per camera

FACE MATCHING
2018/05/10 *08:55:02
Matching face | Registered face
Live | Play | Close

Camera setting position | Time

EXTREME Analytics

Vehicle Search Solution

Vehicle Search Solution operates using analytics software that runs on the server and that utilizes deep learning along with high-resolution video captured via EXTREME Visibility technology (Intelligent Auto, Color Night Vision, etc.).
The analytics software distinguishes between six vehicle types and ten vehicle color types, and it also differentiates eight directions at intersections.
The search for the subject vehicle is supported using the vehicle's color and shape and the direction it is proceeding at the intersection.

Monitoring on Camera

i-PRO Extreme Cameras

Multi-Sensor Camera captures whole intersection by only one camera minimizing blind spots

Analytics on Server

Deep Learning engine

Thumbnails

Color | Type | Direction

Server detects all vehicle at intersection and create meta data by deep learning technology

Search Client on VMS*

Candidate's Report(1/3)

Share search result with field officer

*Video Insight and Genetec VMS will be supported as first release

Operator enables to search vehicles by type, color and direction on map from VMS plug-in client. Then list candidate and create PDF for sharing.

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.

Roadside | **Monitoring & Control Center** | **Road Facilities & On-site Services**

Video Management System | Traffic Management System

BEWARE! WRONG-WAY DRIVING VEHICLE AHEAD

Wrong-way Driving & Stopped Vehicles | **Notification & Mapping Situational Awareness** | **Quick & Appropriate Response**

Supported functions and specifications differ according to the models. See the specifications for each model. Photos are images used to describe the functions.
Supported functions and specifications differ according to the models. See the specifications for each model. Photos are images used to describe the functions.

Intelligent VMD i-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 / Type6

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 / Type6

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 / Type6

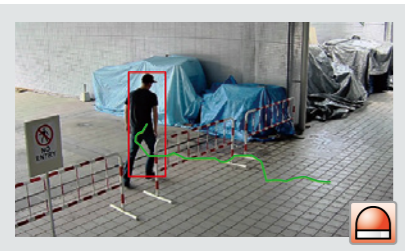It is possible to issue an alarm when a moving object enters the area and moves to the specified direction.
Up to 8 objects, or 32 objects can be detected simultaneously per channel.

Cross line
Type2 / Type3 / Type4 / Type5 / Type6

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 / Type6

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.

▼ left behind in area
▲ taken away from area

Scene change
Type1 / Type2 / Type3 / Type4 / Type5 / Type6

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.
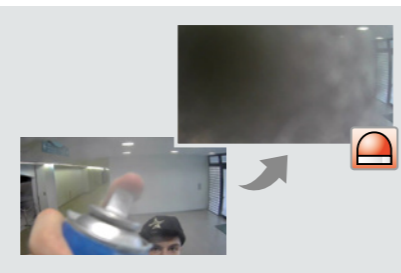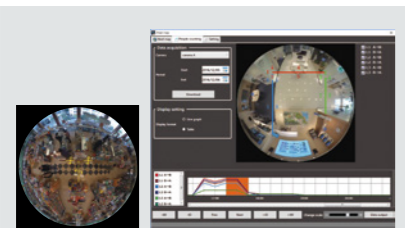
People Counting
Type3 / Type5

123... People Counting

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

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

▼ Passing   ▼ Loitering
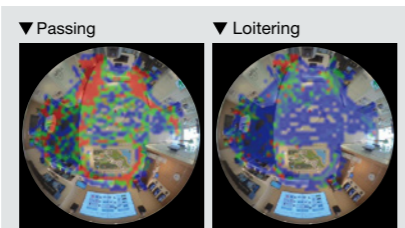
MOR (Moving Object Remover)
Type3 / Type5

OFF ON MOR Moving Object Remover

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

▼ MOR OFF   ▼ MOR ON

Support for Various Installation Environments
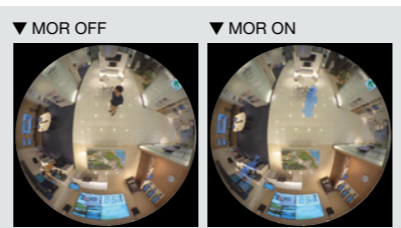
Panasonic network cameras are available in a full lineup of products custom-tailored for a wide range of installation environments.
Their specialized design also helps to reduce the work required for installation.

• 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.
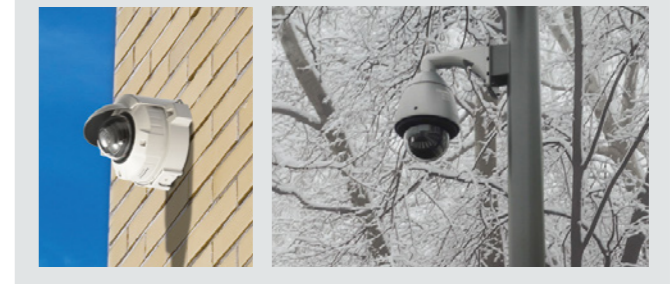
Dehumidification Device

NO HUMIDIFICATION

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.

Dehumidifier
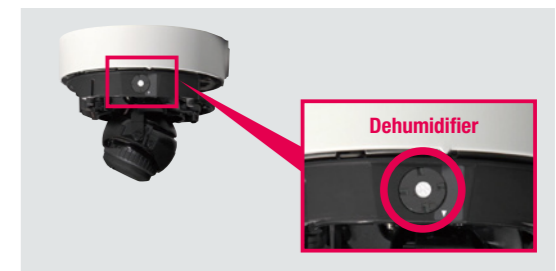
Easy Installation

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.

Rubber (2 pcs)

RJ45 Joint Connector
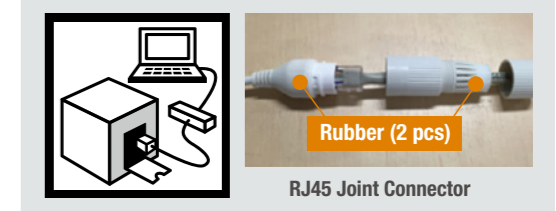
Onboard Model

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-SFV110(M), WV-X4571L(M), WV-S4550L(M), WV-S3532LM, WV-S3512LM, WV-SW458MA and WV-SFV481 are compliant with the EN50155 European railway standards.
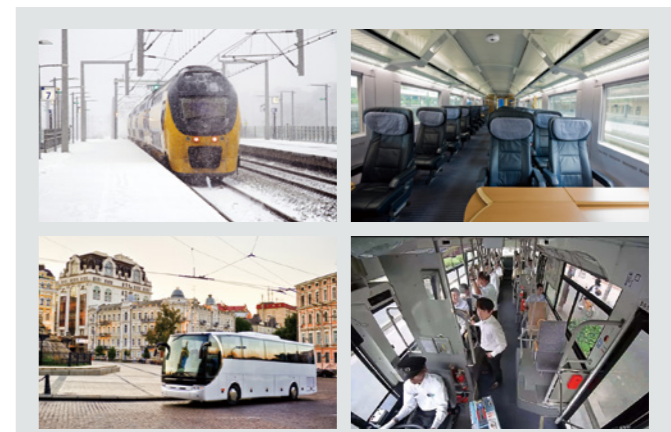
Support for Various Installation Environments

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 ℃ and up to +60 ℃ (-40 ℉ and up to 140 ℉) the camera is highly versatile.

WV-SBV131M / WV-SBV111M

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.

115 degree

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.

Camera Head
Lens
Day/Night Mechanism
Whole image sensor Printed Circuit Board moves to focus point

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.

Products Lineup

Network Cameras

Outdoor | Indoor

i-PRO EXTREME Series

| Multi-Sensor | | | | | | P.24 |
| WV-X8570N | WV-S8530N | | | | | |

| PTZ | | | | | | P.25 - 26 |
| WV-X6531N | WV-X6531NS | WV-X6511N | WV-S6530N | WV-S6131 | WV-S6111 | WV-S6130 |

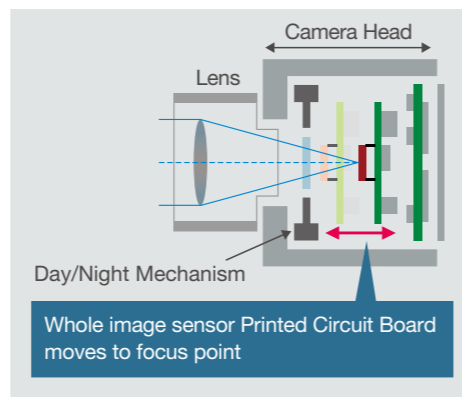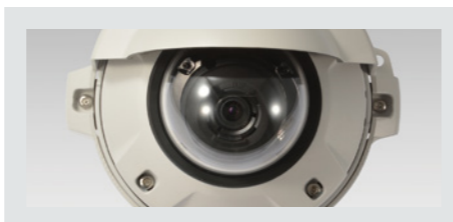| Fixed Dome | | | | | | P.27 - 30 |
WV-S2550L	WV-S2531LTN	WV-S2531LN	WV-S2511LN			
WV-S2250L	WV-S2231L	WV-S2211L	WV-S2131L	WV-S2131	WV-S2130	WV-S2111L	WV-S2110
WV-S3531L	WV-S3532LM	WV-S3511L	WV-S3512LM	WV-S3111L	WV-S3131L	

| 360-degree Dome | | | | | | P.31 - 32 |
| WV-X4571L | WV-X4571LM | WV-S4550L | WV-S4550LM | WV-X4171 | WV-X4170 | WV-S4150 |

Box						P.33 - 35
WV-S1550L	WV-S1531LTN	WV-S1531LN	WV-S1531LNS	WV-S1511LN		
WV-S1132	WV-S1131	WV-S1112	WV-S1111			

i-PRO Series

| PTZ | | | | | | P.36 |
| WV-SUD638(Natural silver), -H(Gray), -T(Brown) | | | | | | |

| Fixed Dome | | | | | | P.37 - 38 |
| WV-SFV781L | WV-SFV110(M) | WV-SFN130 | WV-SFN110 | WV-SW115 | WV-SBV131M | WV-SBV111M |

| 360-degree Dome | | | | | | P.39 |
| WV-SFV481 | WV-SW458(MA) | WV-SFN480 | WV-SF438 | | | |

| Box / Cylinder | | | | | | P.40 |
| WV-SPV781L | WV-SPW532L | WV-SPW312L | WV-SP105 | WV-SP102 | | |

| Pan / Tilt | | | | | | P.41 |
| WV-SW175 | WV-SW174W | WV-SW172 | WV-ST165 | WV-ST162 | | |

| Optional Accessories Compatibility with Network Cameras | P.42 - 43 |

Network Video Recorders
P.44

Network Disk Recorder   WJ-NX400 | WJ-NX300 | WJ-NX200
• Additional Camera Kits   WJ-NXE40 / WJ-NXE40W | WJ-NXE30 / WJ-NXE30W | WJ-NXE20 / WJ-NXE20W   • Additional RAID Kits   WJ-NXR30 / WJ-NXR30W
• Secure Communication Kits   WJ-NXS01(W) | WJ-NXS04(W) | WJ-NXS16(W) | WJ-NXS32(W)

Additional Business Intelligence Kits
Additional Business Intelligence Kit   WJ-NXF02, WJ-NXF02W
P.45

Network Video Decoder
Video Decoder   WJ-GXD400
P.45

360-degree Network Microphone
P.45
360-degree Network Microphone   WV-SMR10   • 360-degree Network Microphone WV-SMR10 with 360-degree Network Camera WV-SF438   WV-SMR10N3

Plug-in Software
P.46 - 47
Vehicle Search Server Software   WV-ASV100W
• Client Plug-in Software(Genetec / VideoInsight)   WV-ASVC101W   • Additional Camera Kit   1ch : WV-ASVE101W / 4ch : WV-ASVE104W   • Update Software (1 year)   WV-ASVM111W
Plug-in Software for Vehicle Incident Detection   WV-XAE100W   Plug-in Software for i-VMD   WV-SAE200   Extension Software   WV-SAE303W

Management Software
P.48
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
i-PRO Central Management Software   WV-ASM300   • Extension Software   WV-ASE202 / ASE203 / ASE204 / ASE205 / ASE306

Face Server
P.49
Facial Recognition Server Software   WV-ASF950
• Additional Camera Kit   1ch : WV-ASFE901 / 4ch : WV-ASFE904   • Additional Face Registration Kit   10,000 face : WV-ASFE951   • Extension software   WV-ASE231 for WV-ASM300

Application for Smartphone / Tablet PC
P.50

IP Migration
P.51
Encoder   WJ-GXE500 | WJ-GXE100   Coaxial-LAN Converter   WJ-PR204 | WJ-PR201 | WJ-PC200

Supported functions and specifications differ according to the models. See the specifications for each model. Photos are images used to describe the functions.

Network Camera Comparison chart — Multi-Sensor

Indoor / Outdoor	Outdoor	
Model Name	**WV-X8570N**	**WV-S8530N**
Appearance	i-PRO EXTREME Onvif S G	i-PRO EXTREME Onvif S G
Sensor	1/1.8 CMOS	1/3 CMOS
Codec and Transmission — Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
H.265 / H.264 multi stream	2 (*1)	2 (*1)
JPEG multi stream	2 (Variable) (*1)	2 (Variable) (*1)
H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR
Smart Coding	Yes	Yes
Max. Resolution (*1) — 16 : 9	3840 x 2160	1920 x 1080
4 : 3	—	1600 x 1200
Max. FPS @Max. Resolution (*1) — H.265 / H.264	15fps (4K)	30fps (2 MP)
JPEG	1fps (4K)	3fps (2 MP)
Super Dynamic / WDR / BLC	Super Dynamic	Super Dynamic
Color/BW	Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist	—	Manual focus
Min. Illumination — Color	0.12 lx @F1.6	0.09 lx @F2.2
Color (Sens up)	0.008 lx @F1.6	0.006 lx @F2.2
B/W	0.05 lx@F1.6	0.04 lx@F2.2
B/W (Sens up)	0.003 lx @F1.6	0.003 lx @F2.2
Lens	f=4.6 mm, F1.6	f=3.2 to 5.7 mm, F2.2
Angular field of view (*1) — 16 : 9	H : 97 deg. V : 53 deg.	H : 53 (TELE) – 99 (WIDE) deg. V : 30 (TELE) – 54 (WIDE) deg.
4 : 3	—	H : 44 (TELE) – 81 (WIDE) deg. V : 33 (TELE) – 60 (WIDE) deg.
Adjusting Angle — Horizontal	Sensor1,2,3,4 : 360 deg.	Sensor1,2,3,4 : 360 deg.
Vertical	Sensor1,2,3 : +30 to +80 deg. Sensor4 : -15 to +80 deg.	Sensor1,2,3 : +30 to +80 deg. Sensor4 : -15 to +80 deg.
Yaw	Sensor1,2,3,4 : ±50 deg.	Sensor1,2,3,4 : ±50 deg.
Optical Zoom	1x	1.8x
Digital Zoom	4x	4x
Image Stabilizer	—	—
Corridor Mode	—	—
iA (Intelligent Auto)	Yes	Yes
VMD (Video Motion Detection)	Yes (4-areas) (*1)	Yes (4-areas) (*1)
i-VMD (Intelligent VMD) (w/optional extension software)	—	—
VIQS	Yes (8-areas)	Yes (8-areas)
Max. Connection	24	24
Audio — In (Line) / Out	Yes / —	—
In (Built-in MIC)		—
Codec	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	—
External I/O	Yes (3) (*3)	—
Monitor Out	Yes (mini-jack)	—
Vandal Resistant	IK10	IK10
Water and Dust Resistance	IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature	–40 to +60 deg.	–40 to +60 deg.
Power Source	PoE	PoE
Dehumidification device	Yes	Yes
Other Functions	Easy setup package, Built-in heater, ClearSight coating	Easy setup package, Built-in heater, ClearSight coating

(*1) : Specification of one sensor   (*2) : Only AAC-LC for SD REC   (*3) : ALARM IN 1(Alarm input 1/ Black & white input/ Auto time adjustment input),ALARM IN 2 (Alarm input 2/ ALARM OUT),ALARM IN 3 (Alarm input 3/ ALARM OUT/ AUX OUT) (x1 for each)

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Network Camera Comparison chart — PTZ

Indoor / Outdoor	Outdoor		
Model Name	**WV-X6531N / WV-X6531NS**	**WV-X6511N**	**WV-S6530N**
Appearance	i-PRO EXTREME Onvif S G Heavy Salt damage resistance	i-PRO EXTREME Onvif S G	i-PRO EXTREME 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 : 3.4 to 73 deg. V : 1.2 to 39 deg.	H : 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 AAC-LC 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.

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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 AAC-LC 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 (Type6)	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, 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 AAC-LC 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		i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S G
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 = 3 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 (Type6)	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 AAC-LC 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		i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S G	i-PRO EXTREME ONVIF° S
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 AAC-LC 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)

Side tabs (both pages): EXTREME Concept | 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 — Fixed Dome

		Outdoor		Indoor	
Indoor / Outdoor					
Model Name		WV-S3531L/WV-S3532LM	WV-S3511L/WV-S3512LM	WV-S3131L	WV-S3111L
Appearance		NEW	NEW	NEW	NEW
Sensor		1/3 CMOS	1/3 CMOS	1/3 CMOS	1/3 CMOS
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	1280 x 720	1920 x 1080	1280 x 720
	4 : 3	2048 x 1536 (*1)	1280 x 960	2048 x 1536 (*1)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080 P)	60fps (720 P)	60fps (1080 P)	60fps (720 P)
	JPEG	30fps (3 MP)	30fps (1.3 MP)	30fps (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		—	—	—	—
Min. Illumination	Color	0.03 lx @F2.3	0.02 lx @F2.3	0.03 lx @F2.3	0.02 lx @F2.3
	Color (Sens up)	0.0019 lx (16x)	0.0013 lx (16x)	0.0019 lx (16x)	0.0013 lx (16x)
	B/W	0.0 lx @F2.3 (w/IR)	0.0 lx @F2.3 (w/IR)	0.0 lx @F2.3 (w/IR)	0.0 lx @F2.3 (w/IR)
	B/W (Sens up)	—	—	—	—
Lens		f = 2.8 mm, F2.3	f = 2.8 mm, F2.3	f = 2.8 mm, F2.3	f = 2.8 mm, F2.3
Angular field of view	16 : 9	H : 108 deg. , V : 60 deg.	H : 97 deg. , V : 54 deg.	H : 108 deg. , V : 60 deg.	H : 97 deg. , V : 54 deg.
	4 : 3	H : 89 deg. , V : 66 deg.	H : 97 deg. , V : 72 deg.	H : 89 deg. , V : 66 deg.	H : 97 deg. , V : 72 deg.
Adjusting Angle	Pan	±45°	±45°	±45°	±45°
	Tilt	0° to +90° (*2)	0° to +90° (*2)	0° to +90° (*2)	0° to +90° (*2)
Optical Zoom		1x	1x	1x	1x
Digital Zoom		4x	4x	4x	1x
Image Stabilizer		—	—	—	—
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		Yes	Yes	Yes	Yes
Max. Connection		14	14	14	14
Audio	In (Line) / Out	— / —	— / —	— / —	— / —
	In (Built-in MIC)	Yes	Yes	Yes	Yes
	Codec	G.711 / G.726 / AAC-LC (*3)	G.711 / G.726 / AAC-LC (*3)	G.711 / G.726 / AAC-LC (*3)	G.711 / G.726 / AAC-LC (*3)
	Audio Detection Alarm	Yes	Yes	Yes	Yes
SD memory Card	Slot	Yes (microSDXC)	Yes (microSDXC)	Yes (microSDXC)	Yes (microSDXC)
	Password & Alter Detection	Yes	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes	Yes
External I/O		—	—	—	—
Monitor Out		—	—	—	—
Vandal Resistant		IK10	IK10	—	—
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	—	—
Temperature		WV-S3531L : -30 to +50 deg. WV-S3532LM : -40 to +60 deg.	WV-S3511L : -30 to +50 deg. WV-S3512LM : -40 to +60 deg.	0 to +40 deg.	0 to +40 deg.
Power Source		PoE	PoE	PoE	PoE
Dehumidification device		—	—	—	—
Other Functions		Built-in IR LED, EN50155, IEC62236-3-2, ECE-R10, EN50498	Built-in IR LED, EN50155, IEC62236-3-2, ECE-R10, EN50498	Built-in IR LED	Built-in IR LED

(*1) : Used by super resolution techniques   (*2) : When viewing images at night using IR LED, set the vertical (TILT) angle between 0 ° to +75 °.
(*3) : Only AAC-LC for SD REC

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Network Camera Comparison chart — 360-degree Dome

		Outdoor	
Indoor / 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 AAC-LC 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.

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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 / JPEG
	H.265 / H.264 multi stream	2	2	2
	JPEG multi stream	2	2	2
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR	VBR
	Smart Coding	Yes	Yes	Yes
Max. Resolution	16 : 9	2560 x 1440	2560 x 1440	1920 x 1080
	4 : 3	2560 x 1920 2992 x 2992 (1 : 1)	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 (9 MP)	30fps (5 MP)
	JPEG	30fps (9 MP)	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	0.3 lx @F2.4
	Color (Sens up)	0.02 lx (16x)	0.02 lx (16x)	0.02 lx (16x)
	B/W	0.2 lx @F1.9	0.2 lx @F1.9	0.2 lx @F2.4
	B/W (Sens up)	0.01 lx (16x)	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.	H : 186 deg. V : 186 deg.
Adjusting Angle	Pan	-5°, 0°, +5°	-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	— / —	Yes / Yes
	In (Built-in MIC)	Yes	—	Yes
	Codec	G.711 / G.726 / AAC (*1)	—	G.711 / G.726 / AAC (*1)
	Audio Detection Alarm	—	—	—
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) (*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 AAC-LC 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.

Network Camera Comparison chart — Box

Indoor / Outdoor		Outdoor	
Model Name		WV-S1550L	WV-S1531LTN
Appearance		Onvif*| S G	Onvif*| S G
Sensor		1/2.8 CMOS	1/3 MOS
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4
	JPEG multi stream	2 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR
	Smart Coding	Yes (*1)	Yes
Max. Resolution	16 : 9	3072 x 1728 (*2)	1920 x 1080
	4 : 3	3072 x 2304 (*2)	2048 x 1536 (*3)
Max. FPS @Max. Resolution	H.265 / H.264	30fps (5 MP)	60fps (1080p)
	JPEG	30fps (5 MP)	30fps (3 MP)
Super Dynamic / WDR / BLC		Super Dynamic	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		Auto Focus	ABF
Min. Illumination	Color	0.07 lx @F1.3	0.015 lx @F1.7
	Color (Sens up)	0.0044 lx @F1.3	0.001 lx (16x)
	B/W	0.04 lx @F1.3	0.0 lx @F1.7 (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
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.
	4 : 3	H : 34 to 106 deg. V : 25 to 77 deg.	H : 12 to 28 deg. V : 9 to 21 deg.
Adjusting Angle	Pan	-180 to +180 deg.	-180 to +180 deg.
	Tilt	0 to +100 deg.	0 to +100 deg.
Optical Zoom		3.1 x	2.3x
Digital Zoom		4x	4x
Image Stabilizer		—	Yes
Corridor Mode		Yes	Yes
iA (Intelligent Auto)		Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type6)	Yes (Type4)
VIQS		Yes (8-areas)	—
Max. Connection		14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes
	In (Built-in MIC)	—	—
	Codec	G.711 / G.726 / AAC (*4)	G.711 / G.726 / AAC (*4)
	Audio Detection Alarm	—	Yes
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	Yes	Yes
	Audio REC	Yes	Yes
External I/O		Yes (3) (*5)	Yes (3) (*5)
Monitor Out		Yes (RCA)	Yes (RCA)
Vandal Resistant		IK10	IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-40 to +60 deg. (*6)	-40 to +60 deg. (*6)
Power Source		12 V DC / PoE	12 V DC / PoE
Dehumidification device		—	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

(*1) : Smart Facial Coding is excluded   (*2) : Used by super resolution techniques   (*3) : w/Super resolution   (*4) : Only AAC-LC 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 — Box

Indoor / Outdoor	Outdoor	
Model Name	WV-S1531LN / WV-S1531LNS	WV-S1511LN
Appearance	i-PRO EXTREME — Heavy Salt damage resistance — ONVIF / S G	i-PRO EXTREME — ONVIF / S G
Sensor	1/3 MOS	1/3 MOS

		WV-S1531LN / WV-S1531LNS	WV-S1511LN
Codec and Transmission	Video Codec	H.265 / H.264 / JPEG	H.265 / H.264 / JPEG
	H.265 / H.264 multi stream	4	4
	JPEG multi stream	3 (Variable)	3 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR	VBR
	Smart Coding	Yes	Yes
Max. Resolution	16 : 9	1920 x 1080	1280 x 720
	4 : 3	2048 x 1536 (*1)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)	60fps (720p)
	JPEG	30fps (3 MP)	30fps (1.3 MP)
Super Dynamic / WDR / BLC		Enhanced SD	Enhanced SD
Color/BW		Yes (ICR)	Yes (ICR)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	ABF
Min. Illumination	Color	0.012 lx @F1.6	0.008 lx @F1.6
	Color (Sens up)	0.0008 lx (16x)	0.0005 lx (16x)
	B/W	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)
	B/W (Sens up)	—	—
Lens		f = 2.8 to 10 mm, F1.6 Motorized	f = 2.8 to 10 mm, F1.6
Angular field of view	16 : 9	H : 31 to 112 deg. V : 17 to 60 deg.	H : 31 to 112 deg. V : 17 to 60 deg.
	4 : 3	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.
	Tilt	0 to +100 deg.	0 to +100 deg.
Optical Zoom		3.6x	3.6x
Digital Zoom		4x	4x
Image Stabilizer		Yes	Yes
Corridor Mode		Yes	Yes
iA (Intelligent Auto)		Yes	Yes
VMD (Video Motion Detection)		Yes (4-areas)	Yes (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		Yes (Type4)	Yes (Type4)
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	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 (RCA)	Yes (RCA)
Vandal Resistant		IK10	IK10
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X
Temperature		-40 to +60 deg. (*4)	-40 to +60 deg. (*4)
Power Source		12 V DC / PoE	12 V DC / PoE
Dehumidification device		Yes	Yes
Other Functions		Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED WV-S1531LNS: IS014993 (Heavy Salt damage resistance)	Easy setup package, Built-in heater, ClearSight coating, Built-in IR LED

(*1) : w/Super resolution (*2) : Only AAC-LC 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) : 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 — Box

Indoor / Outdoor	Indoor			
Model Name	WV-S1132	WV-S1131	WV-S1112	WV-S1111
Appearance	i-PRO EXTREME — Lens not included — ONVIF / S G	i-PRO EXTREME — Lens not included — ONVIF / S G	i-PRO EXTREME — Lens not included — ONVIF / S G	i-PRO EXTREME — Lens not included — ONVIF / S G
Sensor	1/2.8 MOS	1/2.8 MOS	1/2.8 MOS	1/2.8 MOS

		WV-S1132	WV-S1131	WV-S1112	WV-S1111
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 AAC-LC 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)	WV-SUD638-H (Gray)	WV-SUD638-T (Brown)
Appearance		ONVIF S	ONVIF S	ONVIF S
Sensor		1/3 MOS		
Codec and Transmission	Video Codec	H.264 / JPEG		
	H.265 / H.264 multi stream	4		
	JPEG multi stream	3		
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR		
	Smart Coding	Yes		
Max. Resolution	16 : 9	1920 x 1080		
	4 : 3	1280 x 960		
Max. FPS @Max. Resolution	H.265 / H.264	60fps (1080p)		
	JPEG	60fps (1080p)		
Super Dynamic / WDR / BLC		Super Dynamic		
Color/BW		Yes (ICR)		
ABF (Auto Back Focus) / Auto Focus / Focus Assist		Auto Focus		
Min. Illumination	Color	0.06 lx @F1.6		
	Color (Sens up)	0.004 lx (16x)		
	B/W	0.02 lx @F1.6		
	B/W (Sens up)	0.001 lx (16x)		
Lens		f = 4.3 to 129 mm, F1.6 Motorized		
Angular field of view	16 : 9	H : 2.3 to 64 deg. V : 1.3 to 38 deg.		
	4 : 3	H : 1.8 to 50 deg. V : 1.3 to 38 deg.		
Pan	Range	Endless		
	Speed	200 deg/sec		
Tilt	Range	Upright : -45° to +90°, Forward tilt : -90° to +90° Hanging : +30° to -90°		
	Speed	200 deg/sec		
360 Pan-Flip		—		
Number of Preset Positions		256		
Patrol		Yes		
Auto Tracking		Yes (advanced)		
Optical Zoom		30x (45x with Extra Zoom at HD)		
Digital Zoom		24x		
Image Stabilizer		Yes (Hybrid)		
Corridor Mode		—		
iA (Intelligent Auto)		—		
VMD (Video Motion Detection)		Yes (4-areas)		
i-VMD (Intelligent VMD) (w/optional extension software)		—		
VIQS		Yes (8-areas)		
Max. Connection		14		
Audio	In (Line) / Out	Yes / Yes		
	In (Built-in MIC)	—		
	Codec	G.711 / G.726 / AAC		
	Audio Detection Alarm	—		
SD memory Card	Slot	—		
	Password & Alter Detection	—		
	Audio REC	—		
External I/O		Yes (3) (*1)		
Monitor Out		—		
Vandal Resistant		IK10		
Water and Dust Resistance		IP66 / IP67 / NEMA 4X		
Temperature		-50 to +60 deg. (*2) (AC100 to 240 V) -30 to +60 deg. (*2) (PoE) (*3)	-50 to +55 deg. (*2) (AC100 to 240 V) -30 to +55 deg. (*2) (PoE) (*3)	
Power Source		100 to 240 V AC / PoE Injector		
Dehumidification device		Yes		
Other Functions		Optional IR LED, Built-in wiper and defroster, ISO14993(Salt damage resistance)		

(*1) : Alarm In1(Black & White In), Alarm In2(Alarm Out), Alarm In3(AUX Out) (x1 for each)
(*2) : When using the tested PoE injector and IR LED unit at the same time : −20 °C to +55 °C (−4 °F to 131 °F))   (*3) : Tested PoE injector

Network Camera Comparison chart — Fixed Dome

Indoor / Outdoor		Outdoor		Indoor	
Model Name		WV-SFV781L	WV-SFV110 / WV-SFV110M	WV-SFN130	WV-SFN110
Appearance		ONVIF S G	ONVIF S G	ONVIF S G	ONVIF S G
Sensor		1/1.7 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 / JPEG
	H.265 / H.264 multi stream	4	4	4	4
	JPEG multi stream	2	6 (Variable)	6 (Variable)	6 (Variable)
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR / AVBR	VBR / AVBR	VBR / AVBR
	Smart Coding	Yes	Yes	Yes	Yes
Max. Resolution	16 : 9	3840 x 2160	1280 x 720	1920 x 1080	1280 x 720
	4 : 3	4000 x 3000	1280 x 960	2048 x 1536 (*1)	1280 x 960
Max. FPS @Max. Resolution	H.265 / H.264	30fps (4K)	30fps (720p)	30fps (1080p)	30fps (720p)
	JPEG	15fps (12 MP)	30fps (720p)	30fps (1080p)	30fps (720p)
Super Dynamic / WDR / BLC		WDR	Super Dynamic	Super Dynamic	Super Dynamic
Color/BW		Yes (ICR)	Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	—	—	—
Min. Illumination	Color	0.3 lx @F1.6	0.04 lx @F2.3	0.1 lx @F2.3	0.04 lx @F2.3
	Color (Sens up)	0.02 lx (16x)	0.003 lx (16x)	0.007 lx (16x)	0.003 lx (16x)
	B/W	0.0 lx @F1.6 (w/IR)	0.03 lx @F2.3	0.08 lx @F2.3	0.03 lx @F2.3
	B/W (Sens up)	—	0.002 lx (16x)	0.005 lx (16x)	0.002 lx (16x)
Lens		f = 4.2 to 25.2 mm, F1.6 Motorized	f = 2.8 mm, F2.3	f = 2.8 mm, F2.3	f = 2.8 mm, F2.3
Angular field of view	16 : 9	H : 17 to 96 deg. V : 9.3 to 54 deg.	H : 100 deg. V : 55 deg.	H : 108 deg. V : 60 deg.	H : 100 deg. V : 55 deg.
	4 : 3	H : 17 to 100 deg. V : 13 to 75 deg.z	H : 100 deg. V : 73 deg.	H : 89 deg. V : 66 deg.	H : 100 deg. V : 73 deg.
Adjusting Angle	Pan	-180 to +180 deg.	-20 to +20 deg.	-20 to +20 deg.	-20 to +20 deg.
	Tilt	0 to +85 deg.	-20 to +90 deg.	-20 to +90 deg.	-20 to +90 deg.
Optical Zoom		6x	—	—	—
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)	Yes (Type2)
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)	Yes (8-areas)
Max. Connection		14	14	14	14
Audio	In (Line) / Out	Yes / Yes	— / —	— / —	— / —
	In (Built-in MIC)	—	Yes	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
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	—	Yes	Yes	Yes
	Audio REC	Yes	Yes	Yes	Yes
External I/O		Yes (3) (*3)	—	—	—
Monitor Out		Yes (RCA)	—	—	—
Vandal Resistant		IK10	50J, IK10	—	—
Water and Dust Resistance		IP66 / NEMA 4X	IP66 / NEMA 4X	—	—
Temperature		-45 to +50 deg.	-40 to +60 deg.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	PoE	PoE	PoE
Dehumidification device		Yes	—	—	—
Other Functions		Built-in heater, RainWash coating, Built-in IR LED	EN50155-T3, EN50121, EN45545, EN50498, ECE-R10(WV-SFV110M)	—	—

(*1) : w/Super resolution   (*2) : Only AAC-LC 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 — Fixed Dome

		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 — 360-degree Dome

		Outdoor		Indoor	
Model Name		**WV-SFV481**	**WV-SW458 / WV-SW458MA(*1)**	**WV-SFN480**	**WV-SF438**
Appearance		ONVIF S G	ONVIF S	ONVIF S G	ONVIF S
Sensor		1/2 MOS	1/3 MOS	1/2 MOS	1/3 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	2	6	2	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	AVBR (V1.40)	VBR / AVBR	AVBR (V1.40)
	Smart Coding	Yes	—	Yes	—
Max. Resolution	16 : 9	2560 x 1440	1920 x 1080	2560 x 1440	1920 x 1080
	4 : 3	2560 x 1920 2992 x 2992 (1 : 1)	H.264 : 1280 x 960 2048 x 1536	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)	30fps (4 M)	30fps (1080p)
	JPEG	30fps (4 M)	15fps (3 MP) / 30fps (1080p)	30fps (4 M)	15fps (3 MP) / 30fps (1080p)
Super Dynamic / WDR / BLC		WDR	Super Dynamic	WDR	Super Dynamic
Color/BW		Yes (ICR)	Day/Night (Electrical)	Day/Night (Electrical)	Day/Night (Electrical)
ABF (Auto Back Focus) / Auto Focus / Focus Assist		ABF	—	ABF	—
Min. Illumination	Color	0.3 lx @F1.9	1.5 lx @F2.4	0.3 lx @F1.9	1.5 lx @F2.4
	Color (Sens up)	0.02 lx (16x)	0.1 lx (16x)	0.02 lx (16x)	0.1 lx (16x)
	B/W	0.04 lx @F1.9	1.2 lx @F2.4	0.2 lx @F1.9	1.2 lx @F2.4
	B/W (Sens up)	0.003 lx (16x)	0.08 lx (16x)	0.01 lx (16x)	0.08 lx (16x)
Lens		f = 1.38 mm, F1.9	f = 0.837 mm, F2.4	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.	H : 180 deg. V : 180 deg.	H : 188 deg. V : 181 deg.
Adjusting Angle	Pan	±45 deg.	—	±45 deg.	—
	Tilt	±45 deg.	—	±45 deg.	—
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 (Type3)	—	Yes (Type3)	—
VIQS		Yes (8-areas)	Yes (2-areas)	Yes (8-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)	—	—	Yes	Yes
	Codec	G.711 / G.726 / AAC	G.711 / G.726	G.711 / G.726 / AAC	G.711 / G.726
	Audio Detection Alarm	—	—	—	—
SD memory Card	Slot	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)	Yes (SDXC)
	Password & Alter Detection	—	—	—	—
	Audio REC	Yes	—	Yes	—
External I/O		Yes (3) (*2)	Yes (3) (*3)	Yes (3) (*3)	Yes (3) (*3)
Monitor Out		Yes (RCA)	—	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.	Ceiling / Wall /Mount bracket : -10 to +50 deg. Desktop / Tripod : -10 to +40 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		Yes	Yes	—	—
Other Functions		360° monitoring, EN50155-T3, EN50121, DIN5510	360° monitoring, EN50155-T3, EN50121, DIN5510, ECE-R10(WV-SW458MA)	360° monitoring	360° monitoring

(*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 — Box / Cylinder

Indoor / Outdoor		Outdoor			Indoor	
Model Name		**WV-SPV781L**	**WV-SPW532L**	**WV-SPW312L**	**WV-SP105**	**WV-SP102**
Appearance			*Only sold in certain areas	*Only sold in certain areas		
		ONVIF S G	ONVIF S G	ONVIF S G	ONVIF S	ONVIF S
Sensor		1/1.7 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	2	2
	JPEG multi stream	2	6 (Variable)	6 (Variable)	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	VBR / AVBR	VBR / AVBR	VBR / AVBR	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding	Yes	Yes	Yes	—	—
Max. Resolution	16 : 9	3840 x 2160	1920 x 1080	1280 x 720	1280 x 720	640 x 360
	4 : 3	4000 x 3000	2048 x 1536	1920 x 1080 (*1)	1280 x 960	640 x 480
Max. FPS @Max. Resolution	H.265 / H.264	30fps (4K)	30fps (1080p)	30fps (720p)	30fps (1.3 MP)	30fps (VGA)
	JPEG	15fps (12 MP)	30fps (3 MP)	30fps (1.3 MP)	30fps (1.3 MP)	30fps (VGA)
Super Dynamic / WDR / BLC		WDR	WDR	WDR	BLC	BLC
Color/BW		Yes (ICR)	Yes (ICR)	Yes (ICR)	Day/Night (Electrical)	Day/Night (Electrical)
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	0.8 lx @F2.2	2.0 lx @F2.0
	Color (Sens up)	0.02 lx (16x)	0.005 lx (16x)	0.0013 lx (16x)	0.05 lx (16x)	0.3 lx (8x)
	B/W	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)	0.0 lx @F1.6 (w/IR)	0.4 lx @F2.2	1.3 lx @F2.0
	B/W (Sens up)	—	—	—	0.03 lx (16x)	0.16 lx (8x)
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	f = 3.54 mm, F2.2	f = 2 mm, F2.0
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.	H : 70.3 deg. V : 42.6 deg.	H : 66.9 deg. V : 39.2 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.	H : 70.3 deg. V : 55.4 deg.	H : 66.9 deg. V : 52.3 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	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 (4-areas)
i-VMD (Intelligent VMD) (w/optional extension software)		—	Yes (Type2)	Yes (Type2)	—	—
VIQS		Yes (8-areas)	Yes (8-areas)	Yes (8-areas)	Yes (1-area)	Yes (1-area)
Max. Connection		14	14	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.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	PoE	PoE	12 V DC / PoE	12 V DC / 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 AAC-LC 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 — Pan / Tilt

Indoor / Outdoor		Outdoor			Indoor	
Model Name		**WV-SW175**	**WV-SW174W**	**WV-SW172**	**WV-ST165**	**WV-ST162**
Appearance		ONVIF S	ONVIF S	ONVIF S	ONVIF S	ONVIF S
Sensor		1/4 MOS	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.264 / JPEG
	H.265 / H.264 multi stream	2	2	2	2	2
	JPEG multi stream	6	6	6	6	6
	H.265 / H.264 : VBR / AVBR (Advanced VBR)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)	AVBR (V1.80)
	Smart Coding	—	—	—	—	—
Max. Resolution	16 : 9	1280 x 720	1280 x 720	640 x 360	1280 x 720	640 x 360
	4 : 3	1280 x 960	1280 x 960	800 x 600	1280 x 960	800 x 600
Max. FPS @Max. Resolution	H.265 / H.264	30fps (1.3 MP)	30fps (1.3 MP)	30fps (SVGA)	30fps (1.3 MP)	30fps (SVGA)
	JPEG	30fps (1.3 MP)	30fps (1.3 MP)	30fps (SVGA)	30fps (1.3 MP)	30fps (SVGA)
Super Dynamic / WDR / BLC		WDR	WDR	WDR	WDR	WDR
Color/BW		Day/Night (Electrical)	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	0.6 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)	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	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)	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	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.	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.	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.	-47.5 to +47.5 deg.	-47.5 to +47.5 deg.
	Speed	80 deg/sec	80 deg/sec	80 deg/sec	80 deg/sec	80 deg/sec
Tilt	Range	-45 to +10 deg.	-45 to +10 deg.	-45 to +10 deg.	-45 to +10 deg.	-45 to +10 deg.
	Speed	80 deg/sec	80 deg/sec	80 deg/sec	80 deg/sec	80 deg/sec
360 Pan-Flip		—	—	—	—	—
Number of Preset Positions		64	64	64	64	64
Patrol		—	—	—	—	—
Auto Tracking		—	—	—	—	—
Optical Zoom		—	—	—	—	—
Digital Zoom		8x	8x	8x	8x	8x
VMD (Video Motion Detection)		Yes	Yes	Yes	Yes	Yes
i-VMD (Intelligent VMD) (w/optional extension software)		—	—	—	—	—
VIQS		—	—	—	—	—
Max. Connection		14	14	14	14	14
Audio	In (Line) / Out	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
	In (Built-in MIC)	Yes	Yes	Yes	Yes	Yes
	Codec	G.711 / G.726	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)	Yes (SDHC)	Yes (SDHC)
	Password & Alter Detection	—	—	—	—	—
	Audio REC	—	—	—	—	—
External I/O		Yes (3) (*1)	Yes (3) (*1)	Yes (3) (*1)	Yes (3) (*1)	Yes (3) (*1)
Monitor Out		Yes (mini-jack)	Yes (mini-jack)	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.	0 to +40 deg.	0 to +40 deg.
Power Source		12 V DC / PoE	12 V DC	12 V DC / PoE	12 V DC / PoE	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)

Left table

Outdoor / Indoor	Bracket — Wall Mount Bracket	Bracket — Ceiling Mount Bracket	Bracket — Other Mount Bracket	Ceiling Mount Bracket (Embedded)	Dome Cover — Smoke	Dome Cover — Clear	Other
WV-X8570N (Light gray)	WV-Q185 (Light gray) (*1) — Different Color Model : WV-Q122A (Fine silver) (*1)		Pole Mount Bracket WV-Q182 (Light gray) (*2) — Different Color Model : WV-Q188 (Fine silver) (*3)				
WV-S8530N (Light gray)	WV-Q187 (Light gray) (*2)(*3)		Corner Mount Bracket WV-Q183 (Light gray) (*2) — Different Color Model : WV-Q189 (Fine silver) (*3)				
WV-SFV781L (Light gray)							
WV-X6531NS (Metallic silver)	WV-Q122AS (Heavy salt damage resistance)	WV-Q121BS (Heavy salt damage resistance)					
WV-X6531N (Natural silver)	WV-Q122A (Fine silver) — Different Color Model : WV-Q185 (Light gray)	WV-Q121B	Pole Mount Bracket WV-Q188 (Fine silver) (*3) — Different Color Model : WV-Q182 (Light gray) (*2)				
WV-X6511N (Natural silver)			Corner Mount Bracket WV-Q189 (Fine silver) (*3) — Different Color Model : WV-Q183 (Light gray) (*2)				
WV-S6530N (Natural silver)							
WV-S6131 (Sail white)	WV-Q119			WV-Q126A	WV-CS5S transmissivity : approx. 40%	WV-CS5C	
WV-S6111 (Sail white)		WV-Q105A					
WV-S6130 (Fine silver)	WV-Q158S (Smoke) WV-Q158C (Clear) Smoke type transmissivity : approx. 50%			WV-Q159S (Smoke) WV-Q159C (Clear) Smoke type transmissivity : approx. 50% · WV-Q160S (Smoke) WV-Q160C (Clear) Smoke type transmissivity : approx. 50%			Inner Cover WV-Q161
WV-S2550L (Light gray)	WV-Q185 (Light gray) (*4) — Different Color Model : WV-Q122A (Fine silver) (*5)	Although it is different from the camera color, the following models can be connected. : WV-Q121B (Fine silver) WV-Q124 (Fine silver)	Pole Mount Bracket WV-Q182 (Light gray) (*2)(*4) — Different Color Model : WV-Q188 (Fine silver) (*3)(*5)	WV-Q169A (*6)	WV-CW7S · WV-CW7SN (ClearSight coating) transmissivity : approx. 45%	WV-CW7CN (ClearSight coating)	Sun Shade WV-Q7118
WV-S2531LTN (Light gray)	WV-Q186 (Light gray) (*2) — Different Color Model : WV-Q124 (Fine silver) (*3)	WV-Q105A (*6)	Corner Mount Bracket WV-Q183 (Light gray) (*2)(*4) — Different Color Model : WV-Q189 (Fine silver) (*3)(*5)				
WV-S2531LN (Light gray)							
WV-S2511LN (Light gray)							
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) : This bracket requires WV-Q186.   (*5) : This bracket requires WV-Q124.   (*6) : For Indoor installation only

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Right table

Outdoor / Indoor	Bracket — Wall Mount Bracket	Bracket — Ceiling Mount Bracket	Bracket — Other Mount Bracket	Ceiling Mount Bracket (Embedded)	Dome Cover — Smoke	Other
WV-S2250L (Sail white)		WV-Q105A		WV-Q174B	WV-CR1S transmissivity : approx. 45%	
WV-S2231L (Sail white)						
WV-S2211L (Sail white)						
WV-S2131L (Sail white)					WV-CF5SA transmissivity : approx. 30%	
WV-S2131 (Sail white)						
WV-S2130 (Sail white)						
WV-S2111L (Sail white)						
WV-S2110 (Sail white)						
WV-S3531L (Light gray)						
WV-S3532LM (Light gray)						
WV-S3511L (Light gray)						
WV-S3512LM (Light gray)						
WV-S3131L (Sail white)						
WV-S3111L (Sail white)						
WV-SFV110(M) (Light gray)					WV-CW6SA transmissivity : approx. 36%	
WV-SFN130 (Sail white)						
WV-SFN110 (Sail white)						
WV-X4571L (Light gray)	WV-Q185 (Light gray) (*4) — Different Color Model : WV-Q122A (Fine silver) (*5)	Although it is different from the camera color, the following models can be connected. : WV-Q121B (Fine silver) WV-Q124 (Fine silver)	Pole Mount Bracket WV-Q182 (Light gray) (*2)(*4) — Different Color Model : WV-Q188 (Fine silver) (*3)(*5)			
WV-S4550L (Light gray)						
WV-SFV481 (Light gray)	WV-Q186 (Light gray) (*2) — Different Color Model : WV-Q124 (Fine silver) (*3)		Corner Mount Bracket WV-Q183 (Light gray) (*2)(*4) — Different Color Model : WV-Q189 (Fine silver) (*3)(*5)			
WV-SW458 (Light gray)						
WV-X4171 (Sail white)		WV-Q105A				
WV-X4170 (Sail white)						
WV-S4150 (Sail white)						
WV-SFN480 (Sail white)						
WV-SF438 (Sail white)						
WV-S1550L (Metallic silver)			Pole Mount Bracket WV-Q188 (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)			
WV-SPV781L (Metallic silver)						
WV-SPW532L (Light gray)						
WV-SPW312L (Light gray)						

★ 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.

Side tab labels (left page): EXTREME Concept · New Products · Function Introduction · Network Camera Comparison Chart · Multi-Sensor · PTZ · Fixed Dome · 360-degree Dome · Box · Pan/Tilt · Network products

i-PRO EXTREME

TURBO-RAID Network Disk Recorder
WJ-NX400 H.265 H.264 JPEG Onvif*|S

(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.
- digicert® device certificates pre-installed *Secure Communication Kits are necessary.
- Built-in GUI and Dual HDMI (4K/FHD) outputs

Example of a Basic Connection System

Network Camera (Max. 128)
Management Software
Monitor
Network
WJ-HXE400 (Max. 5)
WJ-NX400
NAS device

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)

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i-PRO EXTREME

TURBO-RAID Network Disk Recorder
WJ-NX300 H.265 H.264 JPEG Onvif*|S

[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-HXE400

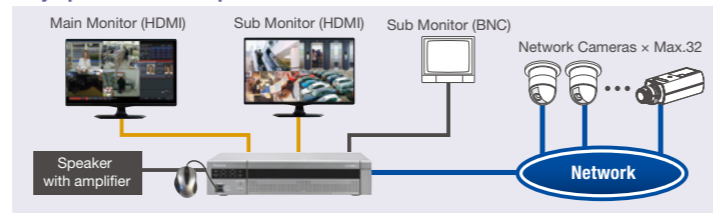| Power Source	120 V AC, 60 Hz (NTSC), 220 - 240 V AC, 50 Hz (PAL)
Power Consumption	approx. 85 W
Dimensions	430 mm (W) x 132 mm (H) x 413 mm(D) (From Rack Mount Bracket 400 mm) (16-15/16" (W) x 5-3/16" (H) x 16-1/4" (D)) (From Rack Mount Bracket 15-3/4") (excluding rubber feet and projections)
Weight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

Rack Mount Bracket
WV-Q202

Easy Operation and Setup without PC

Main Monitor (HDMI) Sub Monitor (HDMI) Sub Monitor (BNC)
Network Cameras × Max.32
Speaker with amplifier
Network

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i-PRO EXTREME

Network Disk Recorder
WJ-NX200 H.265 H.264 JPEG Onvif*|S

[WJ-NX200K (120 V AC): NTSC] [WJ-NX200K/G (220 - 240 V AC): PAL]
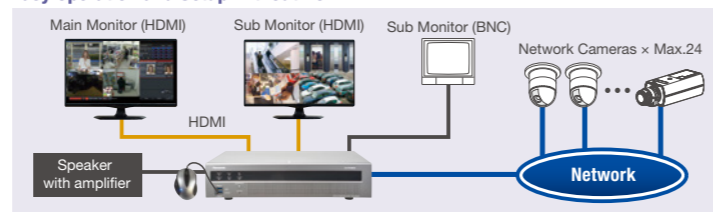
Additional Camera Kits : WJ-NXE20, WJ-NXE20W

- 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

Main Monitor (HDMI) Sub Monitor (HDMI) Sub Monitor (BNC)
Network Cameras × Max.24
HDMI
Speaker with amplifier
Network

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

Secure

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

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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.

Face Matching

WJ-NX300   WJ-NX200

*To use this product, it is necessary to register the license (Registration Key) for Additional Business Intelligence Kit into the WJ-NX300/WJ-NX200 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 file[*1] on a USB 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®

### Multi Channel High Definition Video Decoder
WJ-GXD400

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

H.264 MPEG-4 JPEG

- 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)
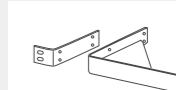
EIA 48.26 cm (19 inch)
Rack Mount Bracket
WV-Q204/2S
(for mounting two WJ-GXD400)
Joint bracket
*Only 3 pieces of joint brackets are necessary. One piece of joint bracket will be unnecessary.

WV-SMR10

(12V DC or PoE)

Vandal Resistant

- **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 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.

360-degree Network Microphone
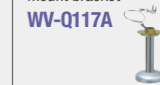WV-SMR10 with 360-degree
Network Camera WV-SF438
WV-SMR10N3

* 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
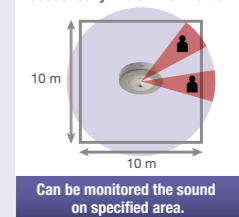**WV-Q117A**

System Example

Network microphone with 360-degree network camera

Management software WV-ASM300
Real-time monitoring of audio and video Playback of recorded audio and video (Network Disk Recorder required)

Network disk recorder WJ-NX300
Real-time monitoring of audio and video Playback of recorded audio and video

Pick up clear sound of specified area in noisy or acoustically live environments.

10 m

10 m

Can be monitored the sound on specified area.

Network Products — Plug-in Software

NEW Vehicle Search Server Software
WV-ASV100W

Client Plug-in Software (Genetec / VideoInsight)
WV-ASVC101W

Additional Camera Kit
1ch : WV-ASVE101W / 4ch : WV-ASVE104W

Update Software (1 year)
WV-ASVM111W

Suspicious vehicle can be searched by feature and narrowed down quickly

Enables law enforcement to find the candidate of suspicious vehicle efficiently even by the incomplete information from witness such as lack of license plate, then helps to accelerate time of investigation.

Searching vehicle from appearance information

• Search by date / time, location, vehicle type, vehicle color, direction, which is often provided by witness of crime or incident.
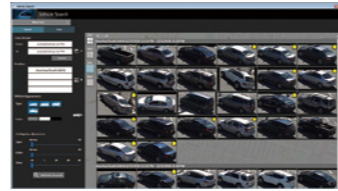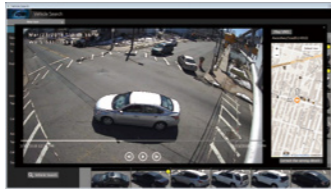
Time & Date
From 3/23/2018 12:10 PM
To 3/23/2018 12:30 PM

Position
AvonAve/South14thSt

Vehicle Appearance
Type
Color

© OpenStreetMap contributors

Narrow down from search result list

• 1 click on a thumbnail and Play high resolution image from VMS to confirm.
• The direction of the car is displayed on the map with the playback image and the thumbnail image.
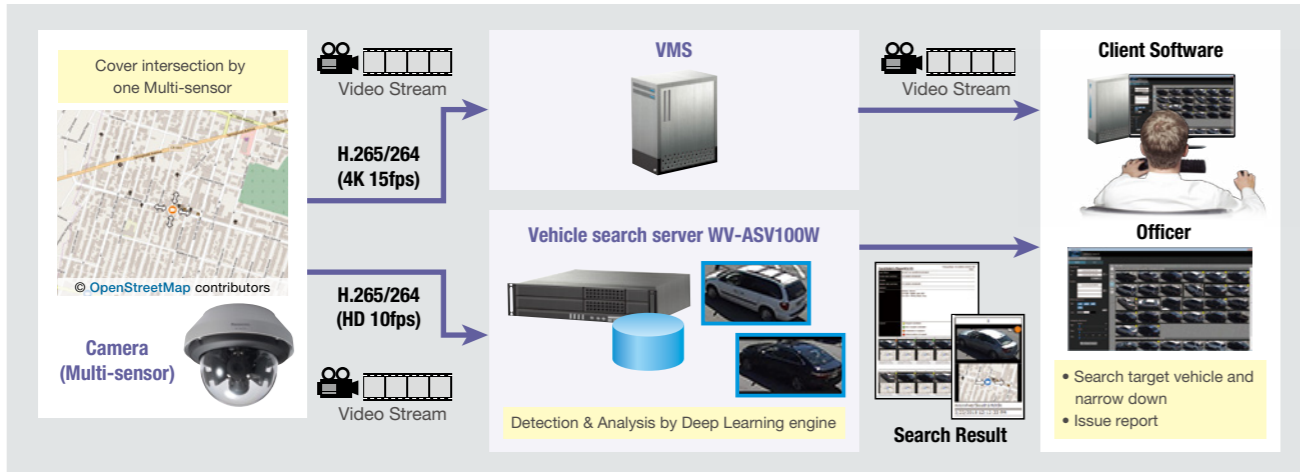
• Select and mark on any candidate. All selected items are easily checked in case management window.

Make out a report including direction information

• In the case management window, manage suspicious candidates and create the report for on-site officer to confirm with witness easily & quickly, such as, by email.

S
AvonAve/South14thSt
3/23/2018 12:13:57 PM

Example of a Basic Connection System

Cover intersection by one Multi-sensor
© OpenStreetMap contributors

Camera (Multi-sensor)

Video Stream
Video Stream
Video Stream

H.265/264 (4K 15fps)
H.265/264 (HD 10fps)

VMS

Vehicle search server WV-ASV100W
Detection & Analysis by Deep Learning engine

Client Software
Video Stream

Officer

Search Result
• Search target vehicle and narrow down
• Issue report

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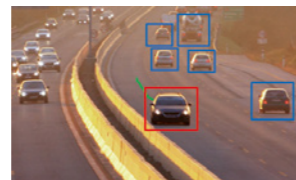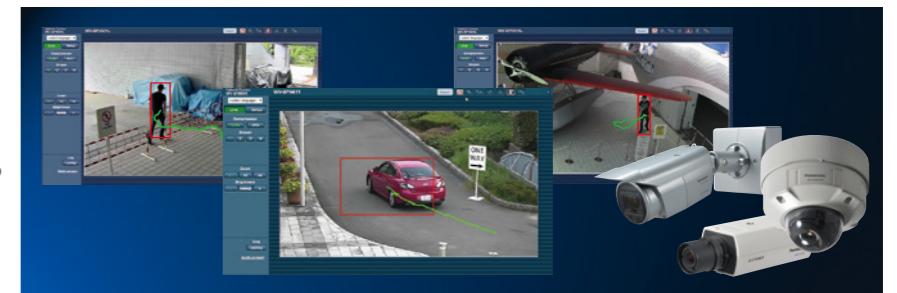
Wrong-way detection
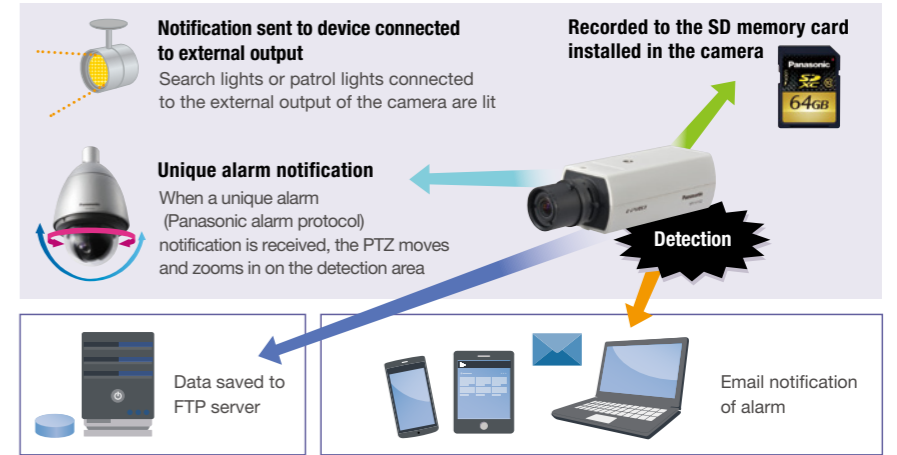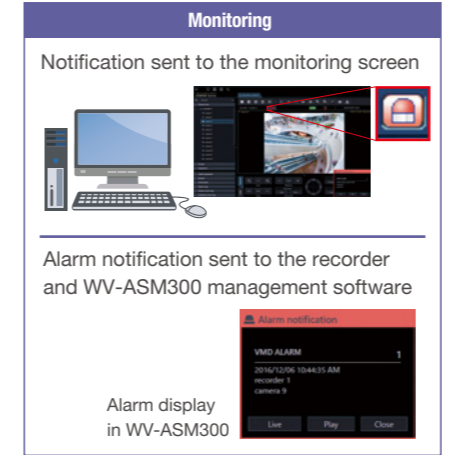*The photo is for illustrative purposes only

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

Network Products — Plug-in Software

Plug-in Software for i-VMD
WV-SAE200   i-VMD

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

Monitoring

Notification sent to the monitoring screen

Alarm notification sent to the recorder and WV-ASM300 management software

Alarm display in WV-ASM300

Notification sent to device connected to external output
Search lights or patrol lights connected to the external output of the camera are lit

Unique alarm notification
When a unique alarm (Panasonic alarm protocol) notification is received, the PTZ moves and zooms in on the detection area

Recorded to the SD memory card installed in the camera

Detection

Data saved to FTP server

Email notification of alarm

Extension Software
WV-SAE303W

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

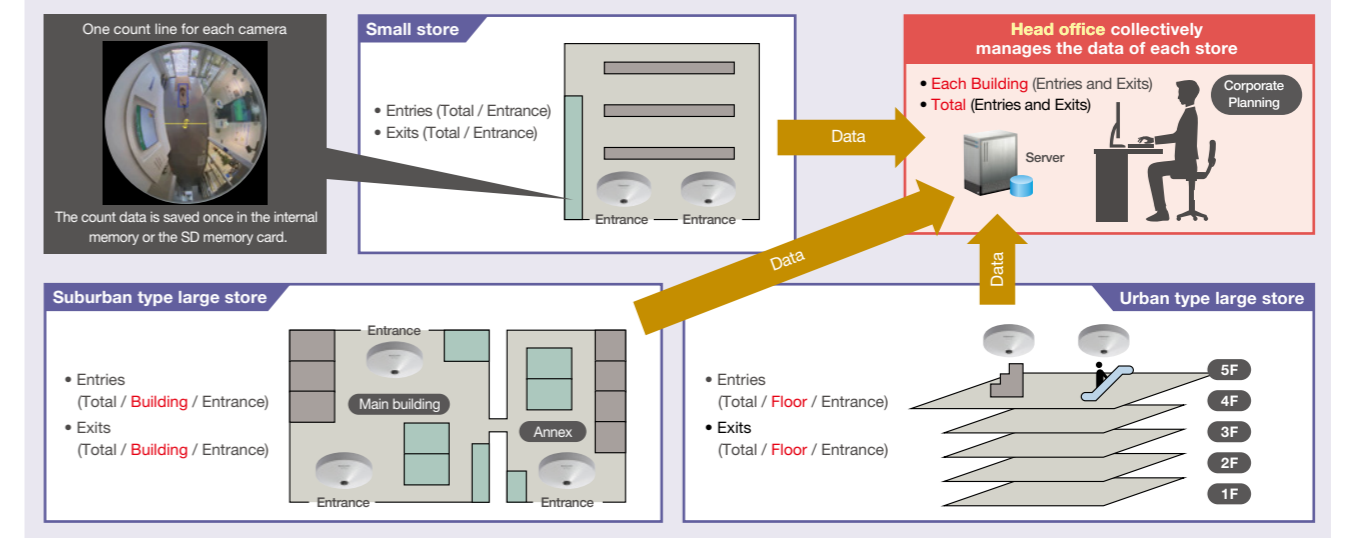### Software for solving marketing problems with a 360-degree Dome Camera

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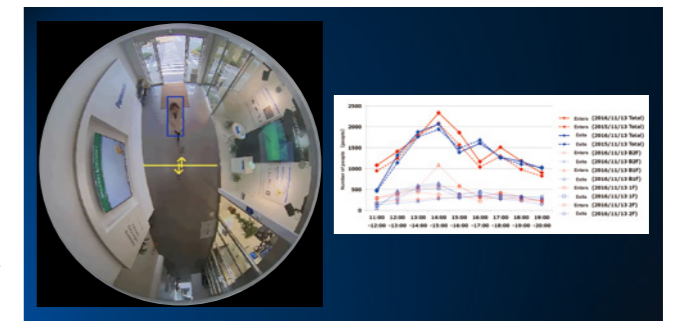
*In some places where people frequently stop or where there is direct sunshine, the people number count accuracy may decrease.
*For other installation conditions, please visit the support website. https://security.panasonic.com/kms/

• 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.**

One count line for each camera

The count data is saved once in the internal memory or the SD memory card.

Small store
• Entries (Total / Entrance)
• Exits (Total / Entrance)
Entrance — Entrance

Head office collectively manages the data of each store
• Each Building (Entries and Exits)
• Total (Entries and Exits)
Corporate Planning
Server
Data

Suburban type large store
• Entries (Total / Building / Entrance)
• Exits (Total / Building / Entrance)
Entrance
Main building
Annex
Entrance   Entrance

Urban type large store
• Entries (Total / Floor / Entrance)
• Exits (Total / Floor / Entrance)
5F 4F 3F 2F 1F

Data
Data
Data

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

Optional Accessory

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

(The pictures above are only for images.)

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-HD616/716 series
- Redundant function supported (Redundant function can consist of 2 WV-ASC970 servers as Main server and Standby server)

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-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.

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-ASE903
- Visibility Enhancement Function
*Same as WV-ASE205 below.

Extension Software WV-ASE904
- Controlling Video Insight server

Extension Software WV-ASE905
- The cropping function of 4K video.

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i-PRO Central Management Software
WV-ASM300

Extension Software
WV-ASE202 / ASE203 / ASE204 / ASE205 / ASE306

WV-ASM300

Optional Accessory

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

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

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.

- 1-screen/4-screen PTZ compensation function (hereinafter compensation function) from the fish-eye images of the Panasonic Fisheye network cameras
- Supports 360-degree Network Microphone (WV-SMR10)
- Selecting the camera icon in map window, a still image of the camera is overlaid.
- Live window, Map window in addition to the Operation window (3 monitors)
- Control using the Ethernet System Controller WV-CU950
*To use the multi-monitor function, it is necessary to install an additional video card on the PC in use.

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-ASE205
- Visibility Enhancement Function

Spatial Tonal Correction	Snowfall and Rainfall Noise Reduction	Multi-frame Synthesis Noise Reduction

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.

Spatial Tonal Correction , Snowfall and Rainfall Noise Reduction

WV-ASE204
- Decoder registration: Up to 10 decoders

Extension Software WV-ASE306
- Controlling Video Insight server

Facial Recognition Server Software
WV-ASF950
Face Matching

Additional Camera Kit
1ch : WV-ASFE901 / 4ch : WV-ASFE904

Additional Face Registration Kit
10,000 face : WV-ASFE951

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.
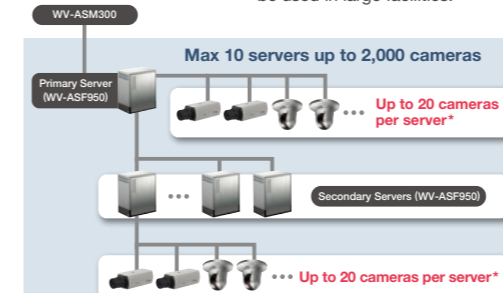
Cost advantage
- Up to 20 cameras can be connected to one server. Reduce the system total cost such as server cost, network cost etc.
*The number of cameras that can be connected is determined by the number of people passing and the retention period of the face image.

Best shot

Best shot (optimum image extraction) function equipped camera

Face detection, Face image clipping, Best shot judgment

Send only necessary images (best shot images)

Facial Recognition server **Low load**

Image analysis
- Face matching, report alarm
- Age and gender evaluation

System scalability

WV-ASM300

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

Max 10 servers up to 2,000 cameras

Primary Server (WV-ASF950)

Up to 20 cameras per server*

Secondary Servers (WV-ASF950)

Up to 20 cameras per server*

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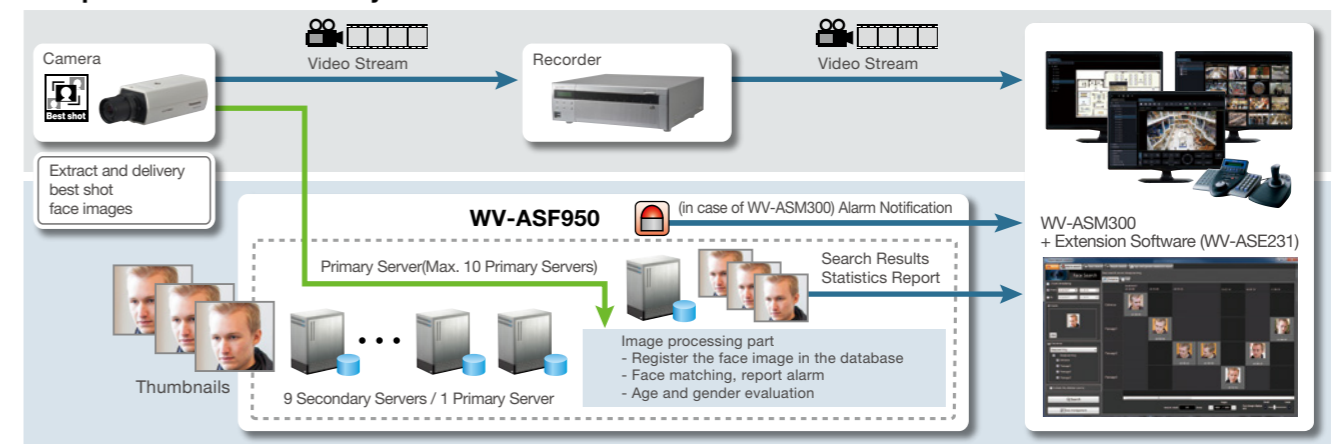
Face Matching
- When it is matched with registered people, alarm of face matching is output in real-time, and display an alarm history in the list.
- Specified screen image can be played back on control monitor with double-clicking on an alarm history.

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

Camera

Best shot

Video Stream Recorder Video Stream

Extract and delivery best shot face images

WV-ASF950 (in case of WV-ASM300) Alarm Notification

WV-ASM300 + Extension Software (WV-ASE231)

Primary Server(Max. 10 Primary Servers)

Search Results Statistics Report

Image processing part
- Register the face image in the database
- Face matching, report alarm
- Age and gender evaluation

Thumbnails

9 Secondary Servers / 1 Primary Server

Extension software
WV-ASE231
for WV-ASM300

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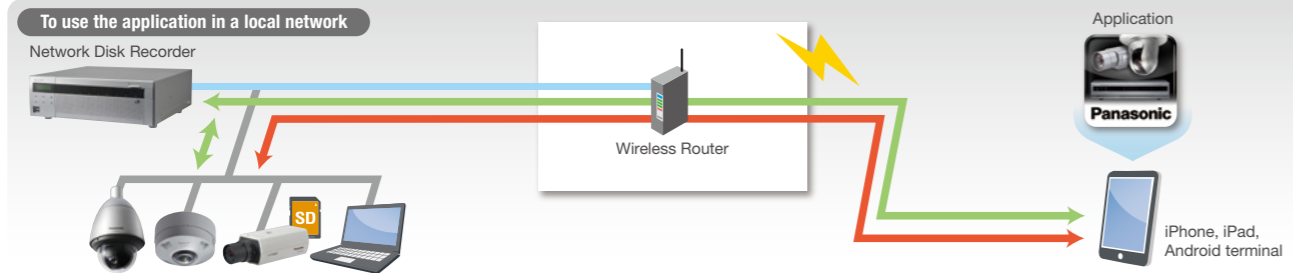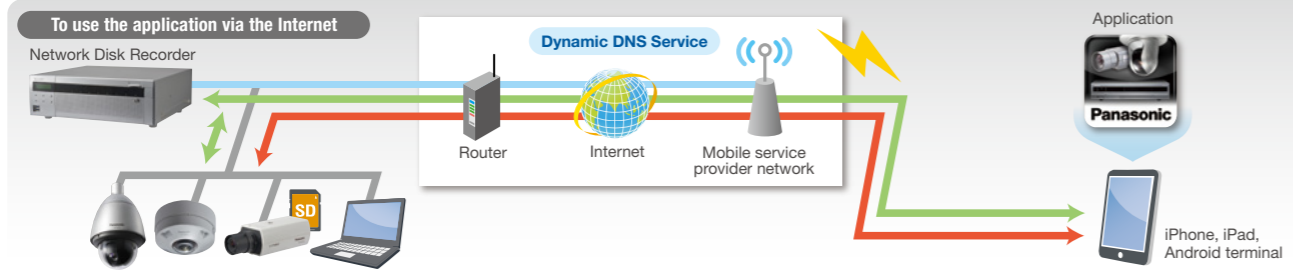- i-VMD (Intelligent Video Motion Detection) tracking path display on WV-ASM300 screen

Network Products — Application for Smartphone / Tablet PC

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.
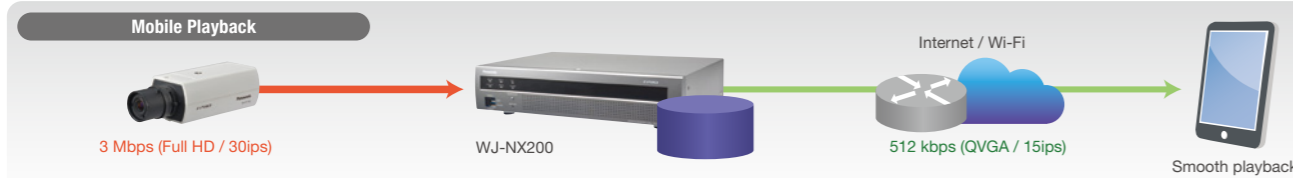
Preface

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

To use the application via the Internet
Network Disk Recorder
Dynamic DNS Service
Router — Internet — Mobile service provider network
Application — Panasonic
iPhone, iPad, Android terminal

To use the application in a local network
Network Disk Recorder
Wireless Router
Application — Panasonic
iPhone, iPad, Android terminal

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

Mobile Playback
3 Mbps (Full HD / 30ips) → WJ-NX200 → Internet / Wi-Fi → 512 kbps (QVGA / 15ips) → Smooth playback

WJ-NX400 / WJ-NX300 / WJ-NX200 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 only.

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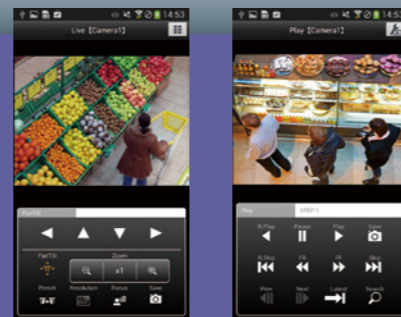
Features of the application

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)
• 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

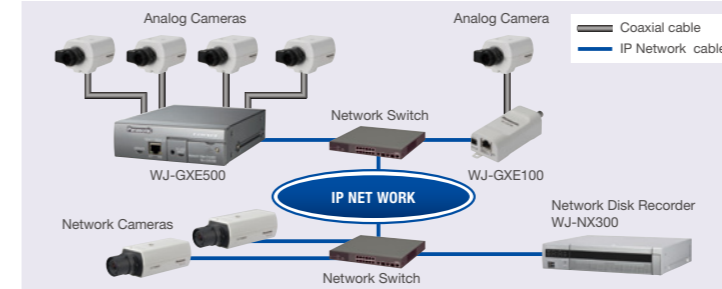| OS	iOS 8 or later
How to get the application	Download from the App Store.
Operation check terminals	iPhone5, iPhone5S, iPhone6, iPhone6 Plus, iPhone6s, iPhone7, iPhone X, iPad Retina, iPad Air, iPad mini, iPad Pro

• Download the application from here.
iPhone / iPad https://security.panasonic.com/ios/

Network Products — IP Migration

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.
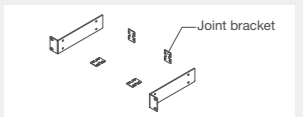
Basic System Connection Example

Analog Cameras — Analog Camera
Coaxial cable / IP Network cable
WJ-GXE500 — Network Switch — WJ-GXE100
Network Cameras — IP NET WORK — Network Disk Recorder WJ-NX300
Network Switch

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)
Joint bracket

1 CH H.264 Video Encoder
WJ-GXE100
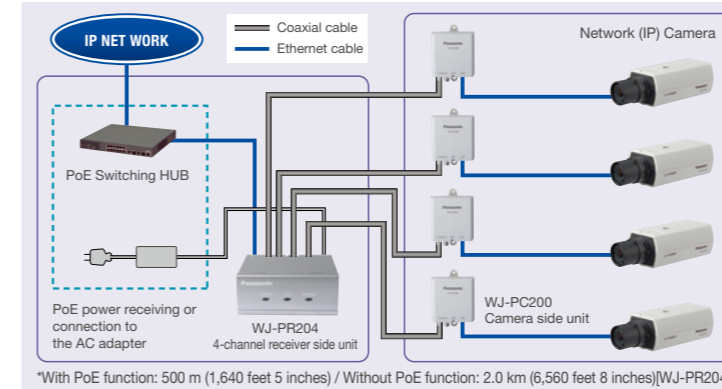(12 V DC or PoE)
H.264 JPEG Onvif™ S

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

IP NET WORK
Coaxial cable / Ethernet cable
Network (IP) Camera
PoE Switching HUB
PoE power receiving or connection to the AC adapter
WJ-PR204 4-channel receiver side unit
WJ-PC200 Camera side unit

*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.

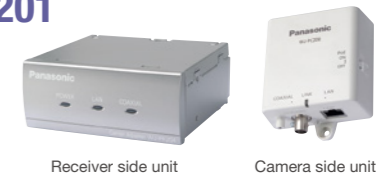**Coaxial-LAN Converter with PoE function**
4-channel receiver side unit | Camera side unit
WJ-PR204   WJ-PC200
1-channel receiver side unit
WJ-PR201
(Indoor use only)
Receiver side unit | Camera side unit

Optional Accessory
Rack Mount Connecting Fitting
BY-HCA10A
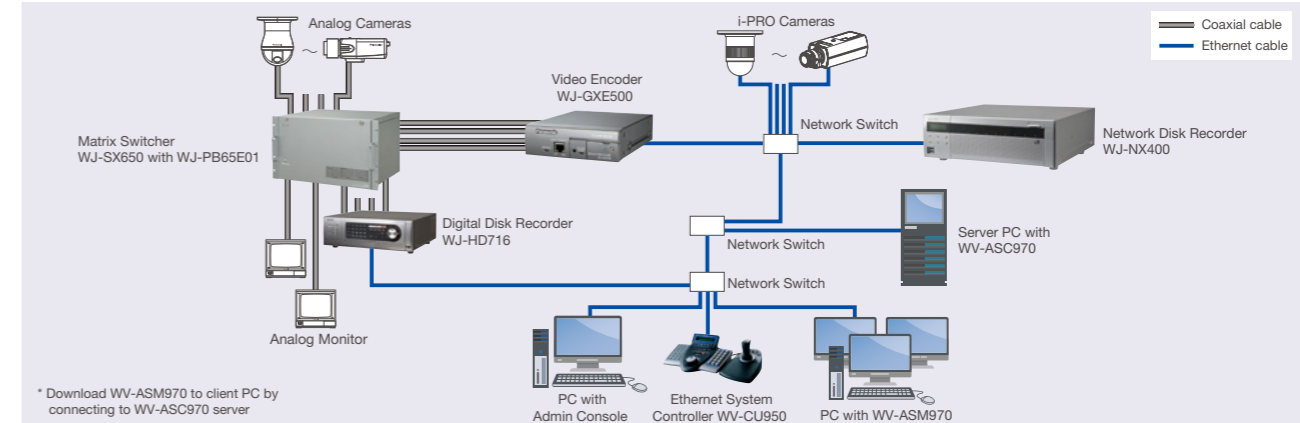(for mounting three or four Receiver side unit)
– For U.S. and Canada : BY-HCA10A
– For Europe and other countries : BY-HCA10CE

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

Analog Cameras — i-PRO Cameras
Coaxial cable / Ethernet cable
Video Encoder WJ-GXE500
Matrix Switcher WJ-SX650 with WJ-PB65E01
Network Switch — Network Disk Recorder WJ-NX400
Digital Disk Recorder WJ-HD716
Network Switch — Server PC with WV-ASC970
Network Switch
Analog Monitor
PC with Admin Console — Ethernet System Controller WV-CU950 — PC with WV-ASM970

* 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.

Panasonic

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

(2B-017BA)