

i-PRO 360-degree Fisheye Network Cameras

WV-X4573L / X4573LM (12MP Sensor Outdoor Vandal Resistant model)

WV-X4172 / X4173 (12MP Sensor Indoor model)

WV-S4551L / S4551LM (5MP Sensor Outdoor Vandal Resistant model)

WV-S4151 (5MP Sensor Indoor model)

Ver. 1.00

Panasonic i-PRO Sensing Solutions Co., Ltd.




Enables 360-degree surveillance
in a new H.265 fisheye camera
with the high quality fisheye lens
captures the image of the person's
face or object at the edge of the
fisheye is clear with less distortion
even in the most challenging
environments.



The new H.265 i-PRO camera allows 360 degree surveillance even in the most challenging environments.

Visibility

- High resolution image with 360-degree fisheye lens
- intelligent Auto **iA** / Super dynamic 120dB(5MP)
- High sensitivity with color night vision 
- View objects in dark condition with IR LED

Data Compression

- H.265 compression with smart coding technology

Video Data Analytics

- Bundled the license of i-VMD(intelligent Video Motion Detection)

Reliability

- Vandal resistant / IP66 compliant / Anti-correction

Data Security

- Secure communication with Digicert certification

Usability

- Support Fiber Optic Media Converter Unit (Option)

Outdoor Vandal type



Indoor type

- **High resolution image with 360-degree fisheye lens** (5MP sensor models)
Captures the image of the person's face or object at the edge of the fisheye is clear with less distortion

Other leading brand
fisheye camera(1)



Other leading brand
fisheye camera(2)

New i-PRO
WV-S4151

■ Super dynamic 120dB (5MP sensor model)

Both bright and dark area are visible by Super Dynamic function.

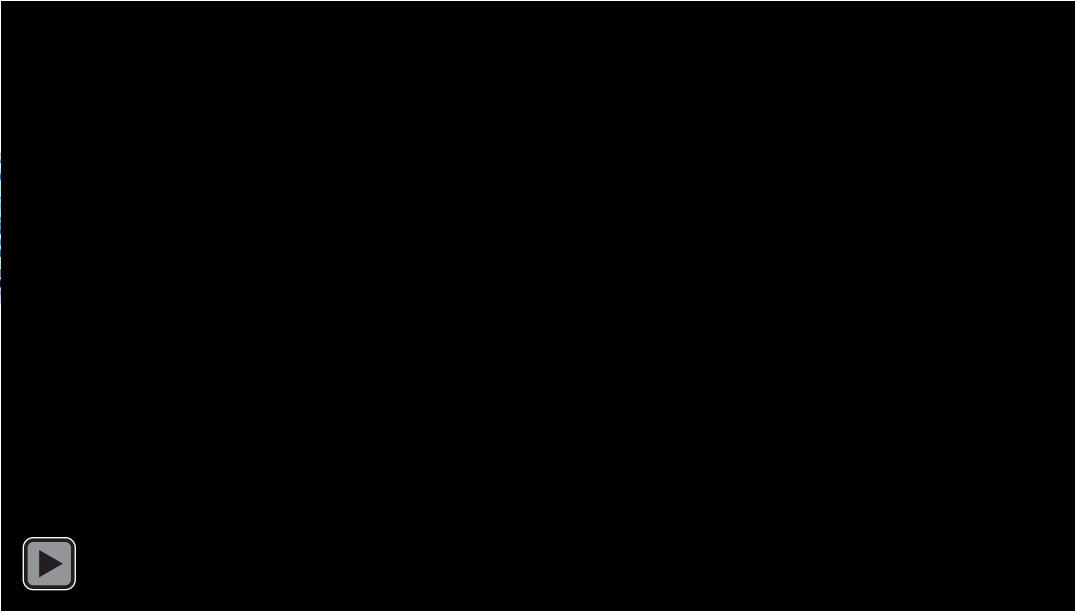
Other leading brand
fisheye camera(1)



Other leading brand
fisheye camera(2)



New i-PRO
WV-S4151



■ High sensitivity with color night vision (12MP sensor models)



It shows clear color images in low light condition at night time

Other leading brand
fisheye camera(1)



Other leading brand
fisheye camera(2)

New i-PRO
WV-S4173



Under 1.5-3 lux lighting environment

H.265 compression with smart coding technology

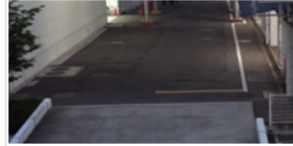
GOP control

Reduces encoding data by using p-frame in place of i-frame when no motion is detected.

With motion



Without motion



Auto-VIQS

Automatically determines areas with and without motion and reduce the data volume of those without motion



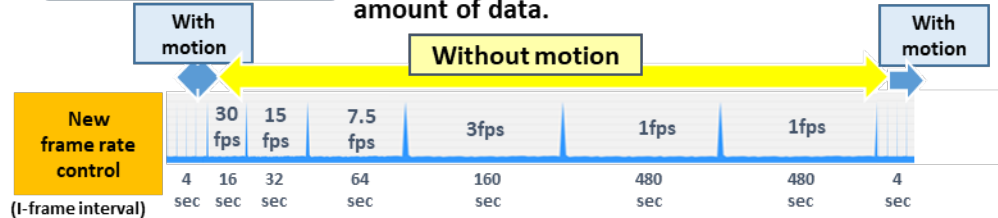
Low bit rate
(Higher
Compression)

High. bit rate
(Original compression)

*Simulated image

Frame control

Dynamically reduce the i-frame rate to reduce the amount of data.



Bit rate
reduction

Conventional
H.264



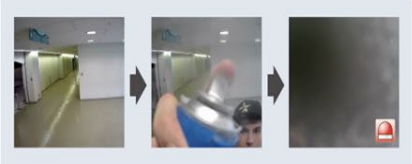

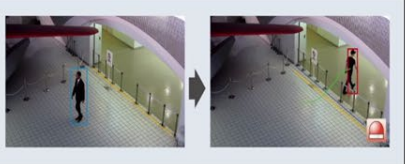


i-PRO
H.265 + Smart coding
Max.95%

Value in bit rate depends on scene

■ Bundled the license of i-VMD(intelligent 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 hence reducing the TCO.

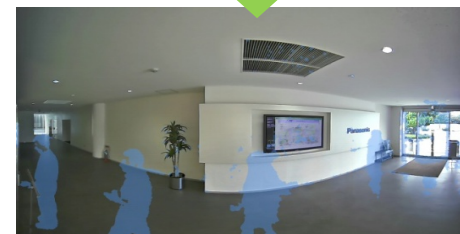
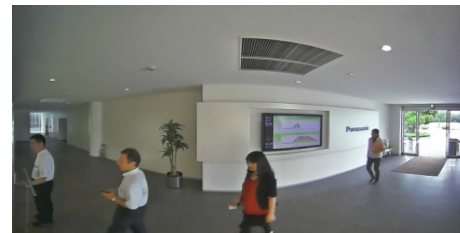
Intruder Detection Crossing over the fence 	Loitering Detection Objects staying longer than a specified time 	
Scene Change Detection Interference such as blockage of the lens with a cloth or spray paint 	Object Detection Removed Object Detection Abandoned Object Detection 	Cross Line Detection A person who crosses the virtual line to the specified direction 

- **Bundled the license of i-VMD(intelligent Video Motion Detection)**
Behavior Analysis / Privacy Protection



Heat Mapping

Analyze high-traffic and long-stay zones



Moving Object Removal

Remove people and moving objects from the video

Achieve high endurance and long life usage under extreme conditions

Dustproof Test



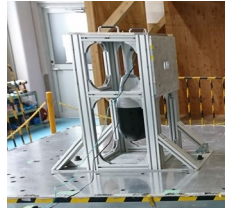
High-Temperature Test



Pressure Test



Earthquake Test



**Waterproof Test
IP66**



IP6K9K



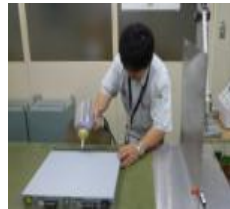
Lifetime Test



Thunder Test



Static Electricity Test



Drop Test



Box Shaking Test



Vibration Test



Achieve high endurance and long life usage under extreme conditions

■ Vandal Resistant

*Except indoor models

- ✓ Highly impact resistant
- ✓ IEC 62262 IK10



■ Water & Dust Resistant

*Except indoor models

- ✓ IP66 (IEC60529)
- ✓ Type 4X(UL50E)
- ✓ NEMA 4X compliant

■ Anti-corrosion screw

*Only WV-X4573L/4573LM

Adoption of Anti-corrosion screws prevents corrosion and improves maintainability.

■ Wind Resistance

*Except indoor models

Operates under up to 40 m/s
(approx. 89 mph) environment

Secure communication with DigiCert certification



Vulnerability Assessment

- 3rd party assessment and penetration tests made to achieve higher security standards



DigiCert Device Certification

- Pre-installed DigiCert Certification
- Video tampering detection



End-to-End Data Encryption

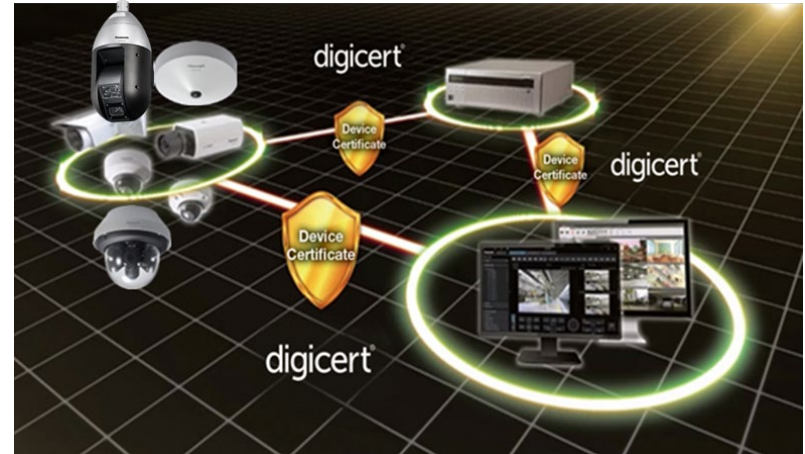
- Support full encryption communication
- Camera encryption recording on-the-edge



FIPS140-2 CAVP compliant

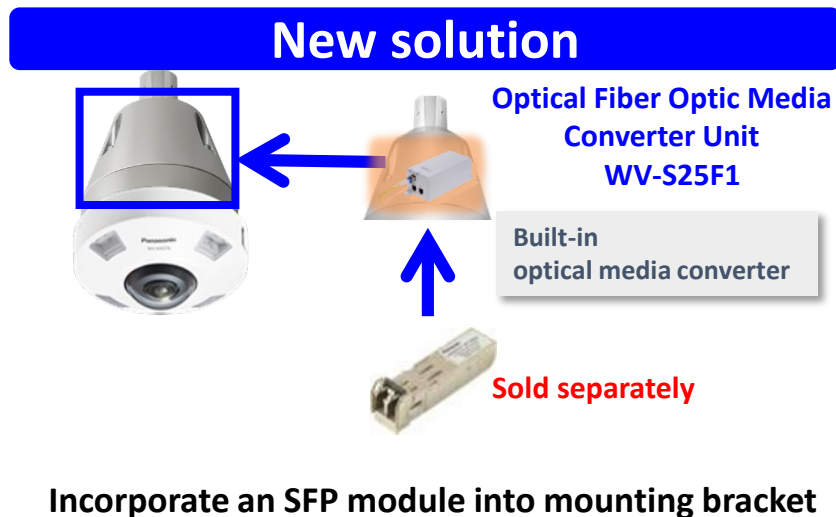
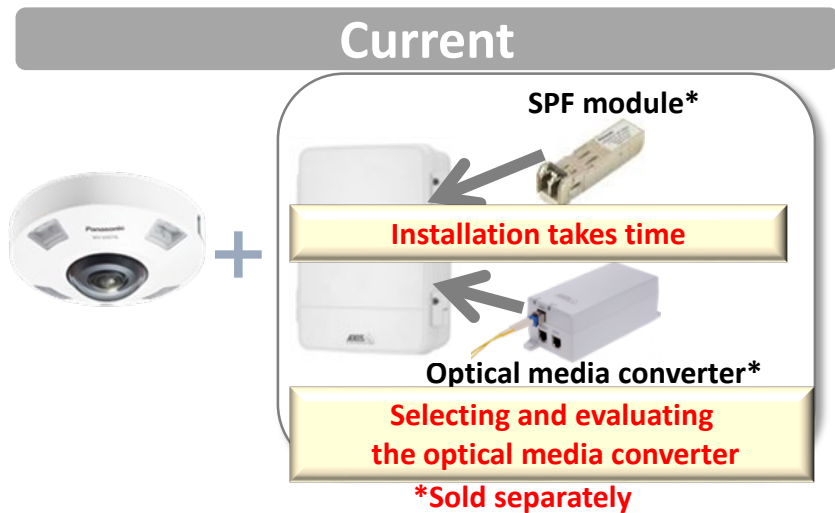
(Federal Information Processing Standardization)

- *Using encryption module standardized by FIPS publication 140-2



■ Support Fiber Optic Media Converter Unit (Option)

The optional optical interface mounting bracket with optical media converter reduces installation time and enables construction of a long distance monitoring system without spending time on selecting and evaluating the optical media converter.



Specifications (5MP sensor models)



		WV-S4151	WV-S4551L	WV-S4551LM
Image sensor		1 / 3 5MP CMOS		
Max. video resolution (pixel)		2192 × 2192 (Fisheye)		
Max. frame rate		30fps / 25fps *When "On (level 30 or 31)" is selected for SD, the frame rate is restricted to a maximum of 15fps (30fps mode) or 12.5fps (25fps mode).		
Minimum Illumination *Shutter speed 1/30s	Color	0.15lx @F2.4, 0.01lx @ shutter speed 16/30		
	B/W	0.1lx @F2.4, 0.006 lx @ shutter speed 16/30	0.02lx @F2.4, 0.0013 lx @ shutter speed 16/30, 0 lx @ IR	
Angular Field of View : Horizontal/Vertical		186° / 186°		
intelligent Auto/ Super Dynamic/Smart coding		intelligent Auto / Super Dynamic (120dB) / Smart Coding		
IR LED /Max.irradiation distance		-	Yes / 10 m (Approx. 33 ft)	
Audio Interface / Compression		input (ø3.5 mm stereo mini jack x 1, Line x1), Output(ø3.5 mm stereo mini jack x 1) / G.726, G.711, AAC-LC		
M12 connector / Railway application		-	- / EN50155-TX	Yes / EN45545 compliant, EN50155-TX
External I/O Terminals		ALARM IN 1(Auto time adjustment) (x1) ALARM IN 2 (ALARM OUT) (x1) , ALARM IN 3 (AUX OUT) (x1)	ALARM IN 1(Black & white input/ Auto time adjustment) (x1) ALARM IN 2 (ALARM OUT) (x1) , ALARM IN 3 (AUX OUT) (x1)	
Environmental		-	IP66(IEC60529), Type 4X(UL50), NEMA 4X compliant, 50J(IEC60068-2-75 compliant), IK10(IEC 62262)	
Power Source / Ambient Operating Temperature		DC12V,PoE -10° C to +50° C (+14° F to +122° F)	DC12V, PoE / -40° C to +50° C (-40° F to 122° F) IR LED is off -40° C to +60° C {-40° F to +140° F}	
Dimension (mm) / Mass (approx.)		ø150 mm × 50.5 mm (H) {ø5-29/32 inches × 2 inches (H)} / 390 g {0.86 lbs}	ø154 mm × 60.3 mm (H) {ø6-1/16 inches × 2-3/8 inches (H)} / 870 g {1.92 lbs}	


Specifications (12MP sensor models)




		WV-X4172	WV-X4173	WV-X4573L	WV-X4573LM
Image sensor		1 / 2 type 12MP CMOS			
Max. video resolution (pixel)		2992 × 2992 (Fisheye)			
Max. frame rate		30fps / 25fps *When "On (level 30 or 31)" is selected for WDR, the frame rate is restricted to a maximum of 15fps (30fps mode) or 12.5fps (25fps mode).			
Minimum Illumination *Shutter speed 1/30s	Color	0.3lx @F1.9, 0.02lx @ shutter speed 16/30			
	B/W	0.2lx @F1.9, 0.01 lx @ shutter speed 16/30		0.04lx @F1.9, 0.003 lx @ shutter speed 16/30, 0 lx @ IR	
Angular Field of View : Horizontal/Vertical		183° / 183°			
intelligent Auto / WDR / Smart coding		intelligent Auto / WDR (84dB) / Smart Coding			
IR LED /Max.irradiation distance		-		Yes, / 10 m (Approx 33ft)	
Audio Interface / Compression		-		input (ø3.5 mm stereo mini jack x 1, Line x1), Output(ø3.5 mm stereo mini jack x 1)/ G.726, G.711, AAC-LC	
M12 connector / Railway application		-		- / EN50155-TX Yes / EN45545 compliant, EN50155-TX	
External I/O Terminals		-		ALARM IN 1(Alarm input 1/ Auto time adjustment input) (x1), ALARM IN 2 (Alarm input 2/ ALARM OUT) (x1) , ALARM IN 3 (Alarm input 3/ AUX OUT) (x1)	
Environmental		-		IP66(IEC60529), Type 4X(UL50), NEMA 4X compliant, 50J(IEC60068-2-75 compliant), IK10(IEC 62262)	
Power Source / Ambient Operating Temperature		PoE / 0° C to +40° C (32° F to 104° F)	PoE / -10° C to +50° C (14° F to 122° F)	DC12V, PoE / -40° C to +50° C (-40° F to 122° F) IR LED is off -40° C to +60° C (-40° F to +140° F)	
Dimension (mm) / Mass (approx.)		ø150 mm × 49.5 mm (H) {ø5-29/32 inches × 1-15/16 inches (H)}/ 400 g {0.88 lbs}	ø150 mm × 49.5 mm (H) {ø5-29/32 inches × 1-15/16 inches (H)}/ 420 g {0.93 lbs}	ø154 mm × 60.3 mm (H) {ø6-1/16 inches × 2-3/8 inches (H)} / 870 g {1.92 lbs}	

It shows the maximum distance at which a camera's tele and wide can meet DORI. *1

*This value does not indicate the performance of the camera

WV-S4151/4551L/4551LM 	Resolution 2192 × 2192		Distance to the object in the center of the image		Coverage radius when mounted at a height of 3 m (10 ft)	
			Distance (m)	Distance (ft)	Distance (m)	Distance (ft)
	Detect	25ppm / 8ppf	20.7	68.0	38.0	124.6
Observe	62.5ppm / 19ppf	8.3	27.2	13.2	43.3	
Recognize	125ppm / 38ppf	4.1	13.6	4.3	14.1	
Identify	250ppm / 76ppf	2.1	6.8	-	-	

WV-X4172/4173 /4573L/4573LM 	Resolution 2992 × 2992		Distance to the object in the center of the image		Coverage radius when mounted at a height of 3 m (10 ft)	
			Distance (m)	Distance (ft)	Distance (m)	Distance (ft)
	Detect	25ppm / 8ppf	29.9	98.2	56.1	184.2
Observe	62.5ppm / 19ppf	12.0	39.3	20.6	67.6	
Recognize	125ppm / 38ppf	6.0	19.6	8.4	27.6	
Identify	250ppm / 76ppf	3.0	9.8	0.3	0.9	

*1 It is calculated with the camera installed horizontally.

Indoor
WV-S4151 / X4172 / X4173



	Ceiling	Wall	Pole	Corner
	1	1	1	1
Combination	WV-Q105A 	WV-QJB500-W 	WV-QPL500-W 	WV-QCN500-W
		WV-QWL500-W 	WV-QJB500-W WV-QWL500-W 	WV-QJB500-W WV-QWL500-W


**Outdoor
Vandal Resistant
WV-S4551L/X4573L**



	Ceiling		
	1	2	3
Combination	WV-Q105A 	WV-QCL501-W 	3rd parties pipe 
		WV-QSR501-W 	WV-QSR501-W 
			WV-QAT500-W 

**Outdoor
Vandal Resistant
WV-S4551LM/X4573LM**



	Ceiling
	1
Combination	WV-QJB501-W 

**Fiber Optic Media
Converter Unit**



WV-S25F1

	Wall	Pole	Corner	
	1	2	1	1
Combination	WV-QWL501-W 	WV-QJB500-W 	WV-QPL500-W 	WV-QCN500-W 
	WV-QSR501-W 	WV-QWL500-W 	WV-QJB500-W WV-QWL500-W 	WV-QJB500-W WV-QWL500-W 

■ Compatible to transit applications

It is robust enough for moving vehicles such as buses and trains to achieve stable monitoring.



**Outdoor Vandal Resistant
WV-S4551LM/X4573LM**

- Vandal resistant (IK10)
- Railway application : EN50155-TX
- Fire safety on rolling stock : EN45545 compliant

Those cameras are suitable under the extreme conditions

- ✓ Retail
 - ✓ Education
 - ✓ Retail
 - ✓ Bank / Logistics / Hospital / Building
 - ✓ Public safety
- and more.



-PRO