

# WV-S4156A

5MP Indoor 360 Fisheye Network Camera with AI engine

## Edge AI 360-degree fisheye camera for video surveillance and business intelligence



- 5MP Indoor 360-degree fisheye camera
- Up to 3 Edge AI analytic apps
- Built-in FIPS 140-2 Level 3 Certified SecureElement (EdgeLock® SE050F NXP® Semiconductors)
- NDAA Compliant



# SPECIFICATIONS

Camera	
Image Sensor	Approx. 1/3 type 5MP CMOS image sensor
Minimum Illumination	Color : 0.15 lx, BW : 0.1 lx (F2.4, Maximum shutter : Off (1/30 s), AGC : 11) Color : 0.01 lx, BW : 0.006 lx (F2.4, Maximum shutter : max. 16/30s, AGC : 11)
Intelligent Auto	On / Off
Maximum Shutter	max. 16/30s to Max. 1/10000s
Super Dynamic	On / Off, The level can be set in the range of 0 to 31.
Dynamic Range	Max.120 dB (Super Dynamic : On, level : 31)
Image Settings	Gain (AGC), White balance
Image Compensation	Adaptive black stretch, Back light compensation (BLC), Fog compensation, High light compensation (HLC), Digital noise reduction
Day / Night (Electrical)	Off / Auto
Video Motion Detection (VMD)	On / Off, 4 areas available
Scene Change Detection (SCD)	On / Off, 1 areas available
Audio Detection	On / Off
AI Sound Classification	Gunshot, Yell, Vehicle horn, Glass break
AI Analytics	AI-VMD/AI People Counting for 360-degree fisheye camera, AI Privacy Guard for 360-degree fisheye camera, AI Scene Change Detection  For details : <a href="https://i-pro.com/products_and_solutions/en/surveillance/products/analytics-software">https://i-pro.com/products_and_solutions/en/surveillance/products/analytics-software</a> 3rd party applications are also available. <a href="https://i-pro.com/products_and_solutions/en/surveillance/solutions/edge-ai-platform/application-list">https://i-pro.com/products_and_solutions/en/surveillance/solutions/edge-ai-platform/application-list</a>
Privacy Zone	On / Off, Up to 8 zones available
Camera Title (OSD)	On / Off, Up to 20 characters (alphanumeric characters, marks)
Fixing angle adjustment	-5°, 0°, +5°
Lens	
Zoom Ratio	1x
Digital (Electronic) Zoom	Choose from 3 levels of x1, x2, x4
Focal Length	0.84 mm {1/32 inches}
Maximum Aperture Ratio	1:2.4
Focus Range	0.3 m {11-13/16 inches} - ∞
Angular Field of View	Horizontal : 186°, Vertical : 186°
DORI	
Distance to the object in the center of the image	Detect (25 ppm / 8 ppf) : 20.7 m / 68.0 ft , Observe (62.5 ppm / 19 ppf) : 8.3 m / 27.2 ft Recognize (125 ppm / 38 ppf) : 4.1 m / 13.6 ft , Identify (250 ppm / 76 ppf) : 2.1 m / 6.8 ft
Coverage radius when mounted at a height of 3 m (10 ft)	Detect (25 ppm / 8 ppf) : 38.0 m / 124.6 ft , Observe (62.5 ppm / 19 ppf) : 13.2 m / 43.3 ft Recognize (125 ppm / 38 ppf) : 4.3 m / 14.1 ft , Identify (250 ppm / 76 ppf) : —
System on Chip (SoC)	
System on Chip (SoC)	Ambarella CV22

Browser GUI	
Camera Control	Brightness, AUX On / Off
Audio	Mic (Line) Input : On / Off Volume adjustment : Low / Middle / High Audio Output : On / Off Volume adjustment : Low / Middle / High
GUI / Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese

Network	
Network IF	10Base-T / 100Base-TX, RJ45 connector
Resolution <Ceiling> <Wall>	<ul style="list-style-type: none"> <li>•Fisheye mode (max. 30 fps/25 fps) 2192×2192 / 1280×1280 / 640×640 / 320×320</li> <li>•Quad PTZ mode (max. 30 fps/25 fps), Single PTZ mode (max. 30 fps/25 fps) 1600×1200 / 1280×960 / 800×600 / VGA / QVGA</li> </ul>
Resolution <Ceiling>	<ul style="list-style-type: none"> <li>•Double Panorama mode (max. 30 fps/25 fps) 1920×1080 / 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Double Panorama mode (max. 30 fps/25 fps) (Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320 (Double Panorama) 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Quad PTZ mode (max. 30 fps/25 fps) (Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320 (Quad PTZ) 1280×960 / 800×600 / VGA / QVGA</li> <li>•Quad streams mode (Single PTZ (Quad streams)) 1280×960 / 800×600 / VGA / QVGA (max. 30 fps/25 fps) (Quad PTZ) 1600×1200 / 1280×960 / 800×600 / VGA / QVGA (max. 5 fps)</li> </ul>
Resolution <Wall>	<ul style="list-style-type: none"> <li>•Panorama mode (max. 30 fps/25 fps) 1920×1080 / 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Panorama mode (max. 30 fps/25 fps) (Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320, (Panorama) 1280×720 / 640×360 / 320×180</li> </ul>
H.265/H.264	[Transmission Mode] Constant bit rate / VBR / Frame rate / Best effort [Transmission Type] Unicast port (AUTO) / Unicast port (MANUAL) / Multicast
JPEG	[Image Quality] 10 steps
Smart Coding	GOP (Group of pictures) control : On (Frame rate control)* / On (Advanced)* / On (Mid) / On (Low) / Off *On (Frame rate control) and On (Advanced) are only available with H.265. Auto VIQS : On / Off
Audio Compression	G.726 (ADPCM) : 16 kbps / 32 kbps, G.711 : 64 kbps, AAC-LC : 64 kbps / 96 kbps / 128 kbps
Supported Protocol	IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMPv1/v2/v3, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ, FTP, SFTP, MQTT, LLDP IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, RTSP, RTP, RTP/RTCP, SMTP, DHCP, DNS, DDNS, NTP, SNMPv1/v2/v3, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ, SRTP, FTP, SFTP, MQTT, LLDP
Maximum concurrent access number	Up to 14 users (Depends on network conditions)
Secure	FIPS 140-2 level 3 (NXP® EdgeLock® SE050F), Device Certificate GlobalSign® pre-installed, HTTPS, User authentication, Digest authentication, Host authentication, IEEE802.1X, System log, Image transmission log, Brute-force protection, Alteration detection
SDXC/SDHC/SD Memory Card (Option)	H.265 / H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC JPEG recording : Manual REC / Alarm REC (Pre/Post) Compatible SDXC/SDHC/SD card : 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 GB**, 256 GB**, 512 GB**model *SDHC card, **SDXC card (except miniSD card and microSD card)
Mobile Terminal Compatibility	iPad / iPhone, Android™ terminals
ONVIF Profile	G / M / S / T

Alarm	
Alarm Source	3 terminals input, VMD, Command alarm
Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification, Indication on browser, TCP alarm notification output

Input/Output	
Audio Input	ø3.5 mm stereo mini jack, Recommended applicable microphone : Plug-in power type (Sensitivity of microphone : -48 dB ±3 dB (0 dB=1 V / Pa,1 kHz)) Input impedance : Approx. 2 kΩ (unbalanced) Supply voltage : 2.5 V ±0.5 V

Built-in microphone	Nondirectional electret condenser microphone
Audio Output	ø3.5 mm stereo mini jack (monaural output) Output impedance : Approx. 600 Ω (unbalanced) Output level : -20 dBV
External I/O Terminals	ALARM IN 1 (Auto time adjustment) (x1), ALARM IN 2 (ALARM OUT) (x1), ALARM IN 3 (AUX OUT) (x1)

General	
Safety	UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1
EMC	FCC (Part15 ClassA), ICES003 ClassA, EN55032 ClassB, EN55035
Power Source and Power Consumption	DC power supply : DC12 V 520 mA, Approx. 6.2 W PoE (IEEE802.3af compliant) Device : DC48 V 140 mA, Approx. 6.7 W (Class 0 device)
Ambient Operating Temperature	-10 °C to +50 °C (14 °F to 122 °F)
Ambient Operating Humidity	10% to 90 % (no condensation)
Dimensions	ø150 mm × 50.5 mm (H) {ø5-29/32 inches × 2 inches (H)}
Mass (Approx.)	Approx. 390 g {0.86 lbs}
Finish	Main body : ABS resin, i-PRO white

## NOTES

### Important

- Safety Precautions : Carefully read the Basic Information, Installation Guide and Operating Instructions before using this product.
- i-PRO Co., Ltd. cannot be held responsible for the performance of the network and/or other manufacturers' products used on the network.
- Masses and dimensions are approximate.
- Specifications are subject to change without notice.

### Trademarks and registered trademarks

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## Bundled License

### AI-VMD/AI People Counting with the 360-degree fisheye camera

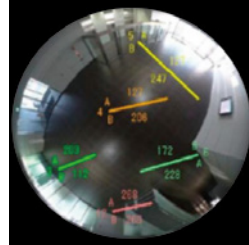
#### AI Video Motion Detection

- AI differentiates between vehicles and people, detecting and sending warning notifications when an intruder enters a specified area.
- Intruder detection:**  
Issues an alarm when a moving object enters a specified area.
- Cross Line detection:**  
Issues an alarm when an object moving in the specified direction crosses a specified threshold.
- Loitering detection:**  
Issues an alarm when a moving object enters a specified area and stays there for a specified amount of time.

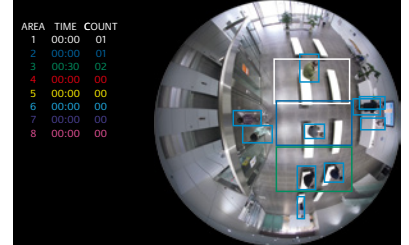


#### People Counting

- Cross Line Counting:**  
Counts the number of people moving in a specified direction and cross a specified threshold.
- Area Counting (Queue Management):**  
Counts the number of people in the set area.



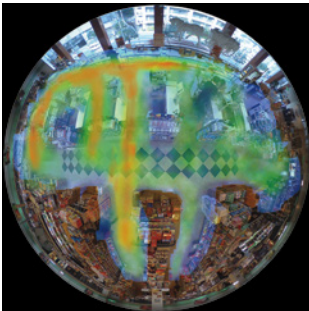
Cross Line Counting



Area Counting

#### Heat map

- Heat mapping provides statistical information about traffic flow and keeps counts for people passing through and loitering in the area.



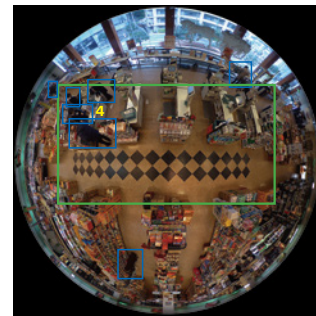
Passing



Loitering

#### Occupancy detection

- The network camera uses its AI engine to detect congestion, providing data that can be used to direct visitor traffic flow in advance or help staff work more efficiently.



### AI Privacy Guard for 360-degree fisheye

#### AI Privacy Guard

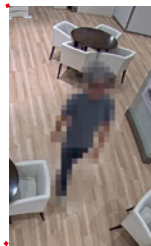
- AI can automatically mosaic faces and figures of people who are photographed to safeguard privacy and portrait rights.



Original image



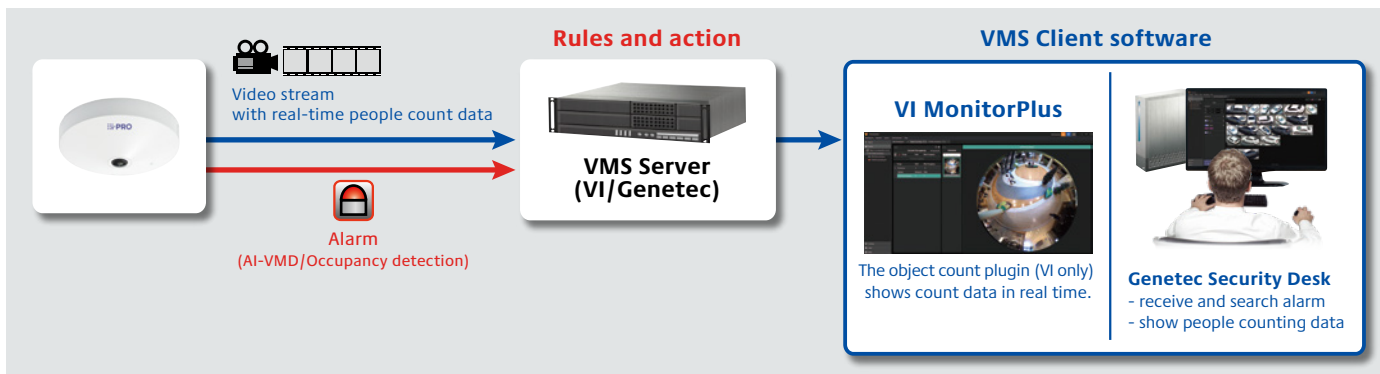
Processed image



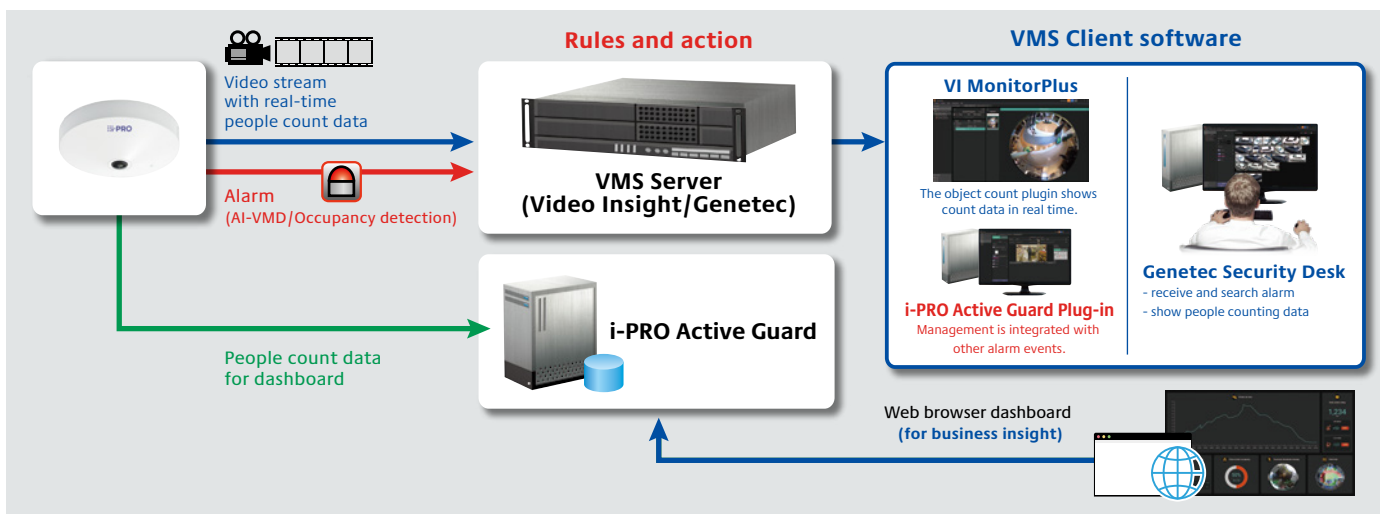
### i-PRO Active Guard

- The i-PRO Active Guard stores the best images and metadata captured by i-PRO network cameras, then collates this data with the watch list registered in the client software and issues an alarm when a match is found. The server does not require expensive hardware because i-PRO network cameras handle the advanced processing. The server can even be installed on the same hardware as the VMS. The system comprises the i-PRO Active Guard, the AI application installed on i-PRO network cameras utilizing AI engines, and i-PRO Active Guard Plug-in software for the VMS client.

#### Example of basic system connection (without i-PRO Active Guard)

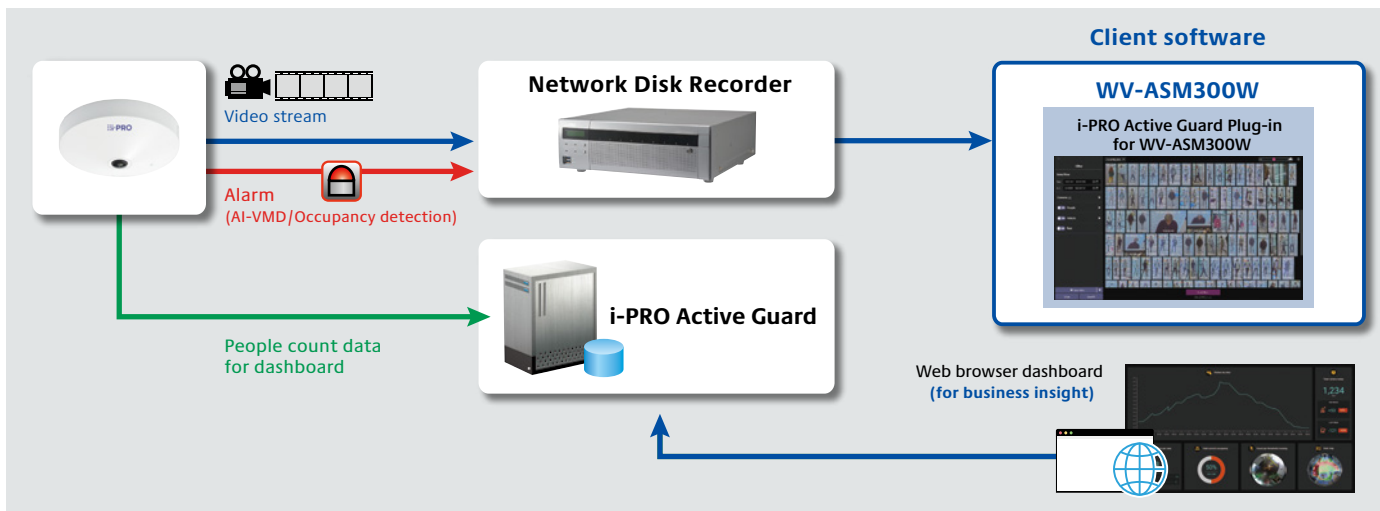


#### Example of basic system connection (with i-PRO Active Guard) for Video Insight/Genetec



\*VMS Server and i-PRO Active Guard can be installed on the same server.

#### Example of basic system connection for WV-ASM300W/Network disk recorder



## OPTIONAL ACCESSORIES

Select a compatible accessory  
[Accessory Selector \(i-pro.com\)](http://i-pro.com).



WV-Q105A  
Mount Bracket



WV-QCL100-W  
Mount Bracket



WV-QCL101-W  
Mount Bracket



WV-QCL102-W  
Universal Camera  
Mount Bracket



WV-QCN500-W  
Mount Bracket



WV-QJB500-W  
Mount Bracket



WV-QLR100-W  
Light Rail Mount  
Bracket



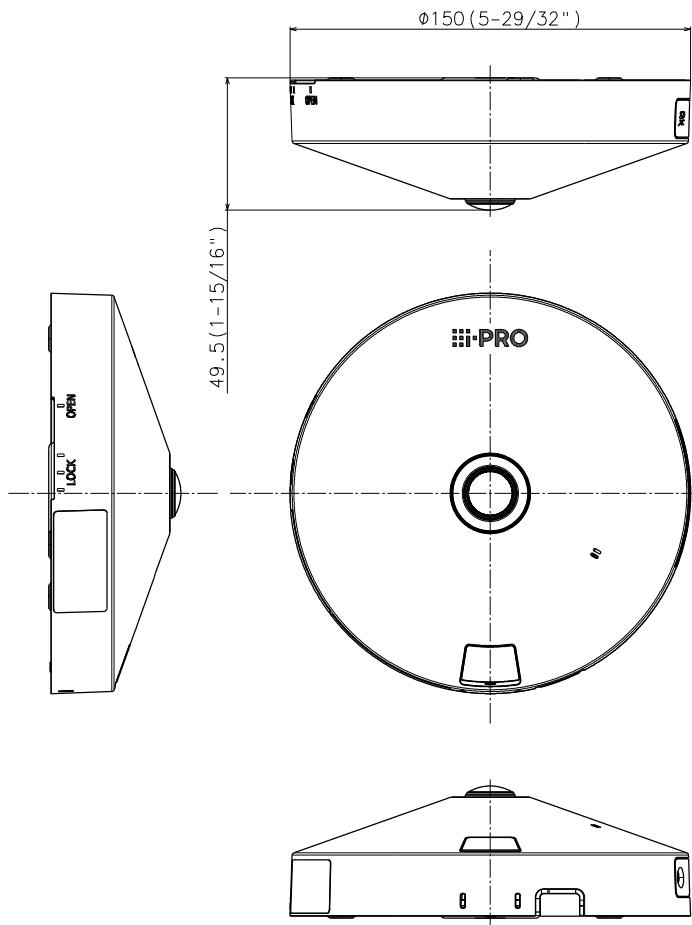
WV-QPL500-W  
Mount Bracket



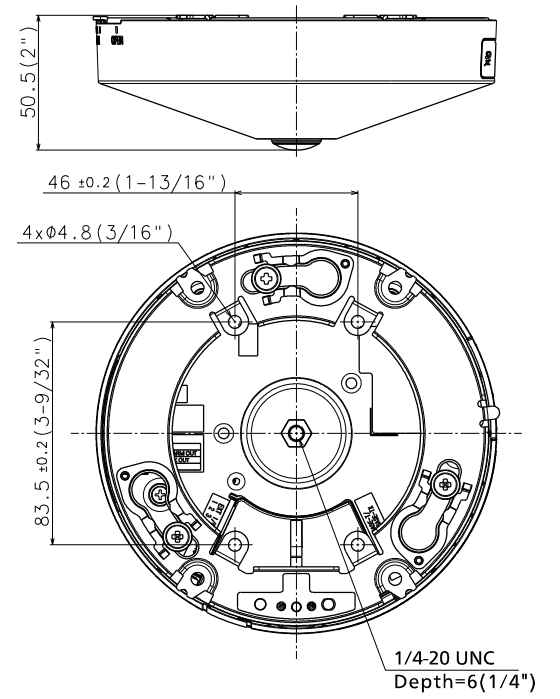
WV-QWL500-W  
Mount Bracket



WV-PM500  
Compact microphone  
unit for surveillance  
cameras



Inside of camera  
fixing screw cover



With attachment plate

Mass : Approx. 390 g {0.86 lbs} (When using the attachment plate)

Unit : mm

