

# WV-S4576LM

12MP Sensor IR In-vehicle 360 Fisheye Network Camera with AI engine

**Edge AI 360-degree fisheye camera that provides video surveillance without any blind spots and business intelligence.**



- 12MP Sensor
- 2992x2992 pixel fisheye images up to 30fps
- Intelligent Auto (with AI Engine)
- Smart Coding (with AI Engine)
- ABF (Auto Back Focus)
- IP66, IK10, 50J compliant, Anti-Condensation System
- Built-in IR LED
- NDAA Compliant



# SPECIFICATIONS

| Camera                       |  |
|------------------------------|--|
| Image Sensor                 | Approx. 1/2 type 12MP CMOS image sensor  |
| Minimum Illumination         | Color : 0.3 lx<br>BW : 0.04 lx (F1.9, Maximum shutter : Off (1/30 s), AGC : 11)<br>BW : 0 lx (F1.9, Maximum shutter : Off (1/30 s), AGC : 11, when the IR LED is lit)<br>Color : 0.02 lx<br>BW : 0.003 lx (F1.9, Maximum shutter : max. 16/30s, AGC : 11)  |
| Intelligent Auto             | On / Off   |
| Maximum Shutter              | max. 16/30s to Max. 1/10000s   |
| Super Dynamic                | On / Off,<br>The level can be set in the range of 0 to 31.   |
| Dynamic Range                | Max.84 dB<br>(Wide Dynamic Range : 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  |
| Color/BW (ICR)               | Off / On (IR Light Off) / On (IR Light On) / Auto1 (IR Light Off) / Auto2 (IR Light On) / Auto3 (SCC)  |
| IR LED Light                 | High* / Middle / Low / Off<br>*Maximum irradiation distance : 14 m{Approx. 45 ft}(30IRE), 10 m {Approx. 33 ft}<br>(Mounting height : Approx. 3 m, Peripheral intensity control : On)   |
| Video Motion Detection (VMD) | On / Off,<br>4 areas available   |
| Scene Change Detection (SCD) | On / Off,<br>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, AI Scene Change Detection<br><br>For details<br><a href="https://i-pro.com/global/en/surveillance/products/i-pro-ai-application">https://i-pro.com/global/en/surveillance/products/i-pro-ai-application</a><br>3rd party applications are also available.<br><a href="https://i-pro.com/global/en/surveillance/i-pro-application-platform/application-list">https://i-pro.com/global/en/surveillance/i-pro-application-platform/application-list</a> |
| Privacy Zone                 | On / Off,<br>Up to 8 zones available   |
| Camera Title (OSD)           | On / Off,<br>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                 | 1.4 mm {1/16 inches}   |
| Maximum Aperture Ratio       | 1:1.9  |
| Focus Range                  | 0.5 m {19-11/16 inches} - ∞  |

|   |   |
|---|---|
| Angular Field of View                                   | Horizontal : 183°<br>Vertical : 183°  |
| <b>DORI</b>   |   |
| Distance to the object in the center of the image       | Detect (25 ppm / 8 ppf) : 29.9m / 98.2ft<br>Observe (62.5 ppm / 19 ppf) : 12.0m / 39.3ft<br>Recognize (125 ppm / 38 ppf) : 6.0m / 19.6ft<br>Identify (250 ppm / 76 ppf) : 3.0m / 9.8ft  |
| Coverage radius when mounted at a height of 3 m (10 ft) | Detect (25 ppm / 8 ppf) : 56.1m / 184.2ft<br>Observe (62.5 ppm / 19 ppf) : 20.6m / 67.6ft<br>Recognize (125 ppm / 38 ppf) : 8.4m / 27.6ft<br>Identify (250 ppm / 76 ppf) : 0.3m / 0.9ft   |
| <b>Browser GUI</b>                                      |   |
| Camera Control  | Brightness, AUX On / Off  |
| Audio   | Mic (Line) Input :<br>On / Off Volume adjustment : Low / Middle / High<br>Audio Output :<br>On / Off Volume adjustment : Low / Middle / High  |
| GUI / Setup Menu Language                               | English, Italian, French, German, Spanish, Portuguese, Russian,<br>Chinese, Japanese  |
| <b>Network</b>  |   |
| 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)<br/>2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320</li> <li>•Quad PTZ mode (max. 15 fps/12.5 fps), Single PTZ mode (max. 15 fps/12.5 fps)<br/>2560×1920 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / VGA / QVGA</li> </ul>   |
| Resolution <Ceiling>                                    | <ul style="list-style-type: none"> <li>•Double Panorama mode (max. 15 fps/12.5 fps)<br/>2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Double Panorama mode (max. 15 fps/12.5 fps)<br/>(Fisheye) 2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320<br/>(Double Panorama) 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Quad PTZ mode (max. 15 fps/12.5 fps)<br/>(Fisheye) 2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320<br/>(Quad PTZ) 1280×960 / 800×600 / VGA / QVGA</li> <li>•Quad streams mode<br/>(Single PTZ (Quad streams)) 1280×960 / 800×600 / VGA / QVGA (max. 15 fps/12.5 fps)<br/>(Quad PTZ) 2560×1920 / 2048×1536 / 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. 15 fps/12.5 fps)<br/>2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180</li> <li>•Fisheye + Panorama mode (max. 15 fps/12.5 fps)<br/>(Fisheye) 2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320<br/>(Panorama) 1280×720 / 640×360 / 320×180</li> </ul>   |
| H.265/H.264   | [Transmission Mode]<br>Constant bit rate / VBR / Frame rate / Best effort<br>[Transmission Type]<br>Unicast port (AUTO) / Unicast port (MANUAL) / Multicast   |
| JPEG  | [Image Quality]<br>10 steps   |
| Smart Coding  | GOP (Group of pictures) control :<br>On (Frame rate control)* / On (Advanced)* / On (Mid) / On (Low) / Off<br>*On (Frame rate control) and On (Advanced) are only available with H.265.<br>Auto VIQS : On / Off   |
| Audio Compression                                       | G.726 (ADPCM) : 16 kbps / 32 kbps<br>G.711 : 64 kbps<br>AAC-LC : 64 kbps / 96 kbps / 128 kbps   |
| Supported Protocol                                      | IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMP v1/v2/v3, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ<br>IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, RTSP, RTP, RTP/RTCP, SMTP, DHCP, DNS, DDNS, NTP, SNMP v1/v2/v3, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ, SRTP   |
| Maximum concurrent accessnumber                         | Up to 14 users (Depends on network conditions)  |

|                                   |   |
|-----------------------------------|---|
| Secure                            | Device Certificate GlobalSign® pre-installed, User authentication, Host authentication, HTTPS, 802.1X Support, Data encryption  |
| SDXC/SDHC/SD Memory Card (Option) | H.265 / H.264 recording :<br>Manual REC / Alarm REC (Pre/Post) / Schedule REC / JPEG recording : Manual REC / Alarm REC (Pre/Post)<br>Compatible SDXC/SDHC/SD card :<br>2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB**, 128 GB**, 256 GB**, 512GB**model<br>*SDHC card, ** SDXC card (except miniSD card and microSD card) |
| Mobile Terminal Compatibility     | iPad / iPhone<br>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

|                                 |   |
|---------------------------------|---|
| Monitor output (for adjustment) | VBS : 1.0 V [p-p] / 75 Ω, composite, ø3.5 mm mini jack<br>An NTSC or PAL signal can be outputted from camera  |
| Audio Input                     | [For microphone]<br>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))<br>Input impedance : Approx. 2 kΩ (unbalanced) Supply voltage : 2.5 V ±0.5 V<br>[For line]<br>Input level : Approx. -10 dBV |
| Audio Output                    | ø3.5 mm stereo mini jack (monaural output)<br>Output impedance : Approx. 600 Ω (unbalanced)<br>Output level : -20 dBV   |
| External I/O Terminals          | ALARM IN1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1)<br>ALARM IN2 (Alarm input 2/ ALARM OUT) (x1)<br>ALARM IN3 (Alarm input 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, EN55024, EN55035<br>ECE-R10, EN50498 compliant, EN50121   |
| Power Source and Power Consumption | DC power supply : DC 12 V 1.1 A/Approx. 13.2 W , PoE (IEEE802.3af compliant, Alternative A)<br>Device : DC 48 V 270 mA/Approx. 12.95 W (Class 0 device)          |
| Ambient Operating Temperature      | IR LED : On -40 °C to +50 °C (-40 °F to 122 °F) / Off -40 °C to +60 °C (-40 °F to 140 °F)  |
| Ambient Operating Humidity         | 10 to 100 % (no condensation)  |
| Anti-Condensation System           | Rosahl element   |
| Water and Dust Resistance          | IP66(IEC60529), Type 4X(UL50), NEMA 4X compliant   |
| Shock Resistance                   | 50J (IEC 60068-2-75 compliant), IK10 (IEC 62262)   |
| Wind Resistance                    | Up to 40 m/s {approx. 89 mph}  |
| Railway Application                | EN45545 compliant, EN50155-TX  |
| Dimensions                         | When using the attachment plate only :<br>ø154 mm × 60.3 mm (H) {ø6-1/16 inches × 2-3/8 inches (H)}<br>Dome radius 35 mm {1-3/8 inches}                          |
| Mass (Approx.)                     | When using the attachment plate only :<br>Approx. 880 g {1.94 lbs}   |
| Finish                             | Main body : Aluminum die cast, i-PRO white<br>Outer fixing screws : Stainless steel (Corrosion-resistant treatment)<br>Dome section : Polycarbonate resin, Clear |

## 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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- All other trademarks identified herein are the property of their respective owners

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## Bundled License

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

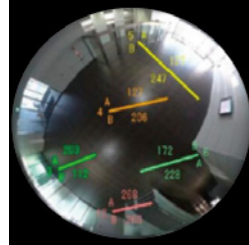
#### AI Video Motion Detection

- 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.

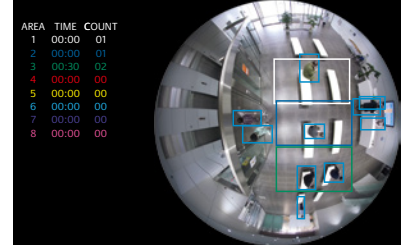


#### People Counting

- 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.



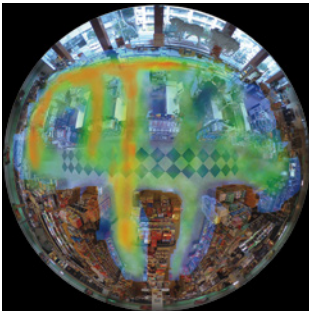
Cross Line Counting



Area Counting

#### Heat map

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



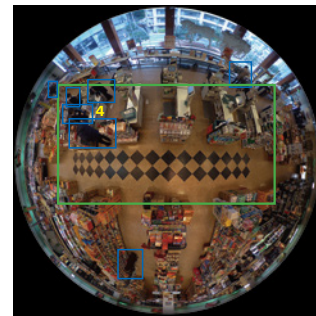
Passing



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

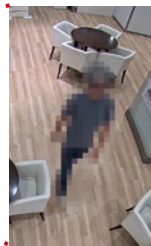
- AI can automatically mosaic faces and figures of people who are photographed to safeguard privacy and portrait rights.



Original image



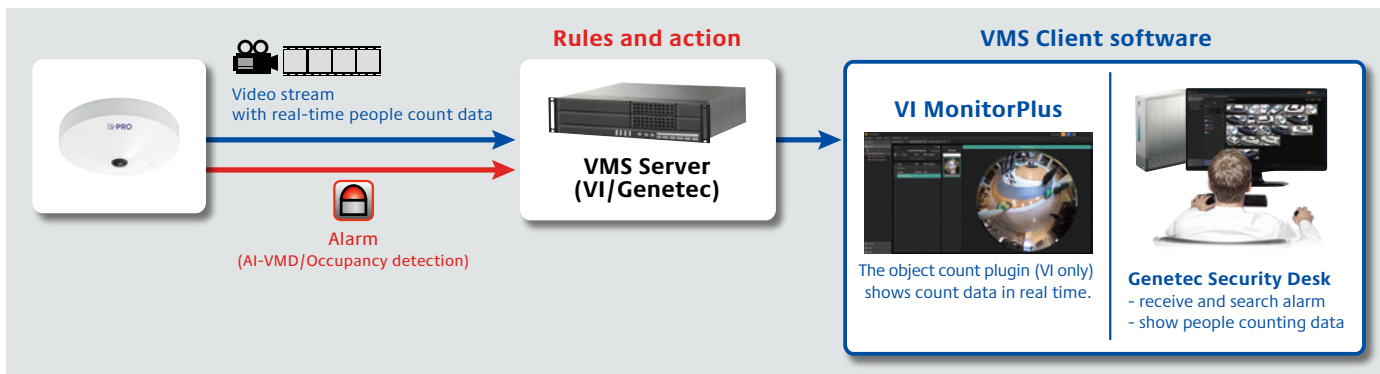
Processed image



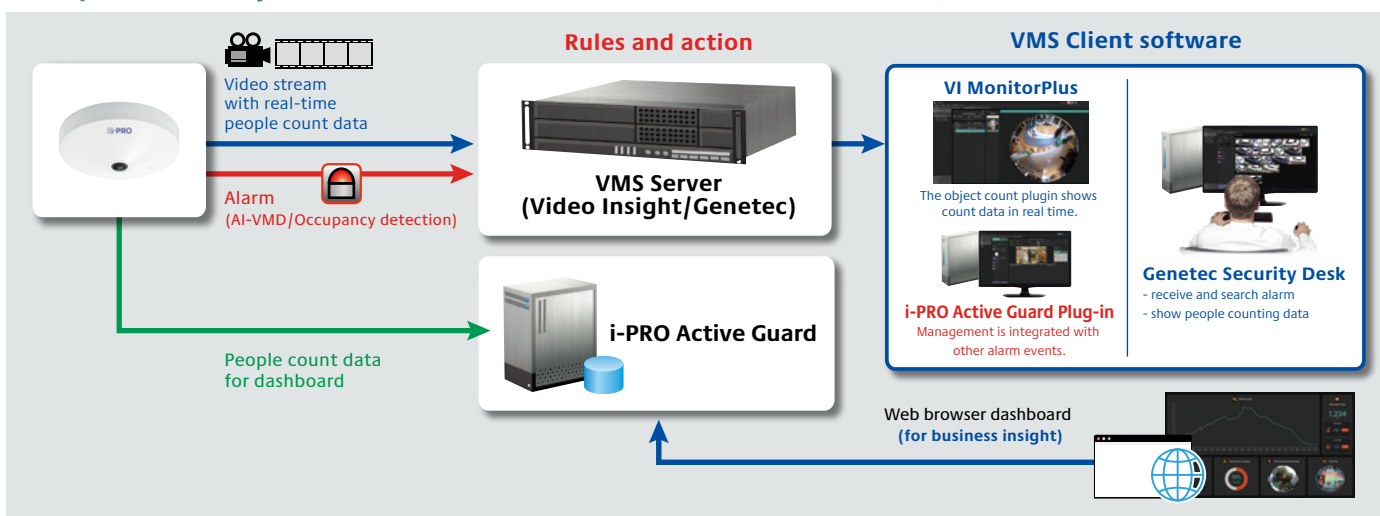
## i-PRO Active Guard

- 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)

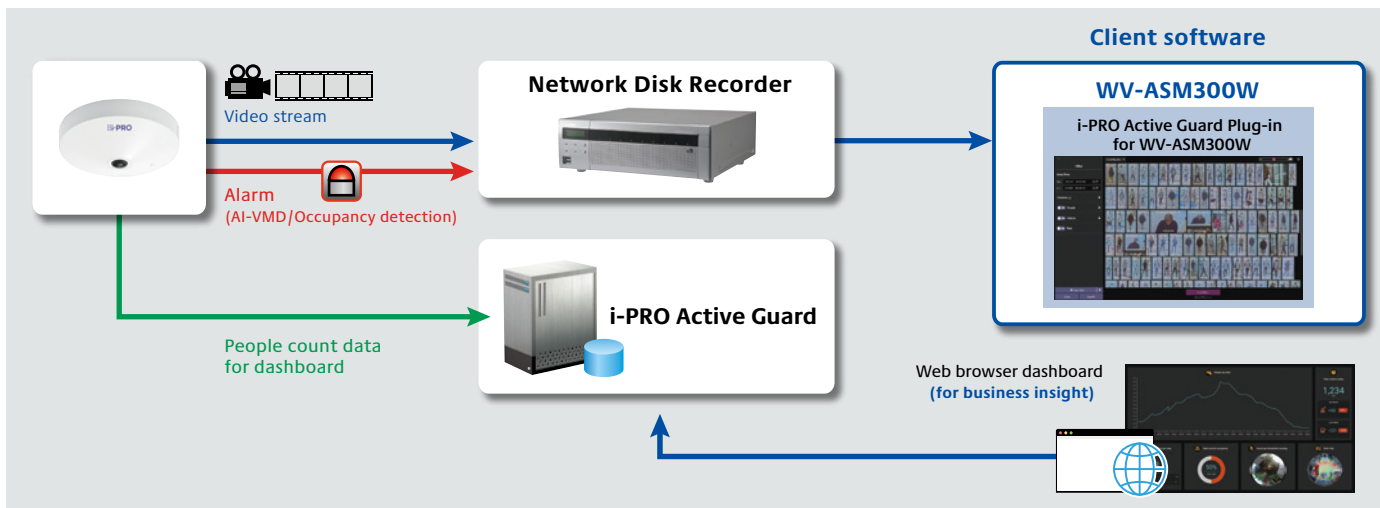


### Example of basic system connection (with i-PRO Active Guard) for Video Insight/Genetec



\*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-QWL500-W  
Mount Bracket



WV-QJB500-W  
Mount Bracket



WV-QSR501-W  
Mount Bracket



WV-QWL501-W  
Mount Bracket



WV-QPL500-W  
Mount Bracket



WV-QCN500-W  
Mount Bracket



WV-QCL501-W  
Mount Bracket



WV-QCL100-W  
Mount Bracket



WV-QCL101-W  
Mount Bracket



WV-QCL102-W  
Universal Camera  
Mount Bracket

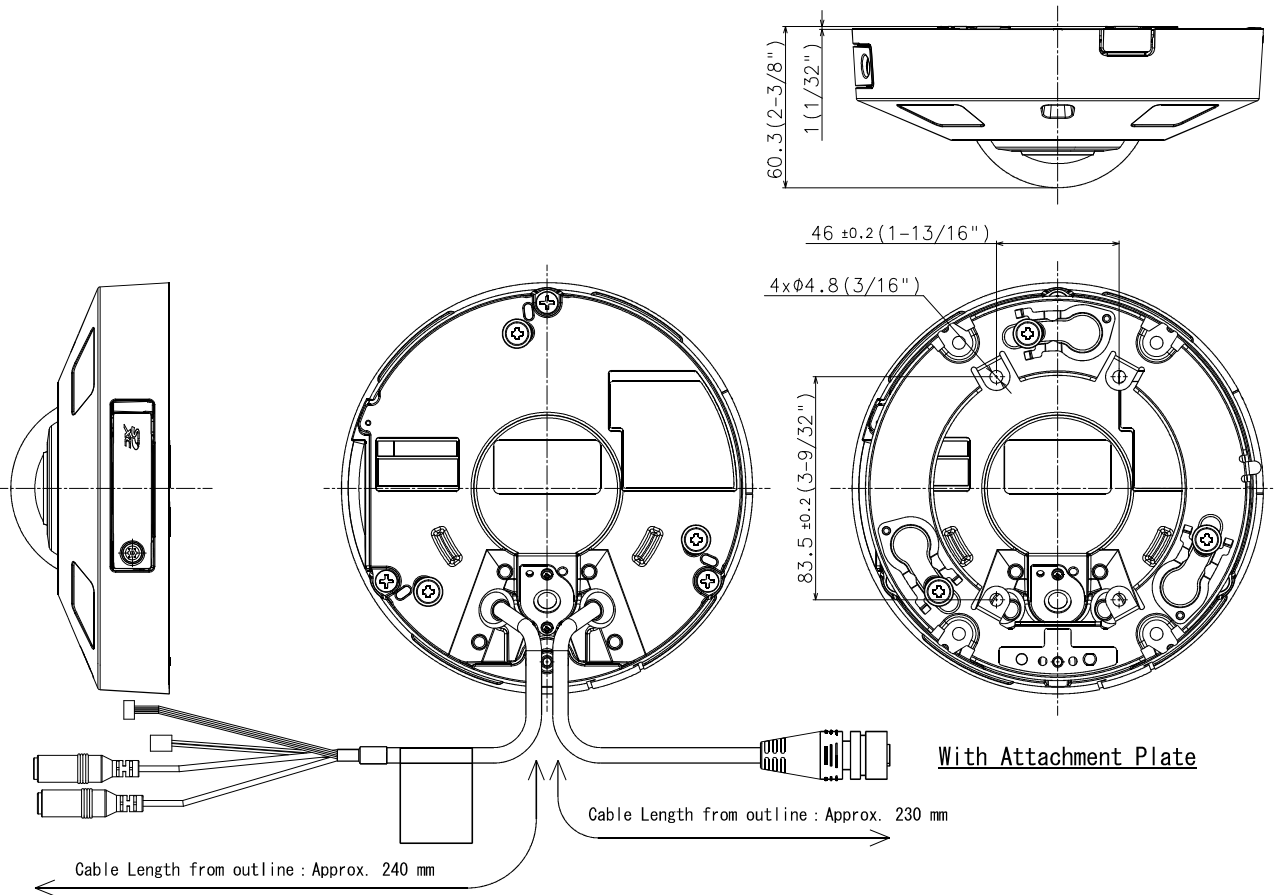
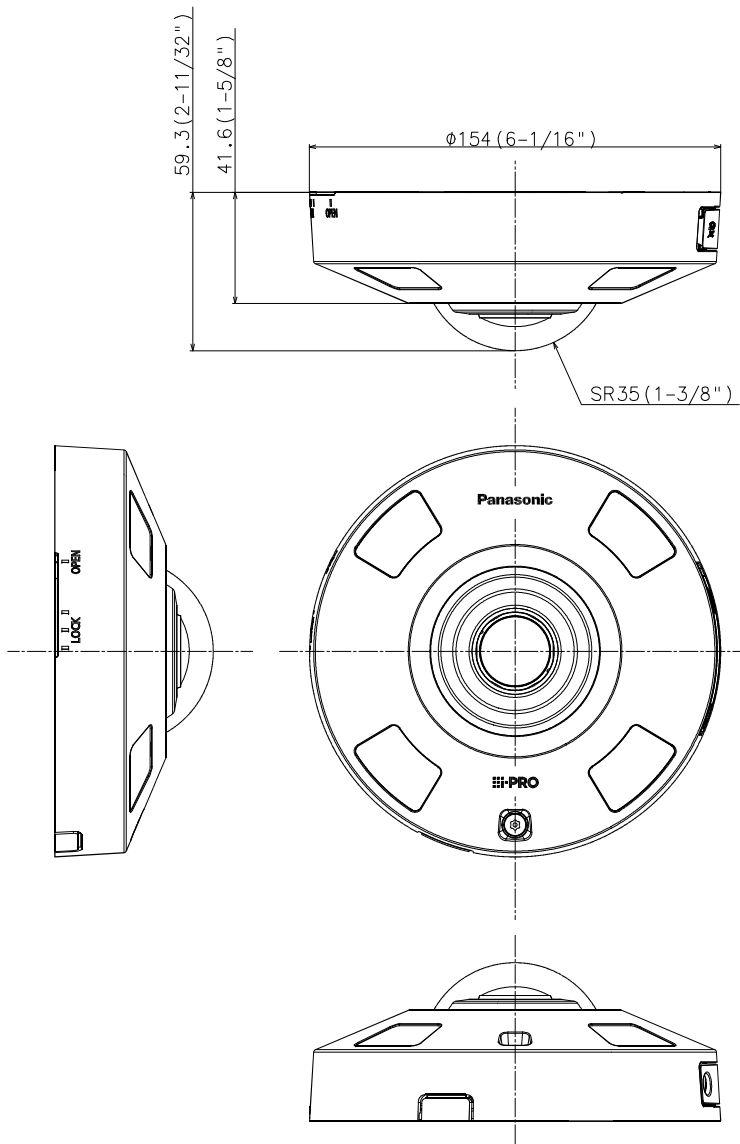


WV-QLR100-W  
Light Rail Mount  
Bracket



WV-Q105A  
Mount Bracket





|               |                         |
|---------------|-------------------------|
| 侧面图/Side-view | 投影面积/Projected area     |
|               | 0.007 (m <sup>2</sup> ) |

Mass : Approx. 880 g {1.94 lbs} (When using the attachment plate)

WV-S4576LM