

## WV-X15501-Z1LN

5MP AI Outdoor IR Bullet Camera (10x zoom)

### 5MP AI Outdoor IR Bullet Camera (10x zoom)

---



- 5MP Bullet camera
  - Up to 9 Edge AI analytic apps
  - 10x optical zoom
  - Built-in IR LED (180m/591ft)
  - IP66, IP67, IK10 certified
  - Built-in FIPS 140-2 Level 3 Certified SecureElement (EdgeLock® SE050F NXP® Semiconductors)
  - NDAA Compliant
-

## SPECIFICATIONS

| Camera                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor                                    | Approx. 1/2.8 type CMOS image sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Scanning Area                                   | 5.12 mm (H) × 3.84 mm (V) {3/16 inches (H) × 5/32 inches (V)}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Minimum Illumination                            | Color :<br>0.04 lx (30IRE, F1.6, 1/30s, AGC:11)*<br>0.06 lx (50IRE, F1.6, 1/30s, AGC:11)<br>0.0038 lx (50IRE, F1.6, 16/30s, AGC:11)*<br>BW :<br>0 lx (50IRE, F1.6, 1/30s, AGC:11, IR LED: On)<br>0.04 lx (50IRE, F1.6, 1/30s, AGC:11)<br>0.0025 lx (50IRE, F1.6, 16/30s, AGC:11)*<br>*Converted value                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| White Balance                                   | ATW1/ ATW2/ AWC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Shutter Speed                                   | [60 fps mode] 1/60 Fix to 1/10000 Fix<br>[30 fps mode] 1/30 Fix to 1/10000 Fix<br>[50 fps mode] 1/50 Fix to 1/10000 Fix<br>[25 fps mode] 1/25 Fix to 1/10000 Fix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum Shutter                                 | [60 fps mode] Max. 1/4000 s to Max. 16/30 s<br>[30 fps mode] Max. 1/4000 s to Max. 16/30 s<br>[50 fps mode] Max. 1/4000 s to Max. 16/25 s<br>[25 fps mode] Max. 1/4000 s to Max. 16/25 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Intelligent Auto                                | On/Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Super Dynamic                                   | On/Off (Range : 0 to 31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dynamic Range                                   | Max. 132 dB (Super Dynamic: On, Level: 31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Adaptive Black Stretch                          | The level can be set in the range of 0 to 255.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Back Light Compensation/High Light Compensation | BLC (Back light compensation) / HLC (High light compensation) / Off (Range : 0 to 31)<br>*only when Super Dynamic/ Intelligent Auto: Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fog Compensation                                | On/Off (Range : 0 to 8)<br>*only when Intelligent Auto / Auto contrast adjust: Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maximum Gain (AGC)                              | The level can be set in the range of 0 to 11.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Color/BW (ICR)                                  | Off/ On (IR Light Off) / On (IR Light On) / Auto1 (IR Light Off) / Auto2 (IR Light On) / Auto3 (SCC) / Auto4 (LPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IR LED Light                                    | High / Middle / Low / Off<br>Maximum irradiation distance:<br>When using PoE++<br>180 m {Approx. 591 ft} (30IRE)*<br>130 m {Approx. 427 ft} (50IRE)<br><br>When using PoE+<br>120 m {Approx. 394 ft} (30IRE)*<br>85 m {Approx. 279 ft} (50IRE)<br><br>When using DC12V<br>85 m {Approx. 279 ft} (30IRE)*<br>60 m {Approx. 196 ft} (50IRE)<br>* Converted value                                                                                                                                                                                                                                                                                                                                                                                                         |
| Digital Noise Reduction                         | The level can be set in the range of 0 to 255.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Video Motion Detection (VMD)                    | On / Off, 4 areas available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Scene Change Detection (SCD)                    | On / Off, 1 area available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Audio Detection                                 | On / Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| AI Sound Classification                         | Selectable from Gunshot, Yell, Vehicle horn, Glass break                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Analytics                                       | AI Video Motion Detection, AI Privacy Guard, AI Face Detection, AI People Detection, AI Vehicle Detection, AI Occupancy Detection, AI Scene Change Detection, AI On-site Learning, AI Processing Relay, License Plate Recognition/MMC classification (3rd party application)*1<br><br>For details:<br><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><br>3rd party applications are also available.<br><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> |
| Max. Number of Applications                     | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Privacy Zone                                    | On/Off, Up to 8 zones available<br>Color : gray/white/blue/green/red/black, or mosaic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| VIQS                                            | On/Off, Up to 8 zones available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Image Rotation                                  | 0° (Off) / 90° / 180° (Upside-down) / 270°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Image Stabilizer                                | On/Off (Built-in gyro sensor)<br>Available only in the 30/25 fps mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Camera Title (OSD)                              | On/Off<br>Up to 40 characters, Up to 2 lines (alphanumeric characters, marks)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Lens                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Optical Zoom                                    | 10x (Motorized zoom / Motorized focus)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Digital (electronic) Zoom                       | max 160x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Focal Length                                    | 4.7 mm – 47 mm {3/16 inches – 1-27/32 inches}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Angular Field of View  | [16:9 mode]<br>Horizontal: 6.1° (TELE) – 58° (WIDE)<br>Vertical: 3.4° (TELE) – 34° (WIDE)<br>[4:3 mode]<br>Horizontal: 6.1° (TELE) – 58° (WIDE)<br>Vertical: 4.6° (TELE) – 45° (WIDE)                                                                                                                                                                                                                           |
| Adjusting Angle        | Ceiling mounting<br>Horizontal : ±180 ° (PAN rotation part)<br>Vertical : 0 ° to 100 ° (TILT rotation part)<br>Yaw : -240 ° to +100 ° (YAW rotation part)<br>Wall mounting<br>Horizontal : ±100 ° (TILT rotation part)*<br>Vertical : ±100 ° (TILT rotation part)*<br>Yaw : -240 ° to +100 ° (YAW rotation part)<br>* You can change between horizontal and vertical angels by adjusting the PAN rotation part. |
| Maximum Aperture Ratio | 1:1.6 (WIDE) – 1:3.0 (TELE)                                                                                                                                                                                                                                                                                                                                                                                     |
| Focus Range            | 1.5 m {59-1/16 inches} – ∞                                                                                                                                                                                                                                                                                                                                                                                      |
| Aperture Range         | F1.6 – Close                                                                                                                                                                                                                                                                                                                                                                                                    |

|                            |                                                     |
|----------------------------|-----------------------------------------------------|
| DORI                       |                                                     |
| Detect (25ppm / 8ppf)      | 92.4 m {303.0 ft} (WIDE) 960.9 m {3152.6 ft} (TELE) |
| Observe (62.5ppm / 19ppf)  | 36.9 m {121.2 ft} (WIDE) 384.4 m {1261 ft} (TELE)   |
| Recognize (125ppm / 38ppf) | 18.5 m {60.6 ft} (WIDE) 192.2 m {630.5 ft} (TELE)   |
| Identify (250ppm / 76ppf)  | 9.2 m {30.4 ft} (WIDE) 96.1 m {315.3 ft} (TELE)     |

|                      |                |
|----------------------|----------------|
| System on Chip       |                |
| System on Chip (SoC) | Ambarella CV52 |

|                         |                                                                              |
|-------------------------|------------------------------------------------------------------------------|
| Preset Positions        |                                                                              |
| No. of Preset Positions | 8                                                                            |
| Auto Mode               | Preset sequence                                                              |
| Self Return             | 10 s, 20 s, 30 s, 1 min, 2 min, 3 min, 5 min, 10 min, 20 min, 30 min, 60 min |

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| Browser GUI               |                                                                                   |
| GUI / Setup Menu Language | English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese |
| Browser *2                | Microsoft Edge, Firefox, Google Chrome                                            |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network                            |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Network IF                         | 10BASE-T/100BASE-TX, RJ45 connector                                                                                                                                                                                                                                                                                                                                                                     |
| Resolution                         | [16:9mode(60fps mode)][16:9mode(50fps mode)]<br>3072x1728*/2560x1440<br>[16:9mode(30fps mode)][16:9mode(25fps mode)]<br>3072x1728*/2560x1440/1920x1080/1280x720/640x360/320x180<br>[4:3mode(60fps mode)][4:3mode(50fps mode)]<br>3072x2304*/2560x1920<br>[4:3mode(30fps mode)][4:3mode(25fps mode)]<br>3072x2304*/2560x1920/1280x960/800x600/640x480/400x300/320x240<br>*By super resolution techniques |
| H.265/H.264 Transmission Mode/Type | [Transmission Mode]<br>Constant bit rate/ VBR/ Frame rate/ Best effort<br>[Transmission Type]<br>Unicast port (AUTO) / Unicast port (MANUAL) / Multicast                                                                                                                                                                                                                                                |
| No. of Stream                      | 4                                                                                                                                                                                                                                                                                                                                                                                                       |
| JPEG (MJPEG) Image Quality         | 10 steps: 0(SUPER FINE) - 9(LOW)                                                                                                                                                                                                                                                                                                                                                                        |
| Smart Coding                       | [GOP(Group of pictures) control]<br>Off/ Low (Variable GOP 1s-8s) / Mid (Variable GOP 4s-16s)/Frame rate control (Variable GOP 4s-16s with frame rate control)<br>*Frame rate control are only available with H.265.<br>[Smart VIQS]<br>On(High)/On(Low)/Off<br>[Smart P-picture control]<br>On/Off                                                                                                     |
| Audio Compression Method *3        | G.726 (ADPCM): 16 kbps/ 32 kbps<br>G.711: 64 kbps<br>AAC-LC: 64 kbps/ 96 kbps/ 128 kbps                                                                                                                                                                                                                                                                                                                 |
| Audio Transmission Mode            | Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)                                                                                                                                                                                                                                                                                                           |
| 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, LLDP, MQTT<br>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, LLDP, MQTT                                                             |
| No. of Simultaneous Users          | Up to 14 users (Depends on network conditions)                                                                                                                                                                                                                                                                                                                                                          |
| Secure                             | FIPS 140-2 level 3 (NXP® EdgeLock® SE050F),<br>Device Certificate GlobalSign® pre-installed, HTTPS,<br>User authentication, digest authentication, Host authentication,<br>IEEE802.1X, System log, Image transmission log, brute-force protection,<br>Alteration Detection, Secure boot, Signed firmware                                                                                                |
| SDXC/SDHC/SD Memory Card (Option)  | microSDXC memory card: 64 GB, 128 GB, 256 GB, 512 GB<br>microSDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB<br>microSD memory card: 2 GB                                                                                                                                                                                                                                                                    |
| Mobile Terminal Compatibility      | iPad / iPhone (iOS 8.0 or later), Android™ terminals                                                                                                                                                                                                                                                                                                                                                    |
| ONVIF@Profile                      | G / M / S / T                                                                                                                                                                                                                                                                                                                                                                                           |

|              |                                                                               |
|--------------|-------------------------------------------------------------------------------|
| Alarm        |                                                                               |
| Alarm Source | 3 terninals input, VMD alarm, SCD alarm, Command alarm, Audio detection alarm |

|                                   |                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Actions                     | SDXC/SDHC/SD memory recording, E-mail notification,<br>HTTP alarm notification Indication on browser, TCP alarm notification output, MQTT alarm notification, FTP/SFTP image transfer, SNMP trap notification                                                                                                                |
| Input/Output                      |                                                                                                                                                                                                                                                                                                                              |
| Built-in Microphone               | -                                                                                                                                                                                                                                                                                                                            |
| Audio Input *4                    | ø3.5 mm stereo mini jack<br>For microphone input:<br>Recommended applicable microphone: Plug-in power type<br>(Sensitivity of microphone: -51 dB to -38 dB (0 dB=1 V/Pa, 1 kHz))<br>Input impedance: Approx. 2 kΩ (unbalanced)<br>Supply voltage: 2.5 V ±0.5 V<br>For line input:<br>Input level: Approx. -10 dBV            |
| Audio Output *4                   | ø3.5 mm stereo mini jack (Audio output is monaural.)<br>Output impedance: Approx. 600 Ω (unbalanced)<br>Output level: -20 dBV                                                                                                                                                                                                |
| External I/O Terminals *4         | ALARM IN1<br>(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)                                                                                                                                                   |
| Monitor Output                    | Yes (for adjustment)<br>Pin jack, NTSC or PAL signal can be output from camera                                                                                                                                                                                                                                               |
| General                           |                                                                                                                                                                                                                                                                                                                              |
| Safety                            | UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1                                                                                                                                                                                                                                                                  |
| EMC                               | FCC (Part15 ClassA), ICES-003 ClassA                                                                                                                                                                                                                                                                                         |
| Power Source/Power Consumption *4 | [Power Source]<br>DC12V<br>PoE+ (IEEE802.3at compliant)<br>PoE++ (IEEE802.3bt compliant)<br>[Power Consumption]<br>DC12V : 1.3A / Approx. 15.6 W<br>PoE+ DC 54 V : 460 mA / Approx. 24.8 W (Class 4 device)<br>PoE++ DC 54 V : 600 mA / Approx. 32.4 W (Class 5 device)                                                      |
| Ambient Operating Temperature     | -40 °C to +60 °C {-40 °F to +140 °F} (PoE++, PoE+)<br>(Power On range: -30 °C to +60 °C {-22 °F to +140 °F})<br>* When using with the IR LED light lit, the upper limit of the operating temperature range is +50 °C {+122 °F}.<br>* When using DC12V, the lower limit of the operating temperature range is -30°C {-22 °F}. |
| Ambient Operating Humidity        | 10 % to 100 % (no condensation)                                                                                                                                                                                                                                                                                              |
| Water and Dust Resistance         | IP66/ IP67 (IEC 60529), Type 4X (UL50E), NEMA 4X compliant                                                                                                                                                                                                                                                                   |
| Shock Resistance                  | IK10 (IEC 62262)                                                                                                                                                                                                                                                                                                             |
| Vibration Resistance              | IEC 60721-3-4 4M4 compliant                                                                                                                                                                                                                                                                                                  |
| Wind Resistance                   | Up to 40 m/s {approx. 89 mph}                                                                                                                                                                                                                                                                                                |
| Dimensions                        | When the sunshade is in its initial position<br>Φ168 mm x 403 mm (D) {Φ6-5/8 inches x 15-7/8 inches(D)}<br><br>When moving the sunshade forward<br>Φ168 mm x 456 mm (D) {Φ6-5/8 inches x 17-15/16 inches(D)}                                                                                                                 |
| Mass (approx.)                    | Approx. 3.6kg {8.0 lbs} (Including accessories)                                                                                                                                                                                                                                                                              |
| Finish                            | Main body: Aluminum die cast, i-PRO white<br>Outer fixing screws: Stainless steel (Corrosion-resistant treatment)<br>Front panel: PC resin, Clear (with ClearSight coating)                                                                                                                                                  |
| Easy Kitting                      | Supported                                                                                                                                                                                                                                                                                                                    |

NOTES

\*1 Vaxtor LPR application (VaxALPR) is pre-installed with a 30-day free trial license.  
At the conclusion of the free trial period, a valid license must be purchased in order to continue using the application.  
Please contact i-PRO regional representative.

\*2 For information on the operation verification of the web browsers, refer to our support website <Control No.: C0132>.

\*3 When recording audio on an SD memory card, only use AAC-LC (Advanced Audio Coding - Low Complexity) .

\*4 When using a 12 V DC power supply, EXT I/O terminal, audio input, and audio output, I/O cable (WV-QCA501A) is required.

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 any third-party products (including applications) used on the network.

– Masses and dimensions are approximate.

– Specifications are subject to change without notice.

Trademarks and registered trademarks

– iPad and iPhone are trademarks of Apple Inc., registered in the U.S.and other countries. – Android is a trademark of Google LLC.

– ONVIF is a trademark of ONVIF, Inc.

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

©i-PRO Co., Ltd All rights reserved / October 2024

## OPTIONAL ACCESSORIES

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



WV-QPL500-W  
Mount Bracket



WV-QCN500-W  
Mount Bracket



WV-QCLI01-W  
Mount Bracket



WV-QCLI00-W  
Mount Bracket



WV-Q105A  
Mount Bracket



WV-SDB256G  
i-PRO SD Memory Card



WV-SDB128G  
i-PRO SD Memory Card



WV-SDB064G  
i-PRO SD Memory Card



WV-SDB032G  
i-PRO SD Memory Card



WV-QCA501A  
I/O Cable



WV-PM500  
Compact microphone unit



WJ-PU201P  
PoE Injector



WJ-PU201/G  
PoE Injector

