

# WV-S65302-Z2-1

2MP (1080p) 21x Outdoor PTZ Network Camera

## S-series PTZ camera with AI Engine



- 2MP (1080p) 1920x1080
- 21x optical zoom
- Intelligent Auto (with AI Engine)
- Super Dynamic 144dB
- Color night vision (0.001 to 0.015 lx)
- Durable Pan/Tilt gear mechanism
- IP66, IK10 certified
- Built-in FIPS 140-2 Level 3 Certified Secure Element  
(EdgeLock® SE050F NXP® Semiconductors)
- NDAA Compliant

# SPECIFICATIONS

| Camera                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor                                      | Approx. 1/2.8 type CMOS image sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Scanning Area                                     | 5.57 mm (H) × 3.13 mm (V)<br>{7/32 inches (H) × 1/8 inches (V)}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Minimum Illumination                              | Color : 0.015 lx (50IRE, F1.6, 1/30s)<br>Color : 0.001 lx (50IRE, F1.6, 16/30s)<br>BW : 0.006 lx (50IRE, F1.6, 1/30s)<br>BW : 0.0004 lx (50IRE, F1.6, 16/30s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| White Balance                                     | ATW1 / ATW2 / AWC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Shutter Speed                                     | [60 fps Mode] 1/60 Fix to 1/10000 Fix, [30 fps/15 fps mode] 1/30 Fix to 1/10000 Fix<br>[50 fps Mode] 1/50 Fix to 1/10000 Fix, [25 fps/12.5 fps mode] 1/25 Fix to 1/10000 Fix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Intelligent Auto                                  | On / Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Super Dynamic                                     | On / Off, The level can be set in the range of 0 to 31.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Dynamic Range                                     | Max.144 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<br>The level can be set in the range of 0 to 31 (only when Super dynamic / Intelligent Auto : Off)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fog compensation                                  | On / Off, The level can be set in the range of 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 / Auto1 / Auto2 / Auto3 (SCC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 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 areas available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Audio Detection                                   | On / Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| AI Sound Classification                           | Gunshot, Yell, Vehicle horn, Glass break                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| AI Analytics                                      | AI Video Motion Detection, AI Privacy Guard, AI Face Detection, AI People Detection,<br>AI Vehicle Detection, AI Non mask Detection, AI Occupancy Detection, AI Scene Change Detection<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> |
| Privacy Zone                                      | On / Off, Up to 32 zones available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| VIQS                                              | On / Off, Up to 8 zones available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Image Stabilizer                                  | On / Off (Built-in gyro sensor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Camera Title (OSD)                                | On / Off, Up to 40 characters (alphanumeric characters, marks)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Focus Adjustment                                  | Auto focus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Lens                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Optical zoom                                      | 21x (Motorized zoom / Motorized Focus)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                        |                                                                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extra zoom             | Max. 31x (21 to 31x : When resolution is 1280 x 720)                                                                                                                                 |
| Focal Length           | 4.0 - 84.6 mm {5/32 inches - 3-21/64 inches}                                                                                                                                         |
| Angular Field of View  | [16 : 9 mode] Horizontal : 3.7° (TELE) - 77° (WIDE), Vertical : 2.2° (TELE) - 44° (WIDE)<br>[ 4 : 3 mode] Horizontal : 2.9° (TELE) - 58° (WIDE), Vertical : 2.2° (TELE) - 44° (WIDE) |
| Maximum Aperture Ratio | 1 : 1.6 (WIDE) - 1 : 4.5 (TELE)                                                                                                                                                      |
| Focus Range            | 1.5 m {50-1/16 inches} - ∞                                                                                                                                                           |

### DORI

|                            |                                                    |
|----------------------------|----------------------------------------------------|
| Detect (25ppm / 8ppf)      | Wide: 51.9m / 170.3 ft, Tele: 1293.8 m / 4244.9 ft |
| Observe (62.5ppm / 19ppf)  | Wide: 20.8 m / 68.1 ft, Tele: 517.5 m / 1697.9 ft  |
| Recognize (125ppm / 38ppf) | Wide: 10.4 m / 34.1 ft, Tele: 258.8 m / 849.0 ft   |
| Identify (250ppm / 76ppf)  | Wide: 5.2m / 17.0 ft, Tele: 129.4 m / 424.5 ft     |

### System on Chip (SoC)

|                      |                 |
|----------------------|-----------------|
| System on Chip (SoC) | Ambarella CV25M |
|----------------------|-----------------|

### Adjusting Angle

|                 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| Adjusting Angle | Horizontal : 360° Endless Panning, Vertical : -15° to +195°, Yaw : 0° |
|-----------------|-----------------------------------------------------------------------|

### Pan/tilt

|                  |                                                                                                            |
|------------------|------------------------------------------------------------------------------------------------------------|
| Panning Range    | 360° Endless Panning                                                                                       |
| Panning Speed    | Manual: Approx. 0.065°/s - 150°/s, Preset: Up to approx. 500°/s                                            |
| Tilting Range    | Operational -15 - +195°                                                                                    |
| Tilting Speed    | Manual: Approx. 0.065°/s -150°/s<br>Preset: Up to approx. 500°/s (PoE+), Up to approx. 350°/s (DC12 V PoE) |
| Preset Positions | 256 positions                                                                                              |
| Auto Mode        | Auto track/ Auto pan/ Preset sequence/ Patrol                                                              |
| 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

|                           |                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Camera Control            | Brightness, AUX On / Off                                                                                                               |
| Audio                     | Mic (Line) Input : On / Off Volume adjustment : Low / Middle / High<br>Audio Output : On / Off Volume adjustment : Low / Middle / High |
| GUI / Setup Menu Language | English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese                                                      |
| Browser                   | Microsoft Edge, Firefox, Google Chrome                                                                                                 |

### Network

|                                      |                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network IF                           | 10 Base-T / 100 Base-TX, RJ45 connector                                                                                                                                                                                                                                                                                                             |
| Resolution H.265/ H.264 JPEG (MJPEG) | [16 : 9 mode (60 fps mode)] , [16 : 9 mode (30 fps mode)] ,<br>[16 : 9 mode (50 fps mode)] , [16 : 9 mode (25 fps mode)]<br>1920x1080, 1280x720, 640x360, 320x180<br>[4 : 3 mode (30 fps mode)] , [4 : 3 mode (25 fps mode)]<br>1280x960, VGA, QVGA<br>[4 : 3 mode (15 fps mode)] , [4 : 3 mode (12.5 fps mode)]<br>2048x1536 , 1280x960, VGA, QVGA |
| H.265/H.264                          | [Transmission Mode] Constant bit rate / VBR / Frame rate / Best effort<br>[Transmission Type] Unicast port (AUTO) / Unicast port (MANUAL) / Multicast                                                                                                                                                                                               |
| JPEG                                 | [Image Quality] 10 steps                                                                                                                                                                                                                                                                                                                            |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smart Coding                      | GOP (Group of pictures) control:<br>Off/ Low (Variable GOP 1s-8s) / Mid (Variable GOP 4s-16s) /<br>Advanced(Fixed GOP 60s w/1s key-frame) /<br>Frame rate control (Variable GOP 4s-16s with frame rate control)<br>*Advanced and Frame rate control are only available with H.265.<br>Smart Coding: 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                                                                                                                                                                                                                                                                                           |
| 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,<br>DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServ, SFTP, MQTT, LLDP<br>IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, RTSP, RTP, RTP/RTCP, SMTP,<br>DHCP, DNS, DDNS, NTP, SNMPv1/v2/v3, UPnP, IGMP, ICMP, ARP,<br>IEEE 802.1X, DiffServ, SRTSP, SFTP, MQTT, NTCIP                                      |
| No. of Simultaneous Users         | Up to 14 users (Depends on network conditions)                                                                                                                                                                                                                                                                                                                                      |
| Secure                            | FIPS 140-2 level 3 (NXP® EdgeLock® SE050F), Device Certificate GlobalSign® pre-installed,<br>HTTPS, User authentication, Digest authentication, Host authentication,<br>IEEE802.1X, System log, Image transmission log, Brute-force protection, Alteration detection, Signed Firmware (V2.50 or later)                                                                              |
| SDXC/SDHC/SD Memory Card (Option) | H.265 / H.264 recording :<br>Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure<br>JPEG recording : Manual REC / Alarm REC (Pre/Post) / Backup upon network failure<br>Compatible SDXC/SDHC/SD Memory Card :<br>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 terminals input, VMD 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 |

## Input/Output

|                        |                                                                                                                                                                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audio Input            | ø3.5 mm stereo mini jack<br>For microphone input : 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 : 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 IN 1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1)<br>ALARM IN 2 (Alarm input 2/ ALARM OUT) (x1), ALARM IN 3 (Alarm input 3/ AUX OUT) (x1)                                                                                                                                           |
| Monitor Output         | Yes (for adjustment)<br>Φ3.5mm stereo mini jack, NTSC or PAL signal can be output from camera<br>*WV-QCA501A is required                                                                                                                                                                                           |

## General

|                                    |                                                                                                                                                                                                |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety                             | UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1                                                                                                                                    |
| EMC                                | FCC (Part15 ClassA), ICES-003 Issue 7 ClassA, EN55032 ClassA, EN55035                                                                                                                          |
| Power Source and Power Consumption | DC12 V, PoE (IEEE802.3af), PoE+ (IEEE802.3at)<br>DC12 V: 1.3 A / Approx.15.6 W<br>PoE DC 48 V: 270 mA / Approx.12.95 W (Class 0 device)<br>PoE+ DC 54 V: 340 mA / Approx18.4 W(Class 4 device) |

|                               |                                                                                                                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Operating Temperature | -30 °C to +55 °C (-22 °F to +131 °F)<br>(Power On range : -20 °C to +55 °C {-4 °F to +131 °F})<br>Maximum temperature according to NEMA TS2(2.2.7) : 74 °C(165 °F)                    |
| Ambient Operating Humidity    | 10 to 100 % (no condensation)                                                                                                                                                         |
| Anti-Condensation System      | Temish element                                                                                                                                                                        |
| Water and Dust Resistance     | IP66, IEC60529 measuring standard compatible, Type 4X(UL50E), NEMA 4X compliant                                                                                                       |
| Shock Resistance              | IK10 (IEC 62262)                                                                                                                                                                      |
| Wind Resistance               | Up to 40 m/s {approx. 89 mph}                                                                                                                                                         |
| Other standard support        | NEMA TS2(2.2.7-2.2.9)                                                                                                                                                                 |
| Dimensions                    | ø165 mm x 153 mm (H) {ø6-1/2 inches x 6-1/32 inches (H)}                                                                                                                              |
| Mass (Approx.)                | Approx. 1.7 kg {3.75 lbs.}                                                                                                                                                            |
| Finish                        | Main body : Aluminum die cast, Black polycarbonate resin, Black<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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## OPTIONAL ACCESSORIES

Select a compatible accessory

[Accessory Selector \(i-pro.com\)](http://i-pro.com).



WV-QWL501-B  
Mount Bracket



WV-QWL500-B  
Mount Bracket



WV-QSR501-B  
Mount Bracket



WV-QPL500-B  
Mount Bracket



WV-QJB501-B  
Base Bracket



WV-QJB500-B  
Mount Bracket



WV-QCN500-B  
Mount Bracket



WV-QCL501-B  
Mount Bracket



WV-QCL101-B  
Mount Bracket



WV-QCL100-B  
Mount Bracket



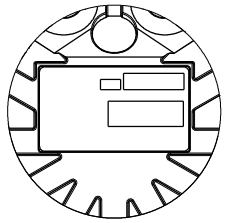
WV-QDC502G  
Dome Cover



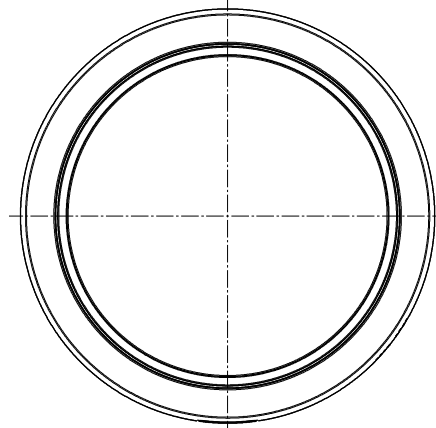
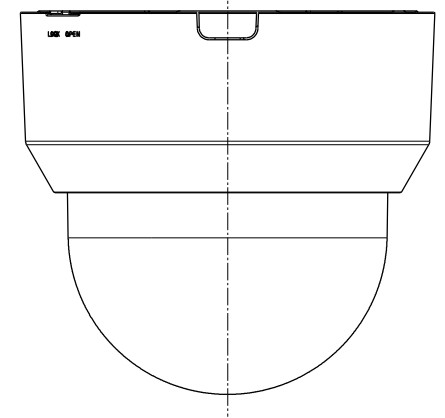
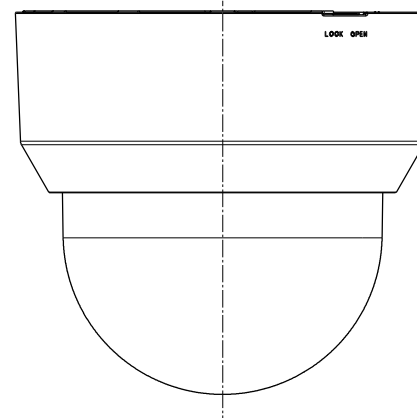
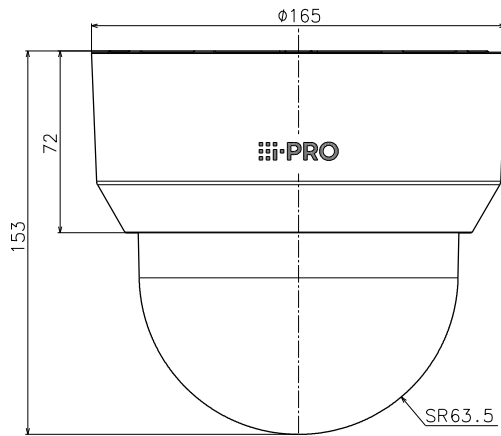
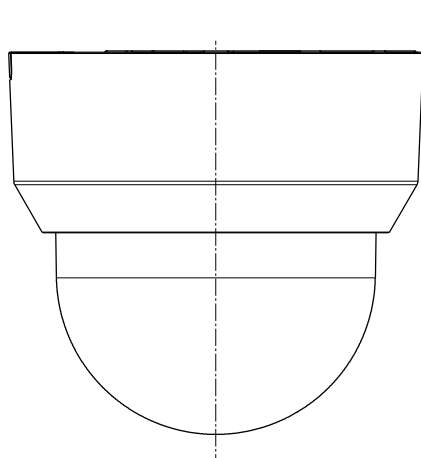
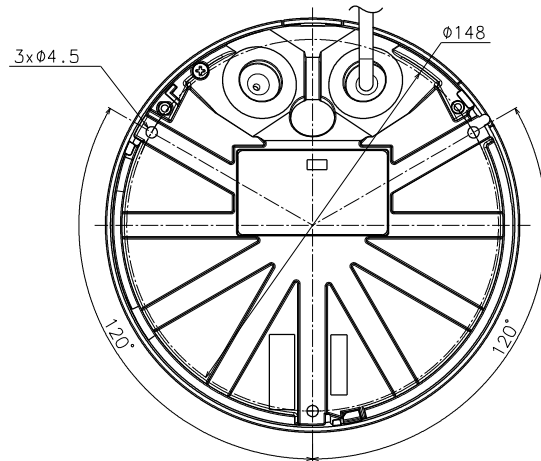
WV-QCA501A  
I/O Cable



WV-PM500  
Compact microphone  
unit for surveillance  
cameras



Object model: WV-B65302-Z2



| Model number    | Dome type  | Decorative cover coating |
|-----------------|------------|--------------------------|
| WV-U65302-Z2    | Clear dome | i-PRO white              |
| WV-U65302-Z2G   | Smoke dome |                          |
| WV-B65302-Z2    | Clear dome |                          |
| WV-S65302-Z2    | Smoke dome |                          |
| WV-S65302-Z2G   | Smoke dome | Black                    |
| WV-S65302-Z2J   | Clear dome |                          |
| WV-S65302-Z2-1  | Clear dome |                          |
| WV-S65302-Z2-1J | Clear dome |                          |

|               | 投影面積/Projected area     |
|---------------|-------------------------|
| 側面図/Side-view | 0.020 (m <sup>2</sup> ) |

Mass : Approx. 1.4 kg {3.09 lbs}