**i-PRO WV-S2136A-B INDOOR DOME NETWORK CAMERA**

**TECHNICAL SPECIFICATIONS**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**28 20 00 ELECTRONIC SURVEILLANCE**

**28 23 00 VIDEO SURVEILLANCE**

**28 23 29 VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS**

*This specification is intended for use by the design/construction professional and any user of i-PRO Security products to assist in developing project specifications for security and video surveillance systems.*

*Specifier Notes: This guide specification incorporates CSI MasterFormatTM 2014 Edition Numbers and Titles.*

*Notes in Italics, such as this one, are explanatory and intended to guide the design professional/specifier and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.*

**PART 1 GENERAL**

* 1. **SUMMARY**
	2. **WARRANTY**
1. Provide manufacturer's standard warranty.

**PART 2 PRODUCTS**

1. **MANUFACTURERS**
	1. i-PRO Co., Ltd.
	2. Provide Video Surveillance Camera from single source manufacturer
2. **i-PRO WV-S2136A-B INDOOR DOME NETWORK CAMERA**
	1. **GENERAL CHARACTERISTICS**
		1. The Indoor Dome Camera shall deliver H.265 stream and H.264 stream.
		2. The Indoor Dome Camera shall produce a resolution of 1920x1080 pixels at up to 60fps with a 16:9 aspect ratio.
		3. The Indoor Dome Camera shall produce a resolution of 2048x1536 pixels at 30fps with a 4:3 aspect ratio.
		4. The Indoor Dome Camera shall utilize an approximate 1/2.8 type high sensitivity CMOS image sensor.
		5. The Indoor Dome Camera shall feature a 144dB wide dynamic range based on Enhanced Super Dynamic and Adaptive Black Stretch technology (ABS).
		6. The Indoor Dome Camera shall produce a color image with a minimum illumination of 0.007 lux and a monochrome image with 0.006 lux at F1.3, shutter speed of 1/30s and AGC 11.
		7. The Indoor Dome Camera shall offer a built-in IR illumination to produce a clear monochrome image in zero lux conditions with 40m (131feet) irradiation distance.
		8. The Indoor Dome Camera shall generate multiple simultaneous video streams of up to four (4) H.265 (Main profile) or H.264 (High profile) streams and JPEG streams.
		9. The Indoor Dome Cameras should be equipped with the improved intelligent auto mode to monitor the dynamics and movement of important subject scenes and to capture license plates and human faces more clearly.
		10. The Indoor Dome Camera should be equipped with improved smart coding with GOP control (including frame control), and it monitors the movement of important subject’s scenes to reduce bit rate for longer recording and reduce network load.
		11. The Indoor Dome Camera shall be equipped with corridor mode which enables the capture of a more vertically oriented area than the normal format would allow.

* + 1. The Indoor Dome Camera shall produce encrypted stream.
		2. The Indoor Dome Camera shall realize SSL / TLS communication with CA certificate.
		3. A user shall be able to view videos on a PC using a browser.
		4. A user shall be able to view videos on a smartphone and tablet using viewer software for iPhone and Android.
		5. The Indoor Dome Camera shall offer Video Motion Detection (VMD) with four (4) programmable detection areas, 15 steps sensitivity level and 10 steps detection size.
		6. The Indoor Dome Camera shall offer intelligent Video Motion Detection (i-VMD) with four (4) detection modes as intruder detection, loitering detection, direction detection,

and cross line detection.

* + 1. The Indoor Dome Camera shall have Fog compensation function.
		2. The Indoor Dome Camera shall have High light compensation (HLC) function.
		3. The Indoor Dome Camera shall have Super Chroma Compensation (SCC) which realizes a better color reproducibility in the low illumination.
		4. The Indoor Dome Camera shall provide up to eight (8) areas of electronic privacy masking.
		5. The Indoor Dome Camera shall offer the prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially.
		6. The Indoor Dome Camera shall have an SD memory card slot that supports SD, SDHC and SDXC memory cards for local storage.
		7. The Indoor Dome Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.
		8. The Indoor Dome Camera shall have three (3) alarm sources of terminal input, VMD, and command alarm that activate the processes such as SDXC/ SDHC/SD memory recording, E-mail notification, HTTP alarm notification, Indication on browser and TCP alarm notification output.
		9. The Indoor Dome Camera shall conform to the ONVIF G/ M/ S/ T standard.

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| **CAMERA** |
| Minimum Image Sensor | Approx. 1/2.8 type CMOS image sensor |
| Minimum Illumination* + - 1. Color
			2. BW
 | 0.007 lx (30IRE, F1.3, 1/30s)0.009 lx (50IRE, F1.3, 1/30s)0.006 lx (50IRE, F1.3, 1/30s) |
| Color/BW (ICR) | Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC) |
| White Balance | ATW1 / ATW2 / AWC |
| Shutter Speed | [60 fps Mode] 1/60 Fix to 1/10000 Fix[30fps/15fps\*2 mode] 1/30 Fix to 1/10000 Fix[50 fps Mode] 1/50 Fix to 1/10000 Fix[25fps/12.5fps\*2 mode] 1/25 Fix to 1/10000 Fix |
| Dynamic Range | Max.144 dB (Super Dynamic: On, Level 31) |
| Image Rotation | 0 ° / 90 ° / 180 ° / 270 ° |
| AI Analytics | AI Video Motion Detection, AI Privacy Guard, AI Face Detection, AI People Detection, AI Vehicle Detection, AI Non mask Detection, AI Occupancy Detection, AI Scene Change DetectionFor details [AI Surveillance](https://i-pro.com/global/en/surveillance/products/i-pro-ai-application) 3rd party applications are also available.[AI Surveillance List](https://i-pro.com/global/en/surveillance/i-pro-application-platform/application-list) |
| AI Sound Classification | Gunshot, Yell, Vehicle horn, Glass break |

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| LENS |
| Optical zoom | 3.1 x (Motorized zoom / Motorized Focus) |
| Focal Length | 2.9 - 9 mm {1/8 inches - 11/32 inches} |
| Extra zoom | 3.1x - 9.3x (when resolution is 640 x 360)  |
| Angular Field of View1. 16:9 mode
2. 4:3 mode
 | Horizontal: 36° (TELE) – 115° (WIDE), Vertical: 20° (TELE) – 61° (WIDE)Horizontal: 28° (TELE) – 82° (WIDE), Vertical: 20° (TELE) – 61° (WIDE) |
| Maximum Aperture Ratio | 1: 1.3 (WIDE) – 1: 2.5 (TELE) |
| Focus Range | 0.3 m {11-13/16 inches} – ∞ |
| Focus Adjustment | Auto focus / Manual |
| Adjusting Angle | Horizontal: -240 to +120°Vertical: -30 to +85°Yaw: ±100° |

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| VIDEO |
| Resolution H.265/ H.264/ JPEG (MJPEG)1. 16:9
2. 4:3
 | [16:9 mode (60 fps mode)], [16:9 mode (30 fps mode)],[16:9 mode (50 fps mode)], [16:9 mode (25 fps mode)]: 1920x1080, 1280x720, 640x360, 320x180[4:3 mode (30 fps mode)], [4:3 mode (25 fps mode)]: 1280x960, VGA, QVGA, [4:3 mode (15 fps mode)], [4:3 mode (12.5 fps mode)]: 2048x1536, 1280x960, VGA, QVGA |
| H.265/ H.2641. Transmission Mode
2. Transmission Type
 | Constant bit rate / VBR / Frame rate / Best effortUnicast port (AUTO) / Unicast port (MANUAL) / Multicast |
| JPEG Image quality | 10 steps |
| Smart Coding1. GOP (Group of Picture) control
2. Frame Rate Control
3. Smart VIQS
4. Smart P-picture control
 | Off/ Low (Variable GOP 1s-8s)/ Mid (Variable GOP 4s-16s)Advanced (Indoor Dome Network GOP 60s w/1s key-frame)Frame rate control (Variable GOP 4s-16s with frame rate control)\*Advanced and Frame rate control are only available with H.265.On (High)/On (Low)/OffOn/Off |

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| AUDIO |
| Audio Compression | G.726 (ADPCM): 16 kbps / 32 kbps, G.711: 64 kbps, AAC-LC: 64 kbps / 96 kbps / 128 kbps |
| Audio Mode | Mic (Line) Input: On / Off Volume adjustment: Low / Middle / HighAudio Output: On / Off Volume adjustment: Low / Middle / High |
| Audio Detection | On / Off |

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| DORI |
| Detect (25ppm / 8ppf) | Wide: 24.5 m / 80.3 ft, Tele: 118.2 m / 387.7 ft  |
| Observe (62.5ppm / 19ppf) | Wide: 9.8 m / 32.1 ft, Tele: 47.3 m / 155.1 ft  |
| Recognize (125ppm / 38ppf) | Wide: 4.9 m / 16.1 ft, Tele: 23.6 m / 77.5 ft  |
| Identify (250ppm / 76ppf) | Wide: 2.4 m / 8.0 ft, Tele: 11.8 m / 38.8 ft |

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| OPERATION |
| i-PRO Super Dynamic | On / Off, The level can be set in the range of 0 to 31. |
| Intelligent Auto | On / Off |
| Adaptive Black Stretch | The level can be set in the range of 0 to 255. |
| Fog compensation | On / Off (only when Intelligent auto / auto contrast adjust: Off) |
| Back light compensation /High light compensation | BLC (Back light compensation) / HLC (High light compensation) /Off (only when Super dynamic / Intelligent Auto: Off) |
| AGC | The level can be set in the range of 0 to 11. |
| Extra Zoom | 3.1x - 9.3x (when resolution is 640 x 360)  |
| Digital Noise Reduction (DNR) | 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 |
| Privacy Zone | On / Off, Up to 8 zones available |
| Camera Title (OSD) | On / Off, Up to 40 characters (alphanumeric characters, marks) |
| VIQS | On / Off, Up to 8 zones available |

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| BROWSER GUI |
| Camera Control | Brightness, AUX On / Off |
| GUI/ Setup Menu Language | English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese |
| Browser | Microsoft Edge, Firefox, Google Chrome |

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| NETWORK |
| Network IF | 10Base-T / 100Base-TX, RJ45 connector |
| Supported Protocol1. IPv6
2. IPv4
 | IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMPv1/v2/v3, DHCPv6,RTP, MLD, ICMP, ARP, IEEE 802.1X,DiffServ, FTP, SFTP, MQTT, LLDPIPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, RTSP, RTP, RTP/RTCP, SMTP, DHCP, DNS, DDNS, NTP, SNMPv1/v2/v3, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ, SRTP, FTP, SFTP, MQTT, LLDP |
| 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, HTTPS, User authentication, Digest authentication, Host authentication, IEEE802.1X, System log, Image transmission log, Brute-force protection, Alteration detection |
| Mobile Terminal Compatibility | iPad, iPhone, AndroidTM terminals |
| ONVIF® Profile | G / M / S / T |

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

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| INTERFACE |
| Monitor Output | VBS: 1.0 V [p-p] / 75 Ω, composite, Pin jack / An NTSC or PAL signal can be outputted from camera |
| Microphone input/ Line input | ø3.5 mm stereo mini jackFor microphone input: Recommended applicable microphone: Plug-in power type(Sensitivity of microphone: -48 dB±3 dB (0 dB=1 V/Pa, 1 kHz))Input impedance: Approx. 2 kΩ (unbalanced)Supply voltage: 2.5 V ±0.5 V / For line input: Input level: Approx. –10 dBV |
| Audio Output | ø3.5 mm stereo mini jack (monaural output)Output impedance: Approx. 600 Ω (unbalanced) / Output level: –20 dBV |
| External I/O Terminals | ALARM IN 1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1)ALARM IN 2 (Alarm input 2/ ALARM OUT) (x1)ALARM IN 3 (Alarm input 3/ AUX OUT) (x1) |
| SDXC/SDHC/SD Memory Card1. H.265 / H.264 recording
2. JPEG recording
3. Compatible SDXC/SDHC/SD Memory Card:
 | Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failureManual REC / Alarm REC (Pre/Post) / Backup upon network failure microSDXC memory card: 64 GB, 128 GB, 256 GB, 512 GBmicroSDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB, microSD memory card: 2 GB |

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| ELECTRICAL |
| Power Source  | DC power supply: DC12 V 410 mA, Approx. 4.9 W |
| Power Consumption | PoE (IEEE802.3af compliant) Device: DC48 V 110 mA, Approx. 5.3 W (Class 2 device) |

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| SAFETY/EMC |
| Safety | UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1 |
| EMC | FCC (Part15 ClassA), ICES-003 ClassA, EN55032 ClassB, EN55035 |

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| MECHANICAL |
| Dimensions | ø129.5 mm x 101 mm (H) {ø5-3/32 inches x 3-31/32 inches (H)}Dome radius 40 mm {1-9/16 inches} |
| Weight  | Approx. 470 g {1.04 lbs.}  |
| Constructional material1. Main body
2. Front cover
 | Acrylic resinClear |
| Finish1. Main body
2. Dome cover
 | ABS resinBlack |

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| ENVIRONMENTAL |
| Ambient Operating Temperature | -10 °C to +50 °C (14 °F to 122 °F) |
| Operating Humidity | 10 to 90 % (no condensation) |