**i-PRO WV-S4156 360-degree INDOOR DOME NETWORK CAMERA**

**TECHNICAL SPECIFICATION**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**28 20 00 ELECTRONIC SURVEILLANCE**

**28 23 00 VIDEO SURVEILLANCE**

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

*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 Sensing Solutions Co., Ltd
	2. Provide Video Surveillance Camera from single source manufacturer
2. **i-PRO WV-S4156 360-degree INDOOR DOME NETWORK CAMERA**
	1. **GENERAL CHARACTERISTICS**
		1. The 360-degree Indoor Dome Camera shall deliver H.265 stream, H.264 stream and JPEG

stream.

* + 1. The 360-degree Indoor Dome Camera shall produce a resolution of 2,192×2,192 pixels

 at up to 30 fps with a fisheye mode.

* + 1. The 360-degree Indoor Dome Camera shall produce a resolution of 1,920 x 1,080 pixels at up to 15fps with a double panorama mode.
		2. The 360-degree Indoor Dome Camera shall utilize an approximate 1/3 5MP CMOS image sensor.
		3. The 360-degree Indoor Dome Camera shall feature a 120dB wide dynamic range based on Enhanced Super Dynamic and Adaptive Black Stretch technology (ABS).
		4. The 360-degree Indoor Dome Camera shall produce a color image with a minimum illumination of 0.01 lux and a monochrome image with 0.006 lux at F2.4, shutter of 16/30s and maximum gain mode 11.
		5. The 360-degree Indoor Dome Camera shall generate multiple simultaneous video streams of up to two (2) H.265 (Main profile) or H.264 (High profile) streams and JPEG streams.
		6. The 360-degree Indoor Dome Camera shall be equipped with intelligent auto mode monitors scene dynamics and motion to adjust key camera settings automatically in real-time reducing distortion such as motion blur on moving objects.
		7. The 360-degree Indoor Dome Camera shall be equipped with GOP control of bitrate reducing technology which five control modes included frame rate control for longer recording and less storage.
		8. The 360-degree Indoor Dome Camera shall produce encrypted stream.
		9. The 360-degree Indoor Dome Camera shall realize SSL / TLS communication with CA certificate.
		10. A user shall be able to view videos on a PC using a browser.
		11. A user shall be able to view videos on a smartphone and tablet using viewer software for iPhone and Android.
		12. The 360-degree Indoor Dome Camera shall offer Video Motion Detection (VMD) with four (4) programmable detection areas, 15 steps sensitivity level and 10 steps detection size.
		13. The 360-degree Indoor Dome Camera shall have Fog compensation function.
		14. The 360-degree Indoor Dome Camera shall have High light compensation (HLC) function.
		15. The 360-degree Indoor Dome Camera shall provide up to eight (8) areas of electronic privacy masking.
		16. The 360-degree Indoor Dome Camera shall offer prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially.
		17. The 360-degree Indoor Dome Camera shall have an SD memory card slot that supports SD, SDHC and SDXC memory card for local storage.
		18. The 360-degree Indoor Dome Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.
		19. The 360-degree Indoor Dome Camera shall have three (3) alarm sources of terminal input, and VMD, command alarm that activate the processes such as SDXC/ SDHC/SD memory recording, E-mail notification, HTTP alarm notification, Indication on browser, FTP image transfer and Panasonic alarm protocol output.
		20. The 360-degree Indoor Dome Camera shall conform to the ONVIF standard.

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| CAMERA |
| Minimum Image Sensor | Approx. 1/3 type 5MP CMOS image sensor |
| Minimum Illumination* + - 1. Color
			2. BW
 | Color : 0.15 lx, BW : 0.1 lx (F2.4, Maximum shutter : Off (1/30 s), AGC : 11)Color : 0.01 lx, BW : 0.006 lx (F2.4, Maximum shutter : max. 16/30s, AGC : 11) |
| Day & Night | Off / Auto |
| Dynamic Range | Max.120 dB (Super Dynamic : On, level : 31) |

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| LENS |
| Focal Length | 0.84 mm {1/32 inches} |
| Maximum Aperture Ratio | 1:2.4 |
| Angular Field of View | Horizontal : 186°Vertical : 186° |
| Zoom Ratio | 1x |

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| VIDEO |
| Image Resolution1. Ceiling
2. Wall
 | •Fisheye mode (max. 30 fps/25 fps)2192×2192 / 1280×1280 / 640×640 / 320×320•Quad PTZ mode (max. 30 fps/25 fps), Single PTZ mode (max. 30 fps/25 fps)1600×1200 / 1280×960 / 800×600 / VGA / QVGA |
| Image Resolution1. Ceiling
 | •Double Panorama mode (max. 30 fps/25 fps)1920×1080 / 1280×720 / 640×360 / 320×180•Fisheye + Double Panorama mode (max. 30 fps/25 fps)(Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320(Double Panorama) 1280×720 / 640×360 / 320×180•Fisheye + Quad PTZ mode (max. 30 fps/25 fps)(Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320(Quad PTZ) 1280×960 / 800×600 / VGA / QVGA•Quad streams mode(Single PTZ (Quad streams)) 1280×960 / 800×600 / VGA / QVGA (max. 30 fps/25 fps)(Quad PTZ) 1600×1200 / 1280×960 / 800×600 / VGA / QVGA (max. 5 fps) |
| Image Resolution1. Wall
 | •Panorama mode (max. 30 fps/25 fps)1920×1080 / 1280×720 / 640×360 / 320×180•Fisheye + Panorama mode (max. 30 fps/25 fps)(Fisheye) 2192×2192 / 1280×1280 / 640×640 / 320×320(Panorama) 1280×720 / 640×360 / 320×180 |
| H.265/ H.264 | [Transmission Mode]Constant bit rate / VBR / Frame rate / Best effort[Transmission Type]Unicast port (AUTO)/ Unicast port (MANUAL)/ Multicast |
| JPEG  | [Image Quality]10 steps |

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| AUDIO |
| Audio Compression | G.726 (ADPCM) : 16 kbps / 32 kbpsG.711 : 64 kbpsAAC-LC : 64 kbps / 96 kbps / 128 kbps |
| Microphone | Nondirectional electret condenser microphone |

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| OPERATION |
| Super Dynamic | On / Off, The level can be set in the range of 0 to 31. |
| Intelligent Auto | On / Off |
| Adaptive Black Stretch | On / Off |
| Fog compensation | On / Off |
| Back light compensation /High light compensation | On / Off |
| AGC | Minimum Illumination and Image settings |
| Maximum shutter | max. 16/30s to Max. 1/10000s |
| Digital Noise Reduction | On / Off |
| Video Motion Detection (VMD) | On / Off,4 areas available |
| Privacy Zone | On / Off, Up to 8 zones available |
| Camera Title (OSD) | On / Off, Up to 20 characters (alphanumeric characters, marks) |

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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, SNMP v1/v2/v3, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X, DiffServIPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, RTSP, RTP, RTP/RTCP, SMTP, DHCP, DNS, DDNS, NTP, SNMP v1/v2/v3, UPnP, IGMP, ICMP, ARP, IEEE 802.1X, DiffServ, SRTP |
| Max. User access | Up to 14 users (Depends on network conditions) |
| Mobile Terminal Compatibility | iPad / iPhone, AndroidTM terminals |

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| INTERFACE |
| Microphone input/ Line input | ø3.5 mm stereo mini jack, Recommended applicable microphone : Plug-in power type(Sensitivity of microphone : –48 dB ±3 dB (0 dB=1 V / Pa,1 kHz))Input impedance : Approx. 2 kΩ (unbalanced) Supply voltage : 2.5 V ±0.5 V |
| Audio Output | ø3.5 mm stereo mini jack (monaural output)Output impedance : Approx. 600 Ω (unbalanced) Output level : –20 dBV |
| External I/O Terminals | ALARM IN 1 (Auto time adjustment) (x1),ALARM IN 2 (ALARM OUT) (x1), ALARM IN 3 (AUX OUT) (x1) |
| SD memory card slot | Compatible SDXC/SDHC/SD card :2 GB, 4 GB\*, 8 GB\*, 16 GB\*, 32 GB\*, 64 GB\*\*, 128 GB\*\*, 256 GB\*\*, 512 GB\*\*model\*SDHC card, \*\* SDXC card (except miniSD card and microSD card) |

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| ELECTRICAL |
| Power Source  | DC power supply : DC12 V 520 mA, Approx. 6.2 WPoE (IEEE802.3af compliant) |
| Power Consumption | Device :DC48 V 140 mA, Approx. 6.7 W (Class 0 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), ICES003 ClassA, EN55032 ClassB, EN55024, EN55035 |

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| MECHANICAL |
| Dimensions | ø150 mm × 50.5 mm (H) {ø5-29/32 inches × 2 inches (H)} |
| Weight  | Approx. 390 g {0.86 lbs} |
| Constructional material1. Main body
 | ABS resin |
| Finish1. Main body
 | i-PRO white |

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