**i-PRO WV-S4556LMA 360-degree IN-VEHICLE 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-S4556LMA 360-degree IN-VEHICLE DOME NETWORK CAMERA**
	1. **GENERAL CHARACTERISTICS**
		1. The 360-degree In-Door Dome Camera shall deliver H.265 stream, H.264 stream and JPEG

stream.

* + 1. The 360-degree In-Door 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 In-Door Dome Camera shall produce a resolution of 1,920 x 1,080 pixels at up to 30fps with a double panorama mode.
		2. The 360-degree In-Door Dome Camera shall utilize an approximate 1/3 5MP CMOS image sensor.
		3. The 360-degree In-Door Dome Camera shall feature a 120dB wide dynamic range based on Enhanced Super Dynamic and Adaptive Black Stretch technology (ABS).
		4. The 360-degree In-Door Dome Camera shall produce a color image with a minimum illumination of 0.01 lux and a monochrome image with 0.0013 lux at F2.4, shutter of 16/30s and maximum gain mode 11.
		5. The 360-degree In-Door 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 In-Door 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 In-Door 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 In-Door Dome Camera shall produce encrypted stream.
		9. The 360-degree In-Door 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 In-Door 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 In-Door Dome Camera shall have Fog compensation function.
		14. The 360-degree In-Door Dome Camera shall have High light compensation (HLC) function.
		15. The 360-degree In-Door Dome Camera shall provide up to eight (8) areas of electronic privacy masking.
		16. The 360-degree In-Door Dome Camera shall offer prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially.
		17. The 360-degree In-Door Dome Camera shall have an SD memory card slot that supports SD, SDHC and SDXC memory card for local storage.
		18. The 360-degree In-Door Dome Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.
		19. The 360-degree In-Door 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 In-Door 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 : 0.02 lx (F2.4, Maximum shutter : Off (1/30 s), AGC : 11)BW : 0 lx (F2.4, Maximum shutter : Off (1/30 s), AGC : 11, when the IR LED is lit)Color : 0.01 lx, BW : 0.0013 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 1.03 A, Approx. 12.4 WPoE (IEEE802.3af compliant) |
| Power Consumption | Device : DC48 V 260 mA, Approx. 12.5 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 | When using the attachment plate : ø154 mm × 60.3 mm (H) {ø6-1/16 inches × 2-3/8 inches (H)} , Dome radius 35 mm {1-3/8 inches} |
| Weight  | When using the attachment plate : Approx. 870 g {1.92 lbs} |
| Constructional material1. Main body
 | Aluminum die cast |
| Finish1. Main body
 | i-PRO white |

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| ENVIRONMENTAL |
| Operating Temperature | IR LED : On -40 °C to +50 °C (-40 °F to 122 °F) / Off -40 °C to +60 °C (-40 °F to 140 °F) |
| Operating Humidity | 10% to 100 % (no condensation) |