**i-PRO WV-S4576LMA 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-S4576LMA 360-degree IN-VEHICLE DOME NETWORK CAMERA**
   1. **GENERAL CHARACTERISTICS**
      1. The 360-degree In-Vehicle Dome Camera shall deliver H.265 stream, H.264 stream and JPEG stream.
      2. The 360-degree In-Vehicle Dome Camera shall produce a resolution of 2,992×2,992 pixels

at up to 30 fps with a fisheye mode.

* + 1. The 360-degree In-Vehicle Dome Camera shall produce a resolution of 2,560 x 1,440 pixels at up to 15fps with a double panorama mode.
    2. The 360-degree In-Vehicle Dome Camera shall utilize an approximate 1/2 12MP CMOS image sensor.
    3. The 360-degree In-Vehicle Dome Camera shall feature an 84dB wide dynamic range based on Enhanced Super Dynamic and Adaptive Black Stretch technology (ABS).
    4. The 360-degree In-Vehicle Dome Camera shall produce a color image with a minimum illumination of 0.02 lux and a monochrome image with 0.0003 lux at F1.9, shutter of 16/30s and maximum gain mode 11.
    5. The 360-degree In-Vehicle 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-Vehicle 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-Vehicle 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-Vehicle Dome Camera shall produce encrypted stream.
    9. The 360-degree In-Vehicle 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-Vehicle 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-Vehicle Dome Camera shall have Fog compensation function.
    14. The 360-degree In-Vehicle Dome Camera shall have High light compensation (HLC) function.
    15. The 360-degree In-Vehicle Dome Camera shall provide up to eight (8) areas of electronic privacy masking.
    16. The 360-degree In-Vehicle 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-Vehicle 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-Vehicle Dome Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.
    19. The 360-degree In-Vehicle 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-Vehicle Dome Camera shall conform to the ONVIF standard.

|  |  |
| --- | --- |
| CAMERA | |
| Minimum Image Sensor | Approx. 1/2 type 12MP CMOS image sensor |
| Minimum Illumination   * + - 1. Color       2. BW | Color : 0.3 lx BW : 0.04 lx (F1.9, Maximum shutter : Off (1/30 s), AGC : 11) BW : 0 lx (F1.9, Maximum shutter : Off (1/30 s), AGC : 11, when the IR LED is lit) Color : 0.02 lx BW : 0.003 lx (F1.9, Maximum shutter : max. 16/30s, AGC : 11) |
| Day & Night | Off / Auto |
| Dynamic Range | Max.84 dB (Super Dynamic : On, level : 31) |

|  |  |
| --- | --- |
| LENS | |
| Focal Length | 1.4 mm {1/16 inches} |
| Maximum Aperture Ratio | 1:1.9 |
| Angular Field of View | Horizontal : 183° Vertical : 183° |
| Zoom Ratio | 1x |

|  |  |
| --- | --- |
| VIDEO | |
| Image Resolution   1. Ceiling 2. Wall | •Fisheye mode (max. 30 fps/25 fps) 2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320 •Quad PTZ mode (max. 15 fps/12.5 fps), Single PTZ mode (max. 15 fps/12.5 fps) 2560×1920\*3 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / VGA / QVGA |
| Image Resolution   1. Ceiling | •Double Panorama mode (max. 15 fps/12.5 fps) 2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180 •Fisheye + Double Panorama mode (max. 15 fps/12.5 fps) (Fisheye) 2992×2992 / 2192×2192 / 1280×1280 / 640×640 / 320×320 (Double Panorama) 1280×720 / 640×360 / 320×180 •Fisheye + Quad PTZ mode (max. 15 fps/12.5 fps) (Fisheye) 2992×2992 / 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. 15 fps/12.5 fps) (Quad PTZ) 2560×1920 / 2048×1536 / 1600×1200 / 1280×960 / 800×600 / VGA / QVGA (max. 5 fps) |
| Image Resolution   1. Wall | •Panorama mode (max. 15 fps/12.5 fps) 2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180 •Fisheye + Panorama mode (max. 15 fps/12.5 fps) (Fisheye) 2992×2992 / 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 |

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

|  |  |
| --- | --- |
| 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) |

|  |  |
| --- | --- |
| NETWORK | |
| Network IF | 10Base-T / 100Base-TX, RJ45 connector |
| Supported Protocol   1. 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, DiffServ IPv4 : 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 |

|  |  |
| --- | --- |
| 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) |

|  |  |
| --- | --- |
| ELECTRICAL | |
| Power Source | DC power supply : DC 12 V 1.1 A/Approx. 13.2 W PoE (IEEE802.3af compliant) |
| Power Consumption | Device : DC 48 V 270 mA/Approx. 12.95 W (Class 0 device) |

|  |  |
| --- | --- |
| 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 |
| Railway Application | EN45545 compliant, EN50155-TX |

|  |  |
| --- | --- |
| MECHANICAL | |
| Dimensions | When using the attachment plate only : 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 only : Approx. 880 g {1.94 lbs} |
| Constructional material   1. Main body | Aluminum die cast |
| Finish   1. Main body | i-PRO white |

|  |  |
| --- | --- |
| 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) |
| Wind Resistance | Up to 40 m/s {approx. 89 mph} |