i-PRO WV-S85702-F3L DUAL-SENSOR 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 MasterFormat™ 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

1.01 SUMMARY
1.02 WARRANTY

A. Provide manufacturer's standard warranty.
Warranty | i-PRO Products

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. i-PRO Co., Ltd.

B. Provide Video Surveillance Camera from single source manufacturer

2.2 i-PRO WV-S85702-F3L DUAL-SENSOR NETWORK CAMERA

A. GENERAL CHARACTERISTICS

1. The Dual-Sensor Camera shall deliver H.265 stream and H.264 stream.

2. The Dual-Sensor Camera shall utilize an approximate 1/2.8 type high sensitivity CMOS image sensor.

3. The Dual-Sensor Camera shall have two 4K image sensors and produce a resolution of up to 3840 x 2160 pixels at up to 15 fps with a 16:9 aspect ratio.

4. The Dual-Sensor Camera shall built-in AI engine to enable analytical applications on network edge. Built-in AI engine supports the detecting suspicious changes in captured scenes, optimizing the image settings of the camera (based on captured scene analysis) for better image usability, and optimizing video compression through captured scenes to save bandwidth.

5. The Dual-Sensor Camera shall enable to install the optional analytics applications with including developed by third party companies using this camera's SDK.

6. The camera shall support up to 4 Edge AI analytics slots.

7. The Dual-Sensor Camera shall have a suite of AI analytic applications.
   a. AI Video Motion Detection
   b. AI Non-Mask Detection
   c. AI Face Detection
   d. AI People Detection
   e. AI Vehicle Detection
   f. AI Occupancy Detection
   g. AI Scene Change Detection
   h. 3rd party applications are also available. (https://i-pro.com/products_and_solutions/en/surveillance/solutions/edge-ai-platform/application-list)

8. The Dual-Sensor Camera shall have the two repositionable lenses with easy adjustment include a wide range horizontal PAN angle (-50 degree to 230 degree), a wide range vertical TILT angle (+10 degrees to +105 degree) and a wide range azimuth YAW angle (±90 degree) mechanism minimizes blind spots.

9. The Dual-Sensor Camera will use a single RJ-45 Ethernet LAN.

10. The Dual-Sensor Camera shall feature a 120dB wide dynamic range based on Enhanced Super Dynamic and built-in AI engine and Adaptive Black Stretch technology (ABS).

11. The Dual-Sensor Camera shall produce a color image with a minimum illumination of 0.084 lux (30IRE) / 0.12 lux (50IRE) and a monochrome image with 0.05 lux (50IRE) at F1.44, shutter speed of 1/30s.

12. The Dual-Sensor Camera shall offer a built-in IR illumination to produce a clear monochrome image in zero lux conditions with 40m (131feet, 30IRE) / 30m (99feet, 50IRE) irradiation distance.

13. The Dual-Sensor Camera shall generate multiple simultaneous video streams of up to two (2) H.265 (Main profile) or H.264 (High profile) streams and MJPEG streams per camera.

14. The Dual-Sensor Camera shall be equipped with AI intelligent auto mode which is the technology for shooting license plate and person’s face more clearly.

15. The Dual-Sensor Camera shall be equipped with GOP controls including smart facial coding and frame control and it reduce bit rate by controlling the image quality of still areas, moving areas, and faces with AI engine.

16. The Dual-Sensor Camera shall be equipped with corridor mode enables the capture of a more vertically-oriented area than the normal format would allow.

17. The Dual-Sensor Camera shall produce encrypted stream.

18. The Dual-Sensor Camera shall realize SSL / TLS communication with CA certificate.

19. The Dual-Sensor Camera shall realize a high level of cyber security with FIPS 140-2 level3 certified hardware, Device Certificate GlobalSign® pre-installed, HTTPS, User authentication, digest authentication, Host authentication, IEEE802.1X, System log, Image transmission log, brute-force protection, Alteration Detection and Signed firmware.

20. The Dual-Sensor Camera shall be rated to IK10 vandal resistance

21. The Dual-Sensor Camera shall be rated to IP67/IP66 and NEMA 4X standard against water and dust ingress

22. A user shall be able to view video on a PC using a browser.

23. A user shall be able to view video on a smartphone and tablet using viewer software for iPhone and Android.

24. The Dual-Sensor Camera shall offer AI Video Motion Detection (AI-VMD) with four (4) detection modes as intruder detection, loitering detection, direction detection, and cross line detection.

25. The Dual-Sensor Camera shall offer Scene Change Detection (SCD) is possible to issue an alarm when a camera is covered with something or the camera direction is changed to shoot a different subject.

26. The Dual-Sensor Camera shall have Fog compensation function.

27. The Dual-Sensor Camera shall have High light compensation (HLC) function.

28. The Dual-Sensor Camera shall provide up to eight (8) areas of electronic privacy masking per camera.

29. The Dual-Sensor Camera shall have a USB terminal for confirming the live image and adjusting viewing angle with the smartphone or tablet device via the Wi-Fi connection at installation.

30. The Dual-Sensor Camera shall offer the prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially.

31. The Dual-Sensor Camera shall have a micro SD memory card slot that supports micro SDXC memory card for local storage.

32. The Dual-Sensor Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.

33. The Dual-Sensor Camera shall have three (3) alarm sources of terminal input, VMD, SCD, command alarm, and audio detection alarm that activate the processes such as micro SDXC memory recording, E-mail notification, HTTP alarm notification, Indication on browser, and TCP alarm protocol output.

34. The Dual-Sensor Camera shall conform to the ONVIF standard Profile G / S / T and M.

35. The Dual-Sensor Camera shall be NDAA compliant.

B. Camera

1. Image Sensor	2x 1/2.8 type CMOS image sensor
2. Scanning Area	5.56 mm(H) x 3.13 mm(V) {7/32 inches(H) × 1/8 inches(V)}
3. Minimum Illumination	Color : 0.084 lx (30IRE, F1.44, 1/30s, AGC:11)*

	0.12 lx (50IRE, F1.44, 1/30s, AGC:11) 0.008 lx (50IRE, F1.44, 16/30s, AGC:11)* BW : 0 lx (50IRE, F1.44, 1/30s, AGC:11, IR LED: On) 0.05 lx (50IRE, F1.44, 1/30s, AGC:11) 0.003 lx (50IRE, F1.44, 16/30s, AGC:11)* *Converted value
4. White Balance	ATW1/ ATW2/ AWC
5. Maximum shutter	15 fps mode: Max.1/10000s to Max.16/30s 12.5 fps mode: Max.1/10000s to Max.16/25s
6. Intelligent Auto	On / Off
7. Super Dynamic	On / Off, The level can be set in the range of 0 to 31.
8. Dynamic Range	120 dB max. (Super Dynamic: On, Level: 31)
9. Adaptive Black Stretch	The level can be set in the range of 0 to 255.
10. Back Light Compensation/High Light Compensation	BLC/ HLC/ Off The level can be set in the range of 0 to 31. (only when Super Dynamic/ Intelligent Auto: Off)
11. Fog Compensation	On/ Off The level can be set in the range of 0 to 8. (only when Intelligent Auto/ Auto contrast adjust: Off)
12. Maximum Gain (AGC)	The level can be set in the range of 0 to 11.
13. Color/BW (ICR)	Off/On(IR Light Off)/On(IR Light On)/Auto1(IR Light Off)/Auto2(IR Light On)/Auto3(SCC)
14. IR LED Light	High/Middle/Low/Off Maximum irradiation distance : 40 m {Approx. 131 ft} (30IRE)* 30 m {Approx. 99 ft} (50IRE) * Converted value
15. Digital Noise Reduction	The level can be set in the range of 0 to 255.
16. Video Motion Detection (VMD)	On / Off, 4 areas available
17. Scene Change Detection (SCD)	On / Off, 1 areas available
18. Audio Detection	On/Off
19. AI Sound Classification	Selectable from Gunshot, Yell, Vehicle horn, Glass break
20. AI Analytics	AI Video Motion Detection, AI Face Detection, AI People Detection, AI Vehicle Detection, AI Non mask Detection (prior to V2.70), AI Occupancy Detection, AI Scene Change Detection For details : https://i-pro.com/products_and_solutions/en/surveillance/products/analytics-software 3rd party applications are also available. https://i-pro.com/products_and_solutions/en/surveillance/solutions/edge-ai-platform/application-list
21. Privacy Zone	On/ Off (up to 8 zones available)
22. VIQS	On / Off (up to 8 zones available)
23. Image Rotation	0° (Off)/ 90°/ 180° (Upside-down)/ 270°

24. Camera Title (OSD)	On/ Off, Up to 40 characters, Up to 2 Lines (alphanumeric characters, marks)

C. Lens

1. Optical zoom	1x
2. Extra zoom	max 6x (when resolution is 640x360)
3. Focal length	3.1mm {1/8 inches}
4. Angular Field of View	Horizontal： 104 °
	Vertical：56 °
5. Maximum Aperture Ratio	1:1.4
6. Focus range	3 m {9.84 ft} – ∞

D. DORI

1. Detect (25ppm / 8ppf)	60.0 m / 196.9 ft
2. Observe (62.5ppm / 19ppf)	24.0 m / 78.7 ft
3. Recognize (125ppm / 38ppf)	12.0 m / 39.4 ft
4. Identify (250ppm / 76ppf)	6.0 m / 19.7 ft

E. System on Chip (SoC)

1. System on Chip (SoC)	Ambarella CV2

F. Adjusting Angle

1. Adjusting Angle	Camera 1, 2: Horizontal: -50° to +230° (Adjust by horizontal (PAN) angle) Vertical: +10° to +105° (Adjust by vertical (TILT) angle) Yaw: ±90° (Adjust by azimuth (YAW) angle)

G. Browser GUI

1. Camera Control	Brightness, AUX On / Off
2. Audio	Mic (Line) Input : On / Off Volume adjustment : Low / Middle / High Audio Output : On / Off Volume adjustment : Low / Middle / High
3. GUI / Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese
4. Browser	Microsoft Edge, Firefox, Google Chrome *1

H. Network

1. Network IF	10BASE-T/100BASE-TX/1000BASE-T, RJ45 connector
2. Resolution H.265/ H.264/ JPEG (MJPEG)	[16:9 mode] 3840×2160 / 2560×1440 / 1920×1080 / 1280×720 / 640×360 / 320×180
3. H.265/H.264	[Transmission Mode] Constant bit rate / VBR / Frame rate / Best effort [Transmission Type] Unicast port (AUTO) / Unicast port (MANUAL) / Multicast
4. JPEG	[Image Quality] 10 steps
5. Smart Coding	GOP(Group of pictures) control : Off/ Low (Variable GOP 1s-8s)/ Mid (Variable GOP 4s-16s)/Advanced (Fixed GOP 60 seconds with 1 second Key frame)/Frame rate control (Variable GOP 4s-16s with frame rate control)

		*Advanced and Frame rate control are only available with H.265. Smart VIQS : On(High)/On(Low)/Off Smart P-picture control : On/Off
6.	Audio Compression	G.726（ADPCM）32 kbps/16 kbps G.711　64 kbps AAC-LC 64kbps/96kbps/128kbps *2
7.	Audio Transmission Mode	Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)
8.	Supported Protocol	IPv6: TCP／IP、UDP／IP、HTTP、HTTPS、SSL/TLS、SMTP、DNS、NTP、SNMPv1/v2/v3、DHCPv6、RTP、MLD、ICMP、ARP、IEEE 802.1X、DiffServ、LLDP、MQTT IPv4：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、LLDP、MQTT
9.	No. of Simultaneous Users	24 (Number of sessions that can connect to cameras at the same time)
10.	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, Signed Firmware
11.	SDXC/SDHC/SD Memory Card	microSDXC memory card：64 GB,128 GB,256 GB,512 GB microSDHC memory card：4 GB,8 GB,16 GB,32 GB microSD memory card ：2 GB
12.	Mobile Terminal Compatibility	iPad / iPhone (iOS 8.0 or later), AndroidTM terminals
13.	ONVIF® Profile	G / M / S / T

I. Alarm

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

J. Input/Output

1.	Audio input *3	ø3.5 mm stereo mini jack For 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 : 2.4 V ±0.5 V For line input : Input level: Approx. –10 dBV
2.	Audio Output *3	ø3.5 mm stereo mini jack (Audio output is monaural.)

		Output impedance: Approx. 600 Ω (unbalanced) Output level: –20 dBV
3.	External I/O Terminals *3	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/ ALARM OUT /AUX OUT) (x1)
4.	Wi-Fi USB Adapter	Yes (for adjustment)

K. General

1.	Safety	UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1
2.	EMC	FCC (Part15 ClassA), ICES-003 ClassA, EN55032 ClassA, EN55035
3.	Power Source and Power Consumption	PoE+ (IEEE802.3at compliant) : DC 54 V : 350 mA/Approx. 18.9 W (Class 4 device)
4.	Ambient Operating Temperature	–40 °C to +60 °C* {–40 °F to 140 °F}(Power On range: –20 °C to +60 °C {–4 °F to 140 °F}) Maximum temperature according to NEMA TS 2 (2.2.7) : 74℃(165℉) *When using with the IR LED light constantly lit, the upper limit of the operating temperature range is +50 °C {+122 °F}.
5.	Ambient Operating Humidity	10 % to 100 % (no condensation)
6.	Anti-Condensation System	Temish element
7.	Water and Dust Resistance	IP67/IP66 (IEC 60529), Type 4X (UL50E), NEMA 4X compliant
8.	Shock Resistance	IK10 (IEC 62262)
9.	Wind Resistance	Up to 40 m/s {approx. 89 mph}
10.	Other standard support	NEMA TS 2 (2.2.7-2.2.9)
11.	Dimensions	When using the attachment plate only: 250 mm(D)× 150 mm (W) × 105 mm (H) {9-27/32 inches (D) ×5-29/32 inches (W) ×4-1/8 inches (H)}
12.	Mass (approx.)	Approx. 1.8 kg
13.	Finish	Main body: Aluminum die cast, i-PRO white Outer fixing screws: Stainless steel (Corrosion-resistant treatment) Dome cover: PC resin, Clear