**i-PRO WV-X66700-Z3K RAPID PTZ 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 Panasonic Security products to assist in developing project specifications for security and video surveillance systems.*

*Specifier Notes: This guide specification incorporates CSI MasterFormatTM 2016 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.

 Please refer to [Warranty | i-PRO Products](https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/grants-and-contracts/warranty)

**PART 2 PRODUCTS**

1. **MANUFACTURERS**
	1. i-PRO Co., Ltd.
	2. Provide Video Surveillance Camera from single source manufacturer
2. **i-PRO WV-X66700-Z3K RAPID PTZ DOME NETWORK CAMERA**
	1. **GENERAL CHARACTERISTICS**
3. The Rapid PTZ Network Camera shall deliver H.265 stream and H.264 stream.
4. The Rapid PTZ Network Camera shall produce a resolution of 3840x2160 pixels at up to 30fps with a 16:9 aspect ratio.
5. The Indoor PTZ Network Camera shall utilize an approximate 1/2.8 res-inch type high sensitivity CMOS image sensor.
6. The Indoor PTZ Network Camera shall be equipped with 30 times optical zoom and 90 times

HD extra optical zoom at HD resolution.

1. The Rapid PTZ Network Camera shall feature image stabilization to capture stable images even when installed on the plenty-vibration place.
2. The Rapid PTZ Network Camera shall feature a 132dB wide dynamic range based on Enhanced Super Dynamic and Adaptive Black Stretch technology (ABS).
3. The Rapid PTZ Network Camera shall produce a color image with a minimum illumination of 0.001 lux and a monochrome image with 0.0004 lux at F1.6, maximum shutter of 16/30s and maximum gain mode 11.
4. The Rapid PTZ Network 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.
5. The Rapid PTZ Network Camera shall be equipped with intelligent auto mode, the technology for shooting license plate and person’s face more clearly.
6. The Rapid PTZ Network Camera shall be equipped with GOP control and Smart Facial coding which controls the image quality of a stationary area, a moving area, and a face, as bitrate reducing technology.
7. The Rapid PTZ Network Camera shall produce encrypted stream.
8. The Rapid PTZ Network Camera shall realize SSL / TLS communication with CA certificate.
9. A user shall be able to view videos on a PC using a browser.
10. A user shall be able to view videos on a smartphone and tablet using viewer software for iPhone and Android.
11. The Rapid PTZ Network Camera shall offer Video Motion Detection (VMD) with four (4) programmable detection areas, 15 steps sensitivity level and 10 steps detection size.
12. The Rapid PTZ Network Camera shall offer an optional intelligent VMD (i-VMD) function which provides intruder detection, loitering detection, direction detection, scene change detection, object detection and cross line detection.
13. The Rapid PTZ Network Camera shall offer an optional face detection function.
14. The Rapid PTZ Network Camera shall have Fog compensation function.
15. The Rapid PTZ Network Camera shall have High light compensation (HLC) function.
16. The Rapid PTZ Network Camera shall have Super Chroma Compensation (SCC) which realizes a better color reproducibility in the low illumination.
17. The Rapid PTZ Network Camera shall provide up to thirty-two (32) areas of electronic privacy masking.
18. The Rapid PTZ Network Camera shall offer the prioritized stream control which transmits a video stream to a specified client PC or recorder preferentially.
19. The Rapid PTZ Network Camera shall have an SD memory card slot that supports SD, SDHC and SDXC memory cards for local storage.
20. The Rapid PTZ Network Camera shall offer full-duplex bi-directional audio communication capability between the camera and monitoring site.
21. The Rapid PTZ Network Camera shall have three (3) alarm sources of terminal input, VMD, command alarm, audio detection alarm and auto track 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 TCP alarm protocol output.
22. The Rapid PTZ Network Camera shall conform to the ONVIF profile G / M / S / T.

**B. Camera**

 1. Image Sensor Approx. 1/2.8 type CMOS image sensor

 2. Scanning Area 5.57 mm (H) × 3.13 mm (V)

{7/32 inches (H) × 1/8 inches (V)}

 3. Minimum Illumination Color : 0.13 lx (30IRE, F1.8, 1/30s)

Color : 0.19 lx (50IRE, F1.8, 1/30s)

BW : 0.1 lx (50IRE, F1.8, 1/30s)

 4. White Balance ATW1 / ATW2 / AWC

 5. Shutter Speed [30 fps mode] 1/30 Fix to 1/10000 Fix

[25 fps mode] 1/25 Fix to 1/10000 Fix

 6. Maximum shutter [30 fps Mode] Max.1/4000s to Max.16/30s

[25 fps Mode] Max.1/4000s to Max.16/25s

 7. Intelligent Auto On / Off

 8. Super Dynamic On / Off, The level can be set in the range of 0 to 31.

 9. Dynamic Range Max.132 dB

(Super Dynamic : On, Level 31)

 10. Adaptive Black Stretch The level can be set in the range of 0 to 255.

 11. Back Light Compensation/

High Light Compensation BLC (Back light compensation) / HLC (High light compensation) / Off

The level can be set in the range of 0 to 31 (only when Super dynamic / Intelligent Auto : Off)

 12. Fog Compensation On / Off, The level can be set in the range of 0 to 8

(only when Intelligent auto / auto contrast adjust : Off)

 13. Maximum Gain (AGC) The level can be set in the range of 0 to 11.

 14. Color/BW (ICR) Off / On (IR Light Off) / On (IR Light On) / Auto1 (IR Light Off) / Auto2 (IR Light On) / Auto3 (SCC)

 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 Gunshot, Yell, Vehicle horn, Glass break

 20. 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 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 32 zones available

 22. VIQS On / Off,

Up to 8 zones available

 23. Image Stabilizer On / Off

(Built-in gyro sensor)

 24. Image Rotation On / Off

 25. Camera Title (OSD) On / Off,

Up to 40 characters (alphanumeric characters, marks)

**C. Lens**

 1. Optical zoom 30x (Motorized zoom / Motorized focus)

 2. Extra zoom Max. 90x

(30x - 90x when resolution is 1280x720)

 3. Focal length 4.5mm - 135mm

(3/16 inches - 5-5/16 inches)

 4. Angular Field of View [16 : 9 mode]

Horizontal : 2.5° (TELE) – 62° (WIDE), Vertical : 1.4° (TELE) – 37° (WIDE)

 5. Maximum Aperture Ratio 1 : 1.8 (WIDE) – 1 : 4.7 (TELE)

 6. Focus range 3.0 m {118-1/8 inches} –∞

 7. Aperture range F1.8 – close

**D. DORI**

 1. Detect (25ppm / 8ppf) Wide: 127.8 m / 419.3 ft, Tele: 3519.7 m / 11547.6 ft

 2. Observe (62.5ppm / 19ppf) Wide: 51.1 m / 167.7 ft, Tele: 1407.9 m / 4619.0 ft

 3. Recognize (125ppm / 38ppf) Wide: 25.6 m / 83.9 ft, Tele: 703.9 m / 2309.5 ft

 4. Identify (250ppm / 76ppf) Wide: 12.8 m / 41.9 ft, Tele: 352.0 m / 1154.8 ft

**E. System on Chip**

 **(SoC)**

 1. System on Chip

 (SoC) Ambarella CV22

**F. Adjusting Angle**

 1. Adjusting Angle Horizontal : 360° Endless Panning, TILT : -20° to +90°, Yaw : 0°

**G. Pan /tilt**

 1. Panning Range 360° Endless panning

 2. Panning Speed Manual: Approx. 0.065°/s – 150°/s

Preset: Up to approx. 700°/s

 3. Tilting Range Operational range -20° – +90°

 4. Tilting Speed Manual: Approx. 0.065°/s –150°/s Preset: Up to approx. 500°/s

 5. Preset Positions 256 positions

 6. Auto Mode Auto track/ Auto pan/ Preset sequence/ Patrol

 7. Self Return 10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min

 8. Active ClearSight Yes

**H. Browser GUI**

 1. GUI / Setup Menu Language English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese

 2. Browser \*1 Microsoft Edge, Firefox, Google Chrome

**I. Network**

 1. Network IF 10Base-T / 100Base-TX, RJ45 connector

 2. Resolution

H.265/ H.264/ JPEG (MJPEG) [16:9 mode (30 fps mode) ]

[16:9 mode (25 fps mode) ]

3840x2160/ 2560x1440/ 1920x1080/

1280x720/ 640x360/ 320x180

 3. H.265/H.264 Transmission Mode / Type \*2

[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 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.

Smart VIQS: On(High)/On(Low)/Off, Smart P-picture control: On/Off

 6. Audio compression method \*3 G.726 (ADPCM) : 16 kbps / 32 kbps

G.711 : 64 kbps

AAC-LC : 64 kbps / 96 kbps / 128 kbps

 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

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, MQTT, NTCIP

 9. No. of Simultaneous Users Up to 14 users (Depends on network conditions)

 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

 11. SDXC/SDHC/SD Memory Card (Option) H.265 / H.264 recording :

Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure

JPEG recording :

Manual REC / Alarm REC (Pre/Post) / Backup upon network failure

Compatible 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

**J. Alarm**

 1. Alarm Source 3 terminals input, VMD 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

**K. Input/Output**

 1. Audio Input \*4 ø3.5 mm stereo mini jack

Recommended applicable microphone: Plug-in power type

(Sensitivity of microphone:-51dB to -38dB (0 dB=1 V/Pa, 1 kHz))

Input impedance: Approx. 2 kΩ (unbalanced)

Supply voltage: 4.0V±0.5V

For line input : Input level : Approx. –10 dBV

 2. Audio Output \*4 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 \*4 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)

**L. General**

 1. Safety UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1

 2. EMC FCC (Part15 ClassA), ICES-003 Issue 7 ClassA, EN55032 ClassA, EN55035

 3. Other Standard NEMA-TS2

 4. Power Source and Power Consumption PoE++ (IEEE802.3bt compliant)

DC 54 V : 700 mA/Approx. 37.8 W (Class 6 device)

 5. Ambient Operating Temperature –50 °C to 60 °C \* {–58 °F to 140 °F}

(Power On range: –30 °C to +60 °C {–22 °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}.

 6. Ambient Operating Humidity 10 to 100 % (no condensation)

 7. Water and Dust Resistance IP66, IEC60529 measuring standard compatible, Type 4X(UL50E), NEMA 4X compliant

 8. Shock Resistance IK10 (IEC 62262)

 9. Wind Resistance Up to 40 m/s {approx. 89 mph}

 10. Dimensions Maximum diameter:φ167mm × 205 mm (H){φ6-9/16 inches × 8-1/16 inches (H)}

Dome radius SR 77.5 mm {SR 3-1/16 inches}

(excluding an attachment for the conduit portion and protruding parts)

 11. Mass (approx.) Approx. 3 kg (without attachment)

 12. Finish Main body :

Aluminum die cast (Heavy-salt damage resistance coating), i-PRO white

Outer fixing screws : Stainless steel (Corrosion-resistant treatment)

Dome cover: Polycarbonate resin, Clear (with ClearSight coating)

 13. Other Tamper-resistant enclosure