

PRODUCT:	HIGH DEFINITION, INDOOR IP PTZ CAMERA VB-R13 2.1MP Full HD, Indoor IP PTZ Dome Camera
Division 28	ELECTRONIC SAFETY and SECURITY
Level 1	28 20 00 ELECTRONIC SURVEILLANCE
Level 2	28 23 00 VIDEO SURVEILLANCE
Level 3	28 23 29 VIDEO SURVEILLANCE REMOTE DEVICES and SENSORS

PART 2
GENERAL - Safety, standards and certification

2.01 General Requirements

- A. The camera shall be from the manufacturer's official standard product line, designed for commercial/industrial continuous use i.e. for 24-hour operation.
- B. The camera shall be based upon standardised components and proven technology generally using open and published protocols.

2.02 Quality Assurance

- A. All camera installation, configuration, setup, program and related work shall be performed by trained technicians thoroughly familiar with the installation, setup and service of the camera equipment provided.
- B. All equipment provided shall be backed by a minimum of 1 year manufacturer's warranty.

2.03 Certifications and standards

- A. The camera shall carry the following international standards and other approvals:

EN55032 Class B, FCC part15 subpart B Class B, ICES-3/NMB-3 Class B, VCCI Class B, C-tick AS/NZS EN55032 Class B, CNS13438 Class B, KN32 Class B, EN55024, KN35, EN50581

IEC/UL/EN 60950-1, EN50130-4
- B. The camera shall meet the following coding/compression standards:
 - a. JPEG
 - b. H.264 - ISO/IEC 14496-10 AVC, - 12 and -15
- C. Networking:
 - a. IEEE 802.1X (EAP-MD5, EAP-TLS, EAP-TTLS, EAP-PEAP)
 - b. IPv4
 - c. IPv6

PRODUCTS

- 2.04 Sensor
The camera shall:

- A. Use a high quality 1/3" CMOS sensor using a primary colour filter with approximately 2.1M pixels.

Have an active number of pixels of 1920 x 1080

- B. Use Progressive scanning

2.05 Optics

The camera shall:

- A. Have a Digital Night Mode, supporting Day/Night (colour/monochrome) switching either automatically or manually.
- B. Be fitted with a zoom lens with a focal length of 4.4mm(W) to 132mm(T) (with a x20 digital zoom), giving a horizontal field of view of 62.6° to 2.2° and vertical field of view of 36.9° to 1.3° (164:9 aspect ratio). The F number of the lens shall be F1.4 (W) to F4.6 (T). Be fitted with Enhanced Digital Zoom providing additional magnification.
- C. In colour, provide images down to a lighting level of 0.05 Lux, (F1.4 shutter speed 1/30sec, Smart Shade Control off, 50 IRE).
In monochrome, provide images of a minimum subject illumination down to 0.002 Lux (F1.4 shutter speed 1/30sec, Smart Shade Control off, 50 IRE) – no dome unit.
- D. Have focus control adjustable between: Auto/One Shot AF/Manual/Fixed at infinity
- E. Have the focusing region
- F. Day mode from 0.3 m - infinity (W)/ 2.0m - infinity (T)
Night mode from 1.0 m – infinity (W)/2.0 m – infinity (T)
- G. Have the shutter speed adjustable from 1 sec to 1/16000 sec in 16 steps (17 levels)
- H. Have the White Balance settings selectable between: Auto/Light Source/Manual
Light Source : Fluorescent (Daylight-white-warm)/mercury lamp/sodium lamp/halogen lamp
Manual : One- shot WB (R Gain/ B Gain)
- I. Metering mode shall be either Centre-Weighted or Average or Spot, with 9 levels of exposure compensation.
- J. Have Smart Shade Control with settings as Auto, Manual or Disable with three levels of Auto and 7 levels of Manual.
- K. Have Haze Compensation with settings of Auto/Manual/Disable with three levels in Auto and seven levels in Manual.
- L. Have a digital image stabiliser with two levels.
- M. Have Motion-Adaptive Noise Reduction.
- N. Adjustable colour/monochrome switching settings and an adjustable time period for switching between day and night (with five levels and five time settings).
- O. Have an Automatic Gain Control (AGC) with six levels.

2.06 Server unit

Shall provide video compression in both H.264 and JPEG (both with ten levels of quality).

- A. There shall be 9 image output sizes up to 1920 x 1080 pixels.
- B. Image rates shall be up to 30fps for both H.264 and JPEG with two simultaneous H.264 streams at 15fps each, at the maximum resolution.
- C. The I frame interval shall be variable between 0.5 seconds up to 5 seconds with seven levels.
- D. Maximum number of clients shall be 41 (including one admin client), 31 as http clients (of which 10 can be H.264) plus 10 as RTP clients on H.264
- E. Both IPv4 and IPv6 shall be supported in both TCP/IP and UDP with DHCP (and DHCPv6) and ONVIF Profile S
- F. Shall be able to use encrypted communication such as SSL/TLS, IPsec

2.07 Embedded analytics (Intelligent functions) are to include

- A. Camera tampering detection
- B. Moving object detection
- C. Abandoned object detection
- D. Removed object detection
- E. Passing detection
- F. Intrusion detection
- G. Auto tracking
- H. Audio Volume and Scream detection

Have the ability to set Non-Detection areas and link events conditions by OR, AND whether or not there is a sequence of events

2.08 Connectors

- A. RJ45 network (LAN 100BaseT & PoE)
- B. 1 x 3.5mm mono mini jack (audio in) – Line In or Mic in, selectable
- C. 1 x 3.5mm mono audio jack (audio Line Out)
- D. 2x input, 2x output for external devices
- E. SD, SDHC, SDXC memory card.

2.09 Mechanisms

- A. The camera mechanism shall enable the view to be panned through 360° continuously and tilted between 0° to 180° (with auto flip) and have a pan speed and tilt speed of 450°/sec maximum.

- B. The camera shall have 257 preset positions (256 plus Home position) of pan, tilt and zoom. Also registered with each position is Exposure, Smart Shade Control, Focus, White balance, Video quality adjustment, Day/night, Haze compensation

2.10 Dimensions, weight & colour

- A. 199mm diameter x 199mm high cam only.
- B. Approximately 1990 g
- C. Be available in Titanium White

2.11 Video

- A. Size setting
The camera shall be able to deliver high-quality video in at least 9 different resolutions up to 1920 x 1080.
- B. Transmission speed
The camera shall allow the transmission of images at up to 30 frames per second in all resolutions, using JPEG and/or H.264.
- C. Compression
The camera shall provide simultaneous support for both JPEG and H.264.
The H.264 implementation shall support Bit Rate Control (between 64kbps and 16384kbps) and shall support both unicast and multicast.
The camera shall provide at least 5 different levels of compression (quality settings) in total.
- D. Edge recording
The camera shall be able to record video at "the edge" i.e. to a memory card at the camera and is ONVIF Profile G compliant. This can be downloaded to a PC for viewing remotely.
- E. Privacy masking
The camera shall have 8 privacy masks of one of nine colours.

2.12 Audio

- A. The camera shall support full duplex audio using G.711 m-law compression.
- B. The camera shall be capable of using Sound Transfer Protocol by Canon with echo cancellation.

2.13 Functionality

- A. IP addresses
 - a. The camera shall support both fixed IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server or for IPv6 as DHCPv6.
 - b. The camera shall provide support for both IPv4 and IPv6.
- B. Bandwidth management

- a. The camera shall provide the ability to control network traffic by limiting the maximum bandwidth to a selected value.
 - b. Provide the capability to limit the frame rate to a selected value.
- C. Area-specific Data Size Reduction
- a. Having a maximum of 8 areas to specify high quality transmission.
- D. Event functionality
- The camera shall be equipped with event functionality, which can be triggered by:
- a. External inputs
 - b. Timer and Day/Night switch
 - c. Intelligent Function (video)
 - d. Intelligent function (audio)
 - e. Two Linked events on an AND or OR basis
- E. Response to triggers shall include:
- a. Notification, using E-mail
 - b. Image upload using HTTP/FTP or record to Memory card
 - c. Video upload of JPEG or H.264 files via HTTP/FTP or e-mail
 - d. Activating external output
 - e. Preset call up

2.14 Text overlay

The camera shall provide embedded on-screen text in the video, with support for date & time (NTP server linked), and a customer-specific text, camera name in one of eight colours with one of eight background colours.

2.15 Security

The camera shall support the use of:

- a. IPsec mode shall be supported including Tunnel mode
- b. SSL/TLS, providing the ability to manage certificates and private key files.
- c. Authentication shall be possible by using IEEE 802.1X authentication.
- d. The camera shall provide support for restricting access to pre-defined IP addresses only, so-called IP address filtering.
- e. Access to the built-in web server shall be restricted by usernames and passwords.

- f. Camera control, Admin, or Authorised or Guest – functionality depends on user level.

2.16 Installation and Maintenance

The camera shall:

- a. Be supplied with Windows-based management software which allows the assignment of IP addresses, upgrade of firmware and backup of the cameras configuration.
- b. Be equipped with a Camera Viewer capable of supporting access and control via Windows Internet Explorer 9, 10 and 11, Edge and Google Chrome 45 web browsers
- c. Be equipped with a Mobile Camera Viewer capable of supporting Windows Surface Apple iPad and iPhone, Google Nexus and Samsung Galaxy mobile devices.
- d. Support the use of SNMP-based management tools.
- e. Enable customer-specific settings, including statically assigned IP address, the local time & date, event functionality and video configuration, shall be stored in a non-volatile memory and shall not be lost during power cuts or soft reset.

2.17 Interfaces

A. Inputs/Outputs

The camera shall be equipped with two digital (alarm) inputs and two digital outputs, accessible via a terminal block. These inputs shall be configurable to respond to normally open (NO) or normally closed (NC) dry contacts.

B. Audio

The camera shall be equipped with one mono 3.5mm jack for Line/mic input (selectable in menu) and one 3.5mm Line Out mono jack.

C. Network interface

The camera shall be equipped with one 100baseTX Fast Ethernet-port, using a standard RJ-45 socket and shall support auto sensing of network speed.

D. Memory card

Shall be capable of accepting either a SD, SDHC or SDHXC and shall enable recording either JPEG (1 fps) or H.264 (30fps)

2.18 Power requirements

PoE IEEE802.3at (approx. 10.7W max)
AC mains (100 – 240Vac) adapter 11.3W max
24Vac 10.2W max
12Vdc 9.7W max

2.19 Operating environment

- A. For indoor use only.

- B. Operating temperature -10°C to +50°C.
- C. Humidity 5% to 85% non-condensing.

2.20 Manufactured units

The camera shall be a Canon VB-R13.

[If this is to be a performance-based specification, remove Item 2.20]