

PRODUCT:	HIGH DEFINITION, IP PTZ DOME CAMERA VB-M50B 1.3 Mega pixel, High Definition, 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 1

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 years manufacturer's warranty.

2.03 Certifications and standards

- A. The camera shall carry the following EMC 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:

JPEG

ISO/IEC 14496-10 AVC & parts 12 & 15

- C. Networking:

IEEE 802.1X (EAP-MD5, EAP-TLS, EAP-TTLS, EAP-PEAP)

IPv4

IPv6

PRODUCT

2.04 Sensor

The camera shall:

- A. Use a high quality 1/3" CMOS sensor using a primary colour filter.

Have an active number of pixels of 1280 x 960

B. Use Progressive scanning

2.05 Optics

The camera shall:

- A. Be fitted with a removable IR-cut filter, providing "day mode & night mode" functionality, with automatic switching
- B. Be fitted with a removable IR Band Pass (IRBP) filter, providing a Clear IR Mode, with manual switching
- C. Be fitted with a zoom lens with a focal length of 17.7mm (W) to 88.5mm (T) (with x20 digital zoom), giving a horizontal field of view of 15.6° to 3.2° and vertical field of view of 8.8° (W) to 1.8° (T) (16:9 aspect ratio). The F number of the lens shall be F1 .8 (W) to F2.4 (T) and be fitted with Enhanced Digital Zoom providing between x2 and x4 additional magnification
- D. At minimum zoom, provide colour images down to a lighting level of 0.04 Lux, (F1 .6 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 .6 shutter speed, 1/30sec, Smart Shade Control off, 50 IRE)
- E. At maximum telephoto, provide colour images down to a lighting level of 0.07 Lux F1 .6 shutter speed 1/30sec, Smart Shade Control off, 50 IRE) In monochrome, provide images of a minimum subject illumination down to 0.004 Lux (F2 .4 shutter speed 1/30sec, Smart Shade Control off, 50 IRE)
- F. Have focus control adjustable between:
Auto/One Shot AF/Manual/Fixed at infinity
- G. Have the focusing region
Day mode from 3 m - infinity (W)/5 m - infinity (T)
Night mode from 3 m - infinity (W)/5 m - infinity (T)
- H. Have the shutter speed adjustable from 1 sec to 1/16000 sec in 16 steps (17 levels) in manual mode ½ sec to 1/16000 sec in 15steps (16 levels) in auto mode
- I. Have the white balance settings selectable between:
Auto : Fluorescent (Daylight-white-warm)/mercury lamp/sodium lamp/halogen lamp
Manual: One-shot WB (RGain / BGain)
- J. Have three settings of noise reduction, [mild], [standard] or [strong].
- K. Have seven settings of sharpness.
- L. Have a digital image stabiliser with two settings.
- M. Have Smart Shade Control with settings as [Auto-SSC] with three levels, [Manual] with seven levels of adjustment and [Disable].
- N. Have Haze Compensation with settings of Auto/Manual/Disable with three levels in Auto and seven levels in Manual.
- O. Have Motion-Adaptive Noise Reduction (NR)
- P. Adjustable day/night switching settings and an adjustable time period for switching between day and night (with five time settings).
- Q. Have an Automatic Gain Control (AGC) with six levels.

2.06 Server unit

- A. Shall provide video compression in either H.264 (in ten levels of compression) or JPEG.
- B. There shall be 6 image output sizes up to 1280 x 960 pixels.
- C. Image rates shall be up to 30fps for both H.264 and JPEG with two simultaneous H.264 streams at 15fps each, at the full resolution
- D. The I frame interval shall be variable between 0.5 seconds up to 5 seconds.
- E. Maximum number of clients shall be 31 (including one admin client), 31 as http clients (of which 10 can be H.264)
- F. Both IPv4 and IPv6 shall be supported in both TCP/IP and UDP with DHCP (and DHCPv6) and ONVIF Profile S and G compliant
- G. Shall be able to use encrypted communication such as SSL/TLS, IP sec

2.07 Embedded analytics 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. Audio Volume detection and Scream detection
- H. And have the ability to set non-detection areas and link event conditions by OR, AND, whether or not there is a sequence to events

2.08 Connectors

- A. RJ45 network (LAN 100BaseT)
- B. 2 x 3.5mm mono mini jack (audio in out)
- C. 2x input, 2x output for external devices
- D. Power connector
- E. SD, SDHC, SDXC Memory card

2.09 Mechanisms

Shall :

- A. Provide at least 348° pan rotation and 105° (-90° - +15°) tilt.
- B. Provide pan and tilt speed up to 300°/second, dependent upon the zoom setting.

- C. Have 64 pre-set positions of pan, tilt and zoom, plus a "Home" position and be capable of carrying out pre-set tours with variable dwell periods. Also register with each position is Exposure, AGC Limit, Slow Shutter, Aperture, Gain, Exposure Compensation, Metering Mode, Smart Shade Control & Level, White Balance, Noise Reduction, Sharpness, Colour Saturation, Haze Compensation & Level, Clear IR Mode, and Day/Night selection
- D. The camera shall provide the ability to rotate image 180° to allow for ceiling mounting of the camera.

2.10 Dimensions, weight & colour

- A. 129 mm diameter x 157 mm high
- B. Approximately 1170 g
- C. Be available in Black

2.11 Video

- A. Size setting
The camera shall be able to deliver high-quality video in at least 6 different resolutions up to 1280 x 960.
- B. Transmission speed
The camera shall allow the transmission of images at up to 30 frames per second in all resolutions, using JPEG and H.264.
- C. Compression
The camera shall provide simultaneous support for both JPEG and H.264.
The H.264 implementation shall include support Bit Rate Control and shall support both unicast and multicast.
The camera shall provide at least 10 different levels of compression (quality settings) in total.
- D. Image control
The camera shall incorporate Automatic and Manual White Balance and an electronic shutter operating in the range 1 second to 1/16,000 second.
- E. 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.
- F. Privacy masking
The camera shall have 8 privacy masks.
- G. Panorama image
A "panorama" image may be created to show the complete range of view of the camera.
- H. View restriction tool
Shall be able to restrict the viewing area if sending to a public website.

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

2.13 Functionality

- A. IP addresses
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.
Bandwidth management
- C. The camera shall provide the ability to control network traffic by limiting the maximum bandwidth to a selected value.
- D. Provide the capability to limit the frame rate to a selected value.
- E. The camera shall provide Area-Specific Data Size Reduction, with 8 areas to specify high quality transmission.
- F. Event functionality
- G. The camera shall be equipped with event functionality, which can be triggered by:
External inputs
- H. Timer
Intelligent Function (video) Intelligent Function (audio)
- I. Two Linked Events on an AND or OR basis
- J. Response to triggers shall include:
Notification, using E-mail
Image upload using HTTP/FTP or record to Memory card
Video upload to the main server of JPEG or H.264 files using http/ftp or e-mail
Preset call up
Activating external output
- K. 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.
- L. Security
The camera shall support the use of:
IPSec mode shall be supported including Tunnel mode
HTTPS and SSL/TLS, providing the ability to manage certificates and private key files.
Authentication shall be possible by using IEEE 802.1X authentication.
- M. The camera shall provide support for restricting access to pre-defined IP addresses only, so-called IP address filtering.
- N. Access to the built-in web server shall be restricted by usernames and passwords.
- O. ONVIF Profile S and G compliant.
- P. Installation and Maintenance
- Q. The camera shall:
Be supplied with Windows-based management software which allows the assignment of IP addresses, upgrade of firmware and backup of the cameras configuration.
- R. 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
- S. Be equipped with a Mobile Camera Viewer capable of supporting Windows Surface, Apple iPad and iPhone, Google Nexus and Samsung Galaxy mobile devices

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- T. Support the use of SNMP-based management tools.
 - U. 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.

2.14 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 and one mono 3.5mm jack for line out.

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.

2.15 Power requirements

A. PoE IEEE802.3af (approx. 9.8W max)

B. 12 V DC, max 10W

C. 24V AC max 9.6W

2.16 Operating environment

Operating temperature -10°C to +50°C

Humidity 5% to 85% non-condensing

2.17 Manufactured units

The camera shall be a Canon VB-M50B.

[If this is to be a performance-based specification, remove Item 2.17.]