

---

<b>PRODUCT:</b>	<b>HIGH DEFINITION, IP DOME CAMERA VB-M640VE 1.3 Mega pixel, High Definition, IP Fixed Outdoor Dome Camera</b>
<b>Division 28</b>	<b>ELECTRONIC SAFETY and SECURITY</b>
<b>Level 1</b>	<b>28 20 00 ELECTRONIC SURVEILLANCE</b>
<b>Level 2</b>	<b>28 23 00 VIDEO SURVEILLANCE</b>
<b>Level 3</b>	<b>28 23 29 VIDEO SURVEILLANCE REMOTE DEVICES and SENSORS</b>

## PART 2 GENERAL - Safety, standards and certification

### 2.01 General Requirements

The camera shall be from the manufacturer's official standard product line, designed for commercial/industrial continuous use i.e. for 24-hour operation.

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.

All equipment provided shall be backed by a minimum of 1 years manufacturer's warranty.

### 2.03 Certifications and standards

B. The camera shall carry the following EMC and other approvals:  
EN55022, EN55024

The camera shall meet the following coding/compression standards:

JPEG

H.264 - ISO/IEC 14496-10 AVC, – 12 and -15

Networking:

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

IPv4

IPv6

---

## PRODUCTS

### 2.04 Sensor

The camera shall:

- C. Use a high quality 1/3" CMOS sensor using a primary colour filter with approximately 1.3M pixels.

Use Progressive scanning

### 2.05 Optics

The camera shall:

- D. Be fitted with a removable IR-cut filter, providing "day mode & night mode" functionality, with automatic switching

Be fitted with a 2.4 x optical zoom lens, with autofocus and a four x digital zoom. The focal length range shall be 2.55mm (W) to 6.12mm (T), giving a horizontal field of view of 111° to 46.2°. The F number of the lens shall be in the range of F1.2 (W) to F1.8 (T)

In colour, provide images down to a lighting level of 0.02 Lux, (F1.2 shutter speed 1/30sec, smart shade control off, 50 IRE)

In monochrome, provide images of a minimum subject illumination down to 0.001Lux (F1.2 shutter speed 1/30sec, smart shade control off, 50 IRE)

Have focus control adjustable between:

Auto/One-Shot AF/Manual/Fixed at infinity

Have the focusing region

in Day mode from 0.3 m - infinity

in Night mode from 0.3 m – infinity

Have the shutter speed adjustable from

1 sec to 1/16000 sec in 16 steps (17 levels)

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)

Have three settings of noise reduction, [mild], [standard] or [strong].

Have seven settings of sharpness.

Have Smart Shade Control with settings as [Auto], [Manual] with seven levels and [Disable].

---

Adjustable day/night switching settings and an adjustable time period for switching between day and night (with five levels and five time settings).

Have an Automatic Gain Control (AGC) with five levels and Off.

## 2.06 Server unit

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

E. There shall be 6 image output sizes up to 1280 x 960 pixels.

Image rates shall be up to 30fps for both H.264 and JPEG with two simultaneous streams possible as H.264 at 15fps at maximum resolution.

The I frame interval shall be variable between 0.5 seconds up to 5 seconds.

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

Both IPv4 and IPv6 shall be supported in both TCP/IP and UDP with DHCP (and DHCPv6) and ONVIF Profile S

Shall be able to use encrypted communication such as SSL/TLS, IPsec

## 2.07 Embedded analytics to include

F. Camera tampering detection

Moving object detection

Abandoned object detection

Removed object detection

Passing detection

Intruder detection

## 2.08 Connectors

G. RJ45 network (LAN 100BaseT)

Power connector

microSD, micro SDHC, microSDXC memory card (1fps JPEG, 30fps H.264).

---

## 2.09 Mechanisms

The Camera Angle Setting tool shall remotely enable:

H. At least 350° (▽175°) pan rotation and 150° (▽75°) tilt.

A rotation of 350° (▽175°) to allow for ceiling or wall mounting of the camera or correcting an angled mounting.

Provide a setting speed of pan: 20.1°/sec, tilt :20.7°/sec and rotation 40.0°/sec.

Have up to 21 pre-set positions (20, plus Home). The move to preset on “alarm” is to a “digital” virtual position within the camera’s view

## 2.10 Dimensions, weight, colour & IP rating

I. 180 mm diameter x 131mm high (camera only)

Approximately 1570g

Be available in titanium white

IP rating IP66, NEMA250 Type4X, IEC 60950-1/22 and vandal (impact) resistance IK10 (20J)

## 2.11 Video

J. Size setting

The camera shall be able to deliver high-quality video in at least 6 different resolutions up to 1280 x 960

Transmission speed

The camera shall allow the transmission of images at up to 30fps all resolutions, using JPEG and H.264 at maximum resolution.

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 ten different levels of compression (quality settings) in total.

The camera shall be able to record video at “the edge” i.e. to a memory card at the camera. This can be downloaded to a PC for viewing remotely. This is ONVIF Profile G compliant.

---

### Privacy masking

The camera shall have 8 privacy masks of one of nine colours.

## 2.12 Functionality

### K. 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.

The camera shall provide support for both IPv4 and IPv6.

### Bandwidth management

The camera shall provide the ability to control network traffic by limiting the maximum bandwidth to a selected value.

Provide the capability to limit the frame rate to a selected value.

### Area-specific Data Size Reduction

Having a maximum of 8 areas to specify high quality transmission.

### Event functionality

The camera shall be equipped with event functionality, which can be triggered by:

Timer,

Intelligent Function (video)

### Response to triggers shall include:

Notification, using E-mail

Image upload using HTTP/FTP or record to Memory card

Video upload using H.264

Preset call up of digital preset position within the camera's view

Activating external output

## 2.13 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.

---

## 2.15 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.

The camera shall provide support for restricting access to pre-defined IP addresses only, so-called IP address filtering.

Access to the built-in web server shall be restricted by usernames and passwords.

ONVIF Profile S.

## 2.16 Installation and Maintenance

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.

Support the use of SNMP-based management tools.

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

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

L. PoE IEEE802.3af (approx. 8.9W max)

## 2.16 Operating environment

M. For indoor/outdoor use

Operating temperature -10°C to +55°C

Humidity 5% to 85% non-condensing

---

2.17 Manufactured units

N. The camera shall be a Canon VB-M640VE.

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