

---

<b>PRODUCT:</b>	<b>HIGH DEFINITION, IP PTZ DOME CAMERA VB-H43 2.1 Mega pixel, High Definition, IP PTZ 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

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

Networking:

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

IPv4

IPv6

---

## PRODUCT

### 2.04 Sensor

The camera shall:

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

Have an active number of pixels of 1920 x 1080

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 20 x optical zoom lens, with autofocus. The focal length range shall be 4.7 mm (W) to 94 mm (T), giving a horizontal field of view of 60.4° to 3.2°. The F number of the lens shall be in the range of F1.6 (W) to F3.5 (T) zoom

In colour, provide images down to a lighting level of 0.4 Lux, (F1.6 shutter speed 1/30 the second smart shade control off, 50 IRE)

In monochrome, provide images of a minimum subject illumination down to 0.02 Lux (F1.6 shutter speed 1/30 of the second, 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 (W)/1 m - infinity (T)

in night mode from 1.0 m – infinity (W)/1.5 m – infinity (T)

Have the shutter speed adjustable from

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

1/2 sec to 1/16000 sec in 15 steps (16 levels) in auto mode

Have the white balance settings selectable between:

Auto/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 three settings of sharpness.

Have an image stabiliser with two settings.

Have Smart Shade Control with settings as [Auto-SSC] with three levels, [Manual] with seven levels of adjustment and [Disable].

---

Have Haze Compensation with settings of Auto/Manual/Disable with three levels in Auto and seven levels in Manual.

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

Have an Automatic Gain Control (AGC) with five levels

## 2.06 Server unit

Shall provide video compression in either H.264 : five levels of compression (quality settings) or JPEG.

E. There shall be 9 image output sizes up to 1920 x 1080 pixels.

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

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

Maximum number of clients shall be 31 in total (including one admin client), 31 as http clients (of which 10 can be 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, IP sec

## 2.07 Embedded analytics to include

F. Camera tampering detection

Moving object detection

Abandoned object detection

Removed object detection

Passing detection

Audio Volume detection

## 2.08 Connectors

G. RJ45 network (LAN 100BaseT)

2 x 3.5mm mono mini jack (audio in out)

2x input, 2x output for external devices

---

Power connector

2.09 Mechanisms

Shall :

H. Provide at least 340° pan rotation and 100° tilt.

Provide pan and tilt speed up to 150°/second, dependent upon the zoom setting.

Have up to 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.

The camera shall provide the ability to rotate image 180° to allow for ceiling mounting of the camera.

2.10 Dimensions, weight & colour

I. 132 mm diameter x 155 mm high

Approximately 1140 g

Be available in black or silver colour

2.11 Video

J. Size setting

The camera shall be able to deliver high-quality video in at least 9 different resolutions up to 1920x 1080.

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.

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 5 different levels of compression (quality setting) in total.

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.

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.

---

Privacy masking

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

Panorama image

A "panorama" image may be created to show the complete range of view of the camera.

View restriction tool

Shall be able to restrict the viewing area if sending to a public website.

2.12 Audio

- K. The camera shall support full duplex audio using G.711  $\mu$ -law compression.

The camera shall be capable of using Sound Transfer Protocol by Canon

2.13 Functionality

L. 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.

Event functionality

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

External inputs

Timer

Intelligent Function (video)

Intelligent function (audio)

Response to triggers shall include:

Notification, using E-mail

Image upload using HTTP/FTP or record to Memory card

---

Video upload using H.264 and/or JPEG

Preset call up

Activating external output

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.

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.

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

### M. 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.

#### 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.

#### 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

N. PoE IEEE802.3af (approx. 9.2W max)

12 V DC, max 8.6W

24V AC max 8.8W

### 2.16 Operating environment

O. Operating temperature -10°C to +50°C

Humidity 5% to 85% non-condensing

### 2.17 Manufactured units

P. The camera shall be a Canon VB-H43/B .

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