



Network Camera

Appendix – Specifications



VB-R13VE/VB-R13

VB-R12VE

VB-M50B

VB-H652LVE

VB-H651V

Specifications

Explanations that differ depending on the camera model are indicated by the camera name and the following symbols.

R13 VB-R13VE, VB-R13

R12 VB-R12VE

M50 VB-M50B

H652 VB-H652LVE

H651 VB-H651V

The cameras described in this manual may include models not be sold in your country and region.

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For the latest information on this product (firmware and included software, user manuals, operating environment, etc.), please refer to the Canon website.

■ Camera

Image Sensor	1/3 type CMOS (primary color filter)
Number of Effective Pixels	<p>R13 R12 H652 H651 Approx. 2.1 million pixels</p> <p>M50 Approx. 1.3 million pixels</p>
Scanning Method	Progressive
Lens	<p>R13 R12 30x optical zoom (20x digital zoom) lens with auto focus</p> <p>M50 5x optical zoom (20x digital zoom) lens with auto focus</p> <p>H652 H651 2.4x optical zoom (4x digital zoom) lens (electric drive)</p>
Focal Length	<p>R13 R12 4.4 (W) – 132 mm (T) *¹</p> <p>M50 17.7 (W) – 88.5 mm (T)</p> <p>H652 H651 2.55 (W) – 6.12 mm (T)</p>
35mm Film Equivalent Focal Length (approx.) * ²	<p>R13 R12 31.4 (W) – 942 mm (T)</p> <p>M50 126 (W) – 630 mm (T)</p> <p>H652 H651 18.2 (W) – 43.7 mm (T)</p>
F-number	<p>R13 R12 F1.4 (W) – F4.6 (T)</p> <p>M50 F1.8 (W) – F2.4 (T)</p> <p>H652 H651 F1.2 (W) – F1.8 (T)</p>
Viewing Angle For 16:9 aspect ratios	<p>R13 R12 Horizontal: 62.6° (W) – 2.2° (T) Vertical: 36.9° (W) – 1.3° (T)</p> <p>M50 Horizontal: 15.6° (W) – 3.2° (T) Vertical: 8.8° (W) – 1.8° (T)</p> <p>H652 Horizontal: 122.1° (W) – 50.1° (T) Vertical: 65.9° (W) – 28.1° (T)</p> <p>H651 Horizontal: 122.1° (W) – 50.1° (T) Vertical: 65.8° (W) – 28.2° (T)</p>

For 4:3 aspect ratios	<p>R13 R12 Horizontal: 48.5° (W) – 1.7° (T) Vertical: 36.9° (W) – 1.3° (T)</p> <p>M50 Horizontal: 15.6° (W) – 3.2° (T) Vertical: 11.7° (W) – 2.4° (T)</p> <p>H652 Horizontal: 89.2° (W) – 37.5° (T) Vertical: 65.9° (W) – 28.1° (T)</p> <p>H651 Horizontal: 89.2° (W) – 37.6° (T) Vertical: 65.8° (W) – 28.2° (T)</p>
Day/Night Switch	Auto/Day Mode/Night Mode
Min. Subject Illumination Day Mode (color)	<p>R13 R12 0.05 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.1 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>M50 0.04 lux (F1.8, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>H652 0.035 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.07 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>H651 0.035 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.07 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p>
Night Mode (monochrome)	<p>R13 R12 0.002 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.004 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>M50 0.002 lux (F1.8, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>H652 0 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE with IR light on) 0.002 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.004 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p> <p>H651 0.002 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) When using the Dome Unit (Smoked) (sold separately) : 0.004 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)</p>
Focus	Auto/One-shot AF/Manual/Fixed at infinity
Shooting Distance (from front of lens)	<p>R13 R12 Day Mode: 0.3 m (12 in.) – infinity (W), 2.0 m (6.6 ft.) – infinity (T) Night Mode: 1.0 m (3.3 ft.) – infinity (W), 2.0 m (6.6 ft.) – infinity (T)</p> <p>M50 Day Mode/Night Mode: 3.0 m (9.8 ft.) – infinity (W), 5.0 m (16.4 ft.) – infinity (T)</p> <p>H652 H651 Day Mode/Night Mode: 0.3 m (12 in.) – infinity</p>
Shutter Speed	1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000, 1/16000 sec.
Exposure	Auto/Auto (Flickerless)/Auto (Shutter-priority AE)/Auto (Aperture-priority AE)/Manual (Shutter Speed, Aperture, Gain)
White Balance	Auto/Light Source/Manual Light Source: Daylight Fluorescent/White Fluorescent/Warm Fluorescent/Mercury Lamp/Sodium Lamp/Halogen Lamp Manual: One-shot WB/R Gain/B Gain
Metering Mode	Center-Weighted/Average/Spot
Exposure Compensation	9 levels

Smart Shade Control *3	Auto/Manual/Disable Auto: 3 levels Manual: 7 levels
Haze Compensation	Auto/Manual/Disable Auto: 3 levels Manual: 7 levels
AGC Limit	6 levels
Image Stabilizer	2 levels (digital)
Motion-Adaptive NR (Noise Reduction)	Available
Clear IR Mode	M50 Available
IR Illumination Range	H652 20 m (65.6 ft.) (When using 24 V AC, PoE+)
Pan Angle Range	R13 R12 360° continuous panning M50 348° (±174°) H652 360° (±180°) H651 350° (±175°)
Tilt Angle Range	R13 R12 180° (ceiling-mounted position: 0° – 180°) *4 *5 M50 105° (ceiling-mounted position: -90° – +15°) *4 H652 90° (-15° – +75°) *6 H651 150° (±75°)
Rotation Angle Range	H652 350° (+220°/-130°) +: Clockwise H651 350° (±175°)
Moving Speed	R13 R12 Pan: Max. 450°/sec. Tilt: Max. 450°/sec. M50 Pan: Max. 300°/sec Tilt: Max. 300°/sec. H651 (When using the camera angle in the Setting Page) Pan: 20.1°/sec. Tilt: 20.7°/sec. Rotation: 40.0°/sec.

- *1 (W): maximum wide angle, (T): maximum telephoto
- *2 35mm equivalent focal length is derived by using the proportional calculation based on the diameter of the image circle. As a result, actual viewing angle may differ from the imagined angle of a 35mm equivalent focal length, depending on the properties of the lens.
- *3 Brightens shaded areas of a video
- *4 When the horizontal direction of the camera is 0°
- *5 When the tilt angle is between angles below, the dome cover can cause a line to appear in the video, as well as a decline in the video quality
0° – 12° (168° – 180°) (W)
0° – 5° (175° – 180°) (T)
- *6 Camera is at 0° when attached to the ceiling and facing straight down

■ Server

Video Compression Method	JPEG, H.264
Video Size	R13 R12 H652 H651 JPEG, H.264: 1920 x 1080, 960 x 540, 480 x 270 1280 x 720, 640 x 360, 320 x 180 1280 x 960, 640 x 480, 320 x 240 M50 JPEG, H.264: 1280 x 720, 640 x 360, 320 x 180 1280 x 960, 640 x 480, 320 x 240
Video Quality	JPEG, H.264: 10 levels

Frame Rate *7	JPEG: 0.1 – 30 fps H.264: 1/2/3/5/6/10/15/30 fps Maximum frame rate when used in the following combinations: R13 R12 H652 H651 When streaming H.264(1) (1920 x 1080) and H.264(2) (all sizes) simultaneously: 15 fps When streaming H.264(1) (all sizes) and H.264(2) (1920 x 1080) simultaneously: 15 fps When streaming H.264(1) (1280 x 960) and H.264(2) (1280 x 960) simultaneously: 15 fps When streaming H.264(1) (1280 x 720) and H.264(2) (1280 x 720) simultaneously: 15 fps M50 When streaming H.264(1) (1280 x 960) and H.264(2) (1280 x 960) simultaneously: 15 fps When streaming H.264(1) (1280 x 720) and H.264(2) (1280 x 720) simultaneously: 15 fps
I-Frame Interval	0.5/1/1.5/2/3/4/5 sec.
Simultaneous Client Access	Max. 30 Clients + 1 Admin Client H.264: Max. 10 clients
Bit Rate Control	Target Bit Rate: 64/128/256/384/512/768/1024/2048/3072/4096/6144/8192/10240/12288/14336/ 16384 kbps
ADSR *8	Number of Specified Areas: Max. 8 areas Data Size Reduction Level: 3 levels
Security	Camera Control: Administrator, Authorized user, Guest user (level of control varies depending on user) Access Control: User authority (user name and password), Host Access Restrictions (IPv4, IPv6) IEEE802.1X: EAP-MD5, EAP-TLS, EAP-TTLS, EAP-PEAP Encrypted Communications: SSL/TLS, IPsec
Protocol	IPv4, IPv6, TCP/IP, UDP, HTTP, FTP, SNMPv1/v2c/v3 (MIB2), DHCP, DNS, AutoIP, mDNS, ARP, ICMP, POP3, NTP, SMTP, RTP/RTCP, RTSP, SSL/TLS, IPsec, ONVIF, WV-HTTP (Canon proprietary)
Audio Compression Method	R13 M50 H652 H651 G.711 μ -law (64 kbps)
Audio Communication Method	R13 M50 H652 H651 Full-duplex (two-way) – Echo cancellation function compliant RTP, Sound Transfer Protocol by Canon
Audio File Playback	R13 M50 H652 H651 Available (audio files can be played back when an event is triggered by the intelligent function or external device input) A third-party amplifier speaker is necessary.
Analog video output (NTSC)	H652 Available (Only for checking the camera angle)
Privacy Mask	Number of registration: Max. 8 places, Number of mask colors: 1 (select from 9 colors)
Panorama	R13 R12 M50 Available
View Restriction	R13 R12 M50 Available
Preset	R13 R12 Number of registers: Max. 256 positions (+Home Position) Number of Preset Tour Route: Max. 5 M50 Number of registers: Max. 64 positions (+Home Position) Number of Preset Tour Route: Max. 5 H652 H651 Number of registers: Max. 20 positions (+Home Position) Number of Preset Tour Route: Max. 1
Intelligent Function (Video)	Moving Object Detection, Abandoned Object Detection, Removed Object Detection, Camera Tampering Detection, Passing Detection, and Intrusion Detection Detection Settings: Max. 15 Non-detection Area Settings: Available R13 R12 Auto Tracking

Intelligent Function (Audio)	R13 M50 H652 H651 Volume Detection, Scream Detection
Event Trigger Type	R13 M50 H652 H651 External Device Input, Intelligent Function (Video), Intelligent Function (Audio), Timer, Day/Night Switch Number of Linked Events: 2 Linked Event Conditions: OR, AND (whether or not there is a sequence to events) R12 Intelligent Function (Video), Timer, Day/Night Switch
Image Upload	FTP/HTTP/SMTP (e-mail)
Event Notification	HTTP/SMTP (e-mail)
Log Notification	SMTP (e-mail)
Image Cropping Function	M50 H652 H651 Digital PTZ Cropping sizes: 640 x 360/512 x 288/384 x 216/256 x 144/128 x 72 640 x 480/512 x 384/384 x 288/256 x 192/128 x 96
Enhanced Digital Zoom	R13 R12 M50 Available
Maximum Digital Zoom Magnification Selection	R13 R12 M50 5x/10x/15x/20x
On-Screen Display	Available English/Chinese (Simplified)/Japanese
Daylight Saving Time	Available
Language	German/English/Spanish/French/Italian/Russian/Thai/Turkish/Chinese (Simplified) / Japanese

*7 Values represent streaming performance from the camera. The frame rate may be reduced due to Viewer computer's specs, the number of clients accessing at the same time, network loads, video quality setting, type or movement of the subject or other reasons.

*8 Area-specific Data Size Reduction

Interface

Network Terminal	LAN x 1 (RJ45, 100Base-TX (auto/full-duplex/half-duplex))
Audio Input Terminal (common for LINE IN & MIC IN)	R13 M50 H652 H651 φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) LINE IN (connect to an amplifier microphone) or MIC IN (connect to a microphone w/o amplifier) Switch LINE IN/MIC IN in the Setting Page.
Audio Output Terminal (LINE OUT)	R13 M50 H652 H651 φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) LINE OUT (connect to an amplifier speaker)
External Device I/O Terminal	R13 M50 H651 Input x 2, Output x 2 H652 Input x 2, Output x 2 Analog Video Output x 1
Memory Card *9	Recorded Content: Log, Video (Event, Manual, ONVIF, Timer, Upload) Frame Rate: Max. 1 fps (JPEG) Max. 30 fps (H.264) R13 R12 M50 SD Memory Card, SDHC Memory Card, SDXC Memory Card Compatible. H652 H651 microSD Memory Card, microSDHC Memory Card, microSDXC Memory Card Compatible.

*9 To insure reliability in the recording speed, it is recommended to use CLASS 10 rated products. Even when using CLASS 10 products, reliability cannot be guaranteed during heavy access loads (e.g., when recording and deleting data at the same time).

Other

<p>Operating Environment Temperature:</p> <p>Humidity:</p>	<p>R13 (VB-R13VE only) R12 Operating Temperature Range (including direct sun exposure) AC: -50°C – +55°C (-58°F – +131°F) PoE+: -35°C – +55°C (-31°F – +131°F) DC, PoE: -10°C – +55°C (+14°F – +131°F) Start-up Temperature Range (including direct sun exposure) AC, PoE+: -30°C – +55°C (-22°F – +131°F) DC, PoE: -10°C – +55°C (+14°F – +131°F) R13 (VB-R13 only) M50 H651 AC, DC, PoE: -10°C – +50°C (+14°F – +122°F) H652*10 When the heater unit (sold separately) is installed Operating Temperature Range: AC, PoE+: -40°C – +55°C (-40°F – +131°F) Start-up Temperature Range: AC, PoE+: -30°C – +55°C (-22°F – +131°F) When the heater unit (sold separately) is not installed AC, DC, PoE+, PoE: -10°C – +55°C (+14°F – +131°F)</p> <p>5% – 85% (without condensation)</p>
<p>Storage Environment Temperature:</p> <p>Humidity:</p>	<p>-30°C – +60°C (-22°F – +140°F) 5% – 90% (without condensation)</p>
<p>Installation Method</p>	<p>R13 (VB-R13VE only) R12 Ceiling mount/Surface mount Canon will not guarantee proper operation if the cameras are installed on surfaces where the angle is more than ±5° from horizontal, because this will put a heavy load onto sliding mechanical parts and may affect durability. R13 (VB-R13 only) M50 Ceiling mount Canon will not guarantee proper operation if the cameras are installed on surfaces where the angle is more than ±5° from horizontal or on walls, because this will put a heavy load onto sliding mechanical parts and may affect durability. H652 H651 Ceiling mount/Surface mount</p>
<p>Power Supply</p>	<p>AC Adapter: PA-V18 (100 – 240 V AC) (sold separately) External power source: 24 V AC/12 V DC</p> <p>R13 (VB-R13VE only) R12 H652 PoE: PoE power supply via LAN connector (IEEE802.3at Type1/Type2 compliant) R13 (VB-R13 only) M50 H651 PoE: PoE power supply via LAN connector (IEEE802.3at Type1 compliant)</p>
<p>Power Consumption</p>	<p>R13 (VB-R13VE only) R12 PoE+: Max. approx. 22.4 W*11 PoE: Max. approx. 11.3 W*12 AC Adapter PA-V18: Max. approx. 13.8 W (100 V AC) Max. approx. 13.8 W (240 V AC) DC: Max. approx. 12.3 W AC: Max. approx. 34.8 W</p> <p>R13 (VB-R13 only) PoE: Max. approx. 10.7 W*12 AC Adapter PA-V18: Max. approx. 11.3 W (100 V AC) Max. approx. 11.1 W (240 V AC) DC: Max. approx. 9.7 W AC: Max. approx. 10.2 W</p>

	<p>M50 PoE: Max. approx. 9.8 W *12 AC Adapter PA-V18: Max. approx. 11.2 W (100 V AC) Max. approx. 11.2 W (240 V AC) DC: Max. approx. 10 W AC: Max. approx. 9.6 W</p> <p>H652 PoE+: Max. approx. 12.4 W *11 Max. approx. 23.1 W *11 *13 PoE: Max. approx. 12.4 W *12 AC Adapter PA-V18: Max. approx. 15.2 W (100 V AC) Max. approx. 15.2 W (240 V AC) DC: Max. approx. 13.8 W AC: Max. approx. 12.7 W Max. approx. 24.1 W *13</p> <p>H651 PoE: Max. approx. 8.4 W *12 AC Adapter PA-V18: Max. approx. 9.9 W (100 V AC) Max. approx. 9.8 W (240 V AC) DC: Max. approx. 8.7 W AC: Max. approx. 8.1 W</p>
Dimensions	<p>R13 VB-R13VE: (φ x H) φ229 x 324 mm (φ9.02 x 12.76 in.) (Camera only) VB-R13: (φ x H) φ199 x 199 mm (φ7.83 x 7.83 in.) (Camera only. Excluding ceiling plate)</p> <p>R12 (φ x H) φ229 x 324 mm (φ9.02 x 12.76 in.) (Camera only. Excluding connector height)</p> <p>M50 (φ x H) φ129x157 mm (φ5.08 x 6.18 in.) (Camera only)</p> <p>H652 (φ x H) φ180 x 145 mm (φ7.09 x 5.71 in.) (Camera only. Excluding ceiling plate)</p> <p>H651 (φ x H) φ150x129 mm (φ5.91 x 5.08 in.) (Camera only. Excluding ceiling plate)</p>
Weight	<p>R13 VB-R13VE: Approx. 3530 g (7.79 lb.) VB-R13: Approx. 1990 g (4.39 lb.)</p> <p>R12 Approx. 3420 g (7.54 lb.)</p> <p>M50 Approx. 1170 g (2.58 lb.)</p> <p>H652 Approx. 1850 g (4.08 lb.)</p> <p>H651 Approx. 890 g (1.97 lb.)</p>
Impact Resistance	R13 (VB-R13VE only) R12 H652 H651 IK10 (20J)
Dust-resistant/Waterproof Specification	R13 (VB-R13VE only) R12 H652 IP66 rated

*10 Sunshade cover (sold separately) necessary when under direct sun exposure

*11 Class 4 power sourcing equipment (requests 30.0 W)

*12 Class 0 power sourcing equipment (requests 15.4 W)

*13 When the heater unit (sold separately) is installed