Canon

Network Camera

Appendix – Specifications

VB-R11VE/VB-R11

VB-R10VE

VB-M641VE/VB-M641V

VB-M640VE/VB-M640V

VB-M741LE/VB-M740E

ENGLISH

Specifications

Brands or product names in this guide are trademarks or registered trademarks of their respective companies.

Camera Model Symbols

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

R11	VB-R11VE, VB-R11	M641	VB-M641VE, VB-M641V	M741	VB-M741LE
R10	VB-R10VE	M640	VB-M640VE, VB-M640V	M740	VB-M740E

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

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

■ Camera

Image Sensor	1/3 type CMOS (primary color filter)
Number of Effective Pixels	Approx. 1.3 million pixels
Scanning Method	Progressive
Lens	R11 R10 30x optical zoom (20x digital zoom) lens with auto focus M641 M640 M741 M740 2.4 optical zoom (4x digital zoom) lens (electric drive)
Focal Length	R11 R10 4.4 (W) – 132 mm (T)[*1] M641 M640 M741 M740 2.55 (W) – 6.12 mm (T)
F-number	R11 R10 F1.4 (W) – F4.6 (T) M641 M640 M741 M740 F1.2 (W) – F1.8 (T)
Viewing Angle For 16:9 aspect ratios	R11 R10 Horizontal: 58.4° (W) – 2.1° (T) Vertical: 34.1° (W) – 1.2° (T) M641 M640 Horizontal: 111.5° (W) – 46.2° (T) Vertical: 60.5° (W) – 25.9° (T) M741 M740 Horizontal: 113.4° (W) – 46.5° (T) Vertical: 61.4° (W) – 26.2° (T)
For 4:3 aspect ratios	R11 R10 Horizontal: 58.4° (W) – 2.1° (T) Vertical: 45.0° (W) – 1.6° (T) M641 M640 Horizontal: 111.5° (W) – 46.2° (T) Vertical: 81.7° (W) – 34.6° (T) M741 M740 Horizontal: 113.4° (W) – 46.5° (T) Vertical: 83.0° (W) – 34.9° (T)
Day/Night Switch	Auto/Manual

Min. Subject Illumination
　Day Mode (color)
	`R11` `R10`
	0.03 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	When using the Dome Unit (Smoked) (sold separately):
	0.06 lux (F1.4, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	`M641` `M640`
	0.02 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	When using the Dome Unit (Smoked) (sold separately) :
	0.04 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	`M741` `M740`
	0.02 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)

Night Mode
　(monochrome)
	`R11` `R10`
	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)
	`M641` `M640`
	0.001 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	When using the Dome Unit (Smoked) (sold separately) :
	0.002 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	`M741`
	0 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE with IR lamp on)
	0.001 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)
	`M740`
	0.001 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE)

Focus	Auto/One-shot AF/Manual/Fixed at infinity

Shooting Distance
(from front of lens)
	`R11` `R10`
	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)
	`M641` `M640`
	Day Mode: 0.3 m (12 in.) – infinity
	Night Mode: 0.3 m (12 in.) – infinity
	`M741` `M740`
	Day Mode: 0.3 m (12 in.) – infinity
	Night Mode: 0.3 m (12 in.) – infinity

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)/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 [*2]	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)
IR Illumination Range	`M741` 30 m (98.4 ft.) (When using 24 V AC, PoE+)
Pan Angle Range	`R11` `R10` 360° continuous panning `M641` `M640` 350° (±175°) `M741` `M740` 344° (±172°)

Tilt Angle Range	`R11` `R10` 180° (ceiling-mounted position: 0° – 180°) [*3] `M641` `M640` 150° (±75°) `M741` `M740` 93° (-3° – +90°) [*4]
Rotation Angle Range	`M641` `M640` 350° (±175°) `M741` `M740` 344° (±172°)

Moving Speed	`R11` `R10`
	Pan: Max. 450°/sec
	Tilt: Max. 450°/sec.
	`M641` `M640`
	(When Using Camera Angle Setting Tool)
	Pan: 20.1°/sec.
	Tilt: 20.7°/sec.
	Rotation: 40.0°/sec.

*1 (W): maximum wide angle, (T): maximum telephoto
*2 Brightens shaded areas of a video.
*3 When the horizontal direction of the camera is 0°
*4 Camera is at 0° when attached to the ceiling and facing straight down, and 90° when at a horizontal position.

■ Server

Video Compression Method	JPEG, H.264
Video Size	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 [*5]	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:
	   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 [*6]	Number of specified area: Max. 8 areas
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: TCP/IP, UDP, HTTP, FTP, SNMP (MIB2), SMTP (Client), DHCP (Client), DNS (Client), mDNS, ARP, ICMP, POP3 (Client), NTP (Client), SMTP authentication (POP before SMTP, SMTP-AUTH), AutoIP, RTP/RTCP, RTSP, SSL/TLS, IPsec, WV-HTTP (Canon proprietary), ONVIF (Profile S, Profile G) IPv6: TCP/IP, UDP, HTTP, FTP, SMTP (Client), DHCPv6 (Client), DNS (Client), mDNS, ICMPv6, POP3 (Client), NTP (Client), SMTP authentication (POP before SMTP, SMTP-AUTH), RTP/RTCP, RTSP, SSL/TLS, IPsec, WV-HTTP (Canon proprietary), ONVIF (Profile S, Profile G)
Audio Compression Method	`R11` `M641` `M741` G.711 μ-law (64 kbps)
Audio Communication Method	`R11` `M641` `M741` Full-duplex (two-way) – Echo cancellation function compliant RTP, Sound Transfer Protocol by Canon

Audio File Playback	`R11` `M641` `M741` 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.
Privacy Mask	Number of registration: Max. 8 places, Number of mask colors: 1 (select from 9 colors)
View Restriction	`R11` `R10` Available

Preset	`R11` `R10`
	Number of registers: Max. 256 positions (+Home Position)
	Items to Reg.: Pan/Tilt/Zoom, Exposure, Smart Shade Control, Focus, White Balance, Video Quality Adjustment, Day/Night, Haze Compensation
	Number of Preset Tour Route: Max. 5
	`M641` `M640` `M741` `M740`
	Number of registers: Max. 20 positions (+Home Position)
	Items to Reg.: Digital Pan/Digital Tilt/Digital Zoom, Exposure, Smart Shade Control, Focus, White Balance, Video Quality Adjustment, Day/Night, Haze Compensation
	Number of Preset Tour Route: Max. 1

Intelligent Function (Video)	Detection Types: Moving Object Detection, Abandoned Object Detection, Removed Object Detection, Camera Tampering Detection, Passing Detection, and Intrusion Detection Detection Settings: Max. 15 `R11` `R10` Auto Tracking
Intelligent Function (Audio)	`R11` `M641` `M741` Volume Detection, Scream Detection
Event Trigger Type	Intelligent Function (Video), Timer, Day/Night Switch `R11` `M641` `M741` External Device Input, Intelligent Function (Audio) Number of Linked Events: 2 Linked Event Conditions: AND, OR (whether or not there is a sequence to events)
Image Upload	FTP/HTTP/SMTP (e-mail)
Event Notification	HTTP/SMTP (e-mail)
Camera Angle Setting	`M641` `M640` `M741` `M740` Available
Image Cropping Function	`M641` `M640` `M741` `M740` 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
On-Screen Display	Available
Daylight Saving Time	Available
Language	German/English/Spanish/French/Italian/Russian/Turkish/Chinese (Simplified) / Japanese

*5 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.

*6 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)	`R11` `M641` `M741` 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. For the VB-M641V, use the included interface cable.
Audio Output Terminal (LINE OUT)	`R11` `M641` `M741` φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) LINE OUT (connect to an amplifier speaker) For the VB-M641V, use the included interface cable.
External Device I/O Terminal	`R11` `M641` `M741` Input x 2, Output x 2

Memory Card [*7]	Recorded Content: Log, Video (Event, Manual, ONVIF, Timer, Upload)
	Frame Rate: Max. 1 fps (JPEG)
	  Max. 30 fps (H.264)
	 `R11` `R10` `M741` `M740`
	SD Memory Card, SDHC Memory Card, SDXC Memory Card Compatible.
	 `M641` `M640`
	microSD Memory Card, microSDHC Memory Card, microSDXC Memory Card Compatible.

*7 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

Operating Environment
Temperature:
	`R11` `R10`
	VB-R11VE/VB-R10VE:
	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)
	
	VB-R11:
	  AC, DC, PoE: -10°C – +50°C (+14°F – +122°F)
	 `M641`
	VB-M641VE:
	– Sunshade cover (sold separately) necessary when under direct sun exposure
	When the heater unit (sold separately) is installed
	Operating Temperature Range
	  AC: -40°C – +55°C (-40°F – +131°F)
	  DC, PoE: -10°C – +55°C (+14°F – +131°F)
	Start-up Temperature Range
	  AC: -30°C – +55°C (-22°F – +131°F)
	  DC, PoE: -10°C – +55°C (+14°F – +131°F)
	When the heater unit (sold separately) is not installed
	  AC, DC, PoE: -10°C – +55°C (+14°F – +131°F)
	
	VB-M641V:
	  AC, DC, PoE: -10°C – +50°C (+14°F – +122°F)
	 `M640`
	VB-M640VE:
	  PoE: -10°C – +55°C (+14°F – +131°F)
	  – Sunshade cover (sold separately) necessary when under direct sun exposure
	
	VB-M640V:
	  PoE: -10°C – +50°C (+14°F – +122°F)
	 `M741`
	Operating Temperature Range (including direct sun exposure)
	  AC, PoE+: -50°C – +55°C (-58°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)
	 `M740`
	Operating Temperature Range (including direct sun exposure)
	  PoE: -10°C – +55°C (+14°F – +131°F)

Humidity:	5% – 85% (without condensation)
Storage Environment Temperature: Humidity:	-30°C – +60°C (-22°F – +140°F) 5% – 90% (without condensation)

Installation Method	Ceiling mount Surface mount (except for VB-R11) `R11` `R10` VB-R11VE/VB-R10VE: 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 the durability. VB-R11: 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.

Power Supply	PoE: PoE power supply via LAN connector
	  `R11` `R10`
	  VB-R11VE/VB-R10VE: IEEE802.3at Type1/Type2 compliant
	  VB-R11: IEEE802.3at Type1 compliant
	  `M641` `M640` `M740`
	  IEEE802.3at Type1 compliant
	  `M741`
	  IEEE802.3at Type1/Type2 compliant
	`R11` `R10` `M641` `M741`
	AC Adapter: PA-V18 (100 – 240 V AC) (sold separately)
	External power source: 24 V AC/12 V DC

Power Consumption	`R11` `R10`
	VB-R11VE/VB-R10VE:
	  PoE+: Max. approx. 20.8 W
	  PoE: Max. approx. 10.1 W
	  AC Adapter PA-V18:
	        Max. approx. 12.7 W (100 V AC)
	        Max. approx. 12.8 W (240 V AC)
	  DC: Max. approx. 11.0 W
	  AC: Max. approx. 33.2 W
	
	VB-R11:
	  PoE: Max. approx. 9.5 W
	  AC Adapter PA-V18:
	        Max. approx. 9.6 W (100 V AC)
	        Max. approx. 9.8 W (240 V AC)
	  DC: Max. approx. 8.8 W
	  AC: Max. approx. 9.2 W
	
	`M641`
	VB-M641VE:
	  PoE: Max. approx. 8.9 W
	  AC Adapter PA-V18:
	        Max. approx. 10.5 W (100 V AC)
	        Max. approx. 10.6 W (240 V AC)
	  DC: Max. approx. 9.5 W
	  AC: Max. approx. 9.1 W
	        Max. approx. 21.7 W*
	  * When the heater unit (sold separately) is installed
	
	VB-M641V:
	  PoE: Max. approx. 8.4 W
	  AC Adapter PA-V18:
	        Max. approx. 9.8 W (100 V AC)
	        Max. approx. 9.8 W (240 V AC)
	  DC: Max. approx. 8.7 W
	  AC: Max. approx. 8.1 W

	M640
	VB-M640VE:
	    PoE: Max. approx. 8.9 W
	
	VB-M640V:
	    PoE: Max. approx. 8.4 W
	
	M741
	    PoE+: Max. approx. 21.2 W
	    PoE: Max. approx. 10.1 W
	    AC Adapter PA-V18:
	                Max. approx. 12.8 W (100 V AC)
	                Max. approx. 12.8 W (240 V AC)
	    DC: Max. approx. 11.1 W
	    AC: Max. approx. 22.2 W
	
	M740
	    PoE: Max. approx. 7.4 W

Dimensions	R11 VB-R11VE: (φ x H) φ229×324 mm (φ9.02 x 12.76 in.) (Camera only) VB-R11: (φ x H) φ199×199 mm (φ7.83 x 7.83 in.) (Camera only. Excluding ceiling plate) R10 (φ x H) φ229×324 mm (φ9.02 x 12.76 in.) (Camera only. Excluding connector height) M641 VB-M641VE: (φ x H) φ180×131 mm (φ7.09 x 5.16 in.) (Camera only. Excluding ceiling plate) VB-M641V: (φ x H) φ150×129 mm (φ5.91 x 5.08 in.) (Camera only. Excluding ceiling plate) M640 VB-M640VE: (φ x H) φ180×131 mm (φ7.09 x 5.16 in.) (Camera only. Excluding ceiling plate) VB-M640V: (φ x H) φ150×129 mm (φ5.91 x 5.08 in.) (Camera only. Excluding ceiling plate) M741 M740 (H × W × D) 111 x 102 x 214 mm (4.37 x 4.02 x 8.43 in.) (Camera body only. Length when joint fully extended (D): 384 mm (15.12 in.)
Weight	R11 VB-R11VE: Approx. 3530 g (7.79 lb.) VB-R11: Approx. 1990 g (4.39 lb.) R10 Approx. 3420 g (7.54 lb.) M641 VB-M641VE: Approx. 1620 g (3.58 lb.) VB-M641V: Approx. 890 g (1.97 lb.) M640 VB-M640VE: Approx. 1590 g (3.51 lb.) VB-M640V: Approx. 880 g (1.95 lb.) M741 Approx. 2120 g (4.68 lb.) M740 Approx. 2040 g (4.50 lb.)
Impact Resistance	R11 (VB-R11VE) R10 M641 M640 IK10 (20J)
Dust-resistant/Waterproof Specification	VB-R11VE/VB-R10VE/VB-M641VE/VB-M640VE/VB-M741LE/VB-M740E IP66 rated