

TB9332-E (9mm)

Thermal Bullet Network Camera

Thermal Image • 640x512 • < 40 mK • 9mm

Technical Specifications

System Information

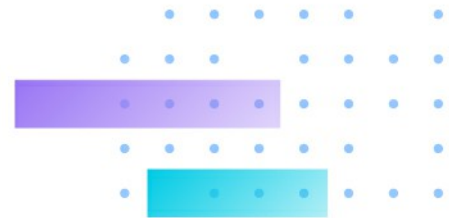
Model	TB9332-E (9mm)
CPU	Multimedia SoC (System-on-Chip)
Flash	16GB
RAM	1GB

Camera Features

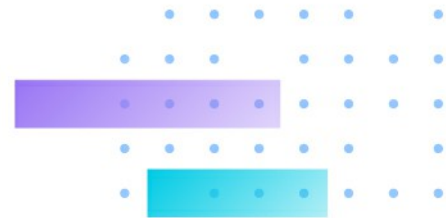
Image Sensor	Uncooled VOx Micro bolometer
Max. Resolution	Effective pixels: 640x512 Image scale up to: 1280x1024
Pixel Size	12 μ m
Spectral Range	8 ~ 14 μ m
Sensitivity	NETD < 40 mK
Lens Type	Fixed-focal (Thermal lens)
Focal Length	f = 9 mm
Aperture	F1.0
Iris Type	Fixed iris
Field of View	48° (Horizontal) 38° (Vertical)
Pan/Tilt/Zoom Functionalities	ePTZ: 4x digital zoom
Storage	MicroSD/SDHC/SDXC card (256GB capacity supported)

Video

Video Compression	H.265, H.264
Maximum Frame Rate	25 fps @ 1280x1024
Maximum Streams	2 simultaneous streams



Video Streaming	Adjustable resolution, CBR/VBR, Smart Encode
Image Settings	General settings: video OSD and time format overlay, video mirror; Thermal settings: white balance, image adjustment (brightness, contrast, sharpness), Pseudocolors, FFC control, 2DNR, 3DNR; Privacy mask; Scheduled settings
Audio	
Audio Capability	Two-way audio
Audio Compression	G.711, RAW_PCM
Audio Interface	External microphone input, External line output
Network	
Users	Live viewing for up to 10 clients
Security	Access list, Password protection, user access log, user account management
Protocols	IPv4/IPv6, HTTP, RTSP/RTP/RTCP, TCP/UDP, DHCP, DNS, PPPOE, SMTP, HTTPS, 802.1x, QOS, NTP, TCP/IP, FTP, UPnP, DDNS, ICMP, IGMP
Interface	10 Base-T/100 Base-TX Ethernet (RJ-45) *It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.
ONVIF	Profile G, S, T supported, specification available at www.onvif.org
AI Analytics	
Compute Capability	SoC with built-in hardware deep learning accelerator (4T)
Application	Temperature measurement alarms (difference, threshold, section, rise), Early Fire Detection (Fire spot detection, Smoking detection)
	VCA (Intrusion, Single line crossing, Double line crossing, Loitering, Wrong way, Enter, Leave)
	Support VCA alarms triggering by person, car, person or car; Support temperature alarms triggering by ignoring person, car, person or car
Temperature Measurement	
Temperature Range	-20°C to 150°C (-4°F to 302°F)
Measurement rule	Point, area, line (up to 20 rules in total)
Temperature alarm	Threshold alarm, Temperature difference alarm, Temperature rise alarm, Section alarm
Accuracy * depends on scene/setting	± 2°C / ±2%
Alarm and Event	
Event Trigger	Motion detection, I/O alarm, Disk alarm, VCA alarm, Temperature alarm
Event Action	Event notification via audio clip, digital output, email, FTP, SD card
General	
Connectors	RJ-45 cable connector for 10/100 Mbps Network/PoE connection Audio input Audio output DC 12V power input AC 24V power input Digital input *2 Digital output *2 BNC RS485
LED Indicator	System power and status indicator
Power Input	AC 24V, DC 12V, IEEE 802.3af PoE Class 2
Power Consumption	Max. 5W
Dimensions	ø141.8 x 367.4 mm
Weight	2350g
Certifications	EMC: CE (EN 55032, Class B), FCC (FCC Part 15 Subpart B), UKCA (BS EN 55032 Class B) Environment: IP66
Operating Temperature	Working Temperature: -40°C ~ 60°C (-40°F ~ 140°F)
Humidity	90%
System Requirements	



Operating System	Microsoft Windows 10/8/7 Mac 10.12 (Chrome only)
Web Browser	Chrome 58.0 or above Internet Explorer 10/11
Other Players	VLC: 1.1.11 or above

Included Accessories

Packing Contents	Quick installation guide, alignment sticker, screw pack, waterproof accessory bag, junction box, sunshield
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VCA Detection Range

VCA detection distance (Human: 1.8x0.5m)	47m (154.2ft)
VCA detection distance (Vehicle: 1.8x0.5m)	110m (360.9ft)
Temperature measurement Object: 1.8x0.5m	65m (213ft)
Temperature measurement Object: 1x1m	75m (246ft)
Fire detection Object: 1x1m	375m (1230ft)
Fire detection Object: 0.2x0.2m	75m (246ft)
Smoking detection	32m (104ft)

Johnson's criteria (Thermal object detection distance. Verification by human eyes)

Human 1.8x0.5m Detection (1.5 pixels)	375m (1230ft)
Human 1.8x0.5m Recognition (6 pixels)	94m (308ft)
Human 1.8x0.5m Identification (12 pixels)	47m (154ft)
Vehicle 4x1.5m Detection (1.5 pixels)	1150m (3772ft)
Vehicle 4x1.5m Recognition (6 pixels)	288m (944ft)
Vehicle 4x1.5m Identification (12 pixels)	144m (472ft)

