



S series **TB9331-E**

Thermal Bullet Network Camera



720x480 • NETD < 50 mk • H.265 • Trend Micro IoT Security • -50°C ~ 60°C • IP66/67 • IK10 • NEMA 4X

VIVOTEK's TB9331-E is an H.265 outdoor thermal bullet network camera designed to detect people and vehicles in wild weather, difficult lighting conditions, and any situation that create poor visibility. With heat based thermal imagery and lens options of 8.8mm or 19mm, the TB9331-E supports long distance monitoring of vehicles up to 4,500m away even in complete darkness or under challenging climate conditions such as fog, rain, smoke and dust.

The TB9331-E offers 720x480 resolution with an uncooled thermal sensor and VIVOTEK's VCA (Video Content Analysis) to enhance perimeter protection and border security. This camera is also embedded with Trend Micro IoT Security software to provide users with higher levels of network protection. With an IP66, IP67, IK10 and NEMA 4X-rated rugged design, the TB9331-E will withstand shock & vibration, humidity, dust, and even extreme temperature fluctuations to maintain stable and reliable video no matter how harsh the environment.

Key Features

- Uncooled VOx Infrared Detector
- 720x480, 384x256 Resolution Support
- NETD < 50 mk @ F1.0
- H.265 Compression Technology
- Trend Micro IoT Security within Standard Warranty Period
- Two-way Audio
- Supports ONVIF Standard to Simplify Integration and Enhance Interoperability
- UL Certification
- Weather-proof IP66/IP67, Vandal-proof IK10 and NEMA 4X-rated Housing
- VIVOTEK VCA (Video Content Analysis) Support

Technical Specifications

Model	TB9331-E(8.8mm) TB9331-E(19mm)	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.
System Information		ONVIF	Supported, specification available at www.onvif.org
CPU	Multimedia SoC (System-on-Chip)	Intelligent Video	
Flash	128MB	Video Motion Detection	Five-window video motion detection
RAM	512MB	VCA	Line crossing detection, field detection, loitering detection
Camera Features		Alarm and Event	
Image Sensor	Uncooled VOx infrared detector	Alarm Triggers	Motion detection, manual trigger, digital input, periodical trigger, system boot, recording notification, camera tampering detection, audio detection, MicroSD card life expectancy
Maximum Resolution	Effective pixels: 720x480 Image scale up to: 960x640 720x480 384x256	Alarm Events	Event notification using digital output, HTTP, SMTP, FTP, NAS server and MicroSD Card File upload via HTTP, SMTP, FTP, NAS server and MicroSD card
Lens Type	Fixed-focal (Thermal Lens)	General	
Focal Length	TB9331-E(8.8mm): f = 8.8 mm TB9331-E(19mm): f = 19 mm	Connectors	RJ-45 cable connector for 10/100Mbps Network/PoE connection Audio input Audio output DC 12V power input AC 24V power input Digital input*1 Digital output*1 BNC RS485
Aperture	F1.0	LED Indicator	System power and status indicator
Auto-iris	Fixed-iris	Power Input	DC 12V AC 24V (Redundant Power) IEEE 802.3at PoE Class 4
Field of View	TB9331-E(8.8mm): 69.6° (Horizontal) 49.7° (Vertical) 79.8° (Diagonal) TB9331-E(19mm): 35.7° (Horizontal) 24.2° (Vertical) 42.3° (Diagonal)	Power Consumption	Max. 14 W
Pan/Tilt/Zoom Functionalities	ePTZ: 20x digital zoom (4x on IE plug-in, 5x built-in)	Dimensions	TB9331-E(8.8mm): 121 x 121 x 471.2 mm (with junction box) TB9331-E(19mm): 121 x 121 x 452.2 mm (with junction box)
On-board Storage	Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording	Weight	TB9331-E(8.8mm): 2,080g TB9331-E(19mm): 2,030g
Video		Casing	IP66, IP67, IK10(Metal Housing), NEMA 4X
Compression	H.265, H.264, MJPEG	Safety Certifications	CE, LVD, FCC Class A, VCCI, C-Tick, UL, EN50121-4
Maximum Frame Rate	30 fps @ 720x480	Operating Temperature	Start Temperature: -40°C ~ 60°C (-40°F ~ 140°F) Working temperature: -50°C ~ 60°C (-58°F ~ 140°F)
Maximum Streams	4 simultaneous streams	Humidity	90%
Sensitivity	NETD < 50 mk	Warranty	36 months
Video Streaming	Adjustable resolution, quality and constant bit rate control, Smart Stream II	System Requirements	
Image Settings	Time stamp, text overlay, flip & mirror, configurable brightness/contrast/sharpness	Operating System	Microsoft Windows 8/7 Mac 10.12 (Chrome only)
Audio		Web Browser	Internet Explorer 10/11 Chrome version 58 or above
Audio Capability	Two-way Audio (full duplex)	Other Players	VLC: 1.1.11 or above QuickTime: 7 or above
Compression	G.726, G.711		
Interface	External microphone input External line output		
Network			
Users	Live viewing for up to 10 clients		
Protocols	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/ RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X, NTCIP, SSL, TLS, CIFS/SMB		

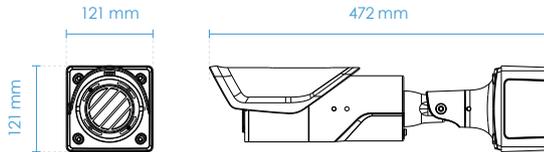
Technical Specifications

Included Accessories

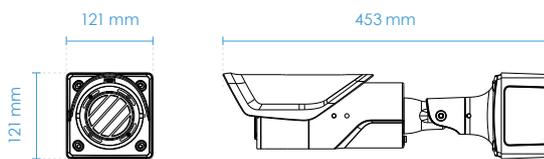
Others Quick installation guide, warranty card, screw pack, alignment sticker, junction box

Dimensions

• TB9331-E(8.8mm)



• TB9331-E(19mm)



Compatible Accessories

Mounting Kits



AM-312
Pole Mount Adapter



AM-412
Corner Mount Adapter



AM-719
Junction Box (Standard Package)

Coverage Table

Resolution	720x480		
Focal Length	8.8mm		19mm
FOV	Horizontal	69.6°	35.7°
	Vertical	49.7°	24.2°
Human 1.8 x 0.5 m (5 x 1 ft)	Detection (1.5 pixels)	262 m (859 ft)	566 m (1,856 ft)
	Recognition (6 pixels)	66 m (216 ft)	142 m (465 ft)
	Identification (12 pixels)	33 m (108 ft)	71 m (232 ft)
Vehicle 4 x 1.5 m (13 x 4 ft)	Detection (1.5 pixels)	800 m (2,624 ft)	1,729 m (5,672 ft)
	Recognition (6 pixels)	200 m (656 ft)	432 m (1,416 ft)
	Identification (12 pixels)	100 m (328 ft)	216 m (708 ft)

Note: The detection ranges are calculated using Johnson's criteria and may vary under different weather conditions.



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