VIVOTEK

S series TB9330-E
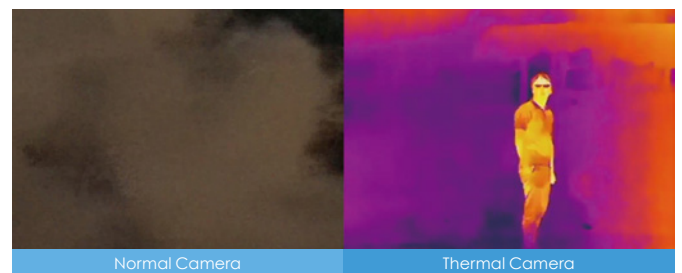### Thermal Bullet Network Camera

384x256 • NETD < 50 mk • H.265 • Trend Micro IoT Security • -50°C ~ 60°C • IP66/67 • IK10 • NEMA 4X

VIVOTEK's TB9330-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 8.8/19/35/50mm, the TB9330-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 TB9330-E offers 384x256 resolution with an uncooled thermal sensor and VIVOTEK's VCA (Video Content Analysis) to enhance perimeter protection and boarder 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 TB9330-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
· 384x256 Resolution
· NETD < 50 mk @ F1.0
· H.265 Compression Technology
· Trend Micro IoT Security
· 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

Normal Camera | Thermal Camera

Infrared thermal image through fog and smoke.

Technical Specifications

Model	TB9330-E(8.8mm) TB9330-E(19mm) TB9330-E(35mm) TB9330-E(50mm)

System Information

CPU	Multimedia SoC (System-on-Chip)
Flash	128MB
RAM	512MB

Camera Features

Image Sensor	Uncooled VOx infrared detector
Maximum Resolution	Effective pixels: 384x256 Image scale up to: 960x640
Pixel Size	17 μm
Spectral Range	8 ~ 14 μm
Sensitivity	NETD < 50 mk
Lens Type	Fixed-focal (Thermal Lens)
Focal Length	TB9330-E(8.8mm): f = 8.8 mm TB9330-E(19mm): f = 19 mm TB9330-E(35mm): f = 35 mm TB9330-E(50mm): f = 50 mm
Aperture	F1.0
Auto-iris	Fixed-iris
Field of View	TB9330-E(8.8mm): 38.3° (Horizontal) 26.1° (Vertical) 45.4° (Diagonal) TB9330-E(19mm): 18.3° (Horizontal) 12.3° (Vertical) 21.9° (Diagonal) TB9330-E(35mm): 10° (Horizontal) 6.7° (Vertical) 12° (Diagonal) TB9330-E(50mm): 7° (Horizontal) 4.7° (Vertical) 8.4° (Diagonal)
Pan/Tilt/Zoom Functionalities	ePTZ: 20x digital zoom (4x on IE plug-in, 5x built-in)
On-board Storage	Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording

Video

Compression	H.265, H.264, MJPEG
Maximum Frame Rate	30 fps @ 384x256
Maximum Streams	4 simultaneous streams
Video Streaming	Adjustable resolution, quality and constant bit rate control, Smart Stream II
Image Settings	Time stamp, text overlay, flip & mirror, configurable brightness/contrast/sharpness

Audio

Audio Capability	Two-way Audio (full duplex)
Compression	G.726, G.711
Interface	External microphone input External line output

Network

Users	Live viewing for up to 10 clients
Protocols	802.1X, ARP, CIFS/SMB, CoS, DDNS, DHCP, DNS, FTP, HTTP, HTTPS, ICMP, IGMP, IPv4, IPv6, NTP, PPPoE, QoS, RTSP/RTP/RTCP, SMTP, SNMP, SSL, TCP/IP, TLS, UDP, UPnP
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	Supported, specification available at www.onvif.org

Intelligent Video

Video Motion Detection	Five-window video motion detection
VCA	Line crossing detection, field detection, loitering detection
VADP Package	Genetec package, Trend Micro IoT Security, Stratocast

Alarm and Event

Alarm Triggers	Motion detection, manual trigger, digital input, periodical trigger, system boot, recording notification, camera tampering detection, audio detection, SD card life expectancy, cybersecurity events (block brute force attack, block cyber attack, quarantine event)
Alarm Events	Event notification via digital output, email, HTTP, FTP, NAS server, SD card, push notification File upload via email, HTTP, FTP, NAS server, SD card

General

Connectors	RJ-45 cable connector for 10/100Mpbs Network/PoE connection Audio input Audio output DC 12V power input AC 24V power input Digital input*1 Digital output*1 BNC RS485
LED Indicator	System power and status indicator
Power Input	DC 12V AC 24V (Redundant Power) IEEE 802.3at PoE Class 4
Power Consumption	PoE: Max. 12.5 W DC 12V: Max. 10 W AC 24V: Max. 11 W
Dimensions	TB9330-E(8.8mm): 121 x 121 x 471.2 mm (with junction box) TB9330-E(19mm): 121 x 121 x 452.2 mm (with junction box) TB9330-E(35mm)/(50mm): 121 x 121 x 455.6 mm (with junction box)

Technical Specifications

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Weight	TB9330-E(8.8mm): 2,080 g TB9330-E(19mm): 2,000 g TB9330-E(35mm): 2,080 g TB9330-E(50mm): 2,080 g
Casing	IP66, IP67, IK10(Metal Housing), NEMA 4X
Safety Certifications	CE, LVD, FCC Class A, VCCI, C-Tick, UL, EN50121-4
Operating Temperature	Start Temperature: -40°C ~ 60°C (-40°F ~ 140°F) Working temperature: -50°C ~ 60°C (-58°F ~ 140°F)
Humidity	90%
Warranty	36 months
System Requirements	
Operating System	Microsoft Windows 8/7 Mac 10.12 (Chrome only)
Web Browser	Internet Explorer 10/11 Chrome version 58 or above
Other Players	VLC: 1.1.11 or above QuickTime: 7 or above
Included Accessories	
Others	Quick installation guide, warranty card, screw pack, alignment sticker, junction box

Dimensions

• TB9330-E(8.8mm)

121 mm   471.2 mm

121 mm

• TB9330-E(19mm)

121 mm   452.2 mm
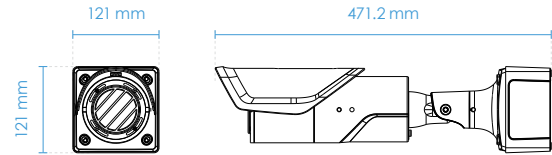
121 mm

• TB9330-E(35mm)/(50mm)

121 mm   455.6 mm
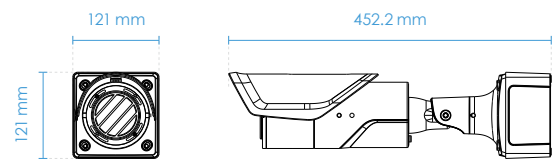
121 mm
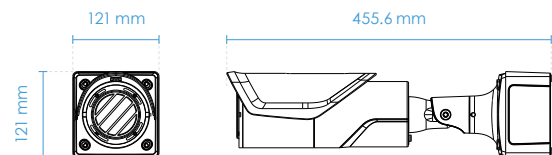
Compatible Accessories

Mounting Kits		
AM-312 Pole Mount Adapter	AM-412 Corner Mount Adapter	AM-719 Junction Box (Standard Package)

Coverage Table

Resolution		384x256			
Focal Length		8.8 mm	19 mm	35 mm	50 mm
FOV	Horizontal	38.3°	18.3°	10°	7°
	Vertical	26.1°	12.3°	6.7°	4.7°
Human 1.8 x 0.5 m (5 x 1 ft)	Detection (1.5 pixels)	262 m (859 ft)	566 m (1856 ft)	1,043 m (3,422 ft)	1,490 m (4,888 ft)
	Recognition (6 pixels)	66 m (216 ft)	142 m (465 ft)	261 m (856 ft)	373 m (1,223 ft)
	Identification (12 pixels)	33 m (108 ft)	71 m (232 ft)	130 m (426 ft)	186 m (610 ft)
Vehicle 4 x 1.5 m (13 x 4 ft)	Detection (1.5 pixels)	801 m (2,627 ft)	1,729 m (5,672 ft)	3,184 m (10,446 ft)	4,549 m (14,924 ft)
	Recognition (6 pixels)	200 m (656 ft)	432 m (1,416 ft)	796 m (2,611 ft)	1,137 m (3,730 ft)
	Identification (12 pixels)	100 m (328 ft)	216 m (708 ft)	398 m (1,305 ft)	569 m (1,866 ft)

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