

DHI-TPC-BF4441

Thermal Network Hybrid Bullet Camera



- Vanadium oxide uncooled focal plane detector.
- 1/2.7" 4Megapixel progressive scan CMOS.
- Offers various AI functions such as tripwire, intrusion, target filtering, and fire detection.
- 12 VDC \pm 20% wide-range voltage, and PoE power supply.
- IP67 rated.
- Supports up to 18 color palettes.

System Overview

The Thermal Network Hybrid Bullet Camera provides an all-in-one solution for video monitoring whether day or night. It has 18 different kinds of thermal pseudo-color modes. It also offers tripwire, intrusion, and multiple types of intelligence analysis functions such as calling, smoking and fire.

Functions

Uncooled VOx Technology

Dahua thermal cameras use uncooled VOx sensor technology. The detector is small-sized, and highly sensitive allowing the camera to reveal images in greater detail, giving you more visual information on a monitored site. It also improves the accuracy of temperature measurements, ensuring that even minute temperature changes are detected.

AI Functions

Supports multiple intelligent functions such as fire detection, tripwire, intrusion, and person and vehicle classification detection. It supports alarm linkages, such as sending emails and triggering external alarms.

Fire Detection & Alarm

With its extended detection range, the camera can detect fires that are in locations distant to it. It is also highly sensitive to temperature changes, allowing the accuracy of its fire detection to be higher than cameras that work in the visible light range.

Smoking Detection

Empowered by deep learning AI technology, the camera can automatically detect and trigger alarms for people smoking, providing intelligent sound and light warnings to dissuade smokers, and avoid potential risks and loss. It multi-tasks in extracting elements from the visible light and thermal image at the same time to detect smoke and the person that is actively smoking.

Environment (–40 °C to +70 °C)

Developed to operate in extreme conditions, the camera can function in temperatures ranging from –40 °C to +70 °C (–40 °F to +158 °F). It was subjected to rigorous dust and water immersion tests, gaining its IP66 certification, making it suitable for demanding outdoor applications. For environments with rain, sleet, snow and fog, an integrated wiper (optional) provides users with clear visibility at all times.

Scene

Ideal for locations that require fire protection such as factories, transit stations, equipment rooms, substations, computer rooms, and more. It is also great for enhancing the perimeter protection of industrial sites, historical and cultural sites, coal yards, and compounds with buildings.

Technical Specification			
Thermal			
Detector Type	Vanadium oxide uncooled focal plane detector		
Effective Pixels	400 (H) × 300 (V)		
Pixel Pitch	17 μm		
Spectral Range	8 μm–14 μm		
Sensitivity (NETD)	≤40 mK (@f/1.0)		
Focal Length	13 mm	19 mm	25 mm
Field of View	H: 30.4°; V: 22.5°	H: 20.3°; V: 15.3°	H: 15.5°; V: 11.6°
Thermal Focus Control	Fixed-focal		
Close Focus Distance	2.5 m (8.20 ft)	5.5 m (18.04 ft)	9 m (29.53 ft)
Detection Distance	Vehicle: 1,020 m (3,346.46 ft) Human: 382 m (1,253.28 ft)	Vehicle: 1,490 m (4,888.45 ft) Human: 558 m (1,830.71 ft)	Vehicle: 1,960 m (6,430.45 ft) Human: 735 m (2,411.42 ft)
Recognition Distance	Vehicle: 255 m (836.61 ft) Human: 98 m (321.52 ft)	Vehicle: 372 m (1,220.47 ft) Human: 143 m (469.16 ft)	Vehicle: 490 m (1,607.61 ft) Human: 190 m (623.36 ft)
Identification Distance	Vehicle: 128 m (419.95 ft) Human: 48 m (157.48 ft)	Vehicle: 186 m (610.24 ft) Human: 72 m (236.22 ft)	Vehicle: 245 m (803.81 ft) Human: 95 m (311.68 ft)
Digital Detail Enhancement (DDE)	Yes		
Digital Zoom	19 levels		
Thermal AGC	Auto/Manual		
Thermal Noise Reduction	2D NR/3D NR		
Image Flip	180°; Mirror		
Color Palettes	18 (white hot/black hot/fusion/rainbow/golden autumn/midday/iron red/amber/jade/sunset/icefire/painting/pomegranate/emerald /spring/summer/ autumn/winter)		
Visible			
Image Sensor	1/2.7" CMOS		
Max. Resolution	2688 (H) × 1520 (V)		
Pixel	4 MP		
Horizontal Definition	≥1100 TVL		
Min. Illumination	Color: 0.01 lux Black & white: 0.001 lux 0 lux (white light on)		
Visible AGC	Auto/Manual		
Visible Noise Reduction	2D NR/3D NR		
S/N Ratio	>55 dB		
White Balance	Auto; manual; indoor; outdoor; tracking; sodium lamp; street lamp; natural		
Defog	Electronic defog		
Electronic Shutter Speed	1 s–1/30,000 s (auto/manual)		
BLC	Yes		

WDR	Yes		
HLC	Yes		
Day/Night	Auto (ICR); Color; B/W		
Iris Control	Fixed		
Image Flip	180°; Mirror		
Exposure Compensation	Yes		
Visible Focus Control	Fixed-focal		
Focal Length	6 mm	8 mm	8 mm
Field of View	H: 56.1°; V: 30.1°	H: 41.3°; V: 23.1°	H: 41.3°; V: 23.1°
Close Focus Distance	4.5 m (14.76 ft)	8 m (26.25 ft)	8 m (26.25 ft)
Aperture	F1.6		
Illuminator On/Off Control	Auto; manual		
Illumination Distance	30 m (98.43 ft)		

Audio and Video

Video Compression	H.265; H.264M; H.264H; H.264B
Resolution	Thermal: Main stream: 1280 × 1024; 1280 × 960; 1280 × 720; 400 × 300; 1280 × 960 (default) Sub stream: 640 × 512; 640 × 480; 400 × 300; 400 × 300 (default) Visible: Main stream: 2688 × 1520; 2560 × 1440; 1920 × 1080; 1280 × 720; 704 × 576; 2560 × 1440 (default) Sub stream: 704 × 576; 352 × 288; 704 × 576 (default)
Video Frame Rate	Thermal (50 Hz): Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default Visible (50 Hz): Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default Thermal (60 Hz): Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default Visible (60 Hz): Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default
Audio Compression	G.711a; G.711 mu
Image Encoding Format	JPEG

Function

Two-way Audio	Yes
Sound and Light Alarm	Local audio and white light alarm prompts
Network Protocol	IPv4/IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE
Region of Interest (RoI)	Yes (customizable)
Storage	FTP; Micro SD card (512 GB, hot swapping)
Micro SD Card (Max.)	512 GB
Interoperability	ONVIF; CGI
Browser	IE; Firefox; Chrome
User/Host	Up to 20 (total bandwidth: 64 MB)

Security	Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled network access
User Management	Up to 20 users; supports multi-level user permissions (2 levels); management group and user group
Malfunction Detection	Network disconnection detection; IP conflict detection; memory card state detection; memory space detection
Fusion Mode	Yes. Off by default
PIP	Yes

Intelligence

Fire Detection	Yes
Cold/Hot Spot Trace	Yes
Perimeter Protection	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification
Target Tracking	Yes
Smoking Detection	Yes
Call Detection	Yes
Smoke Detection	Yes

Port

Analog Output	1 × CVBS output; BNC port
Network Port	1 × RJ-45 (10/100 Base-T)
Alarm Input	2
Alarm Output	2
Audio Input	1
Audio Output	1
RS-485	1

Power

Power Supply	12 VDC ± 20%, PoE (802.3af), ePoE
Power Consumption	Basic: 3.96 W (illuminator, heating, and speaker all off) Max.: 11 W (illuminator, heating, and speaker all on)
ePoE	Yes

Environment

Operating Temperature	−30 °C to +70 °C (−22 °F to +158 °F)
Operating Humidity	≤95%
Storage Temperature	−40 °C to +70 °C

Physical Characteristics

Protection	IP67
Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV

Structure

Product Dimensions	262.0 mm × 11.6 mm × 110.6 mm (10.31" × 0.46 × 4.35") (L × W × H)
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Packaging Dimensions	Package: 365 mm × 175 mm × 176 mm (14.37" × 6.89 × 6.93") (L × W × H) Protection box: 902 mm × 380 mm × 380 mm (35.51" × 14.96" × 14.96") (L × W × H)
Net Weight	≤1.4 kg (3.09 lb)
Gross Weight	≤1.7 kg (3.75 lb)
Lens	Included
Bracket	Wall mount: PFA122 (optional) Corner mount: PFA151, PFA122 (optional) Pole mount: PFA150, PFA122 (optional)

Certification

Certifications	CE/FCC
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Fire Detection Distance

Fire Detection Distance (Recommended)	390 m (1,279.53 ft)	580 m (1,902.89 ft)	750 m (2,460.63 ft)
Fire Detection Distance (Max.)	780 m (2,559.06 ft)	1,170 m (3,838.58 ft)	1,500 m (4,921.26 ft)

Perimeter Protection

Perimeter Protection Distance (Human)	91 m (298.56 ft)	133 m (436.35 ft)	175 m (574.15 ft)
Perimeter Protection Distance (Vehicle)	273 m (895.67 ft)	399 m (1,309.06 ft)	525 m (1,722.44 ft)

Ordering Information

Type	Model	Description
Monitor	DHI-TPC-BF4441-B13F6	Thermal Network Hybrid Bullet Camera
	DHI-TPC-BF4441-B19F8	Thermal Network Hybrid Bullet Camera
	DHI-TPC-BF4441-B25F8	Thermal Network Hybrid Bullet Camera
Accessories	PFA122	Wall Mount
	PFA151	Pole Mount
	PFA152-E	Corner Mount

Accessories

Optional:



PFA122
Wall Mount

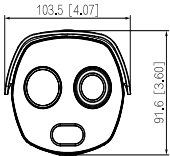
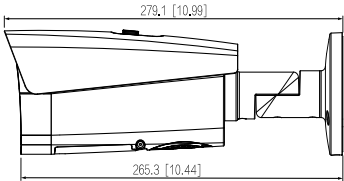


PFA151
Pole Mount



PFA152-E
Corner Mount

Dimensions (mm[inch])



Corner Mount	Junction Mount	Vertical Pole Mount

