

DHI-TPC-BF5441

Thermal Network Hybrid Bullet Camera



- \cdot Vanadium oxide uncooled focal plane detector.
- \cdot 1/1.8" 4Megapixel progressive scan CMOS.
- \cdot Heat detection and alarm, tripwire, intrusion, and target filtering.
- \cdot Junction box optional.
- \cdot Illumination distance is up to 80 m.
- · IP67 rated.
- \cdot Wide input voltage 12 VDC ± 20%, and PoE power supply.
- \cdot Smart linkage of white light and audio.

Featuring thermal and visible channels, Thermal Network Hybrid Bullet Camera offers various AI functions such as heat detection, tripwire, intrusion, and human/vehicle classification, and supports sound and light alarm. The camera is widely applied in outdoor scenes of the medium-distance perimeter protection and heat detection.

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)	≤35 mK (@f/1.0)	
Field of View	7.5 mm: H:53.5°; V: 39.5° 13 mm: H:30.4°; V: 22.5° 19 mm: H:20.3°; V: 15.3° 25 mm: H:15.5°; V: 11.6° 35 mm: H:11.1°; V: 8.3°	
Thermal Focus Control	Fixed-focal	
Close Focus Distance	7.5 mm: 1.2 m (3.93 ft) 13 mm: 2.9 m (9.51 ft) 19 mm: 5.5 m (18.04 ft) 25 mm: 9 m (29.53 ft) 35 mm: 36 m (118.10 ft)	
Detection Distance $^{\textcircled{0}}$	7.5 mm: Vehicle: 633 m (2,078.36 ft); Human: 206 m (675.47 ft) 13 mm: Vehicle: 1,176 m (3,859.81 ft); Human: 382 m (1,253.26ft) 19 mm: Vehicle: 1,719 m (5,641.26 ft); Human: 559 m (1,833.41 ft) 25 mm: Vehicle: 2,262 m (7,422.71 ft); Human: 735 m (2,411.38 ft) 35 mm: Vehicle: 3,167 m (10,391.80 ft); Human: 1,029 m (3,375.94 ft)	

Recognition Distance [®]	7.5 mm: Vehicle: 155 m (509.79 ft); Human: 53 m (173.69 ft) 13 mm: Vehicle: 289 m (946.75 ft); Human: 98 m (321.51 ft) 19 mm: Vehicle: 422 m (1,383.71 ft); Human: 144 m (471.45 ft) 25 mm: Vehicle: 555 m (1,820.67 ft); Human: 189 m (620.07 ft) 35 mm: Vehicle: 777 m (2,548.93 ft); Human: 256 m (868.46 ft)
Identification Distance ^③	7.5 mm: Vehicle: 78 m (257.32 ft); Human: 26 m (86.85 ft) 13 mm: Vehicle: 146 m (477.88 ft); Human: 49 m (160.76ft) 19 mm: Vehicle: 213 m (698.44 ft); Human: 72 m (235.72 ft) 25 mm: Vehicle: 280 m (919.00 ft); Human: 95 m (310.16 ft) 35 mm: Vehicle: 392 m (1,286.60 ft); Human: 132 m (433.06 ft)
 Note: Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 3.6 pixels of the image). Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 14 pixels of the image). Identification Distance: Classifies objects into specific categories based on their characteristics, such as engineering truck, car (the object must cover more than 28 pixels of the image). 	
Digital Detail Enhancement (DDE)	Yes
Digital Zoom	19 levels

Auto/Manual

Thermal AGC



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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	1/1.8" 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
Field of View	4 mm: H: 87.0°; V: 47.3° 6 mm: H: 55.3°; V: 30.0° 12 mm: H:37.3°; V: 21.4° 10–30 mm: H: 42°–15°;V: 23°–8.4°
Close Focus Distance	4 mm: 1.2 m (3.93 ft) 6 mm: 2.5 m (8.20 ft) 12 mm: 7.4 m (24.27 ft) 10–30 mm: 9 m (29.53 ft)
Aperture	4 mm: F1.6 6 mm: F1.6 12 mm: F1.7 10–30 mm: F1.7
Illuminator On/Off Control	Auto; manual
Illumination Distance	80 m (262.47 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–30 fps, 30 fps by default Visible (60 Hz): Main stream: 1 fps–30 fps, 30 fps by default Sub stream: 1 fps–30 fps, 30 fps by default Sub stream: 1 fps–30 fps, 15 fps by default Sub stream: 1 fps–30 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)	
Interoperability	ONVIF; CGI; DaHua SDK	
Browser	IE; Firefox; Chrome; Safari	
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		
Heat Detection	Yes	
Cold/Hot Spot Trace	Yes	
Perimeter Protection	Yes. Supports tripwire and intrusion.	
Target Distinction	Human/Vehicle Classification	
Target Tracking	Yes	
Smoke Detection	Yes	
Port		
Analog Output	$1\times {\rm CVBS}$ output; BNC port (not supported by the device with a junction box)	

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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: 5 W (12 VDC); 8.9 W (PoE) Max: 15 W (12 VDC); 18 W (PoE)
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 (-40 °F to +158 °F)
Physical Characteristic	S
Protection	IP67
Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV
Structure	
Product Dimensions	300.9 mm × 181.8 mm × 181.8 mm (11.85" × 7.16" × 7.16") (L × W × H)
Packaging Dimensions	423 mm × 180 mm × 178 mm (16.65" × 7.09" × 7.01") (L × W × H)
Net Weight	≤2.35 kg (5.18 lb)
Gross Weight	≤2.7 kg (5.95 lb)
Lens	Included
Certification	

Certifications

Heat Detection Distance

Certifications	Max. Distance
7.5 mm	45 m (147.64 ft)
13 mm	78 m (255.91 ft)
19 mm	114 m (374.02 ft)
25 mm	150 m (492.13 ft)
35 mm	210 m (688.98 ft)

CE/FCC

Note:

The table displays the measured distances obtained from using the target size 0.2 m \times 0.2 m for testing in an environment where the temperature is 23 °C and the relative humidity is below 60%.

The table is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more.

Perimeter Protection Distance

Certifications	Distance (Human)	Distance (Vehicle)
7.5 mm	60 m (196.85 ft)	180 m (590.55 ft)
13 mm	104 m (341.21 ft)	312 m (1,023.62 ft)
19 mm	152 m (498.69 ft)	456 m (1,496.06 ft)
25 mm	200 m (656.17 ft)	600 m (1,968.50 ft)
35 mm	280 m (918.64 ft)	840 m (2,755.91 ft)

Note:

The table displays the measured distances obtained from using the target sizes 1.8 m × 0.5 m (human) and 1.4 m × 4 m (vehicle) for testing in an environment where the temperature is 23 °C and the relative humidity is below 60%. The table is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more.

Ordering Information		
Туре	Model	Description
	DHI-TPC-BF5441-B7F4 DHI-TPC-BF5441-B7F4-J	Thermal: 7.5 mm; Visible: 4 mm
	DHI-TPC-BF5441-B13F6 DHI-TPC-BF5441-B13F6-J	Thermal: 13 mm; Visible: 6 mm
Security	DHI-TPC-BF5441-B19F12 DHI-TPC-BF5441-B19F12-J	Thermal: 19 mm; Visible: 12 mm
	DHI-TPC-BF5441-B25F12 DHI-TPC-BF5441-B25F12-J	Thermal: 25 mm; Visible: 12 mm
	DHI-TPC-BF5441-B35Z3 DHI-TPC-BF5441-B35Z3-J	Thermal: 35 mm; Visible: 10mm-30 mm
	PFA151 + PFA121	Corner Mount Bracket
Accessories (Optional)	PFA121	Junction Mount
	PFA150+PFA121	Vertical Pole Mount Bracket
Accessories (Optional for	-	Junction Mount
-J model)	PFA154	Vertical Pole Mount Bracket



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Accessories

Optional:





PFA121



PFA151 + PFA121 Corner Mount Bracket Junction Mount

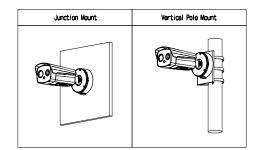
PFA150 + PFA121 Vertical Pole Mount Bracket

For Junction box model (-J):

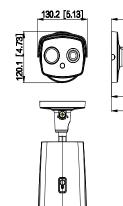


PFA154 Vertical Pole Mount Bracket

Corner Mount.	Junction Mount	Vertical Pole Mount
	60.00	

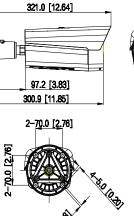


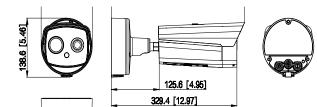
Dimensions (mm[inch])

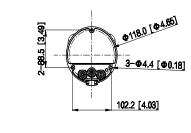


h-m

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