

DHI-TPC-BF5641-T

Thermal Network Hybrid Bullet Camera





- · Vanadium oxide uncooled focal plane detector.
- · 1/1.8" 4Megapixel progressive scan CMOS.
- · Heat detection and alarm, tripwire, intrusion, and target filtering.
- · Junction box optional.
- · Illumination distance is up to 80 m.
- · IP67 rated.
- · Wide input voltage 12 VDC ± 20%, and PoE power supply.
- · Smart linkage of white light and audio.
- · Temperature measurement range of -20 °C to +550 °C.

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.

Al Functions

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

Heat Detection & Alarm

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

Environment (-30 °C to +70 °C)

Developed to operate in extreme conditions, the camera can function in temperatures ranging from $-30~^{\circ}\text{C}$ to $+70~^{\circ}\text{C}$ ($-22~^{\circ}\text{F}$ to $+158~^{\circ}\text{F}$). 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.

Temperature Measurement (-20 °C to +550 °C)

Dahua thermal cameras (-T models) remotely measure temperatures. They are customizable, allowing you to freely set threshold alarms. Whether day or night, the temperature of objects can be measured, making the camera ideal for use in power plants or at oil extraction sites where overheating can be dangerous. When the temperature exceeds the set threshold, an alarm is immediately triggered. The camera can function in temperatures ranging from –20 °C to 550 °C (–4 °F to 1022 °F).

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.

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Technical Specification	on			
Thermal				
Detector Type	Vanadium oxide uncooled focal plane detector			
Effective Pixels	640 (H) × 512 (V)			
Pixel Pitch	12 µm			
Spectral Range	8 μm–14 μm			
Sensitivity (NETD)	≤35 mK (@f/1.0)			
Field of View	5 mm: H: 90.0°; V: 70.7° 9 mm: H: 50.0°; V: 39.6° 13 mm: H: 32.0°; V: 25.7° 19 mm: H: 22.9°; V: 18.4° 25 mm: H: 17.6°; V: 14.1° 35 mm: H: 12.5°; V: 10°			
Thermal Focus Control	Fixed-focal			
Close Focus Distance	5 mm: 0.8 m (6.56 ft) 9 mm: 2.2 m (13.120ft) 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: 13 m (42.65 ft)			
Detection Distance $^{\scriptsize \textcircled{1}}$	5 mm: Vehicle: 555 m (1,820.40 ft); Human: 208 m (682.24 ft) 9 mm: Vehicle: 1,000 m (3,280.00 ft); Human: 375 m (1,230.00 ft) 13 mm: Vehicle: 1,019 m (3,342.32); Human: 382 m (1,253.26ft) 19 mm: Vehicle: 1,490 m(4,887.20ft); Human: 558 m (1,830.68 ft) 25 mm: Vehicle: 1,960 m(6,428.80 ft); Human: 735 m (2,411.38 ft) 35 mm: Vehicle: 2,745 m (9,003.60 ft); Human: 1,029 m (3,375.94 ft)			
Recognition Distance ^②	5 mm: Vehicle: 139 m (455.92 ft); Human: 53 m (173.84 ft) 9 mm: Vehicle: 250 m (820.00 ft); Human: 96 m (314.88 ft) 13 mm: Vehicle: 255 m (836.60 ft); Human: 98 m (321.51 ft) 19 mm: Vehicle: 372 m (1,220.45 ft); Human: 143 m (469.15 ft) 25 mm: Vehicle: 490 m (1,607.59 ft); Human: 189 m (620.07 ft) 35 mm: Vehicle: 686 m (2,250.62 ft); Human: 264 m (866.13 ft)			
Identification Distance [®]	5 mm: Vehicle: 69 m (226.32 ft); Human: 26 m (85.28 ft) 9 mm: Vehicle: 125 m (410.00 ft); Human: 48 m (157.44 ft) 13 mm: Vehicle: 127 m (416.66 ft); Human: 49 m (160.76ft) 19 mm: Vehicle: 186 m (610.22 ft); Human: 71 m (232.93 ft) 25 mm: Vehicle: 245 m (803.79 ft); Human: 94 m (308.39 ft) 35 mm: Vehicle: 343 m (1125.31 ft); Human: 132 m (433.06 ft)			
Note: ① Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 3.6 pixels of the image). ② Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 14 pixels of the image). ③ 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	24 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)
Temperature Measurement Range	Low temperature mode: $ -20 ^{\circ}\text{C} (-4 ^{\circ}\text{F}) \text{to} +150 ^{\circ}\text{C} (+302 ^{\circ}\text{F}) $ High temperature mode: $ 0 ^{\circ}\text{C} (+34 ^{\circ}\text{F}) \text{to} +550 ^{\circ}\text{C} (+1022 ^{\circ}\text{F}) $ Auto mode
Temperature Measurement Accuracy	Max. (\pm 2 °C, \pm 2%) Operating temperature: -20 °C (-4 °F) to $+60$ °C (\pm 140°F)
Temperature Measurement Mode	Spot: 12 Line: 12 Area: 12 Supports 12 rules simultaneously
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: 15.5°; V: 11.6°
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)

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	4 mm: F1.6 6 mm: F1.6 12 mm: F1.7 10–30 mm: F1.7		Human/Vehicle Classificati	on
Aperture			Yes	
Illuminator On/Off Control	Auto; manual	Smoke Detection	Yes	
Illumination Distance	80 m (262.47 ft)	Port		
Audio and Video		Analog Output	1 × CVBS output; BNC port (not supported by the device with a junction box)	
Video Compression	H.265; H.264M; H.264H; H.264B	Network Port	1 × RJ-45 (10/100 Base-T)	
	Thermal: Main stream: 1280 × 1024; 1280 × 720; 640 × 512; 1280 × 1024 (default) Sub stream: 640 × 512; 320 × 256; 640 × 512 (default) Visible: Main stream: 2688 × 1520; 2560 × 1440; 1920 × 1080;	Alarm Input	2	
Resolution		Alarm Output	2	
		Audio Input	1	
	1280 × 720); 704 × 576; 2560 × 1440 (default) Sub stream: 704 × 576; 352 × 288; 704 × 576 (default)	Audio Output	1	
	Thermal (50 Hz): Main stream: 1 fps–25 fps, 25 fps by default	RS-485	1	
	Sub stream: 1 fps–25 fps, 15 fps by default Visible (50 Hz): Main stream: 1 fps–25 fps, 25 fps by default	Power		
Video Frame Rate	Sub stream: 1 fps–25 fps, 15 fps by default Thermal (60 Hz):	Power Supply	12 VDC ± 20%, PoE (802.3a	af), ePoE
	Main stream: 1 fps–30 fps, 30 fps by default Sub stream: 1 fps–30 fps, 15 fps by default	Power Consumption	Basic: 5 W (illuminator off, heater off, speaker off) Max: 15 W (illuminator on, heater on, speaker on)	
Visible (60 Hz): Main stream: 1 fps-30 fps, 30 fps by default Sub stream: 1 fps-30 fps, 15 fps by default		еРоЕ	Yes	
Audio Compression	G.711a; G.711 mu	Environment		
Image Encoding Format	JPEG	Operating Temperature	−30 °C to +70 °C (−22 °F to	+158 °F)
Function		Operating Humidity	≤95%	
Two-way Audio	Yes	Storage Temperature	-40 °C to +70 °C (-40 °F to	+158 °F)
Sound and Light Alarm	Local audio and white light alarm prompts	Physical Characterist	ics	
Network Protocol	IPv4/IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP;	Protection	IP67	
Region of Interest (RoI)	Yes (customizable)	Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV	
Storage	FTP; Micro SD card (512 GB, hot swapping)	Structure		
Interoperability	ONVIF; CGI; DaHua SDK	Product Dimensions	300.9 mm × 181.8 mm × 187.16") (L × W × H)	31.8 mm (11.85" × 7.16" ×
Browser	IE; Firefox; Chrome; Safari	Packaging Dimensions	423 mm × 180 mm × 178 n	nm (16.65" × 7.09" × 7.01")
User/Host	Up to 20 (total bandwidth: 64 MB)		(L × W × H)	
Security	Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled	Net Weight Gross Weight	≤2.35 kg (5.18 lb) ≤2.7 kg (5.95 lb)	
	network access Up to 20 users; supports multi-level user permissions (2	Lens	Included	
User Management	levels): management group and user group	Certification		
Malfunction Detection	Network disconnection detection; IP conflict detection; memory card state detection; memory space detection	Certifications	CE/FCC	
Fusion Mode	Yes. Off by default	Temperature Measurement Distance		
PIP	Yes	end of	Temperature	Temperature
Intelligence		Focal Length	Measurement Distance (Min.)	Measurement Distance (Max.)
Heat Detection	Yes	5 mm	1 m (3.28 ft)	3 m (9.84 ft)
Cold/Hot Spot Trace	Yes	9 mm	1 m (3.28 ft)	5 m (16.40 ft)
Perimeter Protection	Yes. Supports tripwire and intrusion.	13 mm	2 m (6.56 ft)	11 m (36.09 ft)

19 mm	3 m (9.84 ft)	16 m (52.49 ft)
25 mm	4 m (13.12 ft)	21 m (68.88 ft)
35 mm	6 m (19.69 ft)	29.4 m (96.46 ft)

Note:

The table displays the measured distances obtained from using the target size 0.1 m \times 0.1 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

Ordering Information				
Туре	Model	Description		
Security	DHI-TPC-BF5641-TB5F4 DHI-TPC-BF5641-TB5F4-J	Thermal: 5 mm; Visible: 4 mm		
	DHI-TPC-BF5641-TB9F4 DHI-TPC-BF5641-TB9F4-J	Thermal: 9 mm; Visible: 4 mm		
	DHI-TPC-BF5641-TB13F6 DHI-TPC-BF5641-TB13F6-J	Thermal: 13 mm; Visible: 6 mm		
	DHI-TPC-BF5641-TB19F12 DHI-TPC-BF5641-TB19F12-J	Thermal: 19 mm; Visible: 12 mm		
	DHI-TPC-BF5641-TB25F12 DHI-TPC-BF5641-TB25F12-J	Thermal: 25 mm; Visible: 12 mm		
	DHI-TPC-BF5641-TB35Z3 DHI-TPC-BF5641-TB35Z3-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		

Accessories

Optional:











PFA151 + PFA121 Corner Mount Bracket

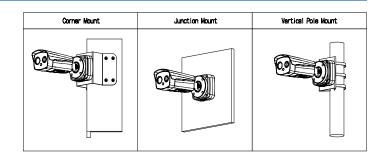
PFA121 Junction Mount

PFA150 + PFA121 Vertical Pole Mount Bracket

For Junction box model (-J):



PFA154 Vertical Pole Mount Bracket



Junction Mount	Vertical Pole Mount

Dimensions (mm[inch])

