

# DH-TPC-BF2221-T

Thermal Network Hybrid Bullet Camera



#### System Overview

Featuring a dual lens, fixed bullet camera, this series provides an all-in-one solution for capturing video surveillance for indoor and outdoor applications. Together with Thermal and Visible Technology, the camera is the perfect solution for dark, small area monitoring applications. The series combines one thermal camera for monitoring in total darkness and one visible camera with Smart IR for confirming details.

#### Functions

#### Uncooled Vox Technology

Dahua thermal cameras use uncooled Vox sensor technology . Because of small size and better performance, it's cost-effective solution for thermal security.

#### **High Sensitivity**

High thermal sensitivity(<50mK) makes cameras capture more image details and temperature difference information.

#### Fire Detection & Alarm

With built-in Fire detect function, the camera has the ability to detect fire in a long distance. because thermal camera is sensitive to temperature, so the accuracy of fire detection will be higher than visible camera.

#### **Temperature Measurement**

Dahua thermal cameras (-T models) provide remote temperature monitoring functionality with the ability to set temperature threshold alarms. Object temperatures can be monitored in daytime or at night, making them ideal for usage in power plant or oil extraction applications where overheating can be dangerous. When the temperature exceeds the set threshold, an alarm is triggered. The temperature range is between-20 °C to 550 °C (-4°F to 1022 °F).

#### Intelligent Video System (IVS)

With built-in intelligent video analytics, the camera has the ability to detect and analyze moving objects for improved video surveillance. The camera provides optional standard intelligence at the edge allowin detection of multiple object behaviors such as abandoned or missing objects. IVS also supports Tripwire analytics, allowing the camera to detect when a pre-determined line has been crossed.

- · 256x192 VOx uncooled thermal sensor technology
- · Athermalized lens (thermal camera), focus-free
- $\cdot$  1/2.8" 2Megapixel progressive scan CMOS
- $\cdot$  Support ROI, motion detection, color palettes
- · Support temperature measurement
- · Support fire detection & alarm
- · Built-in 2/2 alarm in/out
- · Micro SD memory, IP67, PoE, ePOE



## Smoking Detection

Smoking detection is a built-in video analytics algorithm that combines with thermal imaging and visible light technology, based on Dahua Deep-learning AI algorithm to automatically detect if there is someone smoking in a detection area and to trigger an alarm.

Value: Dahua thermal camera can provide a real-time monitoring, in the use of AI technology, to automatically detect people's smoking behavior and provide intelligent voice and light warning (Loudspeaker and white light, etc.) in an effort to dissuade or correct, and avoid potential risk and loss

#### Environmental

With a temperature range of -30 °C to +60 °C (-22 °F to +140 °F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

#### Protection

Supporting  $\pm 15\%$  input voltage tolerance, this camera suits even the most unstable conditions for outdoor applications. Its 6KV lightning rating provides protectection against the camera and its structure from the effects of lightning.

# Lite Series | DH-TPC-BF2221-T

Technical Specification	
Structure	Multi-sensor bullet camera
Thermal	
Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	256x192
Pixel Pitch	12µm
Spectral Range	8µm–14µm
Thermal Sensitivity (NETD)	≤50mK
Focal Length	3.5mm; 7mm
Field of View	3.5mm: horizontal: 50.6° ; vertical: 37.8° 7mm: horizontal: 24° ; vertical: 18°
Focus Mode	3.5mm/7mm: focus free and athermalized
Aperture	F1.0
Detection Distance	3.5mm: vehicle: 389m (1276ft); human: 146m (479ft) 7mm: vehicle: 778m (2552ft); human: 292m (958ft)
Recognition Distance	3.5mm: vehicle: 97m (318ft); human: 38m (125ft) 7mm: vehicle: 194m (636ft); human: 75m (246ft)
Identification Distance	3.5mm: vehicle: 49m (161ft); human: 19m (62ft) 7mm: vehicle: 97m (318ft); human: 38m (125ft)
Digital Detail Enhancement (DDE)	Yes
AGC	Auto; manual
Noise Reduction	2D NR; 3D NR
Color Palettes	18 color modes selectable such as Whitehot/Blackhot/ Ironrow/Icefire.
Temperature Measurement Range	Low temperature mode: -20°C (-4°F) to +150°C (302°F) High temperature mode: 0°C (34°F) to +550°C (1022°F)
Temperature Accuracy	Max (±5°C, ±5%) Operating temperature: -10°C (14°F) to +50°C (122°F)
Temperature Mode	Spot: 12 Line: 12 Area: 12 Support 12 rules simultaneously
Visible	
Image Sensor	1/2.8 inch CMOS
Effective Pixels	1920x1080
Max. Resolution	2MP
Horizontal Definition	≥1100TVL
Min. Illumination	Color: 0.005Lux Black & white: 0.0005Lux IR light (on): 0Lux
AGC	Auto; manual
Noise Reduction	2D NR; 3D NR
S/N Ratio	>56dB
White Balance	Auto/indoor/outdoor/tracking/manual/sodium lamp/ natural/street light
White balance	nataral/street iiBitt

Electronic Imag Stabilization (El	·	Yes				
Electronic Shut	ter Speed	1/3s–1/100000s (auto or manual)				
BLC		Yes				
WDR		DWDR				
HLC		Yes				
Day/Night		Auto (ICR); color/B/W				
Focus Mode		Manual				
Focal Length		4mm; 8mm				
Field of View		4mm: horizontal: 84°; vertical: 45°; diagonal: 99° 8mm: horizontal: 40°; vertical: 22°; diagonal: 46°				
	Lens	Detect	Observe	Recognize	Identify	
DORI Distance	4mm	55m (180ft)	22m (72ft)	11m (36ft)	5.5m (18ft)	
	8mm	110m (361ft)	44m (144ft)	22m (72ft)	11m (36ft)	
Close Focus Dis	stance	0.2m				
Aperture		4mm: F2.0 8mm: F1.9				
IR On/Off contr	rol	Auto; manual				
IR Distance		4mm: 35m (115ft) 8mm: 50m (164ft)				
Audio and Vi	ideo					
Video Compres	ssion	H.265; H.264M; H.264H; H.264B; MJEPG				
Resolution		Thermal: (1280×960) (default value)/XVGA (1024×768)/VGA (640×480)/(256×192) Visual: 1080P (1920×1080) (default value)/720P (1280×720)/ D1 (704× 576/704×480)/CIF (352×288/352×240)				
Video Frame Ra	Thermal:   50Hz:   Main stream (1280×960@25fps/1024×768@25fp   s/640×480@25fps/256×192@25fps), sub stream   (640×480@25fps/256×192@25fps)   60Hz:   Main stream (1280×960@30fps/1024×768@30fp   s/640×480@25fps/256×192@25fps), sub stream   (640×480@30fps/256×192@25fps), sub stream   (640×480@30fps/256×192@30fps)   visual:   50Hz:   Main stream (1920×1080@25fps/1280×7   20@25fps/704×576@25fps), sub stream   (704×576@25fps/352×288@25fps)   60Hz:   Main stream (1920×1080@30fps/1280×7   20@30fps/704×480@30fps), sub stream   (704×480@30fps/252×240@30fps)				b stream 68@30fp b stream 7	
Audio Compres	ssion	G.711a; G.711mu; AAC; PCM				
Image Encoding	g Format	JPEG				
General Fund	ction					
Two-way Talk		Yes				

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Network Protocol	HTTP; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP;			≤1.4kg (	ş (3lb)	
	NTP	Gross Weight		≤1.9kg (4.2lb)		
Region of Interest (ROI)	Yes	Installation Mode		Wall mo	Wall mount/pole mount/corner mount	
Edge Storage	FTP; Micro SD card (256G, hot plug)	Lens		Contain	Contained	
Browser	IE: IE8 and the later, and explorer with IE core Google: 42 and the earlier Firefox: 42 and the earlier	Bracket		Contain	Contained	
	Safari: 10 and the earlier	Certification				
User/Host	20 channels at most (the total bandwidth 64M) Authorized username and password; attached MAC	Certifications		CE (EN 60950:2000); FCC (FCC Part 15 SubpartB )		
Security	address; encrypted HTTPS; IEEE 802.1x; controlled network access	Ordering Information				
User Management	Support 20 users at most and users are classified as two groupsadministrator group and user group.	Туре	Type Part Number		Description	
Malfunction Detection	Network disconnection; IP addresses conflict; SD card error (status or storage space)		DH-TPC-BF222 TB3F4		Thermal: 256x192 3.5mm lens	
Smart Event		DH-TPC-	DH-TPC-BF222 TB3F4	21N-	Visible: 2MP 4mm lens	
General IVS Analytics Tripwire/intrusion		BF2221-T	DH-TPC-BF222 TB7F8	21P-	Thermal: 256x192 7mm lens	
Professional and Intelligen	t		DH-TPC-BF222 TB7F8	21N-	Visible: 2MP 8mm lens	
Fire Detection	Yes		PFA121		Water-proof Junction Box (wall mount)	
Cold/Hot Spot Trace	Auto tracking of the hottest spot and the coldest spot in the thermal image	Accessories	PFA121+PFA1	52-E	Water-proof Junction Box+Pole Mount	
IVS Analytics	Tripwire/intrusion	Accessories			Bracket (pole mount) Water-proof Junction Box+Corner Mount	
Network	1 10M/100M Ethernet port (RJ-45)		PFA121+PFA1	51	Bracket (corner mount)	
Alarm Input	2 channels					
Alarm Output	2 channels					
Audio Input	1 channel					
Audio Output	1 channel					
RS-485	1 channel					
Power						
Power Supply	12V±20% DC, POE (802.3af), ePOE					
Power Consumption	<5.0W (12V DC) (basic power consumption) <12W (12V DC, without power adaptor) (maximum power consumption)					
Environment						
Operating Temperature	-30°C (-22°F) to +60°C (140°F)					
Operating Humidity	≤95%					
Self-Adaptive	Auto heating to protect the chip under the cold environment					
Physical Characteristics						
Protection Grade	IP67, anti-surge 6KV, anti-elctrostatic 8KV (touched by objects), anti-elctrostatic 15KV (air)					
Dimensions	279.9mm (11.02")×103.8mm (4.09")×95.8mm (3.77") (lengthxwidthxheight)					
Packaging Dimensions	Camera with package: 365mm (14.4"")×175mm (6.9"")×176mm (6.9"") (lengthxwidthxheight) Deliveray box: 902mm (35.5"")×380mm (15"")×380mm (15"") (widthxlengthxheight)					

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### Accessories

#### **Optional:**



PFA121 Water-proof Junction Box (wall mount)



PFA121+PFA152-E

Water-proof Junction Box+Pole Mount

Bracket

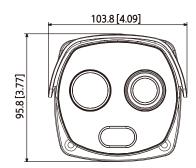
(pole mount)

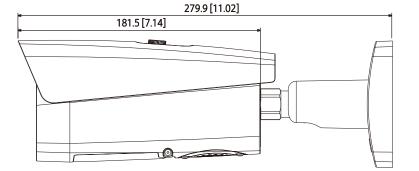


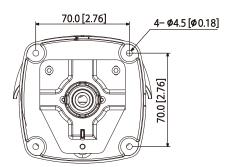
PFA121+PFA151 Water-proof Junction Box+Corner Mount Bracket (corner mount)

Junction Mount	Pole Mount	Corner Mount		
PFA121	PFA121+PFA152-E	PFA121+PFA151		
0	00			

#### Dimensions (mm/inch)







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