

DH-TPC-BF3221-T

Thermal Network Value Hybrid Bullet Camera



- 256x192 VOx uncooled thermal sensor technology
- Athermalized Lens (thermal camera), Focus-free
- 1/2.8" 2Megapixel progressive scan Sony CMOS
- Support ROI, Motion Detection, Color Palettes
- Support measure body temperature,
- Measurement Accuracy: Max ($\pm 0.3^{\circ}\text{C}$, with black-body)
- Active deterrence with white light & siren
- Built-in 2/2 alarm in/out
- Micro SD memory, IP67, PoE



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.

Active Deterrence

Active deterrence is to warn off intruders actively with white light and siren even before users are aware of the incidence. Once an intrusion is detected, the white light will turn on and the siren will buzz to alert the intruder. The white light and the content of siren is configurable.

Technical Specification

Thermal Camera

Image Sensor	Uncooled VOx Microbolometer
Effective Pixels	256(H)x192(V)
Pixel Size	12um
Thermal Sensitivity (NETD)	<50mK@f/1.1
Spectral Range	8~14um
Image Setting	Brightness/Sharpness/ROI/AGC/FFC/3D DNR
Color Palettes	18(Whitehot/Blackhot/Ironrow/Icefire/Fusion/Rainbow/Globow/Iconbow1/Iconbow2 .etc)

Thermal Lens

Lens Type	Fixed	
Focus Control	Athermalized, Focus-free	
Focal Length	3.5mm	7.1mm
Angle of View	H: 50.6° V: 37.8°	H: 24° V: 18°

Visible Camera

Image Sensor	1/2.8" 2M CMOS
Effective Pixels	1920(H)x1080(V)
Electronic Shutter Speed	1/1 ~ 1/30,000s
Min. Illumination	Color: 0.002Lux; B/W: 0.0002Lux; 0Lux (IR on)
IR Distance	35m
IR On/Off Control	Auto/Manual
IR LEDs	1

Visible Lens

Focal Length	4mm	8mm
Max Aperture	F2.0	F1.9
Angle of View	H: 84° V: 45°	H: 40° V: 22°

Temperature Measurement

Measurement Range	30°C ~+45°C
Measurement Accuracy	Max (±0.3°C, ±0.3%) with black-body Max (±1°C, ±1%) without black-body
Measurement Mode	Spot/Line/Area
Measurement Rule	Spot: 12 Line: 12 Area: 12 Support 12 rules simultaneously

Video

Compression	H.265/H.264/MJPEG
Frame Rate	Main Stream: Thermal: 1280*960/1024*768/640*480/256*192@25fps Visible: 1080P (default)/720P@25fps Sub Stream: Thermal: 640*480/256*192@25fps Visible: CIF(default)/D1@25fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 640 ~ 8192Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC Mode	BLC/HLC/WDR
White Balance	Auto, Manual
Noise Reduction	Ultra DNR
Motion Detetion	Off/On (4 zone, Rectangle)
Region of Interest	Off/On (4 zone)
Electronic Image Stabilization (EIS)	NA
Defog	Off/On
Flip	180°
Mirror	Off/On
Privacy Masking	Off/On (4 area, Rectangle)

Audio

Compression	G.711a/G.711Mu/AAC
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Network

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1x
Interoperability	ONVIF Profile S & G, API
Streaming Method	Unicast/Multicast
Max. User Access	10 Users/20 Users
Edge Storage	Micro SD (128GB) Memory status display (Normal/Error/Active/Formatting/Lock), NAS (Network Attached Storage), Local PC for instant recording
Web Viewer	<IE11, <Chrome45, <Firefox52
Management Software	Smart PSS, DSS
Smart Phone	Android, IOS

Certifications

Certification	CE (EN 60950:2000) FCC (FCC Part 15 SubpartB)
Interface	
Video Interface	1.0Vp-p/75Ω, PAL/NTSC (HDCVI Optional)
Audio Interface	In/Out 1/1
RS485	Support
Alarm	2/2 In/Out

Electrical

Power Supply	DC 12V/PoE
Power Consumption	12W (Max)

Environmental

Operating Condition	10°C ~ +35°C
Storage Conditions	10°C ~ +35°C/Less than 95% RH
Ingress Protection	IP67

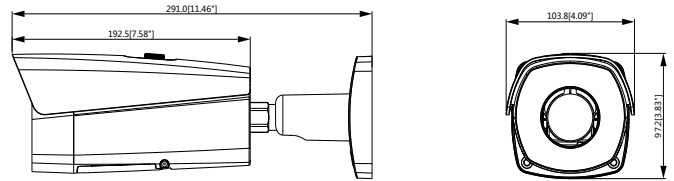
Construction

Casing	Metal
Dimensions	279.9mm × 103.8mm × 95.8mm(With bracket)
Weight	< 1.4Kg

Ordering Information

Type	Part Number	Description
DH-TPC-BF3221-T	DH-TPC-BF3221P-TB3F4	Thermal: 256x192 3.5mm lens
	DH-TPC-BF3221N-TB3F4	Visible: 2MP 4mm lens
DH-TPC-BF3221-T	DH-TPC-BF3221P-TB7F8	Thermal: 256x192 7mm lens
	DH-TPC-BF3221N-TB7F8	Visible: 2MP 8mm lens

Dimensions (mm)



Safety Instructions

Warning

A warning indicates a situation that may cause harm to the user. To avoid personal injury or instrument damage, please follow the following instructions:

- Make sure the place is free of oil and chemicals, no inflammable and explosive articles!
- Working environment is 0°C~ 40°C, do not put into high and low temperature box without permission, to avoid accidents!
- Must use an earthing socket in case of accidental electric shock!
- Blackbody cannot be used for applications other than temperature testing and calibration!
- Do not change the blackbody range without permission, in case of damage to the blackbody or cause safety accidents!
- Do not remove or modify blackbody without permission! The product is not guaranteed if the label is torn or damaged.

Caution

To avoid damaging the instrument or affecting the measurement accuracy, please follow the following instructions:

- Do not touch the radiant surface of blackbody to avoid scratches on the radiant surface of blackbody and affect the temperature measurement accuracy.
- Indoor use only. There should be no obvious air convection and strong light irradiation, no strong electromagnetic interference

and vibration.

- It is necessary to reserve heat dissipation space and keep at least 10cm away from surrounding objects.
- **Safety life:** the safety of blackbody can not be guaranteed after five years from the date of purchase (no matter whether the product is used within five years or not). Beyond this service life, the components may appear aging and failure. In order to ensure the efficiency of blackbody operation and the safety of electricity consumption, it is recommended that users repurchase or scrap blackbody beyond the safe service life.

1. Product overview and features

Human temperature measurement blackbody (Hereinafter referred to as blackbody). Product features are as follows:

- The imported intelligent temperature control meter is used to control the temperature with high precision and good stability.
- The target surface is coated with high emissivity aviation coatings.
- Compared with the same type of products, cost-effective.

2. Product pictures

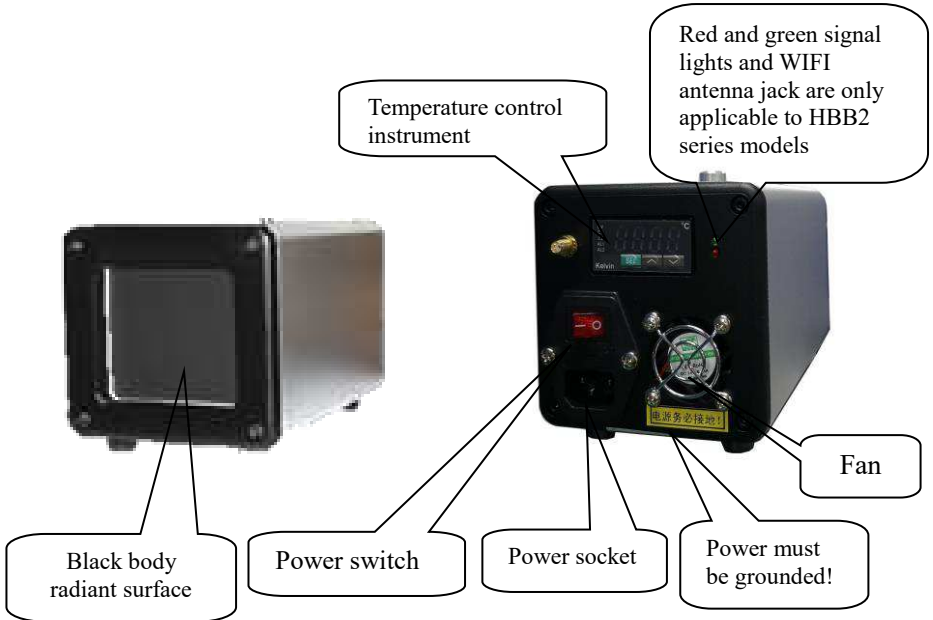


Figure 1: Product picture

3. Parameters

Working temperature	Factory settings □35.0°C □37.0°C □40.0°C (Environment temperature +5.0°C~50.0°C adjustable)
Effective radiant surface	70mm×70mm
Temperature resolution	0.1°C
Temperature accuracy	±0.2°C(single point)
Temperature stability	±(0.1~0.2)°C/30min
Effective emissivity	0.97
Temperature sensor	Pt100
Power supply	220VAC 50Hz 35W
Net weight	1.8 kg
Dimensions	W110 mm× H120 mm ×D180 mm
Ambient temperature/humidity	0°C~40°C/ ≤80%RH

4. Steps

4.1. Connect

Connect one end of the power cord configured by the factory to the power outlet on the back of the blackbody and the other end to the three-hole 220VAC/10A power outlet.

4.2. Temperature setting

- a. Turn on the power switch on the back of the blackbody and the red indicator light is on.
- b. See "3.Parameters" for the preset factory temperature of the boldface. The operation can start when PV value is stable and consistent with SV value.
- c. Blackbody operating temperature can be adjusted according to the need of the field. Press the "SEL" button (see figure 2), the "SV" indicator, press "^" or "v" button to increase or decrease the working temperature, and then press "SEL" to confirm. (See the table for the parameters of the control panel: temperature control instrument panel instructions.)
- d. At the end of the work, turn off the power switch on the back of the blackbody.

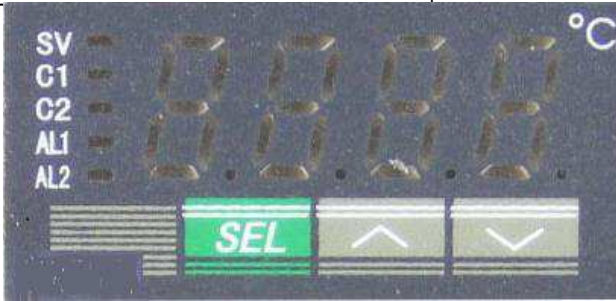


Figure 2: schematic diagram of temperature control instrument panel

Temperature control instrument panel instructions

Parameter	Name	Function
C1	Control output 1 indicator light	This light is ON when control output 1 is ON
C2	Control output 2 indicator light	This light is ON when control output 2 is ON
AL1	Alarm lamp 1	When the alarm output 1 is ON, the light will be ON
AL2	Alarm lamp 2	When the alarm output 2 is ON, the light will be ON
SV	Set value display	Indicates the target temperature
SEL	Parameter selection key	Used to select and set the parameter set /Use to toggle display SV value /PV value
^	Increase key	Increase the SV value
v	Decrease key	Decrease the SV value

4.3. Common faults

Serial number	Fault phenomenon	Cause → solution
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1	No display on startup	Fuse is broken → replace the fuse
2	Display UUUU	Short circuit of sensor → return to factory for maintenance
		Temperature overrange → lower temperature
3	Display LLLL	Sensor break - return to factory for maintenance
4	Display FRL7	Control output is uncertain → return to factory for maintenance
5	Fan does not work	Fan is broken → return to the factory for repair
		Fan noise - add lubricating oil
6	After setting SV value, PV value does not respond.	The heating wire burns off → return to the factory for maintenance
		SV value is close to room temperature → change SV value
		Temperature control element failure - return to factory for maintenance

5. Calibration

To ensure the accuracy of blackbody temperature measurement, it is recommended to send the black body to Dahua for calibration regularly. The calibration cycle is usually one year.

6. Maintenance

a. The blackbody shall be managed and maintained by the designated personnel, keeping records of maintenance and use.

- b. When not in use, put the equipment into the packaging box, and ensure the storage environment temperature and humidity appropriate.
- c. It is recommended to use a neutral cleaner to clean the blackbody shell and a soft brush to clean the dust on the radiant surface of the blackbody.

The appearance and dimension of the product shall be subject to the actual delivery.