

DHI-TPC-AEBF5641-T

Thermal Network Explosion-proof Hybrid Bullet Camera



- Vanadium oxide uncooled focal plane detector.
- Supports up to 18 color palettes.
- 4Megapixel progressive scan CMOS.
- High-precision non-contact temperature measurement.
- Explosion-proof certification: II 2G Ex db IIC T6 Gb/II 2D Ex tb IIIC T80 °C Db.

Featuring thermal and visible channels, Thermal Network Explosion-proof Hybrid Bullet Camera measures temperature through the thermal channel with high accuracy Max ($\pm 2^{\circ}\text{C}$, $\pm 2\%$), and generates alarm when the temperature is abnormal, which help user find potential hazard. It is widely applied in flammable and explosive environment, such as oil and chemical industries.

Technical Specification

Thermal

Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	640 (H) $\times$ 512 (V)
Pixel Pitch	12 μm
Spectral Range	8 μm –14 μm
Sensitivity (NETD)	≤ 40 mK (@f/1.0)
Focal Length	9 mm; 19 mm
Field of View	9 mm: H: 48.3°; V: 38.6° 19 mm: 22.8°; V: 18.3°
Thermal Focus Control	Fixed-focal
Close Focus Distance	9 mm: 2.2 m (7.22 ft) 19 mm: 15 m (49.21 ft)
Digital Detail Enhancement (DDE)	Yes
Digital Zoom	24 levels
Thermal AGC	Auto/Manual
Thermal Noise Reduction	2D NR/3D NR
Image Flip	180°; mirror; rotation mode
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 °C (–4 °F) to +150 °C (+302 °F)
High temperature mode:
+100 °C (+212 °F) to +550 °C (+1022 °F)
Auto mode

Temperature Measurement Accuracy

Max. ($\pm 2^{\circ}\text{C}$, $\pm 2\%$)
Operating temperature: –20 °C (–4 °F) to +50 °C (+122 °F)

Temperature Measurement Mode

Spot: 12
Line: 12
Area: 12
Support 12 rules simultaneously

Visible

Image Sensor	1/2.7" CMOS
Max. Resolution	2688 (H) $\times$ 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; rotation mode
Exposure Compensation	Yes
Visible Focus Control	Fixed-focal
Focal Length	4 mm; 8 mm
Field of View	4 mm: H: 90.1°; V: 48.2° 8 mm: H: 41.3°; V: 23.1°
Close Focus Distance	4 mm: 1.5 m (4.92 ft) 8 mm: 4.4 m (14.44 ft)
Aperture	F2.0
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 × 720; 640 × 512; 1280 × 1024 (default); Sub stream: 640 × 512; 320 × 256; 640 × 512 (default) Visible: Main stream: 2688 × 1520; 1920 × 1080; 1280 × 720; 704 × 576; 2688 × 1520 (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 Sub stream: 1 fps–30 fps, 15 fps by default Visible (60 Hz): Main stream: 1 fps–30 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default
Audio Compression	PCM; G.711a; G.711mu; AAC
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
Storage	FTP; Micro SD card (optional)
Micro SD Card (Max.)	512 GB
Interoperability	ONVIF; CGI

Browser	IE; Firefox; Chrome
User/Host	Up to 12 (total bandwidth: 64 MB)
Security	Authorized username and password; attached MAC address; 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. Disabled by default.
PIP	Yes

Intelligence

Cold/Hot Spot Trace	Yes
Perimeter Protection	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification

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)
Power Consumption	Basic: 5 W Max: 10 W
ePoE	Yes

Environment

Operating Temperature	–40 °C to +60 °C (–40 °F to +140 °F)
Operating Humidity	≤95%
Storage Temperature	–40 °C to +60 °C (–40 °F to +140 °F)

Physical Characteristics

Protection	IP68
Reliability	Surge protection: 6 kV Air discharge of 15 kV Contact discharge of 8 kV
Anti-corrosion Level	304: Basic Protection *The products are designed for general use in areas that have no specific requirements for anti-corrosion protection. 316L: Moderate Protection *The products feature high-grade anti-corrosion protection, making them well-suited for environments with standard corrosion resistance requirements. They perform reliably in areas from 2 km (1.24 mi) and above at coastal regions, as well as in locations prone to acid rain exposure.

Structure

Product Dimensions	248 mm × 149 mm × 155.7 mm (9.76" × 5.87" × 6.13") (L × W × H)
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Packaging Dimensions	Package: 330 mm × 256 mm × 256 mm (12.99" × 10.08" × 10.08") (L × W × H) Protection box: 535 mm × 535 mm × 360 mm (21.06" × 21.06" × 14.17") (L × W × H)
Net Weight	≤5.8 kg (12.79 lb)
Gross Weight	≤6.8 kg (14.99 lb)

Certification

Certifications	CE
Explosion-proof certification	ATEX, IECEx: II 2G Ex db IIC T6 Gb/II 2D Ex tb IIIC T80 °C Db

Heat Detection Distance

Focal Length	Max. Distance
9 mm	540 m (1,771.65 ft)
19 mm	1,140 m (3,740.16 ft)

Note:
The table displays the measured distances obtained from using the target size 2 m × 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.

Temperature Measurement Distance

Focal Length	Min. Distance	Max. Distance
9 mm	1 m (3.28 ft)	5 m (16.4 ft)
19 mm	3 m (9.86 ft)	15 m (49.21 ft)

Note:
The table displays the measured distances obtained from using the target size 0.1 m × 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.

DRI Distance

Focal Length	Detection Distance ^①	Recognition Distance ^②	Identification Distance ^③
9 mm	Vehicle: 1,150 m (3,772.97 ft); Human: 375 m (1,230.31)	Vehicle: 288 m (944.88 ft); Human: 94 m (308.40 ft)	Vehicle: 144 m (472.44 ft); Human: 47 m (154.20 ft)
19 mm	Vehicle: 2,428 m (7,965.88 ft); Human: 792 m (2,598.43 ft)	Vehicle: 607 m (1,991.47 ft); Human: 198 m (649.61 ft)	Vehicle: 303 m (994.09 ft); Human: 99 m (324.80 ft)

- ① Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 1.5 pixels of the image).
② Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 6 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 12 pixels of the image).

Note:
The table is the standard theoretical calculation and is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more. For the intelligent detection distance, refer to the table of Perimeter Protection Distance (IVS Distance) above.

Ordering Information		
Type	Model	Description
Thermography	DHI-TPC-AEBF5641-TB9F4-DW-S2-G	Thermal: 9mm;
	DHI-TPC-AEBF5641-TB19F8-DW-S2-G	Thermal: 19mm;
Accessories (Optional)	EXB100	Wall mount
	ZAZ100W	Universal Joint
	ZANXG-1.5 (1.5 m)	Flexible Tube
	CZ300	Juncton Box
	ZAEX02	Juncton Box

Accessories

Optional:



EXB100
Wall Mount



ZAZ100W
Universal Joint



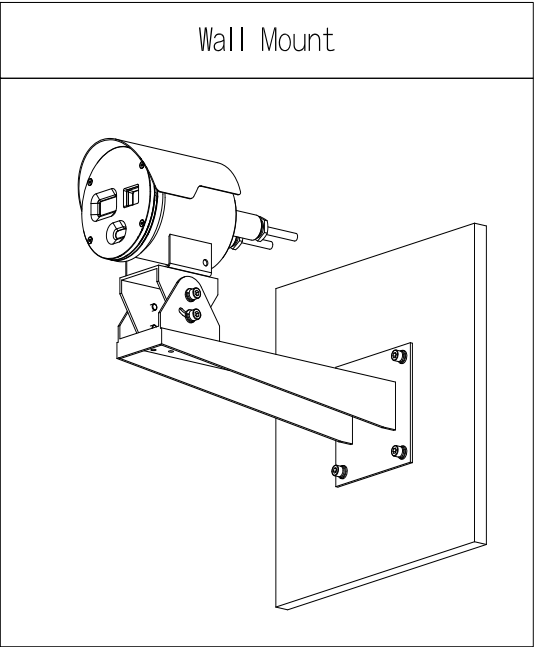
ZANXG-1.5 (1.5 m)
Flexible Tube



CZ300
Juncton Box



ZAEX02
Juncton Box



Dimensions (mm[inch])

