

DHI-TPC-AEPT8441-T

Thermal Network Explosion-proof Hybrid Pan & Tilt Camera



- Vanadium oxide uncooled focal plane detector.
- Supports up to 18 color palettes.
- 4Megapixel progressive scan CMOS.
- High-precision non-contact temperature measurement.
- Advanced Image Processing.
- 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 Pan & Tilt 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	400 (H) × 300 (V)
Pixel Pitch	17 μm
Spectral Range	8 μm–14 μm
Sensitivity (NETD)	≤35 mK (@f/1.0)
Focal Length	9 mm; M25 mm; 50 mm
Field of View	9 mm: H: 41°; D: 31° M25 mm: H: 24°; D: 19.2° 50 mm: H: 7.8°; V: 5.8°
Thermal Focus Control	9 mm: Athermalized M25 mm: Auto; semi-auto; manual 50 mm: Athermalized
Close Focus Distance	9 mm: 1.7 m (5.58 ft) M25 mm: 0.5 m (1.64 ft) 50 mm: 73 m (239.50 ft)
Digital Detail Enhancement (DDE)	Yes
Thermal Image Stabilization	Electronic Image Stabilization (EIS)
Digital Zoom	19 levels
Thermal AGC	Auto; manual
Thermal Noise Reduction	2D NR; 3D NR
Image Flip	180°

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

Audio and Video

Image Sensor	1/1.8" CMOS
Max. Resolution	2688 (H) × 1520 (V)
Pixel	4 MP
Horizontal Definition	Center ≥ 1200 TVL Edge ≥ 850 TVL
Min. Illumination	Color: 0.001 lux@F1.4 Black & white: 0.0001 lux@F1.4 0 lux (IR 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	Optical 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	Auto
Image Flip	180°
Exposure Compensation	Yes
Visible Focus Control	Auto; semi-auto; manual
Focal Length	5.5 mm–248 mm
Field of View	H: 61.8°–2.2° V: 36.3°–1.3°
Close Focus Distance	0.5 m–2 m (1.64 ft–6.56 ft)
Illuminator On/Off Control	Auto; manual
Illumination Distance	150 m (429 ft, IR)

Audio and Video

Video Compression	H.264 (High, Main); M-JPEG; H.265
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; 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 adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default 60 Hz: (main stream) 1 fps–30 fps adjustable, 30 fps by default; (sub stream) 1 fps–30 fps adjustable, 15 fps by default Visible: 50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default 60 Hz: (main stream) 1 fps–30 fps adjustable, 30 fps by default; (sub stream) 1 fps–30 fps adjustable, 15 fps by default
Audio Compression	G.711a; G.711mu; PCM
Image Encoding Format	JPEG

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –90° to +90°
Manual Control Speed	Pan: 0.1°/s to 30°/s Tilt: 0.1°/s to 20°/s
Preset Speed	Pan: 0.1°/s to 30°/s Tilt: 0.1°/s to 20°/s
Preset	300

Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Privacy Masking	4 blocks
Idle Motion	Preset; auto pattern; auto tour; pan; progressive scan

Function

Two-way Audio	Yes
Network Protocol	HTTP; HTTPS; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP; NTP; Multicast; SFTP; 802.1x
Region of Interest (RoI)	Yes
Storage	FTP; Micro SD card (optional)
Micro SD Card (Max.)	512 GB
Interoperability	ONVIF; CGI
Browser	IE: IE8 and later Chrome: 42 and earlier Firefox: 42 and earlier
User/Host	Up to 12 (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 (total bandwidth: 64 MB)
Malfunction Detection	Network disconnection detection; IP conflict detection; memory card state detection; memory space detection
PIP	Yes (Intelligence automatically turns off when PIP is on)

Intelligence

Cold/Hot Spot Trace	Yes
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Port

Analog Output	1 × CVBS output; BNC 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	100–240 VAC
Power Consumption	≤120 W

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
Structure	
Product Dimensions	554mm × 350 mm × 489 mm (21.8 × 13.8" × 19.3") (L × W × H)
Packaging Dimensions	700 mm × 700 mm × 615 mm (27.6" × 27.6" × 24.2") (L × W × H)
Net Weight	≤47 kg (103.62 lb)
Gross Weight	≤75 kg (165.35 lb)
Lens	Included
Casing	SUS304/SUS316L (customized)

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 (1,771.7 ft)
M25 mm	1,500 m (4,921.3 ft)
50 mm	3,000 m (9,842.5 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)
M25 mm	4 m (13.21 ft)	20 m (65.62 ft)
50 mm	9 m (29.53 ft)	45 m (147.64 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: 812 m (2,664.04 ft); Human: 265 m (869.42 ft)	Vehicle: 203 m (666.01 ft); Human: 66 m (216.54 ft)	Vehicle: 101 m (331.36 ft); Human: 33 m (108.27 ft)
M25 mm	Vehicle: 2,255 m (7,398.29 ft); Human: 735 m (2,411.42 ft)	Vehicle: 564 m (1,850.39 ft); Human: 184 m (603.67 ft)	Vehicle: 282 m (925.20 ft); Human: 92 m (301.84 ft)

50 mm	Vehicle: 4,510 m (14,796.59 ft); Human: 1,417 m (4,648.95 ft)	Vehicle: 1,127 m (3,697.51 ft); Human: 368 m (1,207.35 ft)	Vehicle: 564 m (1,850.39 ft); Human: 184 m (603.67 ft)
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- 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
Thermal Camera	DHI-TPC-AEPT8441A-TB9Z45-BW-S22/DHI-TPC-AEPT8441A-TB9Z45-BW-316-S22	Thermal: 9 mm Visible: 5.5 mm–248 mm Without window grid
	DHI-TPC-AEPT8441-TBM25Z45-BW-S22/DHI-TPC-AEPT8441-TBM25Z45-BW-316-S22	Thermal: M25 mm Visible: 5.5 mm–248 mm With window grid
	DHI-TPC-AEPT8441-TB50Z45-BW-S22/DHI-TPC-AEPT8441-TB50Z45-BW-316-S22	Thermal: 50 mm Visible: 5.5 mm–248 mm With window grid
Accessories (Optional)	ZAZ660B	Wall Mount
	ZANXG-1.5 (1.5 m)	Flexible Tube
	CZ300	Juncton Box
	ZAEX02	Juncton Box

Accessories

Optional:



ZAZ660B
Wall Mount



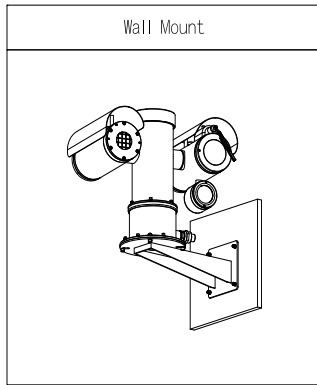
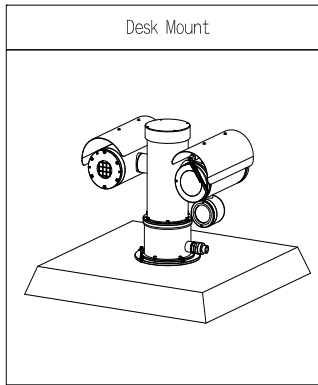
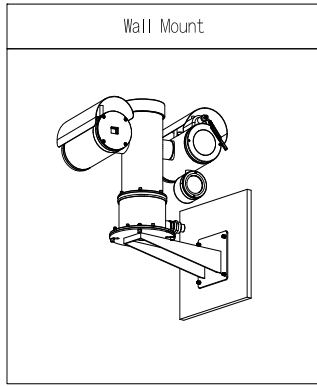
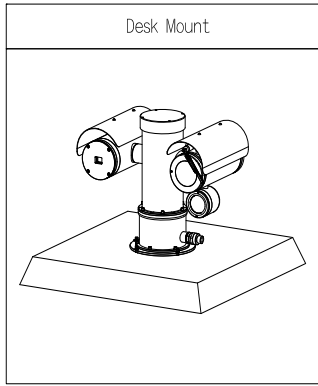
ZANXG-1.5 (1.5 m)
Flexible Tube



CZ300
Juncton Box



ZAEX02
Juncton Box



Dimensions (mm[inch])

