

DHI-TPC-SD5441-AC-V1

Thermal Network Anti-corrosion Hybrid Speed Dome Camera



- Vanadium oxide uncooled focal plane detector.
- 4Megapixel progressive scan CMOS.
- AI functions: boat detection, heat detection, tripwire, intrusion, and human/vehicle classification.
- Maximum IR illumination distance is 100 m.
- Pan: 0° to 360°, tilt: -10° to +90°.
- 36 VDC $\pm$ 50%/Hi-PoE+ power supply.
- IP66 rated.
- Anti-corrosion

Featuring thermal and visible channels, Thermal Network Anti-corrosion Hybrid Speed Dome Camera offers various AI functions such as heat detection, smoke detection, tripwire, intrusion, and human/vehicle classification. The camera is applied in outdoor scenes of the medium-distance perimeter protection and heat detection. With the anti-corrosion coating, the camera can be used in scenes where anti-corrosion is required, such as coasts, ports, and coastal cities.

Technical Specification

Thermal

Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	400 (H) $\times$ 300 (V)
Pixel Pitch	12 μ m
Spectral Range	8 μ m–14 μ m
Sensitivity (NETD)	<35 mK (@f/1.0, 25 Hz, 300 K)
Focal Length	25 mm; 35 mm; 50mm
Field of View	25 mm: H: 11°; V: 8.2° 35 mm: H: 7.85°; V: 5.89° 50 mm: H: 5.5°; V: 4.12°
Thermal Focus Control	Fixed-focal
Close Focus Distance	25 mm: 15 m (49.21 ft) 35 mm: 28 m (91.86 ft) 50 mm: 55 m (180.45 ft)
Digital Detail Enhancement (DDE)	Yes
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)

Visible

Image Sensor	1/2.8" CMOS
Max. Resolution	2688 (H) $\times$ 1520 (V)
Pixel	4 MP
Horizontal Definition	Center $\geq$ 1200 TVL Edge $\geq$ 900 TVL
Min. Illumination	Color: 0.01 lux Black & white: 0.001 lux 0 lux (IR on)
Visible AGC	Auto/Manual
Visible Noise Reduction	2D NR/3D NR
S/N Ratio	$\geq$ 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	Auto
Image Flip	180°
Exposure Compensation	Yes

Visible Focus Control	Manual
Focal Length	3.95 mm–177.75 mm
Field of View	H: 67.5°–1.9° V: 39.4°–1.1°
Close Focus Distance	1 m–10 m (3.28 ft–32.81 ft)
Illuminator On/Off Control	Auto/Manual
Illumination Distance	100 m (328.08 ft)

Audio and Video

Video Compression	H.265; H.264M; H.264H; H.264B
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: 4MP (2688 × 1520); 4MP (2560 × 1440); 2MP (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 4MP (2560 × 1440) (default); Sub stream: 2MP (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); CIF (352 × 288) (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
Image Encoding Format	JPEG

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –10° to +90°
Manual Control Speed	Pan: 0.1°/s to 200°/s Tilt: 0.1°/s to 120°/s
Preset Speed	Pan: 240°/s Tilt: 200°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Privacy Masking	4 areas in the same view
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	Micro SD card
Micro SD Card (Max.)	512 GB
Interoperability	ONVIF; CGI; Dahua SDK
Browser	IE: IE8 and later Chrome: 42 and earlier Firefox: 42 and earlier
User/Host	Up to 20 (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
PIP	Yes (Intelligence automatically turns off when PIP is on)

Intelligence

Fire Detection	Yes
Cold/Hot Spot Trace	Yes
IVS (Perimeter Protection)	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification
Target Tracking	Manual tracking/Alarm linking tracking
Smoke Detection	Yes
Boat Detection	Yes

Port

Analog Output	1 × CVBS output; BNC port
Network Port	1 × RJ-45 (10/100 Base-T)
Alarm Input	7
Alarm Output	2
Audio Input	1
Audio Output	1
RS-485	1

Power

Power Supply	36 VDC ± 50%, Hi-PoE
Power Consumption	Basic: ≤21 W Max: ≤40 W

Environment

Operating Temperature	–30 °C to +60 °C (–22 °F to +140 °F)
Operating Humidity	≤95%
Storage Temperature	–30 °C to +70 °C (–22 °F to +158 °F)

Physical Characteristics

Protection	IP66
Reliability	Surge protection: 6 kV Air discharge: 8 kV Contact discharge: 6 kV

Anti-corrosion Level	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.
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Structure

Product Dimensions	Φ240 mm × 382 mm (Φ9.45" × 15.04")
Packaging Dimensions	319 mm × 319 mm × 521 mm (12.56" × 12.56" × 20.51") (L × W × H)
Net Weight	≤8 kg (17.64 lb)
Gross Weight	≤10 kg (22.05 lb)

Certification

Certifications	CE; NEMA 4X
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Heat Detection Distance

Focal Length	Max. Distance
25 mm	1,500 m (4,921.26 ft)
35 mm	2,100 m (6,889.76 ft)
50 mm	3,000 m (9,842.52 ft)

Note:
The table displays the measured distances obtained from using the target size 0.2 m x 0.2 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.

Perimeter Protection Distance (IVS Distance)

Focal Length	Distance (Vehicle)	Distance (Human)
25 mm	525 m (1722.44 ft)	175 m (574.15 ft)
35 mm	735 m (2,411.42 ft)	245 m (803.81 ft)
50 mm	1,050 m (3,444.88 ft)	350 m (1,148.29 ft)

Note:
The table displays the measured distances obtained from using the target sizes 1.8 m × 0.5 m (human) and 1.4 m × 4 m (vehicle) 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
25 mm	Vehicle: 3,194 m (10,479.00 ft); Human: 1,042 m (3,418.64 ft)	Vehicle: 799 m (2,578.74 ft); Human: 260 m (857.98 ft)	Vehicle: 399 m (1,309.06 ft); Human: 130 m (426.51 ft)
35 mm	Vehicle: 4,472 m (14,671.92 ft); Human: 1,458 m (4,783.46 ft)	Vehicle: 1,118 m (3,667.98 ft); Human: 365 m (1,197.51 ft)	Vehicle: 559 m (1,833.99 ft); Human: 182 m (597.11 ft)
50 mm	Vehicle: 6,389 m (20,961.29 ft); Human: 2,083 m (6,833.99 ft)	Vehicle: 1,597 m (5,239.50 ft); Human: 521 m (1,709.32 ft)	Vehicle: 799 m (2,621.39 ft); Human: 260 m (853.02 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
Thermal Camera	DHI-TPC-SD5441-B2S245-DC-AC-S24-V1	Thermal: 25 mm; Visible: 3.95 mm–177.75 mm
	DHI-TPC-SD5441-B3S245-DC-AC-S24-V1	Thermal: 35 mm; Visible: 3.95 mm–177.75 mm
	DHI-TPC-SD5441-B50Z45-DC-AC-S24-V1	Thermal: 50 mm; Visible: 3.95 mm–177.75 mm
Accessories	PFA111A	Mount Adapter
	36 V/2.23 A	Power Supply
	10 A/250 V	Power Cord
	PFB303W	Wall Mount
	PFB303WA + PFA120A	Wall Mount
	PFB303WA + PFA120A + PFA155A	Vertical Pole Mount
	PFB300CA	Ceiling Mount
	PFB303WA + PFA120A + PFA151A	Corner Mount

Accessories

Included:



PFA111A
Wall Mount
Bracket



36 V/2.23 A
Power Supply



10 A/250 V
Power Cord



PFB303WA
Wall Mount
Bracket

Optional:



PFB303WA + PFA120A
Wall Mount
Bracket



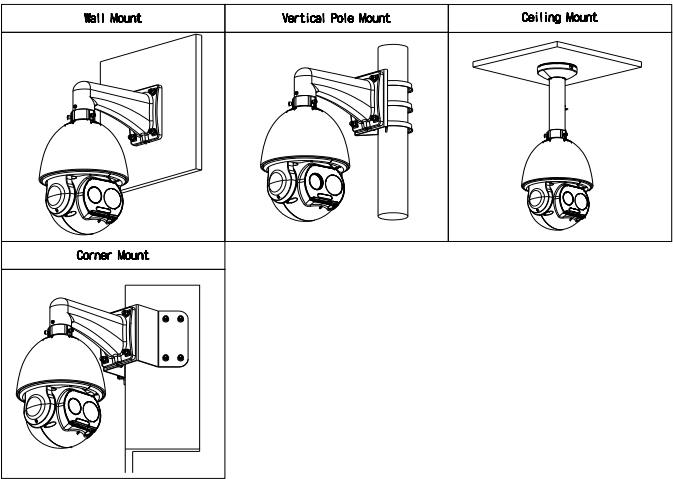
PFB303WA +
PFA120A + PFA155A
Vertical Pole Mount
Bracket



PFB300CA
Ceiling Mount
Bracket



PFB303WA + PFA120A
+ PFA151A
Corner Mount Bracket



Dimensions (mm[inch])

