

DHI-TPC-SD5641-T

Thermal Hybrid Speed Dome Camera



- Vanadium oxide uncooled focal plane detector.
- 4Megapixel progressive scan CMOS.
- AI functions: boat detection, smoke detection, heat detection, tripwire, intrusion, and human/vehicle classification.
- Maximum IR illumination distance is 100 m.
- Pan: 0° to 360°, tilt: -10° to +90°.
- Temperature measurement range of -20 °C to +550 °C.
- Wide input voltage 36 VDC ± 50%.
- IP66 rated.

Featuring thermal and visible channels, Thermal Network Hybrid Speed Dome Camera measures temperature through the thermal channel, with high accuracy Max ($\pm 2^{\circ}\text{C}$, $\pm 2\%$), the camera supports multiple temperature measurement rules of spot, line and region at the same time, and generates alarm when the temperature is abnormal, which can help user find potential hazard. The image details can be confirmed by the visible channel.

| Technical Specification | |
|---------------------------------|---|
| General | |
| Appearance | Thermal Network Hybrid Speed Dome Camera |
| Type | Radiometry |
| Thermal | |
| Detector Type | Vanadium oxide uncooled focal plane detector |
| Effective Pixels | 640 (H) × 512 (V) |
| Pixel Pitch | 12 μm |
| Spectral Range | 8 μm–14 μm |
| Sensitivity (NETD) | <35 mK (@f/1.0, 25 Hz, 300 K) |
| Focal Length | 7 mm; 13 mm; 19 mm; 25 mm; 35 mm; 50 mm |
| Field of View | 7 mm: H: 63.8°; V: 51° 13 mm: H: 36.7°; V: 29.4° 19 mm: H: 23.3°; V: 18.6° 25 mm: H: 18.6°; V: 14.8° 35 mm: H: 12.6°; V: 10.1° 50 mm: H: 9.2°; V: 7.3° |
| Thermal Focus Control | Fixed-focal |
| Detection Distance ^① | 7mm: Vehicle: 897 m (2,942.91 ft) ; Human: 292 m (958.01 ft); 13mm: Vehicle: 222 m (728.35 ft); Human: 83 m (272.31 ft); 19 mm: Vehicle: 2,436 m (7,992.13 ft); Human: 792 m (2,598.43 ft); 25 mm: Vehicle: 3,205 m (1,0515.09 ft); Human: 1,042 m (3,418.64 ft); 35 mm: Vehicle: 4,487 m (14,721.13 ft); Human: 1,458 m (4,783.46 ft); 50 mm: Vehicle: 6,410 m (21,030.18 ft) Human: 2,083 m (6,833.99 ft); |

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| Recognition Distance ^② | 7mm: Vehicle: 220 m (721.78 ft) ; Human: 75 m (246.06 ft); 13mm: Vehicle: 55 m (180.45 ft); Human: 21 m (68.90 ft); 19 mm: Vehicle: 578 m (1,896.33 ft); Human: 204 m (669.29 ft); 25 mm: Vehicle: 786 m (2,578.74 ft); Human: 268 m (879.27 ft); 35 mm: Vehicle: 1,100 m (3,608.92 ft); Human: 375 m (1,230.31 ft); 50 mm: Vehicle: 1,572 m (5,157.48 ft); Human: 536 m (1,758.53 ft); |
| Identification Distance ^③ | 7mm: Vehicle: 111 m (364.17 ft); Human: 38 m (124.67 ft); 13mm: Vehicle: 49 m (160.76 ft); Human: 19 m (62.34 ft); 19 mm: Vehicle: 302 m (990.81 ft); Human: 102 m (334.65 ft); 25 mm: Vehicle: 367 m (1,204.07 ft); Human: 134 m (439.63 ft); 35 mm: Vehicle: 556 m (1,824.15 ft); Human: 188 m (616.8 ft); 50 mm: Vehicle: 794 m (2,604.99 ft); Human: 268 m (879.27 ft) |
| Note: ① Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 3.6 pixels of the image). ② Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 14 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 28 pixels of the image). | |
| Digital Detail Enhancement (DDE) | Yes |
| Thermal Image Stabilization | Electronic Image Stabilization (EIS) |
| Digital Zoom | 24 levels |

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| 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: 0 °C (+34 °F) to +550 °C (+1022 °F) Auto mode |
| Temperature Measurement Accuracy | Max. (±2 °C, ±2%) Operating temperature: -20 °C (-4 °F) to +50 °C (+122 °F) |
| Temperature Measurement Mode | Spot: 12 Line: 12 Area: 12 Supports 12 rules simultaneously |

Visible

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| Image Sensor | 1/2.8" CMOS |
| Max. Resolution | 2688 (H) × 1520 (V) |
| Pixel | 4 MP |
| Horizontal Definition | Center ≥ 1200 TVL Edge ≥ 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 | ≥55 dB |
| White Balance | Auto; manual; indoor; outdoor; tracking; sodium lamp; street lamp; natural |
| Defog | Electronic defog |
| Visible Image Stabilization | Electronic Image Stabilization (EIS) |
| 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 | DC Auto |
| Exposure Compensation | Yes |
| Visible Focus Control | Auto/Semi-auto/Manual |
| Focal Length | 3.95 mm–177.75 mm |
| Zoom Speed | < 7 s |
| Close Focus Distance | 1 m–10 m (3.28 ft–32.81 ft) |
| Optical Zoom | 45× |

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| Illuminator On/Off Control | Auto/Manual |
| Illumination Distance | 100 m (328.08 ft) |

Audio and Video

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| 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: 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, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default Visible (50 Hz): Main stream: 1 fps–50 fps, 50 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–60 fps, 60 fps by default Sub stream: 1 fps–30 fps, 15 fps by default |
| Audio Compression | G.711a; G.711mu; AAC |
| Image Encoding Format | JPEG |

PTZ

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| 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 | 2 |
| Power-off Memory | Yes |
| Privacy Masking | 4 blocks |
| Idle Motion | Preset; pattern; tour; pan; scan |

Function

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| 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 |
| Regional Focus | Yes |
| Storage | FTP; Micro SD card (optional) |
| Interoperability | ONVIF; CGI; DaHua SDK |

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| Browser | IE: IE8 and later (including the browsers with IE kernel, such as 360 Explorer, Sougou Explorer) 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; encrypted 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 |
| Micro SD Card (Max.) | 512 GB |

IVS

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| IVS | Yes |
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Intelligence

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| Cold/Hot Spot Trace | Yes |
| IVS (Perimeter Protection) | Yes. Supports tripwire and intrusion. |
| Target Distinction | Human/Vehicle Classification |
| Target Tracking | Yes |
| Smoke Detection | Yes |
| Smoke Detection Distance | 4,000 m (13,123.36 ft) |
| Boat Tracking | Yes |

Port

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|---------------|---------------------------|
| 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

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

Environment

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|-----------------------|--------------------------------------|
| 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

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| Protection | IP66 |
| Product Dimensions | Φ240.0 mm × 382.0 mm (Φ9.45" × 15.04") |
| Packaging Dimensions | 319.0 mm × 319.0 mm × 521.0 mm (12.56" × 12.56" × 20.51") (L × W × H) |

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| Net Weight | ≤8 kg (17.64 lb) |
| Gross Weight | ≤10 kg (22.05 lb) |
| Lens | Included |
| Reliability | Surge protection: 6 kV Air discharge of 15 kV Contact discharge of 8 kV |
| Anti-corrosion Level | Basic Protection |

Certification

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| Certifications | CE |
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Temperature Measurement Distance

| Focal Length | Min. Distance | Max. Distance |
|--------------|----------------|------------------|
| 7 mm | 1 m (3.28 ft) | 6.5 m (21.33 ft) |
| 13 mm | 1 m (3.28 ft) | 10 m (32.81 ft) |
| 19 mm | 3 m (9.84 ft) | 16 m (52.49 ft) |
| 25 mm | 4 m (13.12 ft) | 21 m (68.90 ft) |
| 35 mm | 6 m (19.69 ft) | 30 m (98.43 ft) |
| 50 mm | 9 m (29.53 ft) | 42 m (137.80 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.

Ordering Information

| Type | Model | Description |
|------------------------|---------------------------------|---|
| Thermal Camera | DHI-TPC-SD5641-TB7Z45-DC-S24-M | Thermal: 7 mm Visible: 3.95 mm–177.75 mm |
| | DHI-TPC-SD5641-TB13Z45-DC-S24-M | Thermal: 13 mm Visible: 3.95 mm–177.75 mm |
| | DHI-TPC-SD5641-TB19Z45-DC-S24-M | Thermal: 19 mm Visible: 3.95 mm–177.75 mm |
| | DHI-TPC-SD5641-TB25Z45-DC-S24-M | Thermal: 25 mm; Visible: 3.95 mm–177.75 mm |
| | DHI-TPC-SD5641-TB35Z45-DC-S24-M | Thermal: 35 mm; Visible: 3.95 mm–177.75 mm |
| | DHI-TPC-SD5641-TB50Z45-DC-S24-M | Thermal: 50 mm; Visible: 3.95 mm–177.75 mm |
| Accessories (Optional) | PFB300C | Ceiling Mount Bracket |
| | PFB303W | Wall Mount Bracket |

Accessories

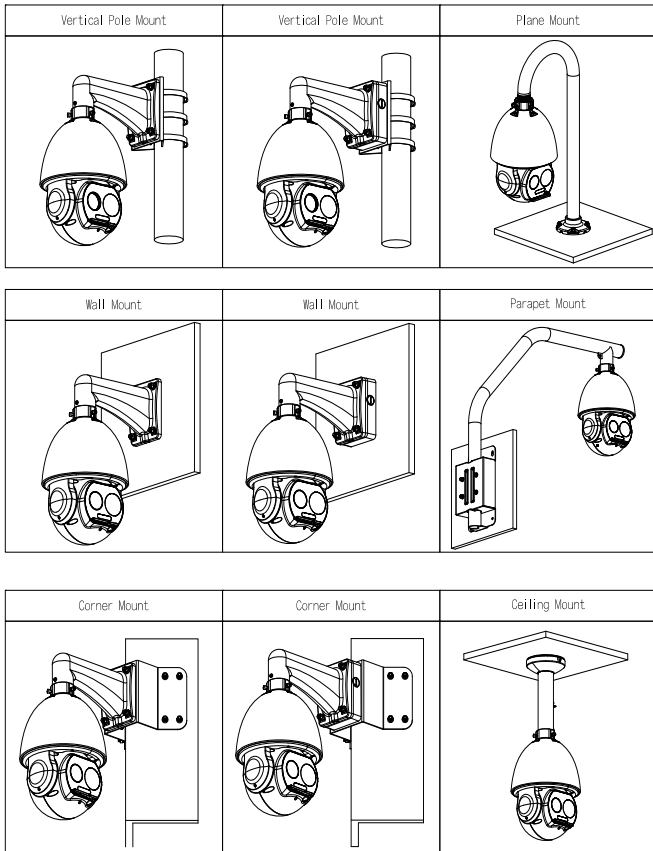
Optional:



PFB300C
Ceiling Mount Bracket



PFB303W
Wall Mount Bracket



Dimensions (mm[inch])

