# DHI-TPC-DF1241-T-V1

## Thermal Network Mini Hybrid Eyeball Camera



- Vanadium oxide uncooled focal plane detector.
- 1/1.8" 4Megapixel progressive scan CMOS.
- AI functions: heat (fire) detection, tripwire, human/vehicle classification, smoking detection, call detection, and smoke detection.
- Temperature measurement range of –20 °C to +650 °C.
- Local audio, white light alarm prompts, red and blue light alarm prompts.
- Dual image fusion (visible and thermal channels).
- Built-in dual microphones.
- Wide input voltage12 (±20%)–24 VDC; PoE (802.3af).
- IP67 rated.
- Ultra low false alarm with Xinghan Large-Scale AI Model

Featuring thermal and visible channels, Eureka series thermal network camera offers various AI functions such as tripwire, intrusion, call detection, smoking detection, and heat (fire) detection. It can be used in short-distance monitoring scenes such as perimeter protection and heat (fire) monitoring, which provides an all-in-one video surveillance solution for small and medium scenes. The camera is widely applied in factory, parking lot, villa, and more.

## Technical Specification

### Thermal

| | |
|---|---|
| Detector Type | Vanadium oxide uncooled focal plane detector |
| Max. Resolution | 256 (H) × 192 (V) |
| Pixel Pitch | 12 μm |
| Spectral Range | 8 μm–14 μm |
| Thermal Sensitivity (NETD) | ≤25 mK@f/1.0 |
| Field of View | 2.6 mm: H: 66.8°; V: 50.0°<br>3.5 mm: H: 50.6°; V: 37.8°<br>7 mm: H: 24.0°; V: 18.0° |
| Close Focus Distance | 2.6 mm: 0.3 m (0.98 ft)<br>3.5 mm: 0.5 m (1.64 ft)<br>7 mm: 1 m (3.28 ft) |
| Aperture | F1.0 |
| Digital Detail Enhancement (DDE) | Yes |
| Digital Zoom | 16 levels |
| AGC | Auto; Manual |
| Noise Reduction | 2D NR; 3D NR |
| Image Flip | 0°; 90°; 180°; 270° |
| 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) |
| Fusion Mode | Yes (disabled by default) |

### Visible

| | |
|---|---|
| Image Sensor | 1/1.8" CMOS |
| Max. Resolution | 2688 (H) × 1520 (V) |
| Pixel | 4 MP |
| Electronic Shutter Speed | 1/30,000 s–1 s |
| Min. Illumination | Color: 0.05 lux<br>Black & white: 0.005 lux<br>0 lux (IR on) |
| Illumination Distance | IR: 2.6 mm: 30 m (98.43 ft); 3.5 mm: 30 m (98.43 ft); 7 mm: 50 m (164.04 ft)<br>Warm light: 30 m (98.43 ft) |
| Illuminator On/Off Control | Auto; Manual |
| Aperture | 2.8 mm:F1.65<br>4 mm: F1.6<br>6 mm: F1.6 |
| Field of View | 2.8 mm:H: 112.2°; V: 57.8°<br>4 mm: H: 88.0°; V: 49.9°<br>6 mm: H: 59.9°; V: 34.7° |
| Focus Control | Fixed |
| Close Focus Distance | 2.8 mm: 0.3 m (0.98 ft)<br>4 mm: 1 m (3.28 ft)<br>6 mm: 1.7 m (5.58 ft) |
| Day/Night | Auto (ICR); Color; B/W |
| BLC | Yes |
| WDR | 120 dB |
| HLC | Yes |

| | |
|---|---|
| White Balance | Auto; Manual; Indoor; Outdoor; Tracking; Street lamp; Natural |
| AGC | Auto; Manual |
| Noise Reduction | 2D NR; 3D NR |
| S/N Ratio | ≥55 dB |
| Region of Interest (RoI) | RoI cannot be deleted |
| Image Flip | 0°; 90°; 180°; 270° |

## Intelligence

| | |
|---|---|
| General Intelligence | Tripwire; Intrusion |
| Advanced Intelligence | Heat (fire) Detection & Alarm<br>Cold & Hot Spot Trace<br>Human & Vehicle Classification<br>Smoking Detection<br>Call Detection<br>Smoke Detection |

## Temperature Measurement

| | |
|---|---|
| Temperature Range | Low Temperature Mode:<br>–20 °C to +150 °C (–4 °F to +302 °F)<br>High Temperature Mode:<br>100 °C to +650 °C (+212 °F to +1202 °F) |
| Temperature Accuracy | Max (±2°C, ±2%) |
| Operating Temperature | –20 °C to +50 °C (–4 °F to +122 °F) |
| Temperature Mode | Spot: 21<br>Line: 21<br>Area: 21<br>Support 21 rules simultaneously |

## Video and Audio

| | |
|---|---|
| Video Compression | H.265; H.264; H.264H; MJPEG |
| Resolution | Thermal: Main stream: 1280 × 960; 1024 × 768; 640 × 480; 256 × 192; 1280 × 960 (default); Sub stream: 640 × 480; 256 × 192; 256 × 192 (default)<br>Visible: Main stream: 2688 × 1520; 1920 × 1080; 1280 × 720; 704 × 576; 2688 × 1520 (default); Sub stream: 1280 × 720; 704 × 576; 352 × 288; 352 × 288 (default) |
| Frame Rate | Thermal (50 Hz):<br>Main stream: 1 fps–25 fps, 25 fps by default; Sub stream: 1 fps–25 fps, 15 fps by default;<br>Visible (50 Hz): Main stream: 1 fps–25 fps, 25 fps by default; Sub stream: 1 fps–25 fps, 15 fps by default;<br>Thermal (60 Hz):<br>Main stream: 1 fps–30 fps, 25 fps by default; Sub stream: 1 fps–30 fps, 15 fps by default;<br>Visible (60 Hz):<br>Main stream: 1 fps–30 fps, 25 fps by default; Sub stream: 1 fps–30 fps, 15 fps by default |
| Audio Compression | G.711a; G.711mu; PCM; AAC |

## 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 |
| Edge Storage | Micro SD card (256 G) |
| Interoperability | ONVIF; CGI; DaHua SDK |
| Browser | IE: IE11 and later (including the browsers with IE kernel, such as 360 Explorer, Sougou Explorer)<br>Chrome: 65 and later<br>Firefox: 65 and later |
| User/Host | 12 |
| Security | Authorized username and password; attached MAC address; HTTPS; IEEE 802.1x; controlled network access |

## Port

| | |
|---|---|
| Network | 1 × RJ-45 (10/100 Base-T) |
| Audio Input | 1 |
| Audio Output | 1 |
| Alarm Input | 2 |
| Alarm Output | 2 |
| RS-485 | 1 pair |
| Local Audio | White light alarm prompts, red and blue light alarm prompts |

## Power

| | |
|---|---|
| Power Supply | 12 (±20%)–24 VDC; PoE (802.3af) |
| Power Consumption | Basic: <5.3 W (12 VDC; illuminator off; speaker off; red and blue light off; power output off); 6.5 W (PoE, without power output function)<br>Max: <12 W (12 VDC; illuminator on; speaker on; red and blue light on; power output on); 11.5 W (PoE, without power output function) |
| Power Output | 12 VDC; ≤0.15 A (supported when the device is powered by DC, not supported when powered by POE) |

## Environment

| | |
|---|---|
| Operating Temperature | –40 °C to +65 °C (–40 °F to +149 °F) |
| Storage Temperature | –40 °C to +70 °C (–40 °F to +158 °F) |
| Operating Humidity | ≤95% |
| Protection | IP67 |
| Anticorrosive Coating | Neutral salt spray test 240 h |
| Anti-corrosion Level | Basic Protection<br>*The products are designed for general use in areas that have no specific requirements for anti-corrosion protection. |

## Structure

| | |
|---|---|
| Product Dimensions | 122 mm × 122 mm × 117.4 mm (4.80" × 4.80" × 4.62") (L × W × H) |
| Packaging Dimensions | 155 mm × 155 mm × 135 mm (6.1" × 6.1" × 5.31") (L × W × H) |
| Net Weight | ≤0.9 kg (1.98 lb) |
| Gross Weight | ≤1 kg (2.20 lb) |

## Heat (Fire) Detection Distance

| Focal Length | Max. Distance |
|---|---|
| 2.6 mm | 30 m (98.43 ft) |
| 3.5 mm | 45 m (147.64 ft) |
| 7 mm | 86 m (282.15 ft) |

Note:
The table displays the measured distances obtained from using the target size 0.2 m × 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.
Supports up to 16 fire points detectable.

### Temperature Measurement Range

| Focal Length (Target Size) | | Min. Distance | Max. Distance |
|---|---|---|---|
| 2.6 mm | 0.1 m × 0.1 m | 1 m (3.28 ft) | 4 m (13.12 ft) |
| | 0.2 m × 0.2 m | 2 m (6.56 ft) | 8 m (26.25 ft) |
| | 1.0 m × 1.0 m | 10 m (32.81 ft) | 40 m (131.23 ft) |
| 3.5 mm | 0.1 m × 0.1 m | 1 m (3.28 ft) | 5.8 m (19.03 ft) |
| | 0.2 m × 0.2 m | 2 m (6.56 ft) | 11.6 m (38.06 ft) |
| | 1.0 m × 1.0 m | 10 m (32.81 ft) | 58 m (190.29 ft) |
| 7 mm | 0.1 m × 0.1 m | 3 m (9.84 ft) | 11.7 m (38.39 ft) |
| | 0.2 m × 0.2 m | 6 m (19.69 ft) | 23.4 m (76.77 ft) |
| | 1.0 m × 1.0 m | 30 m (98.43 ft) | 117 m (383.86 ft) |

Note:
The table displays the measured distances obtained from using the targets 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 Distance① | Recognition Distance② | Identification Distance③ |
|---|---|---|---|
| 2.6 mm | Vehicle: 333 m (1,092.52 ft); Human: 108 m (354.33 ft) | Vehicle: 81 m (265.75 ft); Human: 27 m (88.58 ft) | Vehicle: 41 m (134.51 ft); Human: 13 m (42.65 ft) |
| 3.5 mm | Vehicle: 447 m (1,466.54 ft); Human: 146 m (479.00 ft) | Vehicle: 112 m (367.45 ft); Human: 36 m (118.11 ft) | Vehicle: 56 m (183.73 ft); Human: 18 m (59.06 ft) |
| 7 mm | Vehicle: 894 m (2,933.07 ft); Human: 292 m (958.01 ft) | Vehicle: 224 m (734.91 ft); Human: 73 m (239.50 ft) | Vehicle: 112 m (367.45 ft); Human: 36 m (118.11 ft) |

①Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 1.5 pixels of the image).
②Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 6 pixels of the image).
③Identification 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-DF1241-TB2F2-DW-S8-V1 | Thermal: 256 × 192 2.6 mm lens<br>Visible: 4 MP 2.8 mm lens |
| | DHI-TPC-DF1241-TB3F4-DW-S8-V1 | Thermal: 256 × 192 3.5 mm lens<br>Visible: 4 MP 4 mm lens |
| | DHI-TPC-DF1241-TB7F6-DW-S8-V1 | Thermal: 256 × 192 7 mm lens<br>Visible: 4 MP 6 mm lens |
| Accessories (Optional) | PFB2203W | Wall-mount Bracket |
| | PFB2211C | Ceiling-mount Bracket |
| | PFA130-E | Junction Box |
| | PFM320D | Power Adapter |

## Accessories

Optional:



PFB2203W
Wall-mount bracket



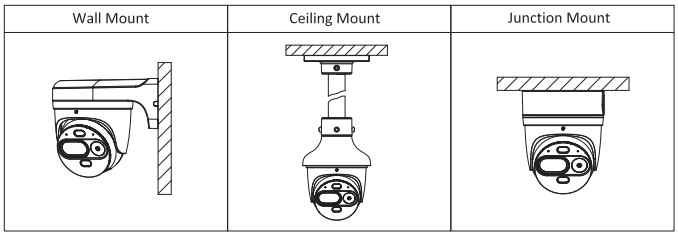
PFB2211C
Ceiling-mount bracket



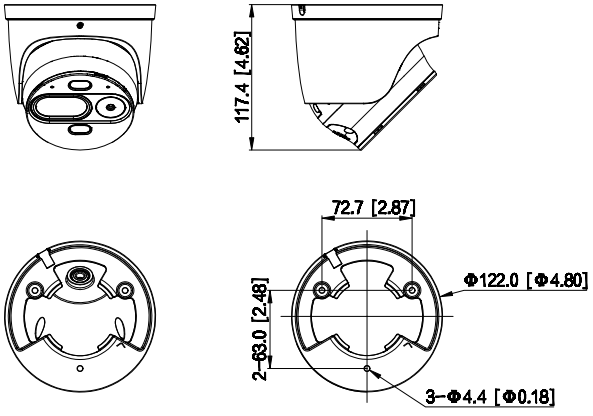
PFA130-E
Junction box



PFM320D
Power adapter




## Dimensions (mm[inch])




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