**DAHUA** TECHNOLOGY

# DHI-TPC-BF1241-T

## Thermal Network Mini Hybrid Bullet Camera

- Vanadium oxide uncooled focal plane detector.
- 4Megapixel progressive scan CMOS.
- AI functions: heat detection, tripwire, human/vehicle classification, smoking detection, and call detection.
- Temperature measurement range of −20 °C to +550 °C.
- Flexible rules and alarms.
- Remote auxiliary management.
- Dual image fusion (visible and thermal channels).
- Wide input voltage 12 VDC ± 20%, and PoE.
- IP67 rated.

Featuring thermal and visible channels, Eureka series thermal network camera offers various AI functions such as tripwire, intrusion, call detection, smoking detection, and temperature measurement. It can be used in short-distance monitoring scenes such as perimeter protection and heat monitoring, which provides an all-in-one video surveillance solution for small and medium scenes. The camera is widely applied in waste, laundry, warehouse, 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) | < 40 mK (@f/1.0, 25 Hz, 300 K) |
| Field of View | 3.5 mm: H: 50.6°; V: 37.8°<br>7 mm: H: 24°; V: 18°<br>10 mm: H: 17.3°; V: 13.1° |
| Close Focus Distance | 3.5 mm: 0.5 m (1.64 ft)<br>7 mm: 1 m (3.28 ft)<br>10 mm: 2 m (6.56 ft) |
| Detection Distance[1] | 3.5 mm: Vehicle: 449 m (1,473.10 ft);<br>Human: 146 m (479.00 ft)<br>7 mm: Vehicle: 897 m (2,942.91 ft);<br>Human: 292 m (958.01 ft)<br>10 mm: Vehicle: 1,282 m (4,206.04 ft);<br>Human: 417 m (1,368.11 ft) |
| Recognition Distance[2] | 3.5 mm: Vehicle: 110 m (360.89 ft);<br>Human: 38 m (124.67 ft)<br>7 mm: Vehicle: 220 m (721.78 ft);<br>Human: 75 m (246.06 ft)<br>10 mm: Vehicle: 314 m (1,030.18 ft);<br>Human: 107 m (351.05 ft) |
| Identification Distance[3] | 3.5 mm: Vehicle: 56 m (183.73 ft);<br>Human: 19 m (62.34 ft)<br>7 mm: Vehicle: 111 m (364.17 ft);<br>Human: 38 m (124.67 ft)<br>10 mm: Vehicle: 159 m (521.65 ft);<br>Human: 54 m (177.17 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).

| | |
|---|---|
| Aperture | F1.0 |
| Digital Detail Enhancement (DDE) | Yes |
| Digital Zoom | 16 levels |
| AGC | Auto; Manual |
| 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) |
| Fusion Mode | 3 (Warm color; Cool color; Ironred) |

### Visible

| | |
|---|---|
| Image Sensor | 1/2.7'' CMOS |

# Eureka Series | DHI-TPC-BF1241-T

| | |
|---|---|
| Max. Resolution | 2336 (H) × 1752 (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) |
| IR Illumination Distance | 30 m (98.43 ft) |
| IR Illuminator On/Off Control | Auto; Manual |
| Aperture | 4 mm: F1.6<br>8 mm: F2.0<br>12 mm: F2.0 |
| Field of View | 4 mm: H: 71.2°; V: 52°<br>8 mm: H: 33.4°; V: 25°<br>12 mm: H: 22°; V: 16.6° |
| Focus Control | Fixed |
| Close Focus Distance | 4 mm: 1 m (3.28 ft)<br>8 mm: 2.5 m (8.2 ft)<br>12 mm: 2.5 m (8.2 ft) |
| Day/Night | Auto (ICR); Color; B/W |
| BLC | Yes |
| WDR | DWDR |
| 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) | Yes |
| Image Flip | 180° |
| Exposure Compensation | Yes |

## Intelligence

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

## Intelligence

| | |
|---|---|
| Temperature Range | Low Temperature Mode:<br>−20 °C to +150 °C (−4 °F to +302 °F)<br>High Temperature Mode:<br>0 °C to +550 °C (+32 °F to +1022 °F) |
| Temperature Accuracy | Max (± 2 °C, ± 2%) Operating Temperature:<br>−20 °C to+50 °C (−4 °F to +122 °F) |
| Temperature Mode | Spot: 12<br>Line: 12<br>Area: 12<br>Support 12 rules simultaneously |

## Video and Audio

| | |
|---|---|
| Video Compression | H.265; H.264; H.264H; MJPEG |

| | |
|---|---|
| Resolution | Thermal:<br>Main Stream: 1280 × 960 (1.3M); XVGA (1024 × 768); VGA (640 × 480); 256 × 192; 1280 × 960 (by default)<br>Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default)<br>Visual:<br>Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 2336 × 1752 (by default)<br>Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) |
| Frame Rate | Thermal<br>50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default<br>60 Hz: (main stream) 1 fps–30 fps adjustable, 30 fps by default; (sub stream) 1 fps–30 fps adjustable, 15 fps by default<br>Visual<br>50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default<br>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 |

## Network

| | |
|---|---|
| Protocol | HTTPS; HTTP; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP; NTP |
| Edge Storage | Micro SD card (256 G) |
| Interoperability | ONVIF; CGI; DaHua SDK |
| Browser | IE: IE 8 and later<br>Google: 42 and earlier<br>Firefox: 42 and earlier |
| User/Host | 10 |
| Security | Authorized username and password; attached MAC address; encrypted 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 |

## Power

| | |
|---|---|
| Power Supply | 12 VDC ± 20%; PoE |
| Power Consumption | Basic: <3 W (12 VDC, LED off); 4 W (PoE)<br>Max: <8.5 W (12 VDC, LED on, heater on); 10 W (PoE) |

## Environment

| | |
|---|---|
| Operating Temperature | −30 °C to +60 °C (−22 °F to +140 °F) |
| Storage Temperature | −30 °C to +70 °C (−22 °F to +158 °F) |
| Operating Humidity | ≤95% |
| Protection | IP67 |

## Structure

| | |
|---|---|
| Product Dimensions | 205.5 mm × 90.4 mm × 90.1 mm (8.09'' × 3.56'' × 3.55'') (L × W × H) |
| Packaging Dimensions | 279 mm × 187 mm × 138 mm (10.98'' × 7.36'' × 5.43'') (L × W × H) |
| Net Weight | ≤0.9 kg (1.98 lb) |
| Gross Weight | ≤1.3 kg (2.87 lb) |

## Heat Detection Distance

| Focal Length | Max. Distance |
|---|---|
| 3.5 mm | 45 m (147.64 ft) |
| 7 mm | 86 m (282.15 ft) |
| 10 mm | 123 m (403.54 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.

## Temperature Measurement Range

| Focal Length | Min. Distance | Max. Distance |
|---|---|---|
| 3.5 mm | 1 m (3.28 ft) | 5 m (16.40 ft) |
| 7 mm | 2 m (6.56 ft) | 8 m (16.25 ft) |
| 10 mm | 3 m (9.84 ft) | 12 m (39.37 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

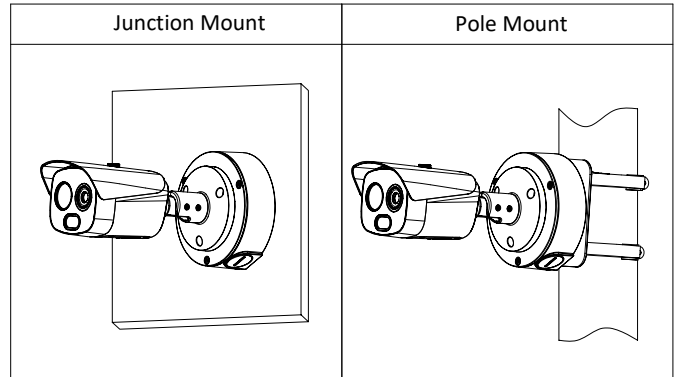| Type | Model | Description |
|---|---|---|
| Thermal Camera | DHI-TPC-BF1241-TB3F4-DW-S8 | Thermal: 256 × 192 3.5 mm lens Visible: 4 MP 4 mm lens |
| | DHI-TPC-BF1241-TB7F8-DW-S8 | Thermal: 256 × 192 7 mm lens Visible: 4 MP 8 mm lens |
| | DHI-TPC-BF1241-TB10F12-DW-S8 | Thermal: 256 × 192 10 mm lens Visible: 4 MP 12 mm lens |
| Accessories (Optional) | PFA152-E | Pole-mount Bracket |
| | PFA130-E | Junction Box |
| | PFM320D | Power Adapter |

## Accessories

Optional:



| PFA152-E Pole-mount bracket | PFA130-E Junction box | PFM320D Power adapter |



| Junction Mount | Pole Mount |

## Dimensions (mm [inch])



151.5 [5.96'']
Ø4.7 [Ø0.185'']
Ø70.0 [Ø2.76'']
Ø90.4 [Ø3.56'']
90.4 [3.56'']
205.5 [8.09'']
90.1 [3.55'']
90.4 [3.56'']