

DHI-TPC-BF1241

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.
- · 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 heat detection. 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 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)	< 40 mK (@f/1.0, 25 Hz, 300 K)	
Field of View	3.5 mm: H: 50.6°; V: 37.8° 7 mm: H: 24°; V: 18° 10 mm: H: 17.3°; V: 13.1°	
Close Focus Distance	3.5 mm: 0.5 m (1.64 ft) 7 mm: 1 m (3.28 ft) 10 mm: 2 m (6.56 ft)	
Detection Distance ^①	3.5 mm: Vehicle: 389 m (1,276 ft); Human: 146 m (479 ft) 7 mm: Vehicle: 778 m (2,552 ft); Human: 292 m (958 ft) 10 mm: Vehicle: 1,111 m (3,645 ft); Human: 417 m (1,368 ft)	
Recognition Distance ^②	3.5 mm: Vehicle: 97 m (318 ft); Human: 38 m (125 ft) 7 mm: Vehicle: 194 m (636 ft); Human: 75 m (246 ft) 10 mm: Vehicle: 278 m (912 ft); Human: 107 m (351 ft)	

Identification Distance ³	Human: 19 m (622 ft) 7 mm: Vehicle: 97 m (318 ft); Human: 38 m (125 ft) 10 mm: Vehicle: 139 m (456 ft); Human: 54 m (177 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 2 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	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	3 (Warm color; Cool color; Ironred)	
Visible		
Image Sensor	1/2.7" CMOS	

3.5 mm: Vehicle: 49 m (161 ft); Human: 19 m (622 ft)

Pace					
Pace Pace	Max. Resolution	2336 (H) × 1752 (V)			
Min.	Pixel	4 MP	default; (sub sti default 60 Hz: (main str default; (sub str default Visual 50 Hz: (main str default; (sub str default 60 Hz: (main str default; (sub str	default; (sub stream) 1 fps–25 fps adjustable, 15 fps by	
Min. Illumination Mile & white 0.005 is so Obcord to Ob	Electronic Shutter Speed	1/30,000 s-1 s		default; (sub stream) 1 fps-30 fps adjustable, 15 fps by	
Ritiumination Distance 200 in (98.48 fb) 400 in (98.48 fb) 400 in (198.48 fb) 400 i	Min. Illumination	Black & white: 0.005 lux		Visual 50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by	
Control Auto, Manual 4 Audio Compression cefault cefault Aperture 4 mm; F1.6 string; 1.20 mm; 1.20 mm	IR Illumination Distance	≥30 m (98.43 ft)		default	
Aperture	· ·	Auto; Manual			
	Aperture		Audio Compression	G.711a; G.711mu; PCM	
Field of View Samma is 3.4 % u.55° 12 min is 12.27 % i.6.6 % of 12 min is 12.27 % i.6.2 % of 12.27 % of 12.22 % of 12.27 % of 12.22 %	Aperture		Network	Network	
Amm m m m m m m m m	Field of View	8 mm: H: 33.4°; V: 25°	Protocol	DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP;	
Samp 2.5 m (3.2 ft) 2.7 m (3.2 ft)	Focus Control	Fixed	Edge Storage	Micro SD card (256 G)	
Day/Night	Clasa Facus Distance		Interoperability	ONVIF; CGI	
BLC Ves User/Host 10 WDR User/Host 10 WDR WDR Security Authorized username and password; attached MCc address; encrypted HTIPS; IEEE 802.1x; controlled network access WDR Auto, Wanual; indoor; Outdoor; Tracking; Street lamp; Notural Port AGC Auto, Manual Auto, Manual Audio Input 1 × RL45 (10/100 Base-T) S/N Ratio 25 S dB Audio Input 1 Region of Interest (Rol) Yes Alam Input 1 Exposure Compensation Yes RS-485 1 pair Exposure Compensation Yes RS-485 1 pair Exposure Compensation Yes WI-Fi Optional \$\frac{\text{Standard No.800.11}{\text{Frequency. 2.6 GHz}}} \text{Frequency. 2.6 GHz} Advanced Intelligence Tripwire; Intrusion Power Advanced Intelligence Tripwire; Intrusion Power Video and Audio \$Led (Adv. 480).256 A 132; 1280 A 900 (13M). XVGA (1024 A 788), You Ghad a 140 A 900	close Focus Distance	, ,	Provicor		
MUR	Day/Night	Auto (ICR); Color; B/W	prowser	o .	
Note Auto, Manual; Indoor; Outdoor; Tracking; Street lamp; Natural Auto, Manual; Indoor; Outdoor; Tracking; Street lamp; Natural Auto, Manual Auto, Manual Auto, Manual Auto, Manual Auto, Manual Audio Input 1 Audio Input 1 Audio Output	BLC	Yes	User/Host	10	
HLC Yes network access White Balance Auto, Manual; indoor; Outdoor; Tracking; Street lamp; Natural POrt AGC Auto, Manual Network 1 × RI-45 (10/100 Base-T) AGC Auto, Manual Audio Input 1 Noise Reduction 2D NR; 3D NR Audio Output 1 Kyn Ratio >55 dB Alarm Input 1 Region of Interest (Ro) Yes Alarm Input 1 Exposure Compensation Yes Alarm Output 1 Intelligence Transmission rate 150 Mbgs Standard No.: 802.11 Frequency. 24 GHz General Intelligence Tripwire; Intrusion Power General Intelligence Tripwire; Intrusion Power Advanced Intelligence Tripwire; Intrusion Power Power Power Video and Audio Leat Detection & Alarm Cold & Hot Spot Trace Hamma & Vehicle Classification Smoking Detection Call Detection Power Consumption Basic: < 3 W (LED off, 12 VDC); 12 W (LED off, pe) (Power Consumption) Video Compression H. 265; H.264M; H.264H; H.264B; MJEPG Power Consumption Power C	WDR	DWDR	Security	· · · · · · · · · · · · · · · · · · ·	
White Balance Natural Network 1 x RJ-45 (10/100 Base-T) AGC Auto; Manual Audio Input 1 Noise Reduction 2D NR; 3D NR Audio Output 1 S/N Ratio x55 dB Audio Output 1 Region of Interest (Rol) Yes Alarm Input 1 Exposure Compensation Yes Alarm Output 1 Exposure Compensation Yes Standard No.: 802.11 Frequency 2.4 Gitz Intelligence Tripwire; Intrusion Wi-Fi Optional Standard No.: 802.11 Frequency 2.4 Gitz General Intelligence Tripwire; Intrusion Power Power Power Advanced Intelligence Tripwire; Intrusion Power Power Power Supply 12 VDC (± 20%); PoE Advanced Intelligence Tripwire; Intrusion Power Supply 12 VDC (± 20%); PoE Power Supply 12 VDC (± 20%); PoE Video and Audio Video Cable States and Audio States an	HLC	Yes	occurre,		
Network 1 x RI-45 (10/100 Base-T)	White Balance		Port		
Noise Reduction ZD NR; 3D NR S/N Ratio 255 dB Audio Output 1 Region of Interest (Rol) Yes Alarm Input 1 Image Flip 90°; 180°; 270° Alarm Output 1 Exposure Compensation Yes Rs-485 1 pair Exposure Compensation Yes Standard No.: 802.11 Frequency; 2.4 GHz Transmission rate: 150 Mlps Transmission rate: 150 Mlps Transmission distance: 150 m (no shield, no disturbance) General Intelligence Heat Detection & Alarm Cold & Hot Spot Trace Human & Vehicle Classification Smoking Detection Call Detection Power Video and Audio Power Consumption Basic: < 8 W (LED off, 12 VDC); 12 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED off, PoE) Max: < 14 W	AGC		Network	1 × RJ-45 (10/100 Base-T)	
S/N Ratio 255 dB Region of Interest (Roll) Yes Alarm Input 1 Image Flip 90°; 180°; 270° Alarm Output 1 Exposure Compensation Intelligence Yes Rs-485 1 pair General Intelligence Tripwire; Intrusion Wi-Fi Optional Standard No.: 802.11 Frequency: 2.4 GHz	Noise Reduction	2D NR; 3D NR	Audio Input	1	
Region of Interest (Rol) Yes	S/N Ratio	≥55 dB	Audio Output	1	
RS-485 1 pair	Region of Interest (RoI)	Yes	Alarm Input	1	
RS-485 1 pair		90°; 180°; 270°	Alarm Output	1	
Intelligence		Yes	RS-485	1 pair	
Transmission rate: 150 Mbps Transmission rate: 150 Mbps Transmission rate: 150 m (no shield, no disturbance)			Wi-Fi Ontional		
Power		Tripwire; Intrusion	WI-I I Optional	·	
Advanced Intelligence Cold & Hot Spot Trace Human & Vehicle Classification Smoking Detection Call Detection Power Consumption Basic: < 8 W (LED off, 12 VDC); 12 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED on, PoE)	Heat Detection & Alarm Cold & Hot Spot Trace Advanced Intelligence Human & Vehicle Classification Smoking Detection	Power			
Smoking Detection Call Detection Power Consumption Basic: < 8 W (LED off, 12 VDC); 12 W (LED off, PoE) Max: < 14 W (LED on, 12 VDC); 20 W (LED on, PoE)		Cold & Hot Spot Trace	Power Supply	12 VDC (± 20%); PoE	
Video Compression H.265; H.264M; H.264B; MJEPG Operating Temperature -30 °C to +50 °C (−22 °F to +122 °F) Thermal: Main Stream: 1280 × 960 (1.3M); XVGA (1024 × 768); VGA (640 × 480); 256 × 192; 1280 × 960 (by default) Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default) Visual: Operating Humidity ≤95% Resolution Protection IP67 Structure Structure Product Dimensions 205.5 mm × 90.4 mm × 90.1 mm (8.09" × 3.56" × 3.55")		Smoking Detection	Power Consumption	, , , , , , , , , , , , , , , , , , , ,	
Thermal: Main Stream: 1280 × 960 (1.3M); XVGA (1024 × 768); VGA (640 × 480); 256 × 192; 1280 × 960 (by default) Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default) Visual: Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 2336 × 1752 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Product Dimensions torage Temperature -30 °C to +70 °C (−22 °F to +158 °F) Operating Humidity ≤95% Structure Structure Product Dimensions 205.5 mm × 90.4 mm × 90.1 mm (8.09" × 3.56" × 3.55")	Video and Audio		Environment		
Nain Stream: 1280 × 960 (1.3M); XVGA (1024 × 768); VGA (640 × 480); 256 × 192; 1280 × 960 (by default) Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default) Visual: Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 2336 × 1752 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288) 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288) 352 × 288 (by default) Product Dimensions Product Dimensions 205.5 mm × 90.4 mm × 90.1 mm (8.09" × 3.56" × 3.55")	Video Compression	H.265; H.264M; H.264H; H.264B; MJEPG	Operating Temperature	−30 °C to +50 °C (−22 °F to +122 °F)	
VGA (640 × 480); 256 × 192; 1280 × 960 (by default) Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default) Visual: Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 2336 × 1752 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default)		Thermal:	torage Temperature	−30 °C to +70 °C (−22 °F to +158 °F)	
Resolution default Visual: Protection Protectio		VGA (640 × 480); 256 × 192; 1280 × 960 (by default) Sub Stream: VGA (640 × 480); 256 × 192; 256 × 192 (by default) Visual: Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p	Operating Humidity	≤95%	
Visual: Main Stream: 2336 × 1752; 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 2336 × 1752 (by default) Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288); 352 × 288 (by default) Product Dimensions 205.5 mm × 90.4 mm × 90.1 mm (8.09" × 3.56" × 3.55")	Resolution		Protection	IP67	
Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288 / 35			Structure		
		Sub Stream: 720p (1280 × 720); D1 (704 × 576); CIF (352 ×		· ·	

Eureka Series | DHI-TPC-BF1241

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	Recommended Distance	Max. Distance
3.5 mm	14.6 m (47.9 ft)	22 m (72.18 ft)
7 mm	29.2 m (95.8 ft)	40 m (131.23 ft)
10 mm	41.7 m (136.81 ft)	60 m (196.85 ft)

Note

The table displays the measured distances obtained from using the target size $0.2~m\times0.2~m$ 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

Focal Length	Distance (Human)	Distance (Vehicle)
3.5 mm	24.5 m (80.38ft)	72.5 m (237.86 ft)
7 mm	49 m (160.76 ft)	146.5 m (480.64 ft)
10 mm	70 m (229.66ft)	209 m (685.70 ft)

Note

The table displays the measured distances obtained from using the target sizes $1.8~\text{m}\times0.5~\text{m}$ (human) and $1.4~\text{m}\times4~\text{m}$ (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.

Ordering Information		
Туре	Part Number	Description
Thermal Camera	DHI-TPC-BF1241-B3F4-DW-S2	Thermal: 256 × 192 3.5 mm lens Visible: 4 MP 4 mm lens
	DHI-TPC-BF1241-B7F8-DW-S2	Thermal: 256 × 192 7 mm lens Visible: 4 MP 8 mm lens
	DHI-TPC-BF1241-B10F12- DW-S2	Thermal: 256 × 192 10 mm lens Visible: 4 MP 12 mm lens
	DHI-TPC-BF1241-B3F4-DW- WIFI-S2	Thermal: 256 × 192 3.5 mm lens Visible: 4 MP 4 mm lens
	DHI-TPC-BF1241-B7F8-DW- WIFI-S2	Thermal: 256 × 192 7 mm lens Visible: 4 MP 8 mm lens
	DHI-TPC-BF1241-B10F12-DW- WIFI-S2	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:







PFA130-E Junction box



PFM320D Power adapter

Junction Mount	Pole Mount

Dimensions (mm [inch])

