Thermal Network Hybrid Bullet Camera
DTC-5641-90-RAD

Manufactured by

KEY FEATURES

- Heat detection and alarm, tripwire, intrusion, and target filtering
- 1/1.8" 4Megapixel progressive scan (CMOS) 50 Hz/25 fps
- H.265, Two-way Audio, I/O PoE, Micro SD
- Vanadium oxide uncooled focal plane detector
- RAD-SENSOR (FOV Optional): 12.5°, 17.6°, 22.9°, 32.0°, 50.0°, 90.0°
- Temperature measurement range of –20 °C to +550 °C

Approved for use with
DETEC NEXT FIRE

- Radiometric thermal camera module with both temperature and radiant energy measurement customized for use with Detec Next RAD Camera License on Detec Next VMS.
- Edge analysis on camera to be used with other types of Detec Next camera licenses.
- Reliable temperature exception alarm function
- Advanced fire detection algorithm
- Very early notification of potential fires to the fire service/control center, for use at i.e:
  - Detection in larger wooden building areas
  - Preventive fire detection and monitoring at garbage facilities

- Vanadium oxide uncooled focal plane detector.
- 1/1.8" 4Megapixel progressive scan CMOS
- Heat detection and alarm, tripwire, intrusion, and target filtering
- Junction box included
- Illumination distance is up to 80 m
- IP67 rated
- Wide input voltage 12 VDC ± 20%, and PoE power supply
- Smart linkage of white light and audio
- Temperature measurement range of –20 °C to +550 °C

Featuring thermal and visible channels, Thermal Network Hybrid Bullet Camera measures temperature through the thermal channel, with high accuracy Max (±2°C, ±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

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)
Field of View	5 mm: H: 90.0°; V: 70.7° 9 mm: H: 50.0°; V: 39.6° 13 mm: H: 32.0°; V: 25.7° 19 mm: H: 22.9°; V: 18.4° 25 mm: H: 17.6°; V: 14.1° 35 mm: H: 12.5°; V: 10°
Thermal Focus Control	Fixed-focal
Close Focus Distance	5 mm: 0.8 m (6.56 ft) 9 mm: 2.2 m (13.120ft) 13 mm: 2.9 m (9.51 ft) 19 mm: 5.5 m (18.04 ft) 25 mm: 9 m (29.53 ft) 35 mm: 13 m (42.65 f
Detection Distance①	5 mm: Vehicle: 641 m (2,103.10 ft); Human: 208 m (682.24 ft) 9 mm: Vehicle: 1,154 m (3,785.58 ft); Human: 375 m (1,230.00 ft) 13 mm: Vehicle: 1,667 m (5,468.07 ft); Human: 542 m (1,777.12 ft) 19 mm: Vehicle: 2,436 m (7,991.79 ft); Human: 792 m (2,597.33 ft) 25 mm: Vehicle: 3,205 m (10,515.51 ft); Human: 1,042 m (3,417.54 ft) 35 mm: Vehicle: 4,487 m (14,721.72 ft); Human: 1,458 m (4,784.56 ft)

Recognition Distance②	5 mm: Vehicle: 157 m (515.86 ft); Human: 54 m (175.76 ft) 9 mm: Vehicle: 283 m (928.54 ft); Human: 96 m (314.88 ft) 13 mm: Vehicle: 409 m (1,341.22 ft); Human: 139 m (456.97 ft) 19 mm: Vehicle: 597 m (1,960.25 ft); Human: 204 m (667.89 ft) 25 mm: Vehicle: 786 m (2,579.28 ft); Human: 268 m (878.8 ft) 35 mm: Vehicle: 1,101 m (3,610.99 ft); Human: 375 m (1,230.31 ft)
Identification Distance③	5 mm: Vehicle: 79 m (260.38 ft); Human: 27 m (87.88 ft) 9 mm: Vehicle: 143 m (468.69 ft); Human: 48 m (157.44 ft) 13 mm: Vehicle: 206 m (677.00 ft); Human: 70 m (228.49 ft) 19 mm: Vehicle: 302 m (989.46 ft); Human: 102 m (333.94 ft) 25 mm: Vehicle: 397 m (1,301.92 ft); Human: 134 m (439.40 ft) 35 mm: Vehicle: 556 m (1,822.69 ft); Human: 188 m (615.16 ft)

Note:
①Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 3.6 pixels of the image).
②Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 14 pixels of the image).
③Identification Distance: Classifies objects into specific categories based on their characteristics, such as enginee truck, car (the object must cover more than 28 pixels of the image)

Digital Detail Enhancement (DDE)	Yes
Digital Zoom	24 levels
Thermal AGC	Auto/Manual

Thermal Noise Reduction	2D NR/3D NR
Image Flip	180°; Mirror
Color Palettes	18 (white hot/black hot/fusion/rainbow/golden autumn/midday/iron/red/amber/jade/sunset/ice fire/ painting/pomegranate/emerald /spring/summer/ autumn/winter)
Temperature Measurement Range	Low temperature mode: –20 °C to +150 °C High temperature mode: 0 °C to +550 °C Auto mode
Temperature Measurement Accuracy	Max. (±2 °C, ±2%) Operating temperature: –20 °C to +60 °C
Temperature Measurement Mode	Spot: 12 Line: 12 Area: 12 Supports 12 rules simultaneously

Visible

Image Sensor	1/1.8" CMOS
Max. Resolution	2688 (H) × 1520 (V)
Pixel	4 MP
Horizontal Definition	≥1100 TVL
Min. Illumination	Color: 0.01 lux Black & white: 0.001 lux 0 lux (white light 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
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	Fixed
Image Flip	180°; Mirror
Exposure Compensation	Yes
Visible Focus Control	Fixed-focal
Field of View	4 mm: H: 87.0°; V: 47.3° 6 mm: H: 55.3°; V: 30.0° 12 mm: H:37.3°; V: 21.4° 10–30 mm: H: 42°–15°;V: 23°–8.4°
Close Focus Distance	4 mm: 1.2 m 6 mm: 2.5 m 12 mm: 7.4 m 10–30 mm: 9 m
Aperture	4 mm: F1.6 6 mm: F1.6 12 mm: F1.7 10–30 mm: F1.7

Illuminator On/Off Control	Auto; manual
Illumination Distance	80 m (262.47 ft)

Audio and Video

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: 2688 × 1520; 2560 × 1440; 1920 × 1080; 1280 × 720); 704 × 576; 2560 × 1440 (default) Sub stream: 704 × 576; 352 × 288; 704 × 576 (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–25 fps, 25 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–30 fps, 30 fps by default Sub stream: 1 fps–30 fps, 15 fps by default
Audio Compression	G.711a; G.711 mu
Image Encoding Format	JPEG

Function

Two-way Audio	Yes
Sound and Light Alarm	Local audio and white light alarm prompts
Network Protocol	IPv4/IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE
Region of Interest (RoI)	Yes (customizable)
Storage	FTP; Micro SD card (512 GB, hot swapping)
Interoperability	ONVIF; CGI; DaHua SDK
Browser	IE; Edge; Firefox; Chrome; Safari
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
Fusion Mode	Yes. Off by default
PIP	Yes

Intelligence

Heat Detection	Yes
Cold/Hot Spot Trace	Yes
Perimeter Protection	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification
Target Tracking	Yes
Smoke Detection	Yes

Port

Network Port	1 × RJ-45 (10/100 Base-T)
Alarm Input	2
Alarm Output	2
Audio Input	1
Audio Output	1
RS-485	1

Power

Power Supply	12 VDC ± 20%, PoE (802.3af), ePoE
Power Consumption	Basic: 5 W (12 VDC); 8.9 W (PoE) Max: 15 W (12 VDC); 18 W (PoE)
ePoE	Yes

Environment

Operating Temperature	–30 °C to +70 °C
Operating Humidity	≤95%
Storage Temperature	–40 °C to +70 °C

Technical Specification

Physical Characteristics

Protection	IP67
Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV

Structure

Product Dimensions	300.9 mm × 181.8 mm × 181.8 mm (11.85" × 7.16" × 7.16") (L × W × H)
Packaging Dimensions	423 mm × 180 mm × 178 mm (16.65" × 7.09" × 7.01") (L × W × H)
Net Weight	≤2.35 kg (5.18 lb)
Gross Weight	≤2.7 kg (5.95 lb)
Lens	Included

Certification

Certifications	CE/FCC

Temperature Measurement Distance

Focal Length	Temperature Measurement Distance (Min.)	Temperature Measurement Distance (Max.)
5 mm	1 m	3 m
9 mm	1 m	5 m
13 mm	2 m	11 m
19 mm	3 m	16 m
25 mm	4 m	21 m
35 mm	6 m	29.4 m

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.
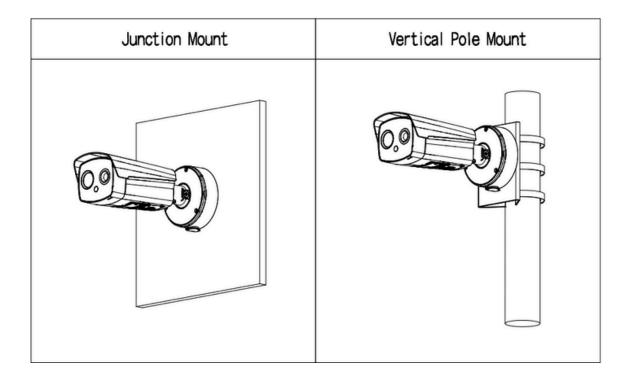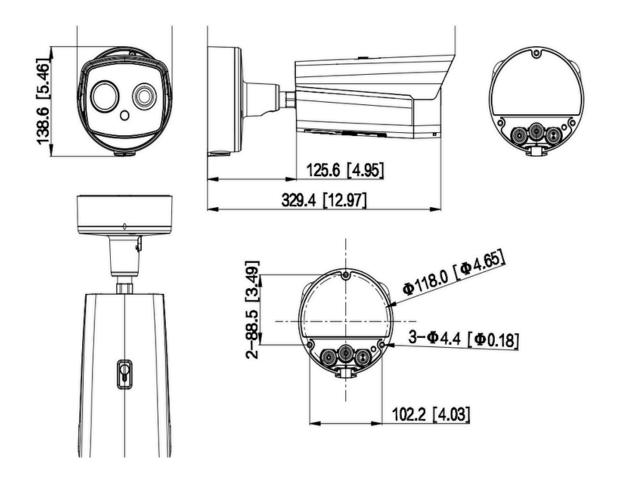
Optional:

PFA150
Pole Mount Bracket

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without prior warning. This document is under constant change, and may be subject to error.   Side 5

Junction Mount	Vertical Pole Mount

138.6 [5.46]

125.6 [4.95]

329.4 [12.97]

2-88.5 [3.49]

Φ118.0 [Φ4.65]

3-Φ4.4 [Φ0.18]

102.2 [4.03]