

DH-TPC-DF1241-T

WizSense Thermal Network Eyeball Camera



Wiz Sense

- Uncooled VOx thermal sensor technology
- Athermalized lens (thermal camera), focus-free
- 1/2.7" 4Megapixel progressive scan CMOS
- Support ROI, motion detection, color palettes
- Smoking and call behaviour detection
- Support fire detection & alarm
- Built-in 1/1 alarm in/out
- Micro SD memory, IP67, PoE
- Smart linkage with strobe light & audio
- Temperature measurement
- Dual image fusion (visible and thermal images)

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopts independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

System Overview

Featuring dual lens, fixed camera, this series provides an all-in-one solution for capturing video surveillance for indoor and outdoor applications. Together with Thermal and Visible Technology, the camera is the perfect solution for dark, small area monitoring applications. The series combines one thermal camera for monitoring in total darkness and one visible camera with Smart IR for confirming details.

Functions

Uncooled VOx Technology

Dahua thermal cameras use uncooled VOx sensor technology. Because of small size and better performance, it is a cost-effective solution for thermal security.

High Sensitivity

High thermal sensitivity (< 50 mK) makes cameras capture more image details and temperature difference information.

Fire Detection & Alarm

With built-in fire detect function, the camera has the ability to detect fire in a long distance. Thermal camera is sensitive to temperature, so the accuracy of fire detection will be higher than visible camera.

Temperature Measurement

Dahua thermal cameras (-T models) provide remote temperature monitoring function with the ability to set temperature threshold alarms. Object temperatures can be monitored in daytime or at night, making them ideal for usage in power plant or oil extraction applications where overheating can be dangerous. When the temperature exceeds the defined threshold, an alarm is triggered. The temperature range is between -20 °C to 400 °C (-4°F to +752°F).

Intelligent Video System (IVS)

With built-in intelligent video analytics, the camera has the ability to detect and analyze moving objects for improved video surveillance. The camera provides optional standard intelligence at the edge allowing detection of multiple object behaviors such as motion detection. IVS also supports tripwire analytics, allowing the camera to detect when a pre-determined line has been crossed.

Smoking Detection

Dahua thermal camera can provide a real-time monitoring, in the use of AI technology, to automatically detect people's smoking behavior and provide intelligent voice and light warning (loudspeaker and white light, etc.) in an effort to dissuade smoker, and avoid potential risk and loss.

Environmental

With a temperature range of -30°C to +60°C (-22°F to +140°F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

Protection

Supporting ±20% input voltage tolerance, this camera suits even the most unstable conditions for outdoor applications. Its 6 kV lightning rating provides protection against the camera and its structure from the effects of lightning.

Technical Specification

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|--------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|
| Thermal | | | |
| Detector Type | Vanadium Oxide Uncooled FPA | | |
| Max. Resolution | 256 × 192 | | |
| Pixel Pitch | 12 μm | | |
| Spectral Range | 8 μm–14 μm | | |
| Thermal Sensitivity (NETD) | < 50 mK (@f/1.0,25 Hz,300 K) | | |
| Focal Length | 2 mm | 3.5 mm | 7 mm |
| Field of View | H: 87.8°, V: 63.8° | H: 50.6°, V: 37.8° | H: 24°, V: 18° |
| Close Focus Distance | 0.3 m (0.98 ft) | 0.5 m (1.64 ft) | 1.0 m (3.28 ft) |
| Effective Distance Human (1.8 m × 0.5 m) | D: 83 m (272 ft) R: 21 m (69 ft) I: 11 m (36 ft) | D: 146 m (479 ft) R: 38 m (125 ft) I: 19 m (622 ft) | D: 292 m (958 ft) R: 75 m (246 ft) I: 38 m (125 ft) |
| Effective Distance Vehicle (4.0 m × 1.4 m) | D: 222 m (728 ft) R: 55 m (80 ft) I: 27 m (89 ft) | D: 389 m (1276 ft) R: 97 m (318 ft) I: 49 m (161 ft) | D: 778 m (2552 ft) R: 194 m (636 ft) I: 97 m (318 ft) |
| Aperture | F1.0 | | |
| Digital Detail Enhancement (DDE) | Yes | | |
| Digital Zoom | 16x | | |
| AGC | Auto; Manual | | |
| Noise Reduction | 2D NR; 3D NR | | |
| Image Flip | 90°; 180°; 270° | | |
| Color Palettes | 18 (Whitehot; Blackhot; Ironrow; Icefire; Fusion; Rainbow; Globow; Iconbow1; Iconbow2 .etc) | | |
| Fusion Mode | 3 (Warm color; cool color; Ironred) | | |

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| Visible | | | |
| Image Sensor | 1/2.7" CMOS | | |
| Max. Resolution | 2336 × 1752 | | |
| Pixel | 4 MP | | |
| Electronic Shutter Speed | 1/30000s–1s | | |
| Min. Illumination | Color: 0.05 lux Black & white: 0.005 lux 0 lux (IR on) | | |
| IR Illumination Distance | ≥ 30 m (98.43 ft) | | |
| IR Illuminator On/Off Control | Auto; Manual | | |
| Focal Length | 2 mm | 4 mm | 8 mm |
| Aperture | F2.2 | F1.6 | F2.0 |
| Field of View | H: 94° V: 72° D: 116° | H: 71.2° V: 52° D: 92.6° | H: 33.4° V: 25° D: 41.9° |
| Focus Control | Fixed | | |
| Close Focus Distance | 0.3 m (0.98 ft) | 1.0 m (3.28 ft) | 2.5 m (8.2 ft) |
| Day/Night | Auto (ICR); Color and B/W | | |
| BLC | Yes | | |

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| 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 (Rol) | Yes |
| Image Flip | 90°; 180°; 270° |
| Exposure Compensation | Yes |

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| Intelligence | |
| General Intelligence | Tripwire, Intrusion |
| Advanced Intelligence | Fire Detection & Alarm Cold & Hot Spot Trace Human & Vehicle Classification Smoking Detection Call Detection |

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| Temperature Measurement | |
| Temperature Range | Low Temperature Mode: -20°C to +150°C (-4°F to +302°F) High Temperature Mode: 0°C to +400°C (+32°F to +752°F) |
| Temperature Accuracy | Max (±5°C, ±5%) Operating Temperature: -30°C to +60°C (-22°F to +140°F) |
| Temperature Mode | Spot: 12 Line: 12 Area: 12 Support 12 rules simultaneously |

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| Video and Audio | |
| Video Compression | H.265; H.264M; H.264H; H.264B; MJPEG |
| Resolution | Thermal: Main Stream: 1280 × 960 (1.3M) ; XGA (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 |
| Frame Rate | Thermal 50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default 60 Hz: (main stream) 1 fps–30 fps adjustable, 30 fps by default; (sub stream) 1 fps–30 fps adjustable, 15 fps by default Visual 50 Hz: (main stream) 1 fps–25 fps adjustable, 25 fps by default; (sub stream) 1 fps–25 fps adjustable, 15 fps by default 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) |

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| Interoperability | ONVIF; CGI |
| Browser | IE: IE8 and the later, and explorer with IE core Google: 42 and the earlier Firefox: 42 and the earlier |
| User/Host | 10 |
| Security | Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled network access |

Certification

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| Certifications | CE: EN55032:2015; EN61000-3-2:2014 FCC: CFR 47 FCC Part15 subpart B; ANSI C63.4-2014 |
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Port

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| Network | 1 10 M/100 M Ethernet port (RJ-45) |
| Audio Input | 1 |
| Audio Output | 1 |
| Alarm Input | 1 |
| Alarm Output | 1 |
| RS-485 | 1 pair |

Power

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| Power Supply | 12 VDC, 1.2 A (±20%) PoE |
| Power Consumption | Basic: < 6.5 W (LED off) Max: < 13 W (LED on, heater on) |

Environment

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|-----------------------|--------------------------------------------------------------------------------------------------|
| 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, anti-surge 6 kV, anti-elctrostatic 6 kV (touched by objects), anti-elctrostatic 8 kV (air) |

Structure

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|----------------------|--------------------------------------------------|
| Product Dimensions | 122 mm × 122 mm × 112 mm (4.8" × 4.8" × 4.41") |
| Packaging Dimensions | 155 mm × 155 mm × 135 mm (6.10" × 6.10" × 5.31") |
| Net Weight | ≤ 0.85 kg (1.87 lb) |
| Gross Weight | ≤ 1 Kg (2.20 lb) |

Ordering Information

| Type | Part Number | Description |
|----------------|----------------------|----------------------------------------------------------|
| Thermal Camera | DH-TPC-DF1241P-TD2F2 | Thermal: 256 × 192 2 mm lens Visible: 4MP 2 mm lens |
| | DH-TPC-DF1241N-TD2F2 | |
| | DH-TPC-DF1241P-TD3F4 | Thermal: 256 × 192 3.5 mm lens Visible: 4MP 4 mm lens |
| | DH-TPC-DF1241N-TD3F4 | |
| | DH-TPC-DF1241P-TD7F8 | Thermal: 256 × 192 7 mm lens Visible: 4MP 8 mm lens |
| | DH-TPC-DF1241N-TD7F8 | |

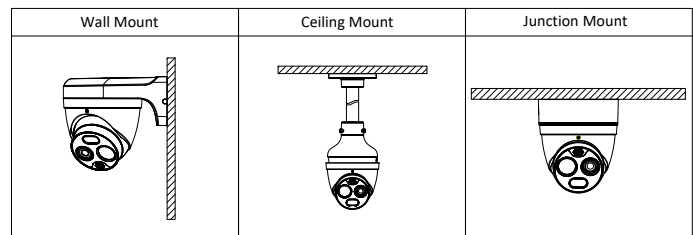
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| Accessories (Optional) | PFB203W | Wall-mount bracket |
| | PFA106 | Ceiling-mount adapter plate |
| | PFB220C | Ceiling-mount bracket |
| | PFA130-E | Junction box |
| | PFM320D | Power adapter |

Temperature Measurement Range

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|--------------|-------|--------|------|
| Focal Length | 2 mm | 3.5 mm | 7 mm |
| Min Distance | 0.5 m | 1 m | 3 m |
| Max Distance | 2.5 m | 5 m | 8 m |

Note: The table is for reference only. Temperature Measurement Range is stongly influenced by the site condition, such as the size of the target, atmospheric conditions, the physical installation, etc.

Accessories



Dimensions (mm [inch])

