

DH-TPC-DF1241

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
- Dual image fusion (visible and thermal images)

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt 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 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.

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 $+60^{\circ}\text{C}$ (-22°F to $+140^{\circ}\text{F}$), 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 $\pm 20\%$ input voltage tolerance, this camera suits even the most unstable conditions for outdoor applications. Its 6kV lightning rating provides protection against the camera and its structure from the effects of lightning.

Technical Specification

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, 25Hz, 300K)		
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	16 ×		
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)		

Visible			
Image Sensor	1/2.7" CMOS		
Max. Resolution	2336 × 1752		
Pixel	4MP		
Electronic Shutter Speed	1/30000 s–1 s		
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		

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	90°; 180°; 270°
Exposure Compensation	Yes

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

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

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

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

Power

Power Supply	12V±20% DC/PoE
Power Consumption	Basic: < 6.5W (LED off) Max: < 13W (LED on, heater on)

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

Structure

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

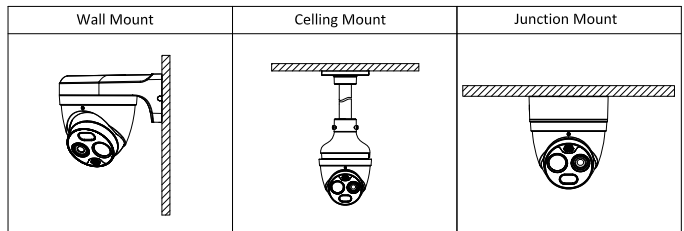
Type	Part Number	Description
Thermal Camera	DH-TPC-DF1241P-D2F2	Thermal: 256 × 192 2 mm lens Visible: 4MP 2 mm lens
	DH-TPC-DF1241N-D2F2	
	DH-TPC-DF1241P-D3F4	Thermal: 256 × 192 3.5 mm lens Visible: 4MP 4 mm lens
	DH-TPC-DF1241N-D3F4	
	DH-TPC-DF1241P-D7F8	Thermal: 256 × 192 7 mm lens Visible: 4MP 8 mm lens
	DH-TPC-DF1241N-D7F8	
Accessories	PFB203W (Optional)	Wall-mount bracket
	PFA106 (Optional)	Adapter plate
	PFB220C (Optional)	Hang-mount bracket
	PFA130-E (Optional)	Junction box
	PFM320D (Optional)	Power adapter

IVS Range

Focal Length	2 mm	3.5 mm	7 mm
Human (1.8 m × 0.5 m)	15 m	26 m	52.5 m
Vehicle (1.4 m × 4.0 m)	42 m	72.5 m	146.5 m

Note: The table is for reference only. IVS coverage range is strongly influenced by the site condition, such as the size of the target, atmospheric conditions, the physical installation.

Accessories



Dimensions (mm [inch])

