DH-TPC-SD8421-T

Thermal Network Hybrid Speed Dome

- · 400 × 300 uncooled VOx thermal sensor technology
- · Athermalized lens (thermal), focus-free
- · 1/2.8" 2 megapixel progressive scan CMOS
- · Support detection and alarm of fire and smog
- · Max 140°/s pan speed, 360° endless pan rotation
- · Up to 300 presets, 5 auto scan, 8 tour, 5 pattern
- · 7/2 alarm in/out
- · Micro SD memory, IP66
- · Support temperature measurement

System Overview

Featuring a dual lens Pan and Tilt camera, this series provides an all-in-one solution that is especially beneficial for temperature measurement. Together with Dahua Thermal and Starlight technology, the camera's long range capabilities are able to be utilized even at night. The series combines one thermal camera for monitoring in total darkness and one camera with Starlight functionality and a motorized lens for confirming details up close.

Functions

Uncooled VOx Technology
Dahua thermal cameras use uncooled VOx sensor technology. Their small size and better performance make them a cost-effective solution for thermal security.

High Sensitivity
High thermal sensitivity (<40mK) allows cameras to capture more image details and temperature difference information.

Fire Detection & Alarm
With built-in fire detection functionality, the camera has the ability to detect fires from long range. Because thermal cameras are sensitive to temperature, they provide higher fire detection accuracy than standard cameras, making them particularly fit for applications such as forest fire prevention.

Temperature Measurement
Dahua thermal cameras (-T models) provide remote temperature monitoring functionality 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 set threshold, an alarm is triggered. The temperature range is between-20 °C to 550 °C.

Intelligent Video System (IVS)
IVS is a built-in video analytics algorithm that delivers intelligent functions to monitor a scene for tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area.

Environmental
With a temperature range of -40°C to +60°C (-40°F to 140°F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP66 rating makes it suitable for demanding outdoor applications. For enviorments with rain, sleet, snow and fog, an integrated wiper (optional) provides users with clear visibility at all times.

Protection
The camera supports wide range voltage input (100–300V AC), suitable for the most unstable conditions for outdoor applications. Its 6 kV lightning rating provides effective protection for both the camera and its structure against lightning.

Onvif

Technical Specification

Thermal

Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	400 × 300
Pixel Pitch	17 μm
Spectral Range	8 μm–14 μm
Thermal Sensitivity (NETD)	≤40 mK
Focal Length	7.5 mm; 13 mm; 25 mm
Field of View	7.5 mm: horizontal: 53.7°, vertical: 39.7° 13 mm: horizontal: 30°, vertical: 22.6° 25 mm: horizontal: 15.5°, vertical: 11.6°
Aperture	F1.0

DRI Distance Based on the reference: human (1.8 m × 0.5 m) vehicle (4 m × 1.4 m)	Lens	Detection	Recognition	Identification
	7.5 mm	Vehicle: 558 m (1830.71 ft) Human:221m (725.07 ft)	Vehicle: 147m (482.28 ft) Human: 57 m (187.01 ft)	Vehicle: 74 m (242.78 ft) Human: 28 m (91.86 ft)
	13 mm	Vehicle: 1020m (3346.47 ft) Human: 382 m (1253.28 ft)	Vehicle: 255 m (836.61 ft) Human: 98 m (321.52 ft)	Vehicle: 127m (416.67 ft) Human: 49 m (160.76 ft)
	25 mm	Vehicle: 1961 m (6433.73 ft) Human: 735 m (2411.42 ft)	Vehicle: 490 m (1607.61 ft) Human: 189 m (620.08 ft)	Vehicle: 245m (803.81 ft) Human: 95 m (311.68 ft)

Digital Detail Enhancement (DDE)	Yes
Thermal Image Stabilization	Electronic Image Stabilization
AGC	Auto; manual
Noise Reduction	2D NR; 3D NR
Image Flip	180°
Color Palettes	18 color modes selectable such as Whitehot/Blackhot/Ironrow/Icefire.
Temperature Measurement Range	Low temperature mode: -20°C (-4°F) to +150°C (302°F) High temperature mode: 0°C (34°F) to +550°C (1022°F)
Temperature Accuracy	Max (±2°C, ±2%) Operating temperature: -20°C (-4°F) to +60°C (140°F)
Temperature Mode	Spot: 12 Line: 12 Area: 12 Support 12 rules simultaneously

Visible

Image Sensor	1/2.8 inch CMOS
Max. Resolution	1920 × 1080
Horizontal Definition	≥1083TVL
Visible Effective Pixels	2MP
Min. Illumination	Color: 0.005 Lux@F1.6 Black & white: (IR off) 0.00051 Lux@F1.6; (IR on) 0 Lux
AGC	Auto; manual
Noise Reduction	2D NR; 3D NR
S/N Ratio	≥ 55 dB
White Balance	Auto/manual/indoor/outdoor/tracking/sodium lamp/street lamp/natural
Visible Image Stabilization	Electronic Image Stabilization
Electronic Shutter Speed	1/30000s–1s
BLC	Yes
WDR	Yes
HLC	Yes
Digital Zoom	16×
Day/Night	Auto (ICR); color/B/W
Image Flip	180°
Exposure Compensation	Yes
Iris	Auto
Focus Mode	Auto; semi-auto; manual
Focal Length	3.95 mm–177.7 mm
Zoom Speed	About 4s
Field of View	Horizontal: 65.66°–1.88°; Vertical: 29.4°–1.09°; Diagonal: 73.1°–2.13°
DORI Distance	D: 2345 m (7694 ft); O: 938 m (3077 ft); R: 469 m (1539 ft); I: 234 m (768 ft)
Close Focus Distance	1 m (39.37 inch)–10 m (393.7 inch)
Optical Zoom	45×
Aperture	F1.6–F4.95
Fill Light Type	IR light
IR On/Off control	Auto; manual
IR Distance	≥100 m
IR Field of View	45° for 2 IR lights, 15° for 2 IR lights

Audio and Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG

Resolution	Thermal: Main stream: SXGA (1280 × 1024)/960P (1280 × 960)/720P (1280 × 720)/400 × 300, 1280 × 960 by default Sub stream: 640 × 512/640 × 480/400 × 300, 400 × 300 by default Visual: Main stream: 1080P (1920 × 1080)/720P (1280 × 720)/704 × 576, 1920 × 1080 by default Sub stream: 704 × 576/352 × 288, 352 × 288 by default
Audio Compression	G.711a; G.711mu; AAC; PCM
Image Encoding Format	JPEG

PTZ

Pan/Tilt Range	Pan: 0°–360° endless;
Manual Control Speed	Pan: 0.1°–200°/s; Tilt: 0.1°–120°/s
Preset Speed	Pan: 240°/s; Tilt: 200°/s
Preset	300
Idle Motion	Activate Preset/Scan/Tour/Pattern if there is no command in the specified period
Timed Task	Preset/Scan/Tour/Pattern
Image Freeze	Yes
PTZ Mode	5 Auto Scan, 8 Tour, 5 Pattern, Auto Pan
Speed Setup	Human-oriented focal length/ speed adaptation
Power Up Action	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/ Scan/ Tour/ Pattern if there is no command in the specified period

General Function

Two-way Talk	Yes
Network Protocol	HTTP; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP; NTP
Region of Interest (ROI)	Yes
Edge Storage	FTP; Micro SD card (256G, hot plug)
Interoperability	ONVIF; CGI; Dahua SDK
Browser	IE: IE8 and the later, and explorer with IE core Google: 42 and the earlier Firefox: 42 and the earlier Safari: 10 and the earlier
User/Host	20 channels at most (the total bandwidth 64M)
Security	Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled network access
User Management	Support 20 users at most and users are classified as two groups-administrator group and user group.
Malfunction Detection	Network disconnection; IP addresses conflict; SD card error (status or storage space)

Professional and Intelligent

Advanced Intelligent Functions	Fire detection & alarm, Cold/Hot spot tracking, Human/Vehicle classification, Auto Tracking
IVS Analytics	Tripwire/intrusion
Object Filter	Yes
Object Tracking	Single-scenario; multi-scenario; panoramic; manual; alarm-linked
Analog Video Output	1 channel of CVBS output with BNC port

Port

Network	1 10M/100M Ethernet port (RJ-45)
Alarm Input	7 channels
Alarm Output	2 channels
Alarm Linkage	SD card recording/on-off output/siren and light/email/PTZ/snapshot
Alarm Event	Motion detection/privacy mask/audio detection/SD card abnormality/network abnormality/anti-burn warning
Audio Input	1 channel
Audio Output	1 channel
RS-485	1 channel

Power

Power Supply	24V/5A±15% AC
Power Consumption	Basic: <17W (heater off) Maximum: <38W (heater on)

Environment

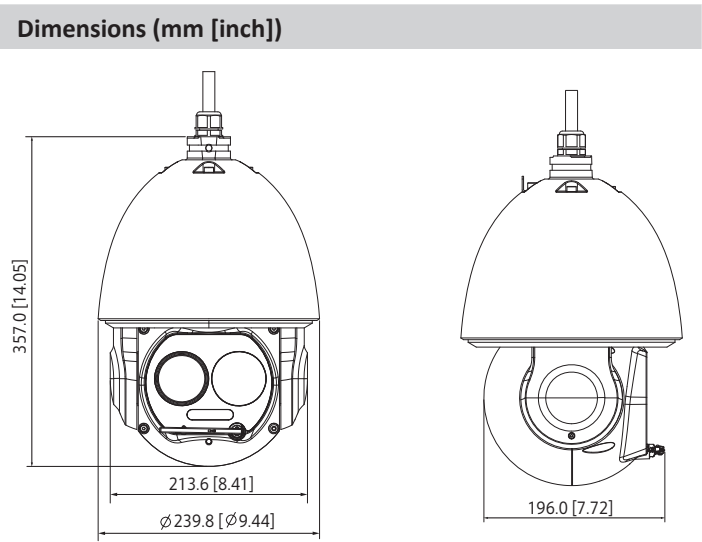|	
Operating Temperature	-40°C to +60°C (-40°F to 140°F)
Operating Humidity	≤95%
Storage Temperature	-50°C to +70°C (-58°F to 176°F)
Self-Adaptive	Auto heating to protect the chip under the cold environment

Physical Characteristics

Protection Grade	IP66, anti-surge 6KV, anti-elctrostatic 8KV (touched by objects), anti-elctrostatic 15KV (air)
Dimensions	Φ240 mm × 357 mm (Φ9.45" × 14.06")
Packaging Dimensions	319.0 mm × 319.0 mm × 521.0 mm (12.56" × 12.56" × 20.16")
Net Weight	≤8 kg (17.64 lb)
Gross Weight	≤10 kg (22.05 lb)
Power Adaptor	Contained
Lens	Contained

Certification

Certifications	CE; FCC

Ordering Information

Type	Part Number	Description
DH-TPC-SD8421-T	DH-TPC-SD8421P-TB7Z45	(with temperature measurement function) Thermal: 400 × 300, 7.5 mm focal length Visible: 1920 × 1080, 3.95 mm–177.7 mm focal length
	DH-TPC-SD8421N-TB7Z45	
	DH-TPC-SD8421P-TB13Z45	(with temperature measurement function) Thermal: 400 × 300, 13 mm focal length Visible: 1920 × 1080, 3.95 mm–177.7 mm focal length
	DH-TPC-SD8421N-TB13Z45	
	DH-TPC-SD8421P-TB25Z45	(with temperature measurement function) Thermal: 400 × 300, 25 mm focal length Visible: 1920 × 1080, 3.95 mm–177.7 mm focal length
	DH-TPC-SD8421N-TB25Z45	

Dimensions (mm [inch])

357.0 [14.05]

213.6 [8.41]

⌀239.8 [⌀9.44]

196.0 [7.72]

Accessories

Included:

PFA111

DH-PFM310

DH-PFB303W

Optional :

DH-PFA120

DH-PFA150

DH-PFA151

DH-PFB300C

Corner Mount	Corner Mount	Hang Mount
PFB303W+PFA151	PFB303W+PFA120+PFA151	PFB300C

Pole Mount	Pole Mount
PFB303W+PFA150	PFB303W+PFA120+PFA150

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