

SN-TPS4157ET-M (II)

Thermal & Optical Bi-spectrum Network Speed Dome Camera



Key Features

- Dual-Spectrum imaging with 384×288 thermal and 4 MP visible sensors
- $12 \mu\text{m}$ VOx uncooled thermal sensor, NETD $\leq 30 \text{ mK}$
- 25 mm motorized focus thermal lens; 40 $\times$ optical zoom visible lens
- Supports human and vehicle detection; smoking detection, smoke and flame detection, and fire spot detection
- Intelligent analytics: intrusion, smart motion detection, line crossing, loitering, wrong-way detection, enter area, leave area, and people counting
- Temperature monitoring and exception alarms
- Supports temperature measurement rules: spot, line, and area
- Temperature measurement range: $-20 \text{ }^{\circ}\text{C}$ to $150 \text{ }^{\circ}\text{C}$ or $0 \text{ }^{\circ}\text{C}$ to $550 \text{ }^{\circ}\text{C}$; accuracy: $\pm 2 \text{ }^{\circ}\text{C}$ / $\pm 2\%$
- Smart tracking: hot/cold spot tracking and human/vehicle auto tracking
- Smart IR illumination up to 300 m
- FIPS 140-3 Level 3 certified secure element
- Smart rain-sensing wiper; NDAA compliant, IP66-rated

Specifications

Camera		
	Thermal	Visible
Image Sensor	VOx uncooled focal plane array	1/1.8" CMOS
Max Resolution	384 × 288 thermal resolution, upscaled output up to 1280 × 720	4MP, 2688(H) × 1520(V)
Pixel Pitch	12 μm	N/A
Spectral Range	8–14 μm	N/A
NETD	≤ 30 mK	N/A
Shutter Speed	N/A	1/5 to 1/20,000s
Min Illumination	N/A	Color: 0.001 Lux @(F1.5, AGC ON), B/W: 0.0005 Lux @(F1.5, AGC ON), 0 Lux with IR on
Day & Night	N/A	Auto (ICR)
Lens		
	Thermal	Visible
Lens Type	Fixed lens	Motorized zoom lens
Focal Length	25 mm	6.27–251 mm (40x optical zoom)
Max. Aperture	F1.0	F1.5–F4.8
Field of View (FOV)	H: 10.5°, V: 7.9°	H: 60.7°–2.33°, V: 36.8°–1.38°
Focus Control	Motorized focus	Auto / Manual
Illuminator		
Type	IR	
IR wavelength	850 nm	
Distance	Up to 300 m (984.25 ft)	
Control	Auto / Manual	
Intelligent Analytics		
	Thermal	Visible
AI Multi-Target Detection	Supports human and vehicle detection	Supports human and vehicle detection
Intelligent Analysis	Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, leave area; supports alarm triggering based on specified target types (human/vehicle)	Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, leave area; supports alarm triggering based on specified target types (human/vehicle)
Smoke and Flame Detection	N/A	Supported
People Counting	Supported	Supported

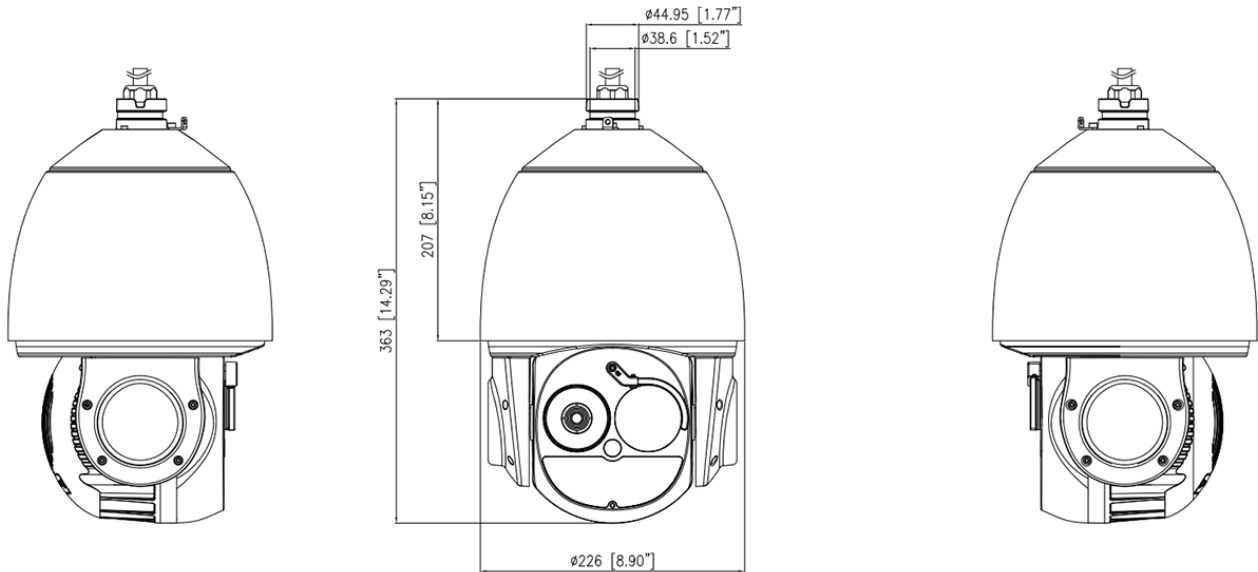
Smoking Detection	Supported	N/A
Fire Spot Detection	Supported	N/A
Video & Audio		
	Thermal	Visible
Resolution	Stream 1: 1280 × 720, D1, 384 × 288 Stream 2: D1, 384 × 288, CIF	Stream 1: 2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080, 1280 × 720 Stream 2: D1, VGA
Frame Rate	Up to 25 fps	Up to 25/30 fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream 1: 100 Kbps to 8 Mbps, Stream 2: 100 Kbps to 6 Mbps	Stream 1: 100 Kbps to 16 Mbps, Stream 2: 100 Kbps to 6 Mbps
Smart Encoding	Supported	Supported
Audio Compression	G.711 A-law, G.711 μ-law, RAW_PCM	G.711 A-law, G.711 μ-law, RAW_PCM
Audio Bit Rate	64 Kbps (G.711), 128 Kbps (RAW_PCM)	64 Kbps (G.711), 128 Kbps (RAW_PCM)
Image		
	Thermal	Visible
Image Adjustment	Brightness, Contrast, Sharpness	Brightness, Saturation, Contrast, Sharpness
Scene Mode	Mirror	Indoor, Outdoor, Mirror
Pseudo-color Setting	Up to 17 colors (White-hot / Black-hot / Rainbow / Iron red / HSV / Bone / Cool / Copper / Fire-hot / Pink / Spring / Summer / Autumn / Winter / Jet / Flame / Rose - Bengal)	N/A
FFC Control	Auto / Manual	N/A
Exposure Mode	N/A	Auto / Manual
White Balance	N/A	Auto / Tungsten / Fluorescent / Daylight / Shadow / Manual
Day/Night Setting	N/A	Auto / Day / Night / Timer
Noise Reduction	2D/3D DNR	2D/3D DNR
Image Enhancement	N/A	HLC, BLC, Defog, WDR
Wide Dynamic Range	N/A	True WDR (120 dB)
Privacy Masking	Supported	Supported
Thermal Function		
Temperature Range	-20 °C to 150 °C (-4 °F to 302 °F) or 0 °C to 550 °C (32 °F to 1022 °F)	
Accuracy	±2 °C or ±2% (whichever is greater)	
Temperature Detection	Supports 3 rule types (spot, line, and area); up to 20 rules, including 1 full-screen rule and 19 spot/line/area rules	
Temperature Alarm	Temperature difference alarm, temperature threshold alarm, and temperature rise alarm	
Temperature Display	Lower-left corner display; cursor-based display of maximum, minimum, and average temperature values	

Image Fusion	Thermal and optical image fusion
PTZ	
Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: -10° to 90° (auto-flip)
Pan Speed	Pan: 0.01° to 300°/s, preset speed: 300°/s
Tilt Speed	Tilt: 0.01° to 240°/s, preset speed: 240°/s
Preset Accuracy	≤ 0.2°
Preset	400
Track	6 tracks
Scan	12 scans
Tour	12 tours, up to 32 presets per tour
Intelligent Tracking	Hot/cold spot tracking; human, and vehicle auto tracking
Power-Off Memory	Supported
3D Positioning	Supported
PTZ Status Display	Supported
Idle Motion	The time can be set (1-240 minutes), and functions such as preset positions, patrols, scans, and tracks can be run.
Event	
Alarm Triggers	IVS, temperature anomaly, motion detection, alarm input, network alarm, disk alarm, and abnormal sound detection
Event Actions	Alarm recording, FTP upload, SMTP email notification, alarm output, and audible alarm output
Network	
Protocols	IPv4/IPv6, HTTP/HTTPS, DNS, DDNS, DHCP, PPPoE, RTSP/ RTP/RTCP, TCP/UDP, NTP, ARP, UPnP, FTP, SMTP, QoS, ICMP, IGMP, SMTP, 802.1x, SNMP, Multicast
Application Programming Interface	ONVIF (Profile S/T/G/M), SDK, CGI
Max Concurrent Streams	10 channels
User/Host Level	32+ users, 3 levels: Administrator, Operator, and Media user
Web Viewer	Chrome, Firefox, Microsoft Edge, IE11 or earlier
Security	
OS / Firmware Protect	Encrypted firmware, Signed firmware
User Authentication	Digest authentication, Brute-force attack protection
Network Authentication	IEEE 802.1X (EAP-TLS)
Secure Communication	HTTPS, WSS (WebSocket Secure), SRTP
Access Control	IP-based access control, Auto logout
Data Protect	Encryption credentials
Audit	Access, system, and event logs
Supply Chain Security	SBOM

Hardware Security	Built-in FIPS 140-3 Level 3 Certified Secure Element
Interface	
Network Interface	1 × RJ45 10/100 Mbps Ethernet port
Audio Interface	1 input (RCA), 1 output (RCA)
Alarm Interface	7 inputs, 2 outputs
RS-485	1 × RS-485
CVBS Output	1 × BNC
SD Card Slot	Built-in microSD card slot (up to 1 TB)
General	
Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	24 VAC / 36 VDC / PoE++ (802.3bt), Standard Equipped: 36VDC
Power Consumption	Max 45 W
Operating Temperature	-40 °C to 60 °C (-40 °F to 140 °F)
Operating Humidity	≤ 95% RH (non-condensing)
Ingress Protection	IP66
Wiper	Supported
Certifications	CE-EMC: EN 55032, EN IEC 61000-6-4, EN IEC 61000-3-2, EN 61000-3-3, EN 55035, EN 50130-4 CE-LVD: EN IEC 62368-1 FCC: 47 CFR Part 15 Subpart B
Material	Aluminium alloy
Dimensions	φ226 × 363 mm (φ8.9 × 14.29 inch)
Net Weight	Approx. 6 kg (13.2 lb)
DORI Distance (EN 62676-4 standard)	
Detect	95–3,515 m (311.68–11,532.15 ft)
Observe	38–1,406 m (124.67–4,612.86 ft)
Recognize	19–703 m (62.34–2,306.43 ft)
Identify	9.5–351.5 m (31.17–1,153.22 ft)
Thermal DRI Distance	
Thermal Lens	25 mm
Detection (Human: 1.8×0.5 m)	1,042 m (3,418.6 ft)
Detection (Vehicle: 4×1.5 m)	3,194 m (10,479 ft)
Recognition (Human: 1.8×0.5 m)	260 m (853 ft)
Recognition (Vehicle: 4×1.5 m)	799 m (2,621.4 ft)

Identification (Human: 1.8×0.5 m)	130 m (426.5 ft)
Identification (Vehicle: 4×1.5 m)	399 m (1,309 ft)
<i>Note:</i> <i>Distances are calculated based on Johnson's Criteria.</i> <i>Detection: Object must be covered by ≥1.5 pixels.</i> <i>Recognition: Object must be covered by ≥6 pixels.</i> <i>Identification: Object must be covered by ≥12 pixels.</i>	
Thermal Smart Detection	
Lens	25 mm
VCA Detection (Human: 1.8×0.5 m)	170 m (557.74 ft)
VCA Detection (Front/Rear of Vehicle: 4×1.5 m)	250 m (820.2 ft)
Temperature Measurement (1 ×1 m)	417 m (1,368.1 ft)
Temperature Measurement (0.2×0.2 m)	83 m (272.3 ft)
Fire Detection (1×1 m)	1,042 m (3,418.6 ft)
Fire Detection (0.2×0.2 m)	208 m (682.4 ft)
<i>Note:</i> <i>Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.</i>	

Dimensions (mm)



Accessories

Optional:



SN-CBK506B
Wall Mount



SN-BK348A
Ceiling Mount



SN-BK605
Corner Mount



SN-BK604B
Pole Mount



SN-BK367
Junction Box



SN-BK358
Corner Mount



SN-BK359
Pole Mount