

SN-TPT6434LPZ-M

Thermal & Optical Bi-spectrum PTZ Camera



Key Features

- Bi-Spectrum: 640 × 512 thermal and 4MP visible sensor
- Sensor: 12 μm VOx uncooled thermal sensor, NETD ≤ 20 mK
- Optional motorized thermal lenses: 50 / 75 / 100 mm; Visible: 40x optical zoom visible lens
- Supports human/vehicle/ship detection; smoking, smoke and flame detection, and fire spot detection
- Intelligent analytics: Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, leave area, and people counting
- Temperature monitoring and exception alarms
- Temperature measurement: spot, line, and area
- Temperature range: $-20\text{ }^{\circ}\text{C}$ to $150\text{ }^{\circ}\text{C}$; accuracy $\pm 2\text{ }^{\circ}\text{C}$ / $\pm 2\%$
- Laser distance up to 800m
- Anti-frozen, NDAA Compliance, IP66

Specifications

Camera		
	Thermal	Visible
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays	1/1.8" STARVIS CMOS
Max Resolution	Sensor is 640×512, Image can be scaled up to 1280×1024	2688 (H)×1520 (V), 4MP
Pixel Pitch	12μm	N/A
Spectral Range	8 to 14μm	N/A
NETD	≤ 20mK	N/A
Shutter Speed	N/A	1/5 to 1/20,000s
Min Illumination	N/A	Color: 0.001 Lux (F1.6, AGC ON), B/W: 0.0005 Lux (F1.6, AGC ON), 0 Lux with illuminator on
Day & Night	N/A	Auto (ICR)
Lens		
	Thermal	Visible
Lens Type	Fixed lens	Motorized zoom lens
Focal Length	50 mm, 75 mm, 100 mm optional	6.8 to 272 mm, 40x optical zoom
Max. Aperture	F1.0	F1.63 to F4.94
Field of View (FOV)	50 mm, H: 8°, V: 7°; 75 mm, H: 6°, V: 5°; 100 mm, H: 4°, V: 3°	H: 60.7° to 2.33°, V: 36.8° to 1.38°
Focus Control	Motorized focus	Auto / Manual
Illuminator		
Type	Laser	
IR wavelength	850 nm	
Distance	Up to 800 m (2,624.7 ft)	
Control	Auto / Manual	
Intelligent Analytics		
	Thermal	Visible
AI Multi-Target	Supports human / vehicle / ship detection.	Supports face, human, and vehicle detection & capture. Supports human and vehicle attribute detection.

Attribute Extraction	N/A	- Human Attributes: Gender, age, glasses, hat, bag, upper clothing color & style, lower clothing color & style, reflective vest. - Vehicle Attributes: Type, color, brand, orientation.
Intelligent Analysis	Intrusion, smart motion detection, single line crossing, double line crossing, loitering, wrong-way detection, enter area, and leave area. - Supports accurate target classification (human/vehicle)	Intrusion detection, smart motion detection, single line crossing, double line crossing, loitering, wrong-way detection, area people limit, perimeter detection, illegal parking, running detection, fall detection, fight detection. - Supports accurate target classification (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	Stream1: 1280×1024, 1280×720, 640×512 Stream2: D1, CIF	Stream1: 2688×1520, 2304×1296, 1920×1080, 1280×720 Stream2: D1, VGA, CIF Stream3: VGA, CIF, QVGA
Frame Rate	Up to 25fps	Up to 50/60fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream1: 100 Kbps to 8 Mbps, Stream2: 10 Kbps to 6 Mbps	Stream1: 200 kbps to 16 Mbps Stream2: 100 kbps to 6 Mbps Stream3: 100 kbps to 3 Mbps
Smart Encoding	Supported	Supported
Region of Interest (ROI)	N/A	Supported
Audio Compression	N/A	G.711 A-law, G.711 μ -law, RAW_PCM
Audio Bit Rate	N/A	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 mode / Night mode / Timer
Noise Reduction	2D/3D DNR	2D/3D DNR
Image Enhancement	N/A	WDR, HLC, BLC, Defog, Anti-shake
Wide Dynamic Range	N/A	True WDR(120dB)
Privacy Masking	Supported	Supported

Thermal Function

Temperature Range	-20°C to 150°C (-4°F to 302°F)
Accuracy	±2°C / ±2%
Temperature Detection	3 temperature measurement rule types, 20 rules in total, 1 full screen, 19 others (spot, areas, line).
Temperature Alarm	Supports threshold alarm, temperature difference alarm, range alarm, and temperature rise alarm.
Temperature Display	Display in the lower left corner; follow the cursor display of the highest temperature, lowest temperature or average temperature
Response Time	≤ 30ms

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: +90° to -90°
Pan Speed	Pan: 0.01° to 60°/s
Tilt Speed	Tilt: 0.01° to 30°/s
Preset Accuracy	± 0.1°
Preset	400
Track	6 tracks
Scan	8 scans
Tour	12 tour, up to 32 presets per tour
Power-Off Memory	Supported
3D Positioning	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, Disk alarm, Network alarm, Abnormal sound detection
Event Actions	Alarm output, Alarm record, SMTP, FTP upload, Audible alarm output

Network

Protocols	IPv4/IPv6, HTTP/HTTPS, DNS, DDNS, DHCP, PPPOE, RTSP/RTP/RTCP, TCP/UDP, NTP, ARP, UPnP, FTP, SMTP, QoS, 802.1x, SNMP, Multicast
Application Programming Interface	ONVIF (Profile S/T/G/M), CGI, SDK
Max Concurrent Streams	10 channels

User/Host Level	32+ users, 3 levels: Administrator, Operator, Media user
Web Viewer	<IE11, Chrome, Firefox, Microsoft Edge
Security	
OS / Firmware Protect	Encrypted firmware, Secure boot, Signed firmware
User Authentication	Digest authentication, Prevent brute-force attack
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 / Event Log management
Supply Chain Security	SBOM
Interface	
Network Interface	RJ-45 Ethernet (10/100BASE-T)
Audio Interface	1 input, 1 output (visible)
Alarm Interface	9 inputs, 4 outputs
CVBS Output	2 BNC outputs (thermal and visible)
SD Card Slot	MicroSD card slot (max. 1 TB) *Memory card must be factory pre-installed and is not field-installable.
General	
Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	36 VDC
Power Consumption	Max 150 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 FCC 47 CFR Part 15 Subpart B
Material	Metal
Dimensions	594 × 350 × 337 mm (23.39 × 13.78 × 13.27 inch)
Net Weight	Approx. 26.6 Kg (58.6 lb)
DORI Distance (EN62676-4 standard)	
Detect	95 to 5,600 m (311.68 to 18,372.7 ft)
Observe	38 to 1,520 m (124.67 to 4,986.88 ft)
Recognize	19 to 760 m (62.34 to 2,493.44 ft)

Identify	9.5 to 380 m (31.17 to 1,246.72 ft)		
Thermal DRI Distance			
Thermal Lens	50 mm	75 mm	100 mm
Detection (Human: 1.8×0.5 m)	2,083 m (6,834.0 ft)	3,125 m (10,252.6 ft)	4,167 m (13,671.3 ft)
Detection (Vehicle: 4×1.5 m)	6,389 m (20,961.3 ft)	9,583 m (31,440.3 ft)	12,778 m (41,922.6 ft)
Recognition (Human: 1.8×0.5 m)	521 m (1,709.3 ft)	781 m (2,562.3 ft)	1,042 m (3,418.6 ft)
Recognition (Vehicle: 4×1.5 m)	1,597 m (5,239.5 ft)	2,396 m (7,860.9 ft)	3,194 m (10,479.0 ft)
Identification (Human: 1.8×0.5 m)	260 m (853 ft)	391 m (1,282.8 ft)	521 m (1,709.3 ft)
Identification (Vehicle: 4×1.5 m)	799 m (2,621.4 ft)	1,198 m (3,930.5 ft)	1,597 m (5,539.5 ft)
Note: Distances are calculated based on Johnson's Criteria. Detection: Object must be covered by ≥1.5 pixels. Recognition: Object must be covered by ≥6 pixels. Identification: Object must be covered by ≥12 pixels.			
Thermal Smart Detection			
Lens	50 mm	75 mm	100 mm
Temperature Measurement (1 ×1 m)	833 m (2,732.9 ft)	1,250 m (4,101.1 ft)	1,667 m (5,469.2 ft)
Temperature Measurement (0.2×0.2 m)	167 m (547.9 ft)	250 m (820.2 ft)	333 m (1,092.5 ft)
Fire Detection (1×1 m)	2,083 m (6,834.0 ft)	3,125 m (10,252.6 ft)	4,167 m (13,671.3 ft)
Fire Detection (0.2×0.2 m)	417 m (1,368.1 ft)	625 m (2,050.5 ft)	833 m (2,732.9 ft)
Note: Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.			
Ordering Info			
Model	SN-TPT6434LPZ-M50-ZSD40	SN-TPT6434LPZ-M75-ZSD40	SN-TPT6434LPZ-M100-ZSD40
Description	Thermal Focal Length: 50 mm Visible Focal Length: 6.8 to 272 mm, 40x optical zoom	Thermal Focal Length: 75 mm Visible Focal Length: 6.8 to 272 mm, 40x optical zoom	Thermal Focal Length: 100 mm Visible Focal Length: 6.8 to 272 mm, 40x optical zoom

Dimensions (mm)

