

Explosion-proof Bi-spectrum PTZ Camera



SN-TPT6434PA-M

Key Features

- + Bi-Spectrum: 640 × 512 thermal & 5MP visible sensor
- + Sensor: 12 μm VOx UFPA, NETD ≤ 20 mK
- + Lens: 25/50 mm fixed thermal lens optional; 30x optical zoom visible lens
- + Detection: Human, vehicle, smoking, smoke and flame, and fire point detection
- + Intelligent Analytics: Intrusion, single/double line crossing, loitering, wrong-way, enter/leave area detection, smart motion detection, people counting
- + Temperature Measurement: Spot, line, area; -20°C to 150°C, accuracy: ±2°C / ±2%
- + Material: 316L Stainless steel
- + NDAA Compliance, IP68

Camera	Thermal	Visible
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays	1/2.8" SRAVIS CMOS
Max. Resolution	Sensor is 640×512, Image can be scaled up to 1280×1024	2592 (H)×1944 (V), 5MP
Pixel Pitch	12μm	N/A
Spectral Range	8 to 14μm	N/A
NETD	≤ 20mK	N/A
Shutter Speed	N/A	1/5 to 1/100,000s
Min. Illumination	N/A	Color: 0.005 Lux @(F1.6, AGC ON), B/W: 0.0001 Lux (F1.6, AGC ON), 0 Lux with illuminator on
Day & Night	N/A	Auto (ICR)

Lens

Lens Type	Fixed lens	Motorized zoom lens
Focal Length	25 mm, 50 mm optional	5.3 to 159 mm, 30x optical zoom
Max. Aperture	F1.0	F1.6 to F4.4
Field of View (FOV)	25 mm, H: 17°, V: 14° 50 mm, H: 8°, V: 7°	H: 56.8° to 2.6°, V: 42.7° to 2.0°
Focus Control	Motorized focus	Auto / Manual

Intelligent Analytics

AI Multi-Target	Human / vehicle 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 detection, smart motion detection, single line crossing, double line crossing, loitering, wrong-way detection, enter/leave area detection - 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 and Audio

Resolution	Stream1: 1280×1024, 1280×720, 640×512 Stream2: D1, CIF	Stream1: 2592×1944, 2592×1520, 1920×1080, 1280×720 Stream2: D1, VGA, CIF Stream3: VGA, CIF, QVGA
Frame Rate	Up to 25fps	Up to 25/30fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream1: 100 Kbps to 8 Mbps, Stream2: 100 Kbps to 6 Mbps	Stream1: 200 kbps to 12 Mbps Stream2: 100 kbps to 6 Mbps Stream3: 100 kbps to 3 Mbps
Smart Encoding	Supported	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

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
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	$\pm 2^\circ\text{C}$ / $\pm 2\%$
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
Event	
Alarm Triggers	IVS, Temperature anomaly, Motion detection, Alarm input, Disk alarm, Network alarm
Event Actions	Alarm output, Alarm record, SMTP, FTP upload, Audible alarm output
PTZ	
Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: -90° to +90°
Pan Speed	Pan: 0.01° to 30°/s, preset speed: 30°/s
Tilt Speed	Tilt: 0.01° to 20°/s, preset speed: 30°/s
Preset Accuracy	≤ 0.2°
Preset	400
Track	6 tracks
Scan	8 scans
Tour	12 tours, up to 32 presets per tour
3D Positioning	Supported
Power-Off Memory	Supported
Idle Motion	The time can be set (1-240 minutes), and functions such as preset positions, patrols, scans, and tracks can be run.
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
Secure Storage	SDcard partition encrypt(AES-256), Secure element
Supply Chain Security	SBOM

Interface

Network Interface	1 × Ethernet (10/100 Base-T), RJ-45 connector
Audio Interface	1ch input, 1ch output (visible)
Alarm Interface	5ch input, 1ch output
Control Interface	1ch RS-485
CVBS Output	1ch (visible)
SD Card Slot	Built-in MicroSD slot, supports up to 1TB <i>* If needed, we recommend purchasing the memory card with the product so it can be pre-installed during production.</i>

General

Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	100 to 240 VAC
Power Consumption	Max 75 W
Operating Temperature	-40°C to 60°C (-40°F to 140°F)
Operating Humidity	≤ 95% RH (non-condensing)
Ingress Protection	IP68
Wiper	Supported
Certifications	CE / FCC
Material	SUS316L
Dimensions	567 × 360 × 494mm (22.66 × 14.17 × 19.45 inch)
Net Weight	52 kg (114.64 lb)

Thermal DRI Distance

Thermal Lens	25 mm	50 mm
Detection (Human: 1.8×0.5 m)	1,042 m (3,418.6 ft)	2,083 m (6,834.0 ft)
Detection (Vehicle: 4×1.5 m)	3,194 m (10,479 ft)	6,389 m (20,961.3 ft)
Recognition (Human: 1.8×0.5 m)	260 m (853 ft)	521 m (1,709.3 ft)



Recognition (Vehicle: 4x1.5 m)	799 m (2,621.4 ft)	1,597 m (5,239.5 ft)
Identification (Human: 1.8x0.5 m)	130 m (426.5 ft)	260 m (853 ft)
Identification (Vehicle: 4x1.5 m)	399 m (1,309.1 ft)	799 m (2,621.4 ft)

Note: The table is only for reference and the performance may vary according to different environment.

Note: The optimal detection, recognition, and identification distances are calculated according to Johnson's Criteria.

Detection Range: In order to distinguish an object from the background, the object must be covered by 1.5 or more pixels.

Recognition Range: In order to classify the object (animal, human, vehicle, etc.), the object must be covered by 6 or more pixels.

Identification Range: In order to identify the object and describe it in details, the object must be covered by 12 or more pixels.

Thermal Smart Distance

Lens	25 mm	50 mm
VCA Detection (Human: 1.8x0.5 m)	280 m (918.6 ft)	480 m (1,574.8 ft)
Temperature Measurement (1 x1 m)	417 m (1,368.1 ft)	833 m (2,732.9 ft)
Temperature Measurement (0.2x0.2 m)	83 m (272.3 ft)	167 m (547.9 ft)
Fire Detection (1x1 m)	1,042 m (3,418.6 ft)	2,083 m (6,834.0 ft)
Fire Detection (0.2x0.2 m)	208 m (682.4 ft)	417 m (1,368.1 ft)

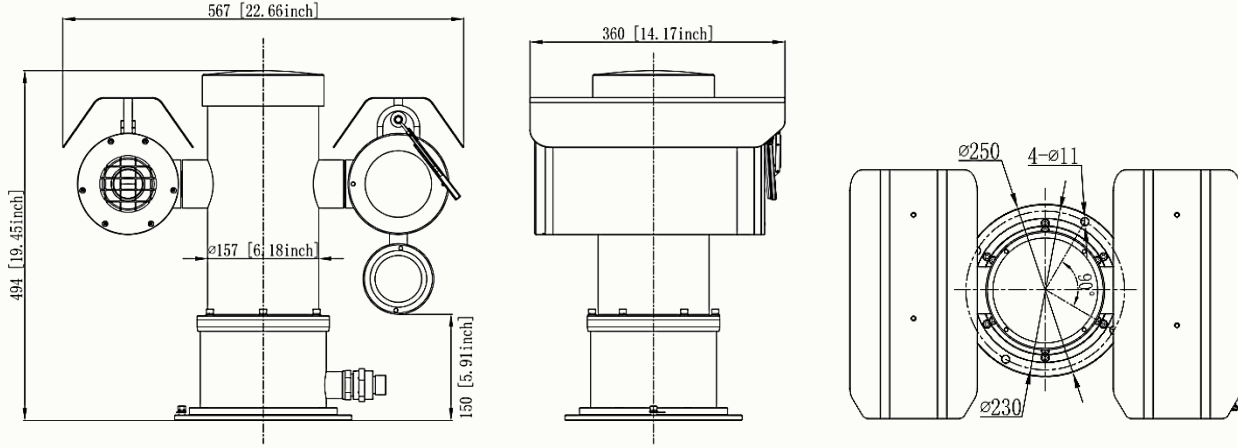
Note:
Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.

DORI Distance (EN-62676-4 standard)

Detect	103 to 3,090 m (337.93 to 10,137.8 ft)
Observe	41.2 to 1,236 m (135.17 to 4,055.1 ft)
Recognize	20.6 to 618 m (67.59 to 2,027.6 ft)
Identify	10.3 to 309 m (33.79 to 1,013.8 ft)



Dimensions (mm)



Accessories

Optional:



Wall Mount



Pole Mount



Corner Mount



Junction Box



Washing Tank



Flexible Tube

