

## Explosion-proof Bi-spectrum PTZ Camera



# SN-TPT6434PA-F

### Key Features

- + Bi-Spectrum: 640 × 512 thermal & 5MP visible sensor
- + Sensor: 12 μm VOx UFPA, NETD ≤ 20 mK
- + Lens: 9/15/25/35/50 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	9 mm, 15 mm, 25 mm, 35 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)	9 mm, H: 48°, V: 38° 15 mm, H: 29°, V: 23° 25 mm, H: 17°, V: 14° 35 mm, H: 12°, V: 10° 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

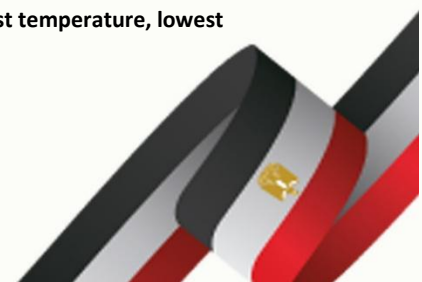
Resolution	Stream1: 1280×1024, 1280×720, 640×512 Stream2: D1, CIF	Stream1: 2592×1944, 2592×1520, 1920×1080, 1280×720 Stream2: D1, VGA, CIF Stream3: VGA, CIF, QVGA
Frame Rate	Up to 25fps	Up to 25/30fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream1: 100 Kbps to 8 Mbps, Stream2: 100 Kbps to 6 Mbps	Stream1: 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 $\mu$ -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
<b>Event</b>	
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
<b>PTZ</b>	
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.
<b>Network</b>	
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
<b>Security</b>	
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	9 mm	15 mm	25 mm	35 mm	50 mm
Detection (Human: 1.8×0.5 m)	375 m (1230.3 ft)	625 m (2,050.5 ft)	1,042 m (3,418.6 ft)	1,458 m (4,783.5 ft)	2,083 m (6,834.0 ft)
Detection (Vehicle: 4×1.5 m)	1,150 m (3,773 ft)	1,917 m (6,289.4 ft)	3,194 m (10,479 ft)	4,472 m (14,672 ft)	6,389 m (20,961.3 ft)
Recognition (Human: 1.8×0.5 m)	94 m (308.4 ft)	156 m (511.8 ft)	260 m (853 ft)	365 m (1,197.5 ft)	521 m (1,709.3 ft)



Recognition (Vehicle: 4×1.5 m)	288 m (944.9 ft)	479 m (1,571.5 ft)	799 m (2,621.4 ft)	1,118 m (3,668 ft)	1,597 m (5,239.5 ft)
Identification (Human: 1.8×0.5 m)	47 m (154.2 ft)	78 m (255.9 ft)	130 m (426.5 ft)	182 m (597.1 ft)	260 m (853 ft)
Identification (Vehicle: 4×1.5 m)	144 m (472.4 ft)	240 m (787.4 ft)	399 m (1,309.1 ft)	559 m (1,834 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	9 mm	15 mm	25 mm	35 mm	50 mm
VCA Detection (Human: 1.8×0.5 m)	135 m (442.9 ft)	195 m (639.8 ft)	280 m (918.6 ft)	380 m (1,246.7 ft)	480 m (1,574.8 ft)
Temperature Measurement (1 ×1 m)	150 m (492.1 ft)	250 m (820.2 ft)	417 m (1,368.1 ft)	583 m (1,912.7 ft)	833 m (2,732.9 ft)
Temperature Measurement (0.2×0.2 m)	30 m (98.4 ft)	50 m (164 ft)	83 m (272.3 ft)	117 m (383.9 ft)	167 m (547.9 ft)
Fire Detection (1×1 m)	375 m (1,230.3 ft)	625 m (2,050.5 ft)	1,042 m (3,418.6 ft)	1,458 m (4,783.5 ft)	2,083 m (6,834.0 ft)
Fire Detection (0.2×0.2 m)	75 m (246.1 ft)	125 m (410.1 ft)	208 m (682.4 ft)	292 m (958 ft)	417 m (1,368.1 ft)

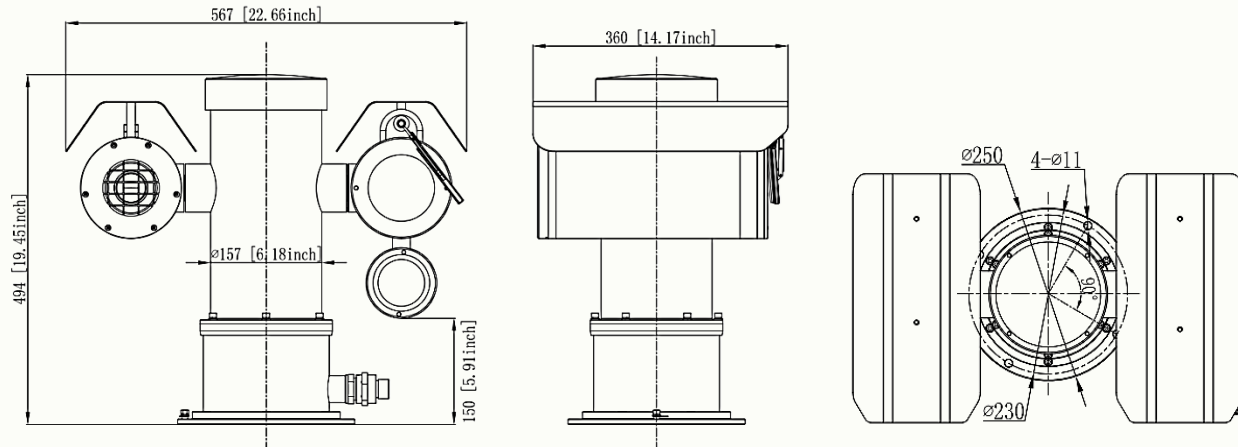
Note:  
 Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.

### 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

