SN-TPT6434PA-F

Explosion-proof Bi-spectrum PTZ Camera



Key Features

- Bi-spectrum: 640 × 512 thermal and 5 MP visible sensor
- 12 µm VOx uncooled thermal sensor, NETD ≤ 20 mK
- Optional fixed thermal lenses: 9 / 15 / 25 / 35 / 50 mm; 30x 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 ℃ to 150 ℃; accuracy: ±2 ℃ or ±2%
- Material: 316L Stainless steel
- NDAA compliant, IP68
- ATEX II 2 G Ex db IIC T6 Gb; II 2 D Ex tb IIIC T80℃ Db

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

Specifications

Camera		
Image Sensor	VOx uncooled focal plane array	1/2.8" SRAVIS CMOS
Max. Resolution	640 × 512 thermal resolution, upscaled output up to 1280 × 1024	2592 (H)×1944 (V), 5MP
Pixel Pitch	12 µm	N/A
Spectral Range	8–14 µm	N/A
NETD	≤ 20 mK	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)	5.3–159 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: 32°, V: 26° 25 mm: H: 17°, V: 14° 35 mm: H: 12°, V: 10° 50 mm: H: 8°, V: 7°	H: 56.8°–2.6°, V: 42.7°–2.0°
Focus Control	Focus-free	Auto / Manual
Illuminator		
Type	IR	
IR wavelength	850 nm	
Distance	Up to 100 m (328.1 ft)	
Control	Auto / Manual	
Intelligent Analytics		
AI Multi-Target Detection	Supports human and vehicle detection	Supports face, human and vehicle detection with snapshot capture Supports human and vehicle attribute analysis
Attribute Analysis	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.

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

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 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 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		
Resolution	Stream 1: 1280 × 1024, 1280 × 720, 640 × 512 Stream 2: D1, CIF	Stream 1: 2592 × 1944, 2592 × 1520, 1920 × 1080, 1280 × 720 Stream 2: D1, VGA, CIF Stream 3: VGA, CIF, QVGA
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: 10 Kbps to 6 Mbps	Stream 1: 200 Kbps to 12 Mbps Stream 2: 100 Kbps to 6 Mbps Stream 3: 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		
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 (120 dB)
Privacy Masking	Supported	Supported
Thermal Function		

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

Temperature Range	-20 ℃ to 150 ℃ (-4 ℉ to 302 ℉)
Accuracy	±2 ℃ 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
Response Time	≤ 30 ms
PTZ	
Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: -90° to +90°
Pan Speed	Pan: 0.1° to 30°/s, preset speed: 30°/s
Tilt Speed	Tilt: 0.1° 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
Intelligent Tracking	Human/Vehicle auto tracking
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, 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, 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, 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)

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

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
Interface	
Network Interface	1 × RJ45 10/100 Mbps Ethernet port
Audio Interface	1 input, 1 output (visible)
Alarm Interface	5 inputs, 1 output
RS-485	1 × RS-485
SD Card Slot	Built-in microSD card slot (up to 1 TB) *Memory card must be factory pre-installed and is not field-installable.
Reset Button	Supported
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-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 ATEX: Ex II 2GD Ex db IIC T6 Gb / Ex tb IIIC T80°C Db; IECEx: Ex db IIC T6 Gb / Ex tb IIIC T80°C Db
Material	SUS316L
Dimensions	567 × 360 × 494mm (22.66 × 14.17 × 19.45 inch)
Net Weight	Approx. 52 kg (114.64 lb)
DORI Distance (EN 62676-4 standard)	
Detect	103–3,090 m (337.9–10,137.8 ft)
Observe	41.2–1,236 m (135.2–4,055.1 ft)
Recognize	20.6–618 m (67.6–2,027.6 ft)
Identify	10.3–309 m (33.8–1,013.8 ft)

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)

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

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:
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	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)

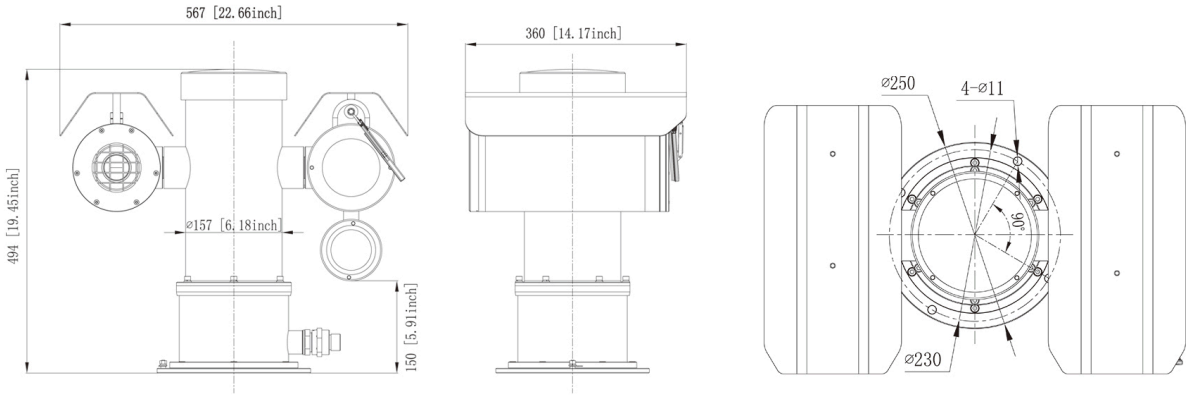
Note:
Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.

Ordering Info

Model	SN-TPT6434PA-F09-ZSE30	SN-TPT6434PA-F15-ZSE30	SN-TPT6434PA-F25-ZSE30	SN-TPT6434PA-F35-ZSE30	SN-TPT6434PA-F50-ZSE30
Description	Thermal Focal Length: 9 mm Visible Focal Length: 5.3–159 mm, 30x optical zoom	Thermal Focal Length: 15 mm Visible Focal Length: 5.3–159 mm, 30x optical zoom	Thermal Focal Length: 25 mm Visible Focal Length: 5.3–159 mm, 30x optical zoom	Thermal Focal Length: 35 mm Visible Focal Length: 5.3–159 mm, 30x optical zoom	Thermal Focal Length: 50 mm Visible Focal Length: 5.3–159 mm, 30x optical zoom

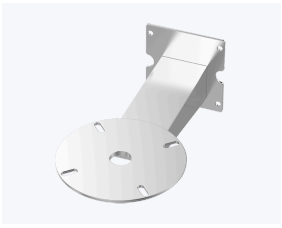
Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.

Dimensions (mm)



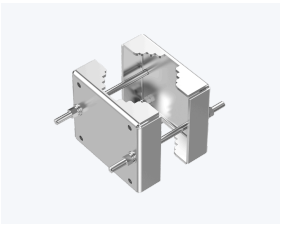
Accessories

Optional:



SN-BK402A-SS

Wall Mount Bracket



SN-BK404

Pole Mount Bracket



SN-BK405-SS

Corner Mount Bracket



SN-BK400-SS

Explosion-proof Junction Box

Product specifications are subject to change without prior notice. For the latest Sunell product information, please visit www.sunellsecurity.com.
© 2026 Shenzhen Sunell Technology Corporation. All rights reserved.