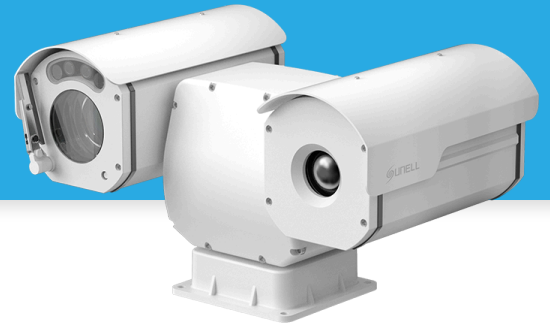


# SN-TPT6434QZ-F

Thermal & Optical Bi-spectrum Mini PTZ Camera



## Key Features

- Bi-Spectrum: 640 × 512 thermal and 5MP visible sensor
- Sensor: 12 μm VOx uncooled thermal sensor, NETD ≤ 20 mK
- Optional fixed thermal lenses: 7 / 9 / 15 / 25 mm; 30x optical zoom visible lens
- Supports human/vehicle 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 °C to 150 °C; accuracy: ±2°C / ±2%
- Compliance: NDA compliant, IP66

## Specifications

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		
	Thermal	Visible
Lens Type	Fixed lens	Motorized zoom lens
Focal Length	7 mm, 9 mm, 15 mm, 25 mm optional	5.3 to 159 mm, 30x optical zoom
Max. Aperture	F1.0	F1.6 to F4.4
Field of View (FOV)	7 mm, H: 63°, V: 50°; 9 mm, H: 48°, V: 38°; 15 mm, H: 32°, V: 26°; 25 mm, H: 17°, V: 14°	H: 56.8° to 2.6°, V: 42.7° to 2.0°
Focus Control	Focus-free	Auto / Manual
Illuminator		
Type	Warm light	
Distance	Up to 30 m (98.4 ft)	
Control	Auto / Manual	
Intelligent Analytics		
	Thermal	Visible
AI Multi-Target	Supports 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 & Audio

	Thermal	Visible
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: 10 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
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

Day/Night Setting	N/A	Auto / Day / Night / 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
<b>Thermal Function</b>		
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	
<b>PTZ</b>		
Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: -90° to +90°	
Pan Speed	Pan: 0.01° to 20°/s, preset speed: 20°/s	
Tilt Speed	Tilt: 0.01° to 10°/s, preset speed: 10°/s	
Preset Accuracy	± 0.1°	
Preset	400	
Track	6 tracks	
Scan	8 scans	
Tour	12 tours, up to 32 presets per patrol	
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.	
<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>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
<b>Interface</b>	
Network Interface	RJ-45 Ethernet (10/100BASE-T)
Built-in Speaker	Supported (visible)
Alarm Interface	1 input, 1 output (thermal)
Control Interface	RS-485
CVBS Output	BNC (visible)
SD Card Slot	MicroSD card slot (max. 1 TB) *Memory card must be factory pre-installed and is not field-installable.
<b>General</b>	
Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	12 VDC
Power Consumption	Typical: 18 W, Max 36 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	348 × 200 × 200 mm (13.7 × 7.87 × 7.87 inch)
Net Weight	Approx. 5 kg (11.0 lb)
<b>DORI Distance (EN62676-4 standard)</b>	
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)			
Thermal DRI Distance				
Thermal Lens	7 mm	9 mm	15 mm	25 mm
Detection (Human: 1.8×0.5 m)	292 m (958.0 ft)	375 m (1,230.3 ft)	625 m (2,050.5 ft)	1,042 m (3,418.6 ft)
Detection (Vehicle: 4×1.5 m)	894 m (2933.1 ft)	1,150 m (3,773 ft)	1,917 m (6,289.3 ft)	3,194 m (10,479 ft)
Recognition (Human: 1.8×0.5 m)	73 m (239.5 ft)	94 m (308.4 ft)	156 m (511.8 ft)	260 m (853 ft)
Recognition (Vehicle: 4×1.5 m)	224 m (734.9 ft)	288 m (944.9 ft)	479 m (1,571.5 ft)	799 m (2,621.4 ft)
Identification (Human: 1.8×0.5 m)	36 m (118.1 ft)	47 m (154.2 ft)	78 m (255.9 ft)	130 m (426.5 ft)
Identification (Vehicle: 4×1.5 m)	112 m (367.5 ft)	144 m (472.4 ft)	240 m (787.4 ft)	399 m (1,309 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	7 mm	9 mm	15 mm	25 mm
VCA Detection (Human: 1.8×0.5 m)	70 m (229.7 ft)	135 m (442.9 ft)	195 m (639.8 ft)	280 m (918.6 ft)
Temperature Measurement (1×1 m)	117 m (383.9 ft)	150 m (492.1 ft)	250 m (820.2 ft)	417 m (1,368.1 ft)
Temperature Measurement (0.2×0.2 m)	23 m (75.5 ft)	30 m (98.4 ft)	50 m (164 ft)	83 m (272.3 ft)
Fire Detection (1×1 m)	292 m (958.0 ft)	375 m (1,230.3 ft)	625 m (2,050.5 ft)	1,042 m (3,418.6 ft)
Fire Detection (0.2×0.2 m)	58 m (190.3 ft)	75 m (246.1 ft)	125 m (410.1 ft)	208 m (682.4 ft)

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

Ordering Info				
Model	SN-TPT6434QZ-F07-ZSE30	SN-TPT6434QZ-F09-ZSE30	SN-TPT6434QZ-F15-ZSE30	SN-TPT6434QZ-F25-ZSE30
Description	Thermal Focal Length: 7 mm Visible Focal Length: 5.3 to 159 mm, 30x optical zoom	Thermal Focal Length: 9 mm Visible Focal Length: 5.3 to 159 mm, 30x optical zoom	Thermal Focal Length: 15 mm Visible Focal Length: 5.3 to 159 mm, 30x optical zoom	Thermal Focal Length: 25 mm Visible Focal Length: 5.3 to 159 mm, 30x optical zoom

## Dimensions (mm)

