

SN-TPT6458WZ-Z

Thermal & Optical Bi-spectrum PTZ Camera



Key Features

- Bi-Spectrum: 640 × 512 thermal and 4MP visible sensor
- Sensor: 17 μm VOx uncooled thermal sensor, NETD ≤ 40 mK
- Thermal: 5x / 6x / 9x motorized lens; Visible: 37x / 80x lens optional
- Detection capabilities: Human/vehicle, , smoke & flame, fire point detection
- Intelligent analytics: Intrusion, single/double line crossing, loitering, wrong-way, enter/leave area detection, smart motion detection.
- Power off self-locking, strong wind resistance
- Anti-frozen, NDA 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 1920×1080	4MP, 2560 (H)×1440 (V)
Pixel Pitch	17μm	N/A
Spectral Range	8 to 14μm	N/A
NETD	≤ 40mK	N/A
Shutter Speed	N/A	1/25 to 1/100,000s
Min Illumination	N/A	Color: 0.005 Lux (F2.1, AGC ON), B/W: 0.0001 Lux (F2.1, AGC ON), 0 Lux with light
Day & Night	N/A	Auto (ICR)
Lens		
	Thermal	Visible
Lens Type	Varifocal lens	Varifocal lens
Focal Length	30 to 150 mm, 30 to 180 mm, 25 to 225 mm optional	21 to 775 mm / 12.5 to 1000 mm
Max. Aperture	F0.95 to F1.13 / F0.8 to F1.2 / F1 to F1.5	F3.9 to T540 / F3.5 to F16
Field of View (FOV)	30 to 150 mm: - H: 20.56° to 4.15°, V: 16.51° to 3.32°; 30 to 180 mm: - H: 20.56° to 3.46°, V: 16.51° to 2.77°; 25 to 225 mm: - H: 24.55° to 2.77°, V: 19.75° to 2.22°	21 to 775 mm: - H: 18.9° to 0.55°, V: 14.2° to 0.41°; 12.5 to 1000 mm: - H: 33.9° to 0.46°, V: 19.5° to 0.26°
Focus Control	Motorized focus	Auto / Manual
Illuminator		
Type	Laser	
IR wavelength	1535 nm ± 10 nm	
Distance	Up to 3 km (9,842.5 ft)	
Control	Auto / Manual	
Intelligent Analytics		
	Thermal	Visible
AI Multi-Target	Human / vehicle / ship detection	Human / vehicle / ship detection

Intelligent Analysis	Intrusion, Single Line Crossing, Double Line Crossing, Loitering, Wrong-Way Detection, Enter Area, Leave Area, Smart Motion Detection Support alarm triggering by specified target types (human and vehicle)	Intrusion, Single Line Crossing, Double Line Crossing, Loitering, Wrong-Way Detection, Illegal parking Smart Motion Detection Support alarm triggering by specified target types (human and vehicle)
Smoke and Flame Detection	N/A	Supported
People Counting	Supported	Supported
Fire Spot Detection	Supported	N/A
Video & Audio		
	Thermal	Visible
Main Stream	1920x1080, 1280x1024, 1280x720, 640x512	2560x1440, 1920x1080, 1280x720
Sub Stream	D1, VGA, 640x512, CIF	704x576, 640x480, 352x288
Frame Rate	Up to 25fps	Up to 25/30fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Main Stream: 100 Kbps to 12 Mbps, Sub Stream: 100 Kbps to 6 Mbps	Main Stream: 32 Kbps to 16 Mbps Sub Stream: 32 Kbps to 8 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 (PCM)
Image		
	Thermal	Visible
Image Adjustment	Brightness, Contrast, Sharpness	Brightness, Saturation, Contrast, Sharpness
Scene Mode	Mirror	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
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, Optical Defog
Wide Dynamic Range	N/A	True WDR 120dB
OSD	Up to 8 OSD	Up to 8 OSD
Privacy Masking	Supported	Supported
Thermal Function		
Temperature Range	-20°C to 150°C (-4°F to 302°F)	

Accuracy	±8°C
Temperature Detection	3 temperature measurement rule types, 20 rules in total, 1 full screen, 19 others (spot, areas, line).
Temperature Alarm	Temperature difference alarm, Threshold alarm, 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 tours, 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 record, Alarm output, FTP upload, SMTP upload, Audible alarm output
Network	
Protocols	IPv4/IPv6, HTTP/HTTPS, DNS, DDNS, DHCP, PPPoE, RTSP/ RTCP/RTP, TCP/UDP, NTP, ARP, UPnP, FTP, SMTP, QoS, ICMP, IGMP, SMTP, 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, 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	7 inputs, 2 outputs
Control Interface	RS-485
CVBS Output	BNC (thermal / visible, switchable)
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, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian. Default: English
Power Supply	48 VDC ±20%
Power Consumption	Max 270 W
Operating Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	0 to 90% RH (non-condensing)
Ingress Protection	IP66
Wiper	Supported
Certifications	CE/FCC
Material	Metal
Dimensions	839 × 581.25 × 705 mm (33.03 × 22.88 × 27.76 inch)
Net Weight	Approx. 82 kg (180.78 lb)

DORI Distance (EN62676-4 standard)

Detect	21 to 775 mm: 290 to 10,690 m; 12.5 to 1000 mm: 172 to 13,793 m
Observe	21 to 775 mm: 117 to 4,310 m; 12.5 to 1000 mm: 70 to 5,562 m
Recognize	21 to 775 mm: 58 to 2,138 m; 12.5 to 1000 mm: 34 to 2,759 m
Identify	21 to 775 mm: 29 to 1,069 m; 12.5 to 1000 mm: 17 to 1,379 m

Thermal DRI Distance

Thermal Lens	30 to 150 mm	30 to 180 mm	25 to 225 mm
Detection (Human: 1.8×0.5 m)	Up to 4,412 m (14,475.1 ft)	Up to 5,294 m (17,368.8 ft)	Up to 6,618 m (21,712.6 ft)
Detection (Vehicle: 4×1.5 m)	Up to 13,529 m (44,386.5 ft)	Up to 16,235 m (53,264.4 ft)	Up to 20,294 m (66,581.4 ft)
Recognition (Human: 1.8×0.5 m)	Up to 1,103 m (3,618.8 ft)	Up to 1,324 m (4,343.8 ft)	Up to 1,654 m (5,426.5 ft)

Recognition (Vehicle: 4×1.5 m)	Up to 3,382 m (11,095.8 ft)	Up to 4,059 m (13,316.9 ft)	Up to 5,074 m (16,647.0 ft)
Identification (Human: 1.8×0.5 m)	Up to 551 m (1,807.7 ft)	Up to 662 m (2,171.9 ft)	Up to 827 m (2,713.3 ft)
Identification (Vehicle: 4×1.5 m)	Up to 1,691 m (5,547.9 ft)	Up to 2,029 m (6,656.8 ft)	Up to 2,537 m (8,323.5 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	30 to 150 mm	30 to 180 mm	25 to 225 mm
Temperature Measurement (1×1 m)	Up to 1,765 m (5,790.7 ft)	Up to 2,118 m (6,948.8 ft)	Up to 2,647 m (8,684.4 ft)
Temperature Measurement (0.2×0.2 m)	Up to 353 m (1,158.1 ft)	Up to 424 m (1,391.1 ft)	Up to 529 m (1,735.6 ft)
Fire Detection (1×1 m)	Up to 4,412 m (14,475.1 ft)	Up to 5,294 m (17,368.8 ft)	Up to 6,618 m (21,712.6 ft)
Fire Detection (0.2×0.2 m)	Up to 882 m (2,893.7 ft)	Up to 1,059 m (3,474.4 ft)	Up to 1,324 m (4,343.8 ft)

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

Ordering Info

Model	SN- TPT6458W Z-Z5- CD75AL3	SN- TPT6458W Z-Z6- CD75AL3	SN- TPT6458W Z-Z9- CD75AL3	SN- TPT6458W Z-Z5- CD100AL3	SN- TPT6458W Z-Z6- CD100AL3	SN- TPT6458W Z-Z9- CD100AL3
Description	Thermal Focal Length: 30 to 150 mm Visible Focal Length: 21 to 775 mm	Thermal Focal Length: 30 to 180 mm Visible Focal Length: 21 to 775 mm	Thermal Focal Length: 25 to 225 mm Visible Focal Length: 21 to 775 mm	Thermal Focal Length: 30 to 150 mm Visible Focal Length: 12.5 to 1000 mm	Thermal Focal Length: 30 to 180 mm Visible Focal Length: 12.5 to 1000 mm	Thermal Focal Length: 25 to 225 mm Visible Focal Length: 12.5 to 1000 mm

Dimensions (mm)

