



SN-TPT4233ZZ-M

Thermal & Optical Bi-spectrum PTZ Camera



Key Features

- 400 × 300 resolution, 17 μm , VOx UFPA, NETD \leq 40 mK
- Thermal: 25/50/75/100mm motorized lens optional; Visible: 37x optical zoom module
- Detection capabilities: Human/vehicle, smoke & flame, and fire point detection
- Intelligent analytics: Intrusion, single/double line crossing, loitering, wrong-way, enter/leave area detection, smart motion detection, and people counting
- Support 3 temperature measurement rule types (spot, line, area)
- Temperature monitoring & alarm: -20°C to 150°C (-4°F to 302°F)
- Accuracy: $\pm 2^{\circ}\text{C}$ / $\pm 2\%$
- Anti-frozen, NDAA Compliance, IP66



Specification

Camera	Thermal	Visible
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays	1/1.8" STARVIS CMOS
Resolution	Sensor is 400×300, Image can be scaled up to 704×576	2592 (H)×1520 (V), 4MP
Pixel Pitch	17μm	
Spectral Range	8 to 14μm	
NETD	≤ 40mK	
Min. Illumination		Color: 0.001 Lux @(F1.5, AGC ON), B/W: 0.0005 Lux (F1.5, AGC ON)
Shutter Speed		1/5 to 1/20,000s
Lens Type	Fixed lens	37x optical zoom
Focal Length	25 mm, 50 mm, 75 mm, 100 mm optional	6.8 to 251 mm
Max. Aperture	F1.0	F1.5
Focus Control	Motorized focus	Auto/Manual/Semi-automatic
Field of View (FOV)	25 mm, H: 15.4°, V: 11.6° 50 mm, H: 7.7°, V: 5.8° 75 mm, H: 5.1°, V: 3.8° 100 mm, H: 3.8°, V: 2.3°	H: 60.7° to 2.33°, V: 36.8° to 1.38°
IVS		
AI Multi-Target	Human / Vehicle detection (Ship detection optional)	Face / Human / Vehicle detection and capture
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		Support
Fire Spot Detection	Support	
People Counting	Support	Support
Video and Audio		
Stream/Frame Rate	Stream1: D1 (704×576) @25/30fps Stream2: CIF @25/30fps	Stream1: 2592×1520, 2304×1296, 1920×1080, 1280×720 @25/30fps Stream2: D1, VGA, CIF @25/30fps Stream3: VGA, CIF, QVGA @25/30fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream1: 100 Kbps to 6 Mbps, Stream2: 10 Kbps to 1.5 Mbps	Stream1: 200 kbps to 12 Mbps Stream2: 100 kbps to 6 Mbps Stream3: 100 kbps to 3 Mbps
Region of Interest	Off/On (8 Zone, Rectangle)	Support
Audio Compression	G.711 A-law, G.711 μ-law, PCM	G.711 A-law, G.711 μ-law, PCM
Audio Bit Rate	64 Kbps (G.711), 128 Kbps (PCM)	64 Kbps (G.711), 128 Kbps (PCM)
Image		
Image Setting	Brightness, Contrast, Sharpness	Brightness, Saturation, Contrast, Sharpness
Mirror	Horizontal / Vertical / Horizontal+Vertical	Horizontal / Vertical / Horizontal+Vertical

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)	
FFC Control	Auto / Manual	
White Balance		Auto / Tungsten / Fluorescent / Daylight / Shadow / Manual
Day/Night		Auto / Day mode / Night mode / Timer
Noise Reduction	2D/3D DNR	2D/3D DNR
Image Enhancement		WDR, HLC, BLC, Defog
Wide Dynamic Range		True WDR
OSD	Up to 8 OSD	Up to 8 OSD
Privacy Masking	Support	Support
Thermal Function		
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	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: +40° to -75°	
Pan/Tilt Speed	Pan: 0.01° to 60°/s, Tilt: 0.01° to 30°/s	
Wiper	Support	
Preset Accuracy	± 0.2°	
Presets	400	
Scan	8 scans	
Patrol	12 patrols, up to 32 presets per patrol	
Track	6 tracks	
3D Positioning	Support	
Speed Setup	Auto/Manual (0-8)	
Power Off Memory	Support	
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	
Events Actions	Alarm out, Alarm record, SMTP, FTP upload, Audible alarm	
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	

Compatible Integration	ONVIF (Profile S/T/G/M), CGI, SDK
Max Concurrent Streams	10 channels
User/Host Level	32+ users, 3 levels: Administrator, Operator, Media user
Security	IP address filter, HTTPS, Illegal login lock, IEEE 802.1x
Web Viewer	<IE11, Chrome, Firefox, Microsoft Edge
Interface	
Network Interface	1 Ethernet (10/100 Base-T) RJ-45 Connector
Audio Interface	2ch input, 2ch output
Alarm Interface	9ch input, 4ch output
RS-485	1
BNC Interface	1 (CVBS output for visible)
SD Card Slot	Built-in, up to 512 GB
Reset Button	Built-in
General	
Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	36 VDC
Power Consumption	Max 100 W
Working Temperature / Humidity	-40°C to 60°C (-40°F to 140°F) Humidity: Less than 90% RH
Certifications	CE-EMC - EN 55032, EN IEC 61000-6-3, EN IEC 61000-3-2, EN 61000-3-3, EN 55035, EN 50130-4 FCC 47 CFR Part 15 Subpart B
Ingress Protection	IP66
Material	Metal
Dimensions	293 × 420 × 520 mm (11.54 × 17.13 × 20.47 inch) with 25/50/75 mm lens 333 × 490 × 550 mm (13.11 × 19.29 × 21.65 inch) with 100 mm lens
Net Weight	≤75mm lens: 26 Kg (57.32 lb) 100mm lens: 28 Kg (61.73 lb)
Ordering Information	
Model	Description
SN-TPT4233ZZ-M25-ZSD37	Thermal Focal Length: 25 mm Optical Focal Length: 6.8 to 251 mm, 37x optical zoom
SN-TPT4233ZZ-M50-ZSD37	Thermal Focal Length: 50 mm Optical Focal Length: 6.8 to 251 mm, 37x optical zoom
SN-TPT4233ZZ-M75-ZSD37	Thermal Focal Length: 75 mm Optical Focal Length: 6.8 to 251 mm, 37x optical zoom
SN-TPT4233ZZ-M100-ZSD37	Thermal Focal Length: 100 mm Optical Focal Length: 6.8 to 251 mm, 37x optical zoom

Thermal DRI Range Table

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.

DRI Distance Table				
Focal Length	25 mm	50 mm	75 mm	100 mm
Detection Distance (Humans: 1.8x0.5m)	735 m (2,411.4 ft)	1,471 m (4,826.1 ft)	2,206 m (7,237.5 ft)	2,941 m (8,172.6 ft)
Detection Distance (Vehicles: 4x1.5m)	2,255 m (7,398.3 ft)	4,510 m (14,796.6 ft)	6,765 m (22,194.9 ft)	9,020 m (29,593.2 ft)
Recognition Distance (Humans: 1.8x0.5m)	184 m (603.7 ft)	368 m (1,207.4 ft)	551 m (1,807.7 ft)	735 m (2,411.4 ft)
Recognition Distance (Vehicles: 4x1.5m)	564 m (1,850.4 ft)	1,127 m (3,697.5 ft)	1,691 m (5,547.9 ft)	2,255 m (7,398.3 ft)
Identification Distance (Humans: 1.8x0.5m)	92 m (301.8 ft)	184 m (603.7 ft)	276 m (905.5 ft)	368 m (1,207.4 ft)
Identification Range (Vehicles: 4x1.5m)	282 m (925.2 ft)	564 m (1,850.4 ft)	846 m (2,775.6 ft)	1,127 m (3,697.5 ft)

Thermal Smart Detection Range Table

Note: The table is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more.

Detection Range Table				
Focal Length	25 mm	50 mm	75 mm	100 mm
Temperature Measurement (Object: 0.2 x 0.2m)	59 m (193.6 ft)	118 m (616.8 ft)	176 m (577.4 ft)	235 m (771 ft)
Fire Detection (Object: 0.2 x 0.2m)	147 m (482.3 ft)	294 m (964.6 ft)	441 m (1,446.9 ft)	588 m (1,929.1 ft)

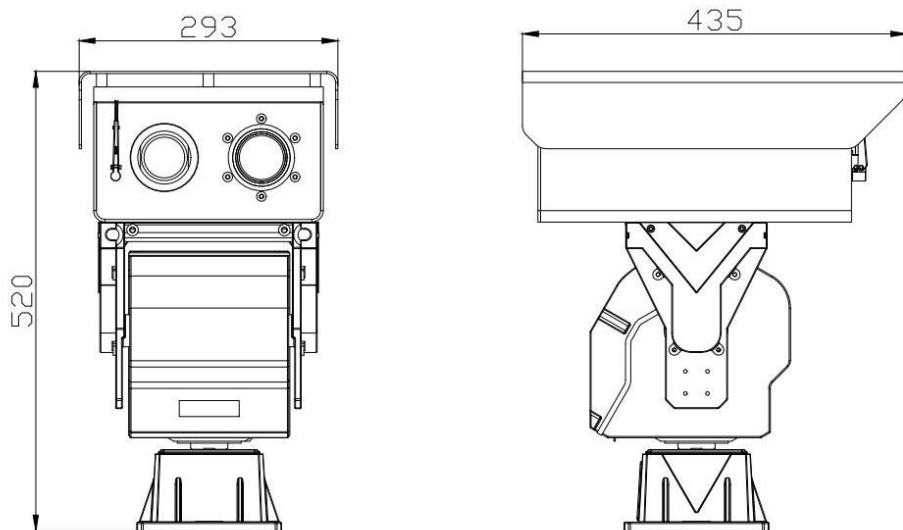
Visible DORI Range Table

Note: DORI (Detect, Observe, Recognize, and Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool.

DORI Distance	
Lens	6.8 to 251 mm
DORI Distance (Detection)	95 to 3,515 m (311.68 to 11,532.15 ft)
DORI Distance (Observe)	38 to 1,406 m (124.67 to 4,612.86 ft)
DORI Distance (Recognize)	19 to 703 m (62.34 to 2,306.43 ft)
DORI Distance (Identify)	9.5 to 351.5 m (31.17 to 1,153.22 ft)

Dimensions (mm)

25/50/75 mm thermal lens



100 mm thermal lens

