

IK-TP3968BV-Z

Thermal & Optical Bi-spectrum PTZ Camera



Key Features

- Bi-Spectrum: 640 × 512 thermal and 4MP visible 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.
- Temperature monitoring and exception alarms
- Temperature measurement: spot, line, and area
- Temperature range: -20 °C to 150 °C; accuracy: ± 8 °C
- Power off self-locking, strong wind resistance
- Anti-frozen, NDAA Compliance, IP66

Specifications

Camera		
Image Sensor	VOx uncooled focal plane array	1/1.8" STARVIS CMOS
Max Resolution	640 × 512 thermal resolution, upscaled output up to 1920 × 1080	4MP, 2560 (H)×1440 (V)
Pixel Pitch	17 μm	N/A
Spectral Range	8–14 μm	N/A
NETD	≤ 40 mK	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)
Day & Night	N/A	Auto (ICR)
Lens		
Lens Type	Varifocal lens	Varifocal lens
Focal Length	30–150 mm / 30–180 mm / 25–225 mm (optional)	21–775 mm / 12.5–1000 mm (optional)
Max. Aperture	F0.95–F1.13 / F0.8–F1.2 / F1–F1.5	F3.9–T540 / F3.5–F16
Field of View (FOV)	30–150 mm: H: 20.56°–4.15°, V: 16.51°–3.32° 30–180 mm: H: 20.56°–3.46°, V: 16.51°–2.77° 25–225 mm: H: 24.55°–2.77°, V: 19.75°–2.22°	21–775 mm: H: 18.9°–0.55°, V: 14.2°–0.41° 12.5–1000 mm: H: 33.9°–0.46°, V: 19.5°–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		
AI Multi-Target Detection	Supports human, vehicle, and ship detection	Supports human, vehicle, and ship detection
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, 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)
Smoke and Flame Detection	N/A	Supported
People Counting	Supported	Supported
Fire Spot Detection	Supported	N/A

Video & Audio		
Resolution	Stream 1: 1920 × 1080, 1280 × 1024, 1280 × 720, 640 × 512 Stream 2: D1, VGA, 640 × 512, CIF	Stream 1: 2560 × 1440, 1920 × 1080, 1280 × 720 Stream 2: 704 × 576, 640 × 480, 352 × 288
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 12 Mbps, Stream 2: 100 Kbps to 6 Mbps	Stream 1: 32 Kbps to 16 Mbps Stream 2: 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		
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 (120 dB)
Privacy Masking	Supported	Supported
Thermal Function		
Temperature Range	-20 °C to 150 °C (-4 °F to 302 °F)	
Accuracy	±8 °C	
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: 0.01° 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, 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, 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, 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)
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	7 inputs, 2 outputs
RS-485	1 × RS-485
CVBS Output	BNC (thermal / visible, switchable)
SD Card Slot	Built-in microSD card slot (up to 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 $\pm$ 20%
Power Consumption	Max. 270 W
Operating Temperature	-40 °C to 65 °C (-40 °F to 149 °F)
Operating Humidity	$\leq$ 95% RH (non-condensing)
Ingress Protection	IP66
Wiper	Supported
Certifications	CE/FCC
Material	Metal
Dimensions	839 $\times$ 581.25 $\times$ 705 mm (33.03 $\times$ 22.88 $\times$ 27.76 inch)
Net Weight	Approx. 82 kg (180.78 lb)

DORI Distance (EN 62676-4 standard)	
Detect	21-775 mm: 290-10,690 m 12.5-1000 mm: 172-13,793 m
Observe	21-775 mm: 117-4,310 m 12.5-1000 mm: 70-5,562 m
Recognize	21-775 mm: 58-2,138 m 12.5-1000 mm: 34-2,759 m
Identify	21-775 mm: 29-1,069 m 12.5-1000 mm: 17-1,379 m

Thermal DRI Distance			
Thermal Lens	30-150 mm	30-180 mm	25-225 mm
Detection (Human: 1.8 $\times$ 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 $\times$ 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 $\times$ 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 $\times$ 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 $\times$ 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 $\times$ 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 $\geq$ 1.5 pixels.

Recognition: Object must be covered by $\geq$ 6 pixels.

Identification: Object must be covered by $\geq$ 12 pixels.

Thermal Smart Detection			
Lens	30–150 mm	30–180 mm	25–225 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: <i>Values are for reference only. Actual detection range may vary with atmospheric conditions, target size, and installation environment.</i>			

Dimensions (mm)

