

# IK-P6433T-M

Thermal & Optical Bi-spectrum PTZ Camera



## Key Features

- Bi-Spectrum: 640 × 512 thermal and 5MP visible sensor
- Sensor: 12 μm VOx uncooled thermal sensor, NETD ≤ 20 mK
- Optional motorized thermal lenses: 25 / 50 mm; 30× 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: NDAA 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	25 mm, 50 mm optional	5.3 to 159 mm, 30x optical zoom
Max. Aperture	F1.0	F1.6 to F4.4
Field of View (FOV)	25 mm, H: 17°, V: 14°; 50 mm, H: 8°, V: 7°	H: 56.8° to 2.6°, V: 42.7° to 2.0°
Focus Control	Motorized focus	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 $\mu$ -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 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(120dB)
Privacy Masking	Supported	Supported

### 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	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 60°/s, preset speed: 60°/s
Tilt Speed	Tilt: 0.01° to 30°/s, preset speed: 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.
<b>Event</b>	
Alarm Triggers	IVS, Temperature anomaly, Motion detection, Alarm input, Disk alarm, Network alarm, Abnormal sound detection
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
Supply Chain Security	SBOM

### Interface

Network Interface	RJ-45 Ethernet (10/100BASE-T)
Audio Interface	1 input, 1 output (visible)
Alarm Interface	9 inputs, 4 outputs
Control Interface	RS-485
CVBS Output	2 BNC outputs (thermal and visible)
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, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	36 VDC
Power Consumption	Max 80 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	419 × 282 × 316 mm (16.5 × 11.1 × 12.44 inch)
Net Weight	Approx. 16.5 Kg (Contains 25 mm lens) (36.8 lb)

### DORI Distance (EN62676-4 standard)

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	25 mm	50 mm
Detection (Human: 1.8×0.5 m)	1,042 m (3,418.6 ft)	2,083 m (6,834.0 ft)
Detection (Vehicle: 4×1.5 m)	3,194 m (10,479 ft)	6,389 m (20,961.3 ft)

Recognition (Human: 1.8×0.5 m)	260 m (853 ft)	521 m (1,709.3 ft)
Recognition (Vehicle: 4×1.5 m)	799 m (2,621.4 ft)	1,597 m (5,239.5 ft)
Identification (Human: 1.8×0.5 m)	130 m (426.5 ft)	260 m (853 ft)
Identification (Vehicle: 4×1.5 m)	399 m (1,309.1 ft)	799 m (2,621.4 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	25 mm	50 mm
VCA Detection (Human: 1.8×0.5 m)	280 m (918.6 ft)	480 m (1,574.8 ft)
Temperature Measurement (1×1 m)	417 m (1,368.1 ft)	833 m (2,732.9 ft)
Temperature Measurement (0.2×0.2 m)	83 m (272.3 ft)	167 m (547.9 ft)
Fire Detection (1×1 m)	1,042 m (3,418.6 ft)	2,083 m (6,834.0 ft)
Fire Detection (0.2×0.2 m)	208 m (682.4 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.*

## Dimensions (mm)

