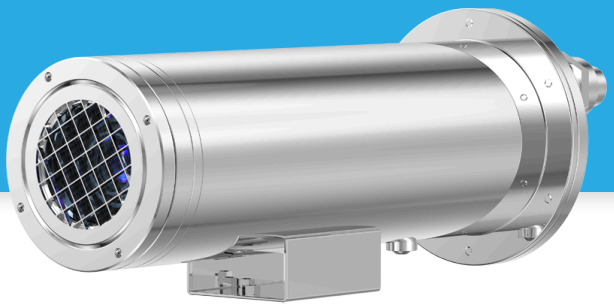
SN-TPH4204DA-F

Explosion-proof Bullet Thermal Camera



Key Features

- 384 × 288 VOx uncooled thermal sensor, 17 µm pixel pitch, NETD ≤ 20 mK
- Optional fixed lenses: 9 / 15 / 25 / 35 / 50 mm
- Supports human, vehicle, and ship detection, as well as smoking detection and fire spot detection
- Intelligent analytics: intrusion, smart motion detection, line crossing, loitering, wrong-way detection, enter area, leave area, and people counting
- Temperature monitoring with exception alarms
- Supports temperature measurement rules: spot, line, and area
- Temperature measurement range: -20 ℃ to 150 ℃, accuracy: ±2 ℃ or ±2%
- Material: 316L Stainless steel
- NDAA compliant, IP68
- ATEX II 2 G Ex db IIC T6 Gb; II 2 D Ex tb IIIC T80℃ Db

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Specifications

Camera	
Image Sensor	VOx uncooled focal plane array
Max Resolution	384 × 288 thermal resolution, upscaled output up to 1280 × 1024
Pixel Pitch	17 µm
Spectral Range	8–14 µm
NETD	≤ 20 mK
Lens	
Lens Type	Fixed lens
Focal Length	9 mm / 15 mm / 25 mm / 35 mm / 50 mm (optional)
Max. Aperture	F1.0
Field of View (FOV)	9 mm: H: 37°, V: 28° 15 mm: H: 28°, V: 21° 25 mm: H: 14°, V: 11° 35 mm: H: 10°, V: 8° 50 mm: H: 7.4°, V: 5.6°
Focus Control	Focus-free
Intelligent Analytics	
AI Multi-Target Detection	Supports human and vehicle 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)
People Counting	Supported
Smoking Detection	Supported
Fire Spot Detection	Supported
Video & Audio	
Resolution	Stream 1: 1280 × 1024, 1280 × 720, 384 × 288 Stream 2: D1, CIF
Frame Rate	Up to 25 fps
Bit Rate Control	CBR/VBR
Bit Rate	Stream 1: 100 Kbps to 8 Mbps Stream 2: 10 Kbps to 6 Mbps
Smart Encoding	Supported
Image	
Image Adjustment	Brightness, Contrast, Sharpness
Scene Mode	Mirror

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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
Noise Reduction	2D/3D DNR
Privacy Masking	Up to 4 configurable zones
Thermal Function	
Temperature Range	-20 ℃ to 150 ℃ (-4 ℉ to 302 ℉)
Accuracy	±2 ℃ or ±2% (whichever is greater)
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
Event	
Alarm Triggers	IVS, temperature anomaly, motion detection, alarm input, network alarm, and disk alarm
Event Actions	Alarm recording, FTP upload, SMTP email notification, and alarm output
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
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
Alarm Interface	1 input, 1 output

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RS-485	1 × RS-485
CVBS Output	Supported
SD Card Slot	Built-in microSD card slot (up to 1 TB) *Memory card must be factory pre-installed and is not field-installable.
Reset Button	Supported

General

Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	100 to 240 VAC
Power Consumption	Max 36 W
Operating Temperature	-40 ℃ to 60 ℃ (-40 °F to 140 °F)
Operating Humidity	≤ 95% RH (non-condensing)
Ingress Protection	IP68
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 ATEX: Ex II 2GD Ex db IIC T6 Gb / Ex tb IIIC T80°C Db; IECEx: Ex db IIC T6 Gb / Ex tb IIIC T80°C Db
Material	SUS316L
Dimensions	464 × 166 × 171mm (18.27 × 6.54 × 6.73 inch)
Net Weight	Approx. 10 kg (22.05 lb)

Thermal DRI Distance

Thermal Lens	9 mm	15 mm	25 mm	35 mm	50 mm
Detection (Human: 1.8×0.5 m)	265 m(869.4 ft)	441 m(1,446.9 ft)	735 m(2,411.4 ft)	1,029 m(3,376.0 ft)	1,471 m(4,826.1 ft)
Detection (Vehicle: 4×1.5 m)	812 m(2,664.0 ft)	1,353 m(4,439.0 ft)	2,255 m(7,398.3 ft)	3,157 m(10,357.6 ft)	4,510 m(14,796.6 ft)
Recognition (Human: 1.8×0.5 m)	66 m(216.5 ft)	110 m(360.9 ft)	184 m(603.7 ft)	257 m(843.2 ft)	368 m(1,207.4 ft)
Recognition (Vehicle: 4×1.5 m)	203 m(666.0 ft)	338 m(1,108.9 ft)	564 m(1,850.4 ft)	789 m(2,588.6 ft)	1,127 m(3,697.5 ft)
Identification (Human: 1.8×0.5 m)	33 m(108.3 ft)	55 m(180.5 ft)	92 m(301.8 ft)	129 m(423.2 ft)	184 m(603.7 ft)
Identification (Vehicle: 4×1.5 m)	101 m(331.4 ft)	169 m(554.5 ft)	282 m(925.2 ft)	395 m(1,295.9 ft)	564 m(1,850.4 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

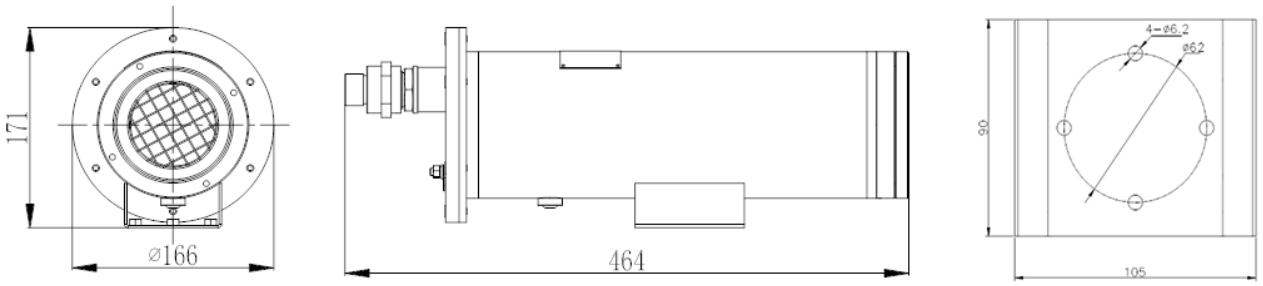
Lens	9 mm	15 mm	25 mm	35 mm	50 mm

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Temperature Measurement (1 ×1 m)	106 m(347.8 ft)	176 m(577.4 ft)	294 m(964.6 ft)	412 m(1,351.7 ft)	588 m(1,929.1 ft)
Temperature Measurement (0.2×0.2 m)	21 m(68.9 ft)	35 m(114.8 ft)	59 m(193.6 ft)	82 m(269.0 ft)	118 m(387.1 ft)
Fire Detection (1×1 m)	265 m(869.4 ft)	441 m(1,446.9 ft)	735 m(2,411.2 ft)	1,029 m(3,376.0 ft)	1,471 m(4,826.1 ft)
Fire Detection (0.2×0.2 m)	53 m(173.9 ft)	88 m(288.7 ft)	147 m(482.3 ft)	206 m(675.9 ft)	294 m(964.6 ft)

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

Dimensions (mm)



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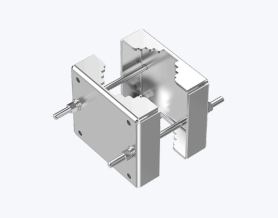
Accessories

Optional:



SN-BK401A-SS

Wall Mount Bracket



SN-BK406-SS

Pole Mount Bracket



SN-BK407-SS

Corner Mount Bracket



SN-BK400-SS

Explosion-proof Junction Box

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