# SN-TPC2553CT-F

**Bi-spectrum Turret Network Camera**



## Key Features

- 256 × 192 resolution, 12 µm, VOx UFPA, NETD ≤ 50 mK
- Lens Options: Thermal – 3.5mm/7mm fixed; Visible – 4mm/8mm fixed
- Detection Capabilities: Human/vehicle, smoking, smoke & flame, fire point detection
- Intelligent Analytics: Intrusion, single/double line crossing, loitering, wrong-way, people counting, enter/leave area detection, smart motion detection
- Support 3 temperature measurement rule types (spot, line, area)
- Temperature Monitoring & Alarm: -20°C to 150°C (-4°F to 302°F), Accuracy: ±2°C / ±2%
- Built-in mic, speaker, and strobe light; supports sound-light alarm
- Smart IR range up to 35m/50m
- Supports I/O alarm, RS485, built-in microSD card slot
- Power Supply: 12 VDC / 24 VDC, PoE

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## Specifications

| Camera | | |
|---|---|---|
| | **Thermal** | **Visible** |
| Image Sensor | Vanadium Oxide Uncooled Focal Plane Arrays | 1/2.7" CMOS |
| Max Resolution | Sensor is 256(H) × 192(V) , Image can be scaled up to 704 × 576 | 2560(H) × 1440(V) |
| Pixel Pitch | 12μm | N/A |
| Spectral Range | 8 to 14μm | N/A |
| NETD | ≤ 50mK | N/A |
| Shutter Speed | N/A | 1/5 to 1/20,000s |
| Min Illumination | N/A | Color: 0.05Lux @(F1.6, AGC ON),<br>B/W: 0.005Lux @(F1.6, AGC ON), 0Lux with IR on |
| Day & Night | | Auto (ICR) |
| **Lens** | | |
| | **Thermal** | **Visible** |
| Lens Type | Fixed lens | Fixed lens |
| Focal Length | 3.5 mm, 7 mm optional | 4 mm, 8 mm optional |
| Max. Aperture | F1.0 | F1.6 / F2.0 |
| Field of View (FOV) | 3.5 mm,<br>- H: 48°, V: 36°<br>7 mm,<br>- H: 24°, V: 18° | 4 mm,<br>- H: 92°, V: 46°<br>8 mm,<br>- H: 40°, V: 20° |
| Focus Control | Fixed | Fixed |
| **Illuminator** | | |
| Type | IR | |
| IR wavelength | 850 nm | |
| Distance | 4 mm: Up to 35 m (114.83 ft)<br>8 mm: Up to 50 m (164.04 ft) | |
| Control | Auto / Manual | |
| **Intelligent Analytics** | | |
| | **Thermal** | **Visible** |
| AI Multi-Target | Supports human/vehicle detection. | Supports human/vehicle detection. |

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| | | |
|---|---|---|
| Intelligent Analysis | Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, and leave area.<br>- Supports accurate target classification (human/vehicle). | Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, and leave area.<br>- 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 |
|---|---|---|
| Main Stream | D1 (704×576) | 2560×1440, 2304×1296, 1920×1080, 1280×720 |
| Sub Stream | D1, CIF, 256×192 | D1, VGA |
| Frame Rate | Up to 25fps | Up to 25fps |
| Bit Rate Control | CBR/VBR | CBR/VBR |
| Bit Rate | Main Stream: 100 Kbps to 3 Mbps,<br>Sub Stream: 10 Kbps to 3 Mbps | Main Stream: 100 Kbps to 12 Mbps<br>Sub Stream: 10 Kbps to 6 Mbps |
| Smart Encoding | Supported | Supported |
| Audio Compression | G.711 A-law, G.711 μ-law, RAW_PCM | G.711 A-law, G.711 μ-law, RAW_PCM |
| Audio Bit Rate | 64 Kbps (G.711), 128 Kbps (RAW_PCM) | 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, Shutter priority |
| 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 |
| Wide Dynamic Range | N/A | True WDR 120dB |
| OSD | Up to 8 OSD | Up to 8 OSD |
| Privacy Masking | Up to 4 areas | Up to 4 areas |

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| Thermal Function | |
|---|---|
| Temperature Range | -20℃ to 150℃ (-4℉ to 302℉) |
| Accuracy | ±2℃ / ±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 |
| Image Fusion | Fusion view of thermal view and overlaid details of the optical channel |
| **Event** | |
| Alarm Triggers | IVS, Motion detection, Alarm input, Network alarm, Disk alarm, Abnormal sound detection |
| Event Actions | Alarm output, Recording, SMTP, FTP upload, Flashlight alarm, Audible 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, 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 | 1 × Ethernet (10/100 Base-T), RJ-45 connector |
| Built-in Microphone | Supported |
| Built-in Speaker | Supported |
| Audio Interface | 1ch input, 1ch output |
| Alarm Interface | 1ch input, 1ch output |
| Control Interface | 1ch RS-485 |

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| | |
|---|---|
| SD Card Slot | Support microSD card, up to 512GB |
| Reset Button | Supported |

## General

| | |
|---|---|
| Language | English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English |
| Power Supply | 12 VDC / 24 VDC / PoE (802.3af) |
| Power Consumption | Max 10 W |
| Operating Temperature | -40°C to 60°C (-40°F to 140°F) |
| Operating Humidity | Less than 95% RH |
| Ingress Protection | IP66 |
| Certifications | CE-EMC<br>- EN 55032, EN IEC 61000-6-3, EN IEC 61000-3-2, EN 61000-3-3, EN 55035, EN 50130-4<br>FCC 47 CFR Part 15 Subpart B |
| Material | Metal |
| Dimensions | φ140 × 117.8 mm (5.51 × 4.64 inch) |
| Net Weight | 1.03 Kg (2.27 lb) |

## DORI Distance (EN62676-4 standard)

| | |
|---|---|
| Detect | 4 mm: 72 m (236.22 ft), 8 mm: 146 m (479 ft) |
| Observe | 4 mm: 28.8 m (94.49 ft), 8 mm: 58.4 m (191.6 ft) |
| Recognize | 4 mm: 14.4 m (47.24 ft), 8 mm: 29.2 m (95.8 ft) |
| Identify | 4 mm: 7.2 m (23.62 ft), 8 mm: 14.6 m (47.9 ft) |

## Thermal DRI Distance

| | | |
|---|---|---|
| Thermal Lens | 3.5 mm | 7 mm |
| Detection<br>(Human: 1.8×0.5 m) | 146 m (479.0 ft) | 292 m (958.0 ft) |
| Detection<br>(Vehicle: 4×1.5 m) | 447 m (1,466.5 ft) | 894 m (2933.1 ft) |
| Recognition<br>(Human: 1.8×0.5 m) | 36 m (118.1 ft) | 73 m (239.5 ft) |
| Recognition<br>(Vehicle: 4×1.5 m) | 112 m (367.5 ft) | 224 m (734.9 ft) |
| Identification<br>(Human: 1.8×0.5 m) | 18 m (59 ft) | 36 m (118.1 ft) |
| Identification<br>(Vehicle: 4×1.5 m) | 56 m (183.7 ft) | 112 m (367.5 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.*

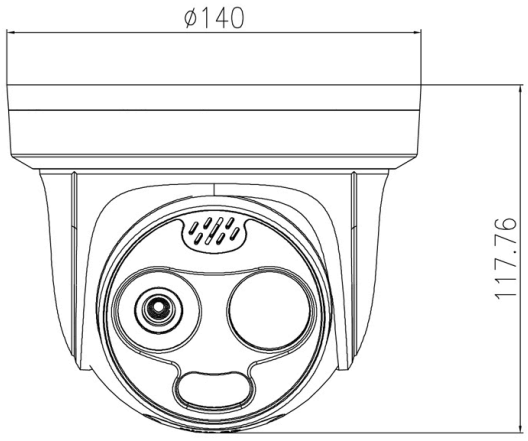
## Thermal Smart Detection

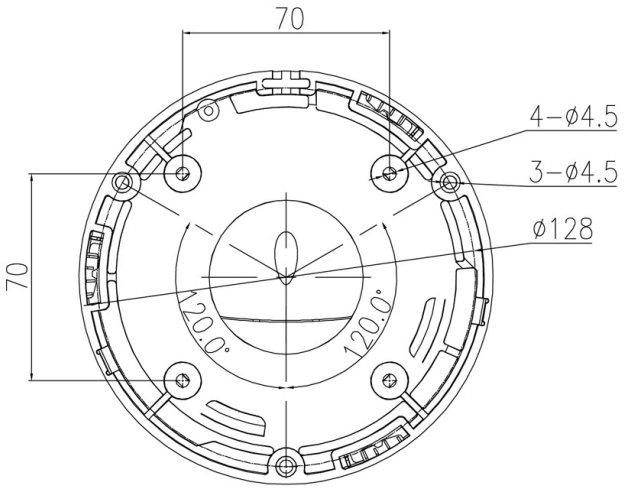
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| | | |
|---|---|---|
| Lens | 3.5 mm | 7 mm |
| VCA Detection (Human: 1.8×0.5 m) | 30 m (98.4 ft) | 60 m (196.9 ft) |
| VCA Detection (Front/Rear of Vehicle: 4×1.5 m) | 35 m (114.8 ft) | 70 m (229.7 ft) |
| Temperature Measurement (1 ×1 m) | 58.3 m (191.3 ft) | 116.7 m (382.9 ft) |
| Temperature Measurement (0.2×0.2 m) | 11.7 m (38.4 ft) | 23.3 m (76.4 ft) |
| Fire Detection (0.2×0.2 m) | 29.2 m (95.8 ft) | 58.3 m (191.3 ft) |
| Smoking Detection | 13 m (42.7 ft) | 25 m (82 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-CBK645G<br>Junction Box | SN-CBK206<br>Pendant Cap | SN-CBK402<br>Ceiling Mount | SN-CBK501<br>Wall Mount |
|  |  |  | |
| SN-CBK502<br>Wall Mount | SN-CBK101<br>Pole Mount | SN-CBK102<br>Corner Mount | |

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