

SN-TPC2553DRT-F

Bi-spectrum Bullet Network Camera



Key Features

- 256 × 192 resolution, 12 μm, VOx UFPA, NETD ≤ 50 mK
- Lens Options: Thermal – 3.5mm/7mm/10mm 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 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

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	2880(H) × 1620(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), B/W: 0.005Lux @(F1.6, AGC ON), 0Lux with IR on
Day & Night	N/A	Auto (ICR)
Lens		
	Thermal	Visible
Lens Type	Fixed lens	Fixed lens
Focal Length	3.5 mm, 7 mm, 10 mm optional	4 mm, 8 mm optional
Max. Aperture	F1.0	F1.6 / F2.0
Field of View (FOV)	3.5 mm, - H: 48°, V: 36°; 7 mm, - H: 24°, V: 18°; 10 mm, - H: 17°, V: 13°	4 mm, - H: 92°, V: 46°; 8 mm, - 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) 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.

Intelligent Analysis	Intrusion, smart motion detection, single-line crossing, double-line crossing, loitering, wrong-way detection, enter area, and leave area. - 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. - 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)	2880×1620, 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, Sub Stream: 10 Kbps to 3 Mbps	Main Stream: 100 Kbps to 12 Mbps, 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	4 areas	4 areas

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
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
Secure Storage	SDcard partition encrypt (AES-256), Secure element
Supply Chain Security	SBOM
Interface	
Network Interface	1 × Ethernet (10/100 Base-T), RJ-45 connector
Built-in Speaker	Supported
Audio Interface	1ch input, 1ch output
Alarm Interface	2ch input, 2ch output
Control Interface	1ch RS-485

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 12 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 - 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
Material	Metal
Dimensions	303 × 95 × 107 mm (11.93 × 3.74 × 4.21 inch)
Net Weight	Approx. 1.38 Kg (3.04 lb) with 3.5mm lens

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	10 mm
Detection (Human: 1.8×0.5 m)	146 m (479.0 ft)	292 m (958.0 ft)	417 m (1,368.1 ft)
Detection (Vehicle: 4×1.5 m)	447 m (1,466.5 ft)	894 m (2933.1 ft)	1,278 m (4,192.9 ft)
Recognition (Human: 1.8×0.5 m)	36 m (118.1 ft)	73 m (239.5 ft)	104 m (341.2 ft)
Recognition (Vehicle: 4×1.5 m)	112 m (367.5 ft)	224 m (734.9 ft)	319 m (1,046.5 ft)
Identification (Human: 1.8×0.5 m)	18 m (59 ft)	36 m (118.1 ft)	52 m (170.6 ft)
Identification (Vehicle: 4×1.5 m)	56 m (183.7 ft)	112 m (367.5 ft)	160 m (524.9 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.

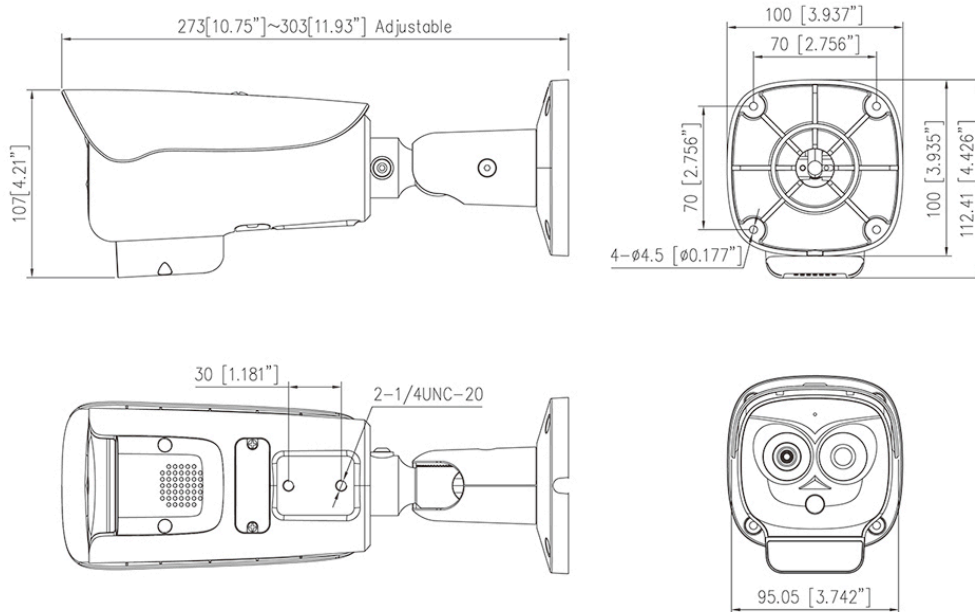
Thermal Smart Detection

Lens	3.5 mm	7 mm	10 mm
VCA Detection (Human: 1.8×0.5 m)	30 m (98.4 ft)	60 m (196.9 ft)	103 m (337.9 ft)
VCA Detection (Front/Rear of Vehicle: 4×1.5 m)	35 m (114.8 ft)	70 m (229.7 ft)	230 m (754.6 ft)
Temperature Measurement (1 ×1 m)	58.3 m (191.3 ft)	116.7 m (382.9 ft)	166.7 m (546.9 ft)
Temperature Measurement (0.2×0.2 m)	11.7 m (38.4 ft)	23.3 m (76.4 ft)	33.3 m (109.3 ft)
Fire Detection (0.2×0.2 m)	29.2 m (95.8 ft)	58.3 m (191.3 ft)	83.3 m (273.3 ft)
Smoking Detection	13 m (42.7 ft)	25 m (82 ft)	40 m (131.2 ft)

Note:

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

Dimensions (mm)



Accessories

Optional:



SN-CBK645G
Junction Box



SN-CBK627D
Pole Mount



SN-CBK101
Pole Mount



SN-CBK102
Corner Mount