

# SN-TPS4157ED-F

Bi-spectrum Radar-PTZ Linkage Speed Dome Camera



## Key Features

- 384 × 288 thermal resolution, 12 μm VOx UFPA, NETD ≤ 40 mK
- Thermal lens options: 5 mm / 7 mm / 15 mm; Visible lens: 40× optical zoom
- Human/vehicle detection; smoking, smoke & flame, and fire point detection
- Intelligent analytics: intrusion, single/double line crossing, loitering, wrong-way detection, enter/leave area, smart motion detection, people counting
- Radar-PTZ linkage for video-radar integration
- Smart tracking: cold/hot spot tracking, human/vehicle tracking
- Supports 3 temperature measurement rule types: spot, line, and area
- Temperature measurement range: -20°C to 150°C (-4°F to 302°F), accuracy ±8°C
- Smart IR illumination up to 300 m
- Smart rain-sensing wiper; IP66-rated protection

## Specifications

Camera		
	Thermal	Visible
Image Sensor	Vanadium Oxide Uncooled Focal Plane Arrays	1/1.8" CMOS
Max Resolution	Sensor is 384×288. Image can be scaled up to 1280×720	2688(H) × 1520(V)
Pixel Pitch	12 μm	N/A
Spectral Range	8 to 14 μm	N/A
NETD	≤ 40mK	N/A
Shutter Speed	N/A	1/5 to 1/20,000s
Min Illumination	N/A	Color: 0.001 Lux @(F1.5, AGC ON), B/W: 0.0005 Lux @(F1.5, AGC ON), 0 Lux with IR on
Day & Night	N/A	Auto (ICR)
Lens		
	Thermal	Visible
Lens Type	Fixed lens	Motorized zoom lens
Focal Length	5 mm, 7 mm, 15 mm optional	6.27 to 251 mm, 40x optical zoom
Max. Aperture	F1.0	F1.5 to F4.8
Field of View (FOV)	5 mm, H: 56°, V: 40° 7 mm, H: 44°, V: 33° 15 mm, H: 21°, V: 16°	H: 60.7° to 2.33°, V: 36.8° to 1.38°
Focus Control	Free-focus	Auto / Manual
Illuminator		
Type	IR	
IR wavelength	850 nm	
Distance	Up to 300 m (984.25 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/double line crossing, loitering, wrong-way detection, and enter/leave area. - Supports accurate target classification (human/vehicle)	Intrusion, smart motion detection, single/double line crossing, loitering, wrong-way detection, and enter/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	1280×720, 704×576, 384×288	2688×1520, 2560×1440, 2304×1296, 1920×1080, 1280×720
Sub Stream	D1, 384×288, 352×240	D1, CIF
Frame Rate	Up to 25fps	Up to 25/30fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Main stream: 100 Kbps to 8 Mbps, Sub stream: 100 Kbps to 6 Mbps	Main Stream: 100 Kbps to 16 Mbps Sub Stream: 100 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
White Balance	N/A	Auto / Tungsten / Fluorescent / Daylight / Shadow / Manual
Day/Night Setting	N/A	Auto / Day / Night / Timer
Noise Reduction	2D/3D DNR	2D/3D DNR
Image Enhancement	N/A	HLC, BLC, Defog, WDR
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
Thermal Function		
Temperature Range	-20°C to 150°C (-4°F to 302°F)	
Accuracy	±8°C	
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
Image Fusion	Fusion view of thermal view and overlaid details of the optical channel
<b>PTZ</b>	
Pan/Tilt Range	Pan: 0° to 360° endless, Tilt: -10° to 90° (auto-flip)
Pan Speed	Pan: 0.01° to 300°/s, preset speed: 300°/s
Tilt Speed	Tilt: 0.01° to 240°/s, preset speed: 240°/s
Preset Accuracy	≤ 0.2°
Preset	400
Track	6 tracks
Scan	12 scans
Tour	12 tours, up to 32 presets per tour
Intelligent Tracking	Supported (Cold/hot spot tracking, human/vehicle tracking)
Power-Off Memory	Supported
3D Positioning	Supported
PTZ Status Display	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, Motion detection, Alarm input, Network alarm, Disk alarm, Abnormal sound detection
Event Actions	Alarm record, Alarm output, FTP upload, SMTP upload, Audible alarm output
<b>Network</b>	
Protocols	IPv4/IPv6, HTTP/HTTPS, DNS, DDNS, DHCP, PPPoE, RTSP/ RTCP/RTP, TCP/UDP, NTP, ARP, UPnP, FTP, SMTP, QoS, ICMP, IGMP, SMT, 802.1x, SNMP, Multicast
Application Programming Interface	ONVIF (Profile S/T/G/M), SDK, CGI
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, 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
Audio Interface	1ch Audio In, 1ch Audio Out
Alarm Interface	7ch Alarm In, 2ch Alarm Out
Control Interface	1ch RS-485
CVBS Output	Supported
SD Card Slot	Built-in MicroSD slot, supports up to 1 TB

### General

Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Power Supply	24 VAC / 36 VDC / PoE++ (802.3bt), Standard Equipped: 36VDC
Power Consumption	Max 45 W
Operating Temperature	-40°C to 60°C (-40°F to 140°F)
Operating Humidity	0 to 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 CE-LVD - EN IEC 62368-1 FCC 47 CFR Part 15 Subpart B
Material	Metal
Dimensions	φ226 × 363 mm (φ8.9 × 14.29 inch)
Net Weight	Approx. 6 kg (13.2 lb)

### DORI Distance (EN62676-4 standard)

Detect	95 to 3,515 m (311.68 to 11,532.15 ft)
Observe	38 to 1,406 m (124.67 to 4,612.86 ft)
Recognize	19 to 703 m (62.34 to 2,306.43 ft)
Identify	9.5 to 351.5 m (31.17 to 1,153.22 ft)

### Thermal DRI Distance

Thermal Lens	5 mm	7 mm	15 mm
Detection (Human: 1.8×0.5 m)	208 m (682.4 ft)	292 m (958.0 ft)	625 m (2,050.5 ft)
Detection (Vehicle: 4×1.5 m)	639 m (2,096.5 ft)	894 m (2933.1 ft)	1,917 m (6,289.4 ft)

Recognition (Human: 1.8×0.5 m)	52 m (170.6 ft)	73 m (239.5 ft)	156 m (511.8 ft)
Recognition (Vehicle: 4×1.5 m)	160 m (524.9 ft)	224 m (734.9 ft)	479 m (1,571.5 ft)
Identification (Human: 1.8×0.5 m)	26 m (85.3 ft)	36 m (118.1 ft)	78 m (255.9 ft)
Identification (Vehicle: 4×1.5 m)	80 m (262.5 ft)	112 m (367.5 ft)	240 m (787.4 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.*

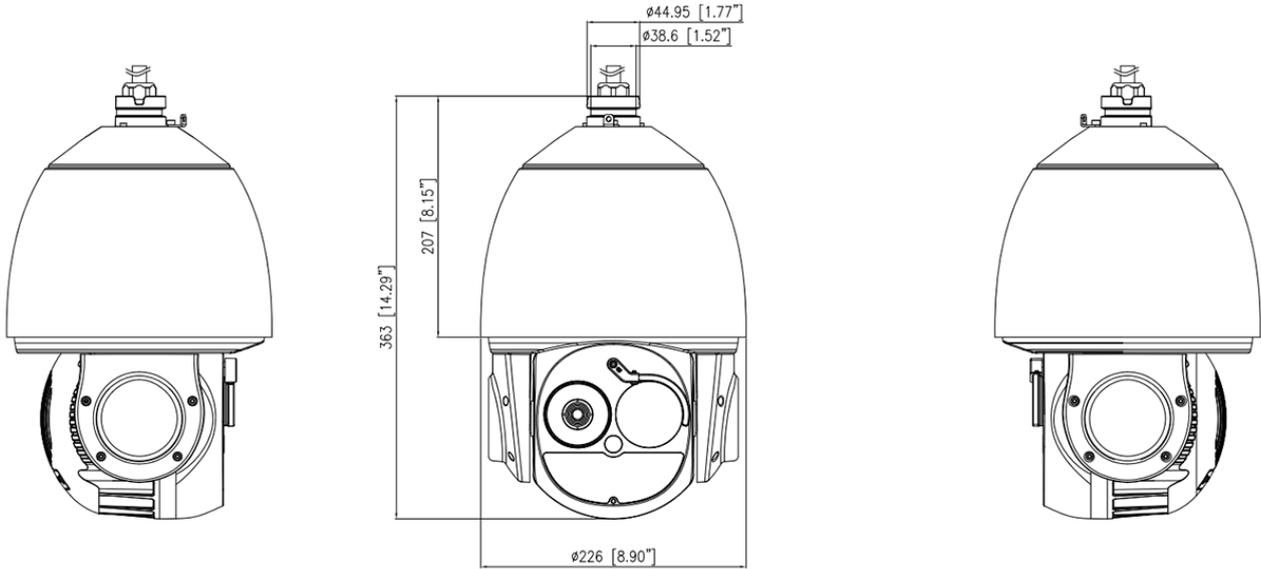
### Thermal Smart Detection

VCA Detection (Human: 1.8×0.5 m)	45 m (147.6 ft)	65 m (213.3 ft)	110 m (360.9 ft)
VCA Detection (Front/Rear of Vehicle: 4×1.5 m)	50 m (164 ft)	80 m (262.5 ft)	140 m (459.3 ft)
Temperature Measurement (1×1 m)	83 m (272.3 ft)	117 m (383.9 ft)	250 m (820.2 ft)
Temperature Measurement (0.2×0.2 m)	17 m (55.8 ft)	23 m (75.5 ft)	50 m (164 ft)
Fire Detection (1×1 m)	208 m (682.4 ft)	292 m (958 ft)	625 m (2,050.5 ft)
Fire Detection (0.2×0.2 m)	42 m (137.8 ft)	58 m (190.3 ft)	125 m (410.1 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-CBK506B  
Wall Mount



SN-BK348A  
Ceiling Mount



SN-BK605  
Corner Mount



SN-BK604B  
Pole Mount



SN-BK367  
Junction Box



SN-BK358  
Corner Mount



SN-BK359  
Pole Mount