SPECTRUM CAMERA SOLUTIONS
SPECIALIZING IN EXPLOSION PROOF TECHNOLOGY

Spectrum S-TB640-T25-V30

Thermal & Optical Bi-spectrum Bullet Network Camera

Key Features

- Bi-spectrum: 640 × 512 thermal and 4 MP visible sensors
- 12 µm VOx uncooled thermal sensor, NETD ≤ 20 mK
- Multiple optional thermal and visible lens configurations
- Supports human and vehicle detection, smoking detection, smoke and flame 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
- Temperature measurement range: -20 °C to 150 °C; accuracy: ±2 °C or ±2%
- Supports temperature measurement rules: spot, line, and area
- Smart IR illumination up to 100 m
- Built-in strobe lights and speaker for active deterrence with two-way audio
- NDAA compliant, IP66, optional NEMA 4X rating

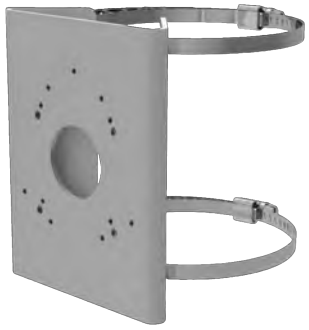


NDAA Compliant | 5 YEAR WARRANTY | ONVIF | GMST

Description

The Spectrum S-TB640-T25-V30 is an outdoor bi-spectrum thermal bullet network camera that pairs a high-resolution 640×512 thermal sensor (featuring a 25mm fixed lens) with a 4MP visible-light sensor. It is built for advanced fire protection and industrial monitoring, offering precise real-time temperature measurements (-20°C to 150°C) alongside active deterrence via built-in strobe lights and a speaker. Its intelligent AI handles everything from fire point, smoke, and flame detection to perimeter intrusion alerts over long distances

Optional Accessory



S-TB640-PM
Pole Mount

- Compatible with the S-TB640 bullet camera
- Fits poles from Φ100–152 mm (3.94–5.98 in)

RedAI

Specifications

Spectrum S-TB640-T25-V30

Camera	Thermal	Optical
Image Sensor	VOx uncooled focal plane array	1/1.8" CMOS
Max Resolution	640 × 512 thermal resolution, upscaled output up to 1920 × 1080	4MP, 2688(H) × 1520(V)
Pixel Pitch	12 μm	N/A
Spectral Range	8–14 μm	N/A
NETD	≤ 20 mK	N/A
Shutter Speed	N/A	1/5 to 1/20,000s
Min Illumination	N/A	Color: 0.005 Lux @(F1.6, AGC ON), B/W: 0.001 Lux @(F1.6, AGC ON), 0 Lux with IR on
Day & Night	N/A	Auto (ICR)

Lens	Thermal	Optical
Lens Type	Fixed lens	4 mm / 6 mm: Fixed lens; 10–30 mm: Motorized Varifocal lens
Focal Length	9 mm / 15 mm / 25 mm / 35 mm / 50 mm (optional)	4 mm / 6 mm / 10–30mm (optional)
Max. Aperture	F1.0	F1.6
Field of View (FOV)	9 mm: H: 48°, V: 38° 15 mm: H: 32°, V: 26° 25 mm: H: 17°, V: 14° 35 mm: H: 12°, V: 10° 50 mm: H: 8°, V: 7°	4 mm: H: 87°, V: 47° 6 mm: H: 55°, V: 30° 10-30 mm: H: 43.4° - 15.5°, V: 23.8° - 8.8°
Focus Control	Focus-free	4 mm / 6 mm: Fixed focus 10–30 mm: Motorized focus

IR Illuminator	Thermal	Optical
Type	IR	
IR Wavelength	850 nm	
Distance	4 mm: up to 70 m (229.6 ft) 6 mm: up to 80 m (262.5 ft) 10–30 mm: up to 100 m (328.0 ft)	
Control	Auto / Manual	

Intelligent Analytics	Thermal	Optical
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)	
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	Optical
Resolution	Stream 1: 1920 × 1080, 1280 × 1024, 1280 × 720, 640 × 512 Stream 2: D1, VGA, 640 × 512, CIF	Stream 1: 2688 × 1520, 2560 × 1440, 2304 × 1296, 1920 × 1080, 1280 × 720 Stream 2: D1, VGA
Frame Rate	Up to 25 fps	Up to 25/30 fps
Bit Rate Control	CBR/VBR	CBR/VBR
Bit Rate	Stream 1: 100 Kbps to 12 Mbps Stream 2: 100 Kbps to 6 Mbps	Stream 1: 100 Kbps to 16 Mbps Stream 2: 100 Kbps to 6 Mbps
Smart Encoding	Supported	N/A
Audio Compression	G.711 A-law, G.711 μ-law, RAW_PCM	
Audio Bit Rate	64 Kbps (G.711), 128 Kbps (RAW_PCM)	

Image	Thermal	Optical
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 (120 dB)
Privacy Masking	Up to 4 configurable zones	

Thermal Function	
Temperature Range	-20 °C to 150 °C (-4 °F to 302 °F)
Accuracy	±2 °C 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
Image Fusion	Thermal and optical image fusion

Specifications

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Event

Alarm Triggers	IVS, temperature anomaly, motion detection, alarm input, network alarm, disk alarm, and abnormal sound detection
Event Actions	Alarm recording, FTP upload, SMTP email notification, alarm output, flashing light alarm, and audible alarm output

Network

Protocols	IPv4/IPv6, HTTP/HTTPS, DNS, DDNS, DHCP, PPPoE, RTSP/ RTCP/RTP, TCP/UDP, NTP, ARP, UPnP, FTP, SMTP, QoS, ICMP, IGMP, SMTP, 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, 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
Built-in Microphone	Supported
Built-in Speaker	Supported
Audio Interface	1 input (3.5 mm), 1 output (3.5 mm)
Alarm Interface	2 inputs, 2 outputs
RS-485	1 × RS-485
CVBS Output	1 × BNC (Switchable thermal/visible video output)
SD Card Slot	Built-in microSD card slot (up to 1 TB)
Reset Button	Supported

Dori Distance (EN 62676-4 Standard)

Detect	4 mm: 67.6 m (221.8 ft) / 6 mm: 96.6 m (316.9 ft) / 10–30 mm: 150–400 m (492.1–1,312.3 ft)
Observe	4 mm: 27 m (88.6 ft) / 6 mm: 38.6 m (126.6 ft) / 10–30 mm: 60–160 m (196.9 ft–524.9 ft)
Recognize	4 mm: 13.5 m (44.3 ft) / 6 mm: 19.3 m (63.3 ft) / 10–30 mm: 30–80 m (98.4–262.5 ft)
Identify	4 mm: 6.8 m (22.3 ft) / 6 mm: 9.7 m (31.8 ft) / 10–30 mm: 15–40 m (49.2–131.2 ft)

Thermal DRI Distance

Thermal Lens	9 mm	15 mm	25 mm	35 mm	50 mm
Detection (Human: 1.8×0.5 m)	375 m (1230.3 ft)	625 m (2050.5 ft)	1042 m (3418.6 ft)	1458 m (4783.5 ft)	2083 m (6834 ft)
Detection (Vehicle: 4×1.5 m)	1150 m (3773 ft)	1917 m (6289.4 ft)	3194 m (10479 ft)	4472 m (14672 ft)	6389 m (20961.3 ft)
Recognition (Human: 1.8×0.5 m)	94 m (308.4 ft)	156 m (511.8 ft)	260 m (853 ft)	365 m (1197.5 ft)	521 m (1709.3 ft)
Recognition (Vehicle: 4×1.5 m)	288 m (944.9 ft)	479 m (1571.5 ft)	799 m (2621.4 ft)	1118 m (3668 ft)	1597 m (5239.5 ft)
Identification (Human: 1.8×0.5 m)	47 m (154.2 ft)	78 m (255.9 ft)	130 m (426.5 ft)	182 m (597.1 ft)	260 m (853 ft)
Identification (Vehicle: 4×1.5 m)	144 m (472.4 ft)	240 m (787.4 ft)	399 m (1309.1 ft)	559 m (1834 ft)	799 m (2621.4 ft)

Thermal Smart Detection

Lens	9 mm	15 mm	25 mm	35 mm	50 mm
VCA Detection (Human: 1.8×0.5 m)	135 m (442.9 ft)	190 m (623.4 ft)	280 m (918.6 ft)	380 m (1246.7 ft)	480 m (1547.8 ft)
VCA Detection (Vehicle: 4×1.5 m)	200 m (656.2 ft)	290 m (951.4 ft)	420 m (1378 ft)	580 m (1902.9 ft)	720 m (2362.2 ft)
Temperature Measurement (1 ×1 m)	150 m (492.1 ft)	250 m (820.2 ft)	417 m (1368.1 ft)	583 m (1912.7 ft)	833 m (2732.9 ft)
Temperature Measurement (0.2×0.2 m)	30 m (98.4 ft)	50 m (164 ft)	83 m (272.3 ft)	117 m (383.9 ft)	167 m (547.9 ft)
Fire Detection (1×1 m)	375 m (1230.3 ft)	625 m (2050.5 ft)	1042 m (3418.6 ft)	1458 m (4783.5 ft)	2083 m (6834 ft)
Fire Detection (0.2×0.2 m)	75 m (246.1 ft)	125 m (410.1 ft)	208 m (682.4 ft)	292 m (958 ft)	417 m (1368.1 ft)
Smoking Detection	25 m (82 ft)	35 m (114.8 ft)	55 m (180.5 ft)	80 m (262.5 ft)	110 m (360.9 ft)

General

Materials	Aluminum alloy
Weight	Approx. 2.58 Kg (5.69 lb) with 9 mm lens
Power Supply	12 VDC / 24VAC / PoE+ (802.3at)
Power Consumption	Max 25 W
Operating Conditions	-40°C to 60°C (-40°F to 140°F) Humidity ≤ 95% RH (non-condensing)
IP Rating	IP66, NEMA 4X (optional)
Language	English, Chinese, Traditional Chinese, Polish, Italian, Portuguese, Spanish, Russian, French, Czech, Hungarian, Japanese, Korean. Default: English
Warranty	5-year warranty - with registration
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
Dimensions	(327.4–347.4) × 140.04 × 120.72 mm, (12.89–13.55) × 5.59 × 4.75 inch)

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