Network Thermal

TNO-C4050T

VGA AI Tele lens Thermal Camera

Key Features

- VGA Image Resolution
- 19mm Focal Length
- <16mK NETD
- Person, Vehicle, Vessel Detection
- Upscaling up to 1280x960 resolution
- Max. 30fps@all resolutions (H.265/H.264, MJPEG)
- MIL-STD, NEMA 4X, NEMA TS Rated

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TNO-C4050T

VGA AI Tele lens Thermal Camera

Specifications

Video

Imaging Device	Type	Uncooled micro bolometer (640x480)
Resolution		1280x960, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264	30fps/25fps(60Hz/50Hz)
	MJPEG	30fps
Spectral Range		8~14㎛
NETD		≤16mK@25°C, F1.0
Pixel Size		17㎛
Video Out		USB: USB Type C. Preview and installation ONLY. Requires WiFi dongle.

Lens

Focal Length (mm)		19
Max Aperture Ratio (F number)	Wide	1.0
Angular Field of View	Horizontal	32.8°
	Vertical	24.6°
	Diagonal	41.1°
iFoV		0.89 mRad
Min. Object Distance		11m(36.1ft)
Focus Control		Fixed
Lens Type		Athermalized

Pan / Tilt / Rotate

Pan / Tilt / Rotate Range	Pan	0°~350°
	Tilt	0°~90°
	Rotate	0°~350°

Operational

Digital Noise Reduction		WiseNR
Motion Detection	Quantity	8ea
	Shape	8point Polygonal zones

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Operational

Privacy Masking	Quantity	32ea
	Shape	8point Polygonal zones
	Color / Option	Gray, Green, Red, Blue, Black, White, Mosaic, Purple, Yellow
Video Rotation		Flip, Mirror, Hallway view(90°/270°)
Serial Interface		RS-485
Alarm Interface	In/Out	2 configurable I/O ports
	Others	Support extra alarm I/O via optional I/O box
Alarm Triggers		Analytics, Network disconnect, Alarm input, Time schedule, MQTT subscription, Case tampering
Alarm Events When Alarm Trigger Occurred		File upload(image): e-mail/FTP/SFTP, File upload(video clip): FTP/SFTP, Notification: e-mail, Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output, Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback, MQTT: publication
Audio In		Selectable(mic in/line in)
Audio Out		Line out
Color Pallettes		Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom

Analytics

Classified Object Type		Person, Vehicle, Vessel
Thumbnail		BestShot
Analytics Events	Based on AI Engine	Object detection, Virtual line(Crossing/Direction), Motion detection, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear), Sound classification
	Normal	Tampering, Audio detection, Shock detection, Temperature change detection

Network

Ethernet		Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression		H.265/H.264: Main/Baseline/High, MJPEG
Audio Compression		G.711(PCM): 8kHz(64kbps), G.726(ADPCM): 8kHz(16/24/32/40kbps), AAC-LC: 16kHz(48kbps), OPUS: 16kHz(64kbps)
Smart Codec		WiseStream(Based on AI engine)
Bitrate Control		H.265/H.264: CBR or VBR, MJPEG: VBR
Streaming	Unicast	Up to 20 users
	Multicast	Support
	Multiple Streaming	Up to 5 profiles
Protocol		IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SFTP, SMTP, ICMP, IGMPv2, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT, Syslog

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Network

Application Programming Interface	ONVIF	S, G, T, M
	Others	SUNAPI(HTTP API), Hanwha Vision Open Platform
Direct Cloud Connection		Support

Security

OS / Firmware Protect	Encrypted firmware, Secure boot, Signed firmware
User authentication	Digest authentication, Prevent brute-force attack
Network authentication	IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication	HTTPS, WSS(WebSocket Secure), SRTP
Access Control	IP-based access control, MAC-based access control, Auto logout
Data Protect	Encryption credentials, Encrypt compress for live recording file export
Audit	Access / System / Event Log management
Device ID	Device certificate(Hanwha Vision Root CA)
Secure Storage	SDcard partition encrypt(AES-256), Secure element
Supply Chain Security	SBOM
Security Certificate	Secure element(FIPS 140-3 level3, CC EAL6+), Consumer IoT Security Standard (ETSI EN 303 645)

General

SoC	Type	Wisenet 8
Edge Storage	Micro SD/SDHC/SDXC	Max. 1TB x 1slot
Edge Storage(OnCloud)	Micro SD/SDHC/SDXC	Max. 1TB x 1slot *Hanwha Vision branded microSD cards have been certified and recommended for OnCloud edge recording.

Environmental & Electrical

Operating Condition	Temperature	-40°C~+60°C(-40°F~+140°F)
	Humidity	0~95% RH(non-condensing)
	Others	+74°C(+165°F)(Max) based on NEMA-TS 2(2.2.7)
Storage Condition	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~95% RH(non-condensing)
Input Voltage		PoE(IEEE802.3af, Class3), 12VDC
Power Consumption	PoE	Max. 7.8W, typical 7.4W
	12VDC	Max. 8.1W, typical 7.8W

Mechanical

Color	White
Material	Aluminum, PC(Polycarbonate)
RAL Code	RAL9003
Product Dimensions	ø107.3 x 275mm(ø4.22/10.83")

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Mechanical

Product Weight	2000g(4.4 lb)
Compatible Conduit Hole	Support conduit compatibility via optional adaptor
Compatible Gang Box	Single, Double, 4" Octagon, Square

Certifications & Standards

EMC	FCC 47 CFR 15 Subpart B Class A,CE/UKCA - EN55032 Class A,EN 50130-4,EN 61000-3-2,EN 61000-3-3,VCCI CISPR 32 Class A,RCM AS-NZS CISPR 32 Class A,KS C 9832 Class A,KS C 9835,IC Regulation ICES-003 Issue 7 Class A,FCC - IC Regulation ICES 003 Issue 7, RCM - EN IEC 63000:2018 Class A, VCCI - EN IEC 63000:2018 Class A
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1
Environment	IEC/EN 63000, IEC 60529 IP66, IEC 60529 IP67, IEC 62262 IK10, NEMA TS 2-2013 (2.2.7, 2.2.8, 2.2.9), NEMA 250 type 4X, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, MIL-STD-810H 501.7, MIL-STD-810H 502.7, MIL-STD-810H 505.7, MIL-STD-810H 506.6, MIL-STD-810H 507.6, MIL-STD-810H 509.7, MIL-STD-810H 510.7, MIL-STD-810H 514.8, MIL-STD-810H 516.8, MIL-STD-810H 521.4

AI Detection Distance

Person(1.8m/5.9ft)	Wide	up to 159m(522ft)
Vehicle(1.45m/4.8ft)	Wide	up to 227m(745ft)
Vessel(2.4m/7.9ft from Waterline)	Wide	up to 542m(1,778ft)

DRI (Johnson's Criteria)

Detection	Person(1.67PPM)	652m(2,140ft)
	Vehicle(0.65PPM)	1,667m(5,470ft)
Recognition	Person(6.67PPM)	163m(535ft)
	Vehicle(2.61PPM)	417m(1,367ft)
Identification	Person(13.33PPM)	82m(268ft)
	Vehicle(5.22PPM)	208m(684ft)

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Compatible Devices

SBP-160HMW1

SBP-150CMI

SBP-300CMI

SBP-900CMW

SBP-300CMTW

SBD-180PMW

SBP-156KMW

SBP-156LMW1

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