



Network

Thermal

## TNM-C4942TDR

Bi-spectrum AI IR Thermal Camera

### Key Features

- VGA Thermal Image Resolution
- 8MP Visible Image Resolution
- Temperature Detection Range : -20 ~ 130°C
- Abnormal Temperature Detection
- Max. Framerate 8fps
- AI available for both visible and thermal image
- Monitoring potential risk caused by heat
- FIPS 140-2 Level 2
- NEMA4X, NEMA TS 2

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### Specifications

Video		Thermal	Visible
Imaging Device	Size		1/1.8"
	Type	Uncooled micro bolometer (640x480)	CMOS
Resolution		1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	3840x2160, 3072x1728, 2688x1520, 2592x1944, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360
Max. Framerate	H.265/H.264	8fps	30fps/25fps(60Hz/50Hz)
	MJPEG	3fps	1fps
	Others	Max. 15fps when both channel AI on	Max. 15fps when both channel AI on
Spectral Range		8~14 $\mu$ m	
NETD		$\leq$ 60mK	
Pixel Size		12 $\mu$ m	
Min. Illumination (Lux)	Color(1/30sec, 30IRE)		0.06
	BW(1/30sec, 30IRE)		0.004
Video Out		USB: Micro USB Type B. Preview and installation ONLY. Requires WiFi dongle.	

### Lens

Focal Length (mm)		9.1	4.4~9.3
Max Aperture Ratio (F number)	Wide	1.0	1.3
	Tele		2.15
Angular Field of View	Horizontal	50°	112°(Wide)~47°(Tele)
	Vertical	37°	58°(Wide)~26°(Tele)
	Diagonal	64°	138°(Wide)~54°(Tele)
iFoV		1.319 mRad	
Min. Object Distance		3.5m(11.48ft)	1.75m(5.74ft)
Focus Control		Fixed	Simple focus

### Pan / Tilt / Rotate

Pan / Tilt / Rotate Range	Pan	-170° ~ +170°
	Tilt	-40° ~ 50°

## Pan / Tilt / Rotate

Sequence	Preset(255ea)
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## Operational

Day & Night		Auto(ICR)
Backlight Compensation		BLC, WDR, SSSR
Wide Dynamic Range (dB)		120
Digital Noise Reduction		WiseNR II (Based on AI engine), SSSNR V
Digital Image Stabilization		Support(built-in gyro sensor)
Gain Control		Low, Middle, High
White Balance		ATW, AWC, Manual, Indoor, Outdoor
LDC		Support
Electronic Shutter	Mode	Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)
	Speed Range	1/5~1/12,000sec
Light Viewable Length	IR	30m(98.42ft)
IR Wavelength		850nm

## Analytics

Classified Object Type		Person, Vehicle	Person, Face, Vehicle, License plate
Attributes	Vehicle		Type(car, bus, truck, motorcycle, bicycle)
Thumbnail		BestShot	BestShot
Analytics Events	Based on AI Engine	Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit)	Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit)
	Normal	Motion detection, Temperature detection	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Loitering, Intrusion, Enter/Exit, Appear/Disappear)

## Radiometry

Temperature Detect Range		-20°C~130°C
Temperature Accuracy		±5°C(≤100°C), ±20%(>100°C)
Temperature Detection ROI Zones	Quantity	10ea
	Shape / Option	Polygonal
Hybrid Pallettes		Support
Spot Temperature Reading		Support
ROI Condition Monitoring		Above, Below, Increase, Decrease

## Network

Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG

## Network

<b>Audio Compression</b>		G.711 u-law /G.726 selectable,G.726(ADPCM) 8kHz,G.711 8kHz, G.726: 16kbps,24kbps,32kbps,40kbps, AAC-LC: 48kbps at 16kHz
<b>Bitrate Control</b>		H.265/H.264: CBR or VBR, MJPEG: VBR
<b>Streaming</b>	Unicast	Up to 6 users
	Multicast	Support
	Multiple Streaming	Up to 3 profiles
<b>Protocol</b>		IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast)
<b>Application Programming Interface</b>	ONVIF	S, T, M
	Others	SUNAPI(HTTP API), Hanwha Vision Open Platform

## Security

<b>OS / Firmware Protect</b>	Encrypted firmware, Secure boot, Signed firmware
<b>User authentication</b>	Digest authentication
<b>Network authentication</b>	IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
<b>Secure Communication</b>	HTTPS, WSS(WebSocket Secure)
<b>Access Control</b>	IP-based access control
<b>Data Protect</b>	Encryption credentials, Encrypt compress for live recording file export
<b>Audit</b>	Access / System / Event Log management
<b>Device ID</b>	Device certificate(Hanwha Vision Root CA)
<b>Secure Storage</b>	HTPM(Hanwha Trusted Platform Module), SDcard partition encrypt(AES-256)
<b>Security Certificate</b>	TPM 2.0 with FIPS 140-2 level2

## General

<b>Memory</b>	RAM	4GB
	Flash	512MB
<b>Edge Storage</b>	Micro SD/SDHC/SDXC	Max. 256GB x 2slot(Total 512GB)

## Environmental & Electrical

<b>Operating Condition</b>	Temperature	-40°C~+60°C(-40°F~+140°F)
	Humidity	0~95% RH(non-condensing)
	Others	Start up should be done at above -30°C
<b>Storage Condition</b>	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~90% RH(non-condensing)
<b>Input Voltage</b>		PoE+(IEEE802.3at, Class4), 12VDC
<b>Power Consumption</b>	PoE	Max. 25.5W, Typ 16.0W
	12VDC	Max. 21.5W, Typ 14.0W

## Mechanical

Color	White
Material	Aluminum
RAL Code	RAL9003
Product Dimensions	353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")
Product Weight	4.53kg(9.99lb)

## Certifications & Standards

EMC	FCC 47 CFR 15 Subpart B Class A, ICES-3(A)/NMB-3(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
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1
Environment	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

## DORI (EN62676-4 standard)

Detect (25PPM/ 8PPF)	Wide	51.7m(169.94ft)
	Tele	174.5m(572.64ft)
Observe (63PPM/ 19PPF)	Wide	20.7m(67.85ft)
	Tele	69.8m(229.06ft)
Recognize (125PPM/ 38PPF)	Wide	10.3m(33.93ft)
	Tele	34.9m(114.53ft)
Identify (250PPM/ 76PPF)	Wide	5.2m(16.96ft)
	Tele	17.5m(57.26ft)

## DRI (Johnson's Criteria)

Detection	Person(1.67PPM)	412m(1,351ft)
	Vehicle(0.65PPM)	1,052m(3,452ft)
Recognition	Person(6.67PPM)	103m(338ft)
	Vehicle(2.61PPM)	263m(863ft)
Identification	Person(13.33PPM)	51m(169ft)
	Vehicle(5.22PPM)	132m(432ft)

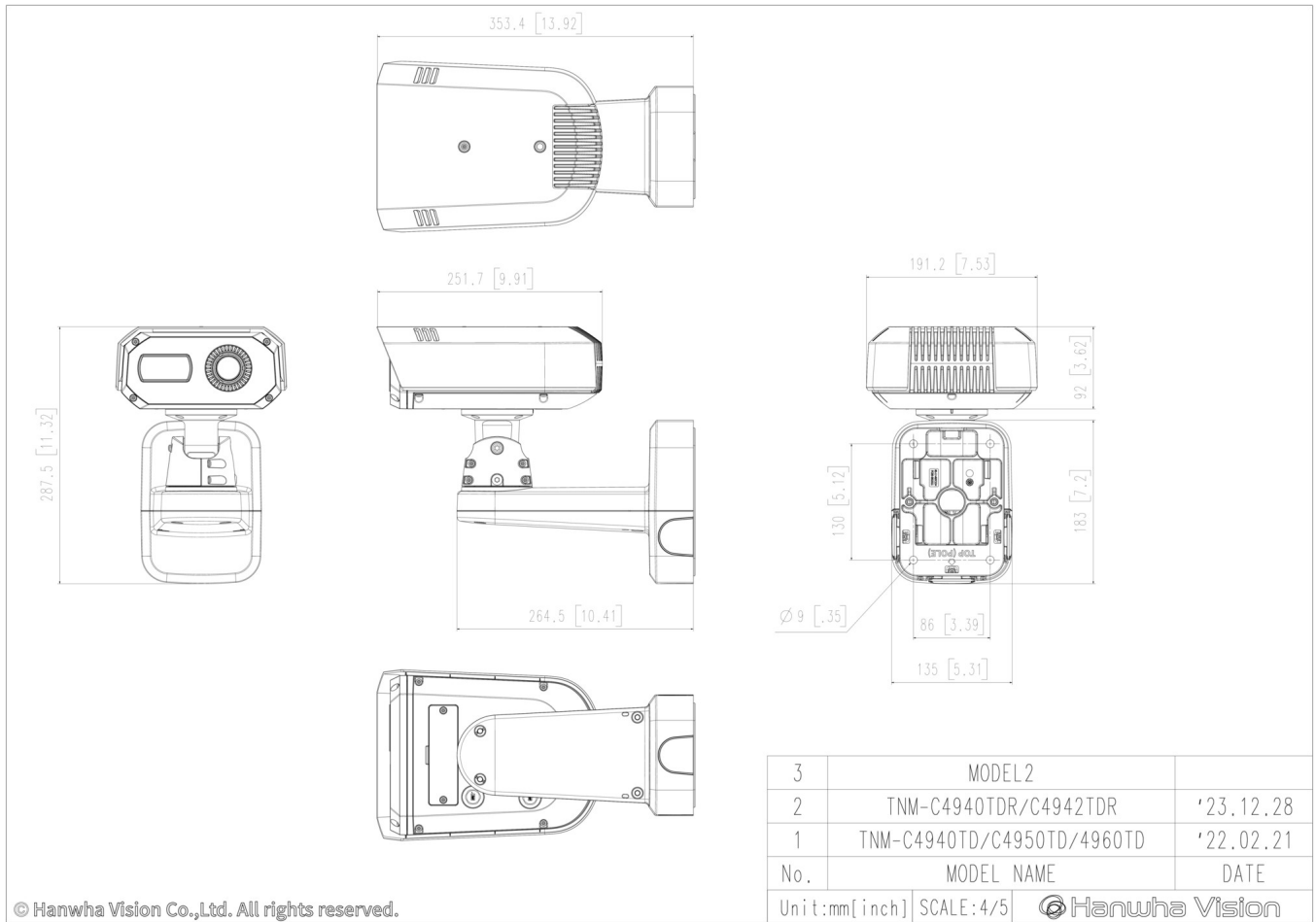
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## CAD

Unit: mm [inch]



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