



Key Features



TNM-C4960TD

Bi-spectrum AI Thermal Camera



- Bi-spectrum: VGA thermal & 8MP visible sensor
- Dual (thermal & visible) channel by one device, one IP
- Maximum 30fps @ all resolutions (H.265/H.264)
- Lens : 25mm fixed thermal & 10.9~29mm motorized varifocal visible
- Day & Night(ICR), WDR(120dB)
- Noise reduction : WiseNR II (Based on AI engine, visible only)
- Smart codec : WiseStream III (Based on AI engine, visible), WiseStream II (thermal)
- Video Analytics based on Al
- IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)
- PoE+(IEEE802.3at), 12VDC
- Wall & Pole mount all-in-one design

Design and specifications are subject to change without notice. The latest product information / specification can be found at HanwhaVision.com Hanwha Vision is formerly known as Hanwha Techwin.



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Bi-spectrum AI Thermal Camera







Specifications

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Video	Thermal	Visible
Imaging Device	Uncooled micro bolometer	1/1.8" CMOS
Resolution	640x480 (can be scaled up to 1280x960) 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024,1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360
Max. Framerate	H.265/H.264: Max. 30fps/25fps (AI 2CH ON - 15fps) MJPEG: Max. 3fps	H.265/H.264: Max. 30fps/25fps (AI 2CH ON - 15fps) MJPEG: Max. 1fps
NETD	<60mK	
Pixel Size	12µm	
Min. Illumination		Color: 0.06Lux(F1.7, 1/30sec) BW: 0.005Lux(F1.7, 1/30sec)
Video Out	USB : Micro USB Type B	
Lens		
Focal Length (Zoom Ratio)	25mm fixed focal	10.9~29mm(2.6x) motorized varifocal
Max. Aperture Ratio	F1.0	F1.7(Wide)~F1.73(Tele)
Angular Field of View	H: 17.4°, V: 13.1°, D: 21.6°	H:42.0°(Wide)~15.0°(Tele) / V:22.8°(Wide)~8.4°(Tele) / D:48.7°(Wide)~17.1°(Tele)
Min. Object Distance	26m(85.30ft)	Wide: 2.5m(8.20ft) / Tele: 6m(19.68ft)
Focus Control	Fixed	Simple foucs
Operational		
Camera Title	Displayed up to 85 characters	
Day & Night		Auto(ICR)
Backlight Compensation		BLC, WDR, SSDR
Wide Dynamic Range		WDR(120dB)
Digital Noise Reduction		SSNR V, WiseNR II
Digital Image Stabilization		Support(built-in gyro sensor)
Motion Detection	8ea, polygonal zones	
Privacy Masking	6ea, rectangle zones - Color: Gray/Black/White	
Gain Control		Low / Middle / High
White Balance		ATW / AWC / Manual / Indoor / Outdoor
LDC		Support
Electronic Shutter Speed		Minimum / Maximum / Anti flicker(1/5~1/12,000sec) Auto prefer shutter control(Based on AI engine)

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Analytics -Analytics events based on Al engine : Diject discribution and the pression for a convent detection (Person Vencile), the setting internation of the setting internating internation of the setting internation			
Business Intelligence Vehicle counting Vehicle counting Alarm I/O 4 configurable //O ports Alarm Triggers Analytics, Network disconnect, Alarm input Alarm Events Pile upload(image) := mail/FTP Notification := email Pile upload(image) := mail/FTP Notification := email/FTP Notificatin := email/FTP	Analytics	detection (Person/Vehicle), Bestshot, IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam	 Object detection(Person, face, Vehicle(car/bus/truck/motorcycle/bicycle), License plate), Bestshot, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam Analytics events : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual
Alarm I/O 4 configurable I/O ports Alarm Triggers Analytics, Network disconnect, Alarm input Alarm Events The alarm trigger occurred in a subscription memory in all ITP * Network income the alarm trigger occurred * Alarm output Alarm Events Selectable(mic (IIV)ne in) Supply voltages 2.5VDC(4rmA), Input impedance: 2K Ohm Audio In Selectable(mic (IIV)ne in) Supply voltages 2.5VDC(4rmA), Input impedance: 2K Ohm Audio Out Line out, Max output Ivee!: 1Vms Color Palettes Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom Network Ethernet Video Compression H.265/H.264: Main/High, M.JPEG Audio Compression H.265/H.264: Main/High, M.JPEG Audio Compression H.265/H.264: Main/High, M.JPEG Smart Codec WiseStream II Manual(Sea area), WiseStreamIII Video Compression H.264/H.265: Target bitrate level control MUPGE: VBR Unicast(6 users) / Multicast Streaming Unicast(6 users) / Multicast Wides General Linew (ICMP, SINP PL/V2/V3(MIB-2), ARP, DIS, DDNS, QoS, UPAP, Bonjour, LLDP, STPT (TCP, UDP Unicast) Streaming Unicast(6 users) / Multicast Wides General Suther triateriotical Bitrate Control M.	Business Intelligence	Vehicle counting	
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Audio in Supply voltage: 2.5VDC (4mA). Input impedance: 2K Ohm Audio Out Line out. Max.output level: 1Yrms Color Palettes Whitehot, Blackhot, Rainbow2, Sepia, Kontowski, Sepi		When alarm trigger occurred - File upload(image) : e-mail/FTP - Notification : e-mail - Recording : SD/SDHC/SDXC or NAS recording at event triggers - Alarm output - Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)	
Color Palettes Whitehot. Blackhot. Rainbow, Rainbow2. Sepia, Red. Iron. Custom Network Metal shielded RJ-45(10/100/1000BASE-T) Ethernet Metal shielded RJ-45(10/100/1000BASE-T) Video Compression H.265/H.264: Main/High. MJPEG Audio Compression G.711 u-Jaw / G.726 speletable Audio Compression G.721 (J-Jaw / G.726 speletable Smart Codec WiseStream II Video Quality Adjustment M.264/H.265: Target bitrate level control MJPEG: Target bitrate level control MJPEG: Target bitrate level control MJPEG: VBR Multiple streaming(Up to 3 profiles) Streaming Multiple streaming(Up to 3 profiles) Protocol PP4, IP6, TCP/IP, UDP/IP, RTP(ICP), RTCP.RTSP. NTP. HTTP, HTTPS, SSL/TLS, DHCP, FTP. Streaming MULTER'STAD-2 level 2) Prite CMP (IGM, SNMPV1/V2/V3(MIB-2), ARP, DNS, DDNS, OS, UPNP, Bonjour, LLDP, SRTP (TCP, UDP) UDP Unicast) Security USer access log Suver access log Suver	Audio In		
Cultor Patettes Red. Iron. Custom Network Ked. Iron. Custom Ethernet Metal shielded RJ-45(10/100/1000BASE-T) Video Compression H.265/H.264'. Main/High, MJEEG Audio Compression G.711 u-law / G.726 Selectable G.726 (ADPCM) 8KHz G.711 8KHz G.726 (ADPCM) 8KHz G.711 8KHz Smart Codec WiseStream II Manual(Sea area), WiseStream III Manual(Sea area), WiseStreamIIII Video Quality Adjustment J.264/H.265: Target bitrate level control Bitrate Control MJPEG: Target bitrate level control Streaming Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles) Protocol IV-4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(UDP), RTP(DP, RTCP, RTSP, NTP, HTTP, SSL7LS, DHCP, FTP, UDP Unicast) Security IVP4 2.0 (FIPS 140-2 level 2) HTTPS/SSL) login authentication (Boer access log B02, IX authentication)(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAP-v2) Device certificate(Hamwha Techwin Root CA, pre-installed) Security ONVIF Profile S/T UNAPP(ITT PAP) Wisenet open platform (visible channel only) General Faglish, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek	Audio Out	Line out, Max.output level: 1Vrms	
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Video Quality AdjustmentH.264/H.265: Target bitrate level control MJPEG: Target bitrate level controlBitrate ControlH.264/H.265: CBR or VBR MJPEG: VBRStreamingUnicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)ProtocolIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)SecurityIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)SecurityIPv4, IPv6, TCP/IP, UDP/IP, STP(UDP), RTP(CDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)SecurityIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(UDP), RTP(CDP, RTP, DNS, DDNS, QOS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)SecurityIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(UDP), RTP(UDP), RTP(UDP), RTP(UDP), RTP(IP), PD, SRTP (TCP, UDP Unicast)SecurityIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(UDP), RTP(IP), IPV6, RTP, SSL, IPP, PEAP MSCHAPv2) Device certificate(Hanwha Techwin Root CA, pre-installed) Secure boot, Secure firmwareApplication Programming InterfaceONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)CeneralEnglish, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, GreekEdge StorageMicro SD/SDHC/SDXC 2slots 512GB		G.711 u-law / G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps	
Video Quality AdjustmentMJPEG: Target bitrate level controlBitrate ControlH.264/H.265: CBR or VBR MJPEG: VBRStreamingUnicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)ProtocolIPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTCP(P,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)SecurityTPM 2.0 (FIPS 140-2 level 2) HTTPS(SSL) login authentication IP address filterring User access log 802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device certificate(Hanwha Techwin Root CA, pre-installed) Secure boot, Secure firmwareApplication Programming InterfaceONVIF Profile S/T SUNAPI(HTTP API) Wishert open platform (visible channel only)GeneralEnglish, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, GreekEdge StorageMicro SD/SDHC/SDXC 2slots 512GB	Smart Codec	WiseStream II	Manual(5ea area), WiseStreamIII
Bit ale ControlMJPEG: VBRStreamingUnicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)ProtocolIPv4, 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, SRTP (TCP, UDP Unicast)SecurityTPM 2.0 (FIPS 140-2 level 2) HTTPS(SSL) login authentication Digest login authentication Digest login authentication Security user access log 802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device certificate(Hanwha Techwin Root CA, pre-installed) secure boot. Secure firmwareApplication Programming InterfaceONVIF Profile S/T SUNAPI(HTTP API) wisenet open platform (visible channel only)GeneralEnglish, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, GreekEdge StorageMicro SD/SDHC/SDXC 2slots 512GB	Video Quality Adjustment		
Streaming Multiple streaming(Up to 3 profiles) Protocol IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTCP, RTCP, RTCP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast) Security TPM 2.0 (FIPS 140-2 level 2) HTTPS(SSL) login authentication Digest login authentication Digest login authentication User access log 802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device certificate(Hanwha Techwin Root CA, pre-installed) Secure boot, Secure firmware Application Programming Interface ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only) General Edge Storage Muebpage Language English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek	Bitrate Control		
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Application Programming Interface SUNAPI(HTTP API) Wisenet open platform (visible channel only) General English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek Edge Storage Micro SD/SDHC/SDXC 2slots 512GB	Security	HTTPS(SSL) login authentication Digest login authentication IP address filtering User access log 802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device certificate(Hanwha Techwin Root CA, pre-installed)	
Webpage LanguageEnglish, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, GreekEdge StorageMicro SD/SDHC/SDXC 2slots 512GB	Application Programming Interface	SUNAPI(HTTP API)	
Edge Storage Micro SD/SDHC/SDXC 2slots 512GB	General		
	Webpage Language		
	Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB	
Methory 46B KAM, 512MB FLASH	Memory	4GB RAM, 512MB FLASH	

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Environmental & Electrical			
Operating Temperature / Humidity	-40°C to +60°C(-58°F to +140°F) * Start up should be done at above -30°C less than 95% RH(non-condensing)		
Storage Temperature / Humidity	-50°C to +60°C(-58°F to +140°F) / Less than 95% RH(Non-condensing)		
Certification	IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)		
Input Voltage	PoE+(IEEE802.3at, Class4), 12VDC		
Power Consumption	PoE+ : Max 23.5W, Typ 16.0W 12VDC : Max 19.5W, Typ 14.0W		
Mechanical			
Color / Material	White / Aluminum		
RAL Code	RAL9003		
Product Dimensions / Weight	353.4 * 287.5 * 191.2mm (13.92 * 11.32 * 7.53in) / 4.533kg		
DORI (EN62676-4 standard)			
Detect (25PPM/ 8PPF)		Wide: 200.1m(656.40ft) / Tele: 583.4m(1913.89ft)	
Observe (63PPM/ 19PPF)		Wide: 80.0m(262.56ft) / Tele: 233.3m(765.56ft)	
Recognize (125PPM/ 38PPF)		Wide: 40.0m(131.28ft) / Tele: 116.7m(382.78ft)	
Identify (250PPM/ 76PPF)		Wide: 20.0m(65.64ft) / Tele: 58.3m(191.39ft)	

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