



Network

Multi-sensor

# TNM-C4960TD

Bi-spectrum AI Thermal Camera



## Key Features

- 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 AI
- IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)
- PoE+(IEEE802.3at), 12VDC
- Wall & Pole mount all-in-one design

# TNM-C4960TD

## Bi-spectrum AI Thermal Camera



### Specifications

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	
<b>Lens</b>		
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 focus
<b>Operational</b>		
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)	

Analytics	<ul style="list-style-type: none"> <li>- Analytics events based on AI engine : Object detection (Person/Vehicle), Bestshot, IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam</li> <li>- Analytics events : Motion detection</li> </ul>	<ul style="list-style-type: none"> <li>- Analytics events based on AI engine - 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</li> <li>- Analytics events : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear)</li> </ul>
Business Intelligence	Vehicle counting	Vehicle counting
Alarm I/O	4 configurable I/O ports	
Alarm Triggers	Analytics, Network disconnect, Alarm input	
Alarm Events	<ul style="list-style-type: none"> <li>When alarm trigger occurred</li> <li>- File upload(image) : e-mail/FTP</li> <li>- Notification : e-mail</li> <li>- Recording : SD/SDHC/SDXC or NAS recording at event triggers</li> <li>- Alarm output</li> <li>- Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)</li> <li>- Audio clip playback</li> </ul>	
Audio In	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm	
Audio Out	Line out, Max.output level: 1Vrms	
Color Palettes	Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom	

<b>Network</b>		
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)	
Video Compression	H.265/H.264: Main/High, MJPEG	
Audio Compression	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	
Smart Codec	WiseStream II	Manual(5ea area), WiseStreamIII
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR	
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)	
Protocol	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, SRTP (TCP, UDP Unicast)	
Security	TPM 2.0 (FIPS 140-2 level 2) 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) Secure boot, Secure firmware	
Application Programming Interface	ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)	

<b>General</b>		
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek	
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB	
Memory	4GB RAM, 512MB FLASH	

**Environmental & Electrical**

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

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)