





# **TNM-C4950TD**

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: 13.5mm 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 (visible)
- IP66/IP67, NEMA4X
- PoE+(IEEE802.3at), 12VDC
- Wall & Pole mount all-in-one design



## **TNM-C4950TD**

### 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, 1280x720 for installation	1
Lens		
Focal Length (Zoom Ratio)	13.5mm 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: 31.9-, V: 24.2-, D: 39.5-	H:42.0°(Wide)~15.0°(Tele) / V:22.8°(Wide)~8.4°(Tele) / D:48.7°(Wide)~17.1°(Tele)
Min. Object Distance	7.6m(24.93ft)	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)

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.



Analytics events based on Al engine: Object detection (Person Nehicle). Besthott MA (Virtual since Application (Person Nehicle). Besthott MA (Virtual since Application). Analytics events including direction included (Person Nehicle). Besthott MA (Virtual since Lorder). Besthott MA (Virtual			
Alarm I/O 4 configurable I/O ports Alarm Triggers Analytics, Network disconnect, Alarm input  When alarm trigger occurred - File upload(image): e-mail/FTP - File upload(imale): e-mail/FTP - File upl	Analytics	detection (Person/Vehicle), Bestshot, IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam	<ul> <li>Object detection(Person, face, Vehicle(car/bus/truck/motorcycle/bicycle), License plate), Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit)</li> <li>Analytics events: Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual</li> </ul>
Alarm Triggers  Analytics, Network disconnect, Alarm input  When alarm trigger occurred File upload(lingse): e-mail/FP -Notification: e-mail -Recording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC or NAS recording at event triggers -Alarm output -Randording: SU/SDH/SDXC SPID -Randord	Business Intelligence	Vehicle counting	Vehicle counting
When alarm trigger occurred   File upload(image)   e-mail/FP    - Audio Old upload(image)   e-mail/File upload(image)    - Audio Old upload(image)   e-mail/File upload(image)    - Network    - Color Palettes   Metal shielded RJ-45(10/100/1000BASE-T)    - Video Compression   H.265/H.265(10/100/1000BASE-T)    - Video Compression   H.265/H.265(10/100/1000BASE-T)    - Video Compression   H.266/H.265(10/100/1000BASE-T)    - Video Compression   H.266/H.265(10/100/1000BASE-T)    - Video Compression   H.266/H.265(10/100/1000BASE-T)    - Video Compression   H.266/H.265(10/100/1000BASE-T)    - Video Compression   Manual(Sea area). WiseStreamIII    - Video Compression   Manual(Sea area). WiseStreamIII    - Video Quality Adjustment   H.266/H.265(10/100/100/100BASE-T)    - Video Quality Adjustment   H.266/H.265(10/100BASE-T)    - Video Quality Adjustment   H.266/H.265(10/100BA	Alarm I/O	4 configurable I/O ports	
Alarm Events	Alarm Triggers	Analytics, Network disconnect, Alarm input	
Audio Out Line out, Max.output level: 1 Vrms  Color Palettes Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom  Network  Ethernet Metal shielded RJ-45(10/100/1000BASE-T)  Video Compression H.265/H.264: Main/High, MJPEG  G721 Lrlaw / G.726 Selectable G726(ADPCM) BKHz, G.711 BKHz G726 Leftybps, 30Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz  Smart Codec WiseStream II Manual(Sea area), WiseStreamIII  Video Quality Adjustment H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control MJPEG: VBR  Streaming Unicast(6 users) / Multicast MUltiple streaming(Up to 3 profiles)  Protocol PV4, IPv4, TCP/IP, UDP/IP, RTP(UDP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SMMPVJ/V2c/V3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  PM262 Application Programming Interface Public authentication Digest login authentication Digest	Alarm Events	<ul> <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> </ul>	
Color Palettes  Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom  Network  Ethernet  Metal shielded RJ-45(10/100/1000BASE-T)  Video Compression  H.265/H.264: Main/High, MJPEG  G.711 u-law/ G.726 Selectable G.726: Jok/DpN, BKH2, G.711 BKH2 G.726: Jok/DpN, BKH2, G.711 BKH2 G.726: Jok/DpS, 24Kbps, 32Kbps, 40Kbps AAc-LC: 48Kbps, 24Kbps, 32Kbps, 40Kbps AAc-LC: 48Kbps, a1 LokHz G.726: Jok/DpS, a1 LokHz G.726:	Audio In		
Network  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) BikHz, G.711 8KHz G.726: 16KDps, 24KDps, 32KDps, 40KDps AAC-LC: 48KDps at 16KHz  Smart Codec WiseStream II Manual(Sea area), WiseStreamIII  Video Quality Adjustment MJPEG: Target bitrate level control  MJPEG: Target bitrate level control  Bitrate Control MJPEG: Target bitrate level control  MJPEG: Target bitrate level control  Bitrate Control MJPEG: VBR  Streaming Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  Multiple streaming(Up to 3 profiles)  Multiple streaming(Up to 3 profiles)  MIPEG: VBR  Streaming Uper Adjustment Multiple streaming(Up to 3 profiles)  MIPEG: VBR  Streaming Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  Multiple streaming(Up to 3 profiles)  Multiple streaming(Up to 3 profiles)  MIPEG: VBR  Streaming Uper Adjustment Multiple streaming(Up to 3 profiles)  Multiple streaming(Up t	Audio Out	Line out, Max.output level: 1Vrms	
Ethernet Metal shielded RJ-45(10/100/1000BASE-T)  Video Compression H.265/H.264: Main/High, MJPEG  G.711 u-law / G.726 Selectable G.726 (ADPCM) BKHz, G.711 BKHz G.721 BKHz G.726 Stlectable G.726 (ADPCM) BKHz, G.711 BKHz G.726 Stlectable G.726 (ADPCM) BKHz, G.711 BKHz G.726 Stleps, 40Kbps AAC-LC: 48Kbps at 16KHz  Smart Codec WiseStream II Manual(5ea area), WiseStreamIII  Video Quality Adjustment H.264/H.265: Target bitrate level control M.PEG: Target bitrate level control  Bitrate Control H.264/H.265: CBR or VBR M.PEG: VBR  WIPEG: WBR  Streaming Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  IPv4. IPv6. TCP/IP. UDP/IP. RTP(IDP), RTCP.RTSP. NTP. HTTP. HTTPS, SSL/TLS, DHCP. FTP. SMTP. ICMP, IGMP. SMMPv1/V2c/V3(MIB-2), ARP, DNS, DDNS, QOS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  FM 2.0 (FIPS 140-2 level 2) HTTPS(SSL) login authentication Digest login authentication Digest login authentication Digest login authentication Digest login authentication Praddress filtering User access login authentication Secure boot. Secure firmware  Application Programming Interface ONVIF Profile S/T  Application Programming Interface English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek  Edge Storage Micro SO/SDHC/SDXC 2slots 512GB	Color Palettes		
Ethernet Metal shielded RJ-45(10/100/1000BASE-T)  Video Compression H.265/H.264: Main/High, MJPEG  G.711 u-law / G.726 Selectable G.726 (ADPCM) BKHz, G.711 BKHz G.721 BKHz G.726 Stlectable G.726 (ADPCM) BKHz, G.711 BKHz G.726 Stlectable G.726 (ADPCM) BKHz, G.711 BKHz G.726 Stleps, 40Kbps AAC-LC: 48Kbps at 16KHz  Smart Codec WiseStream II Manual(5ea area), WiseStreamIII  Video Quality Adjustment H.264/H.265: Target bitrate level control M.PEG: Target bitrate level control  Bitrate Control H.264/H.265: CBR or VBR M.PEG: VBR  WIPEG: WBR  Streaming Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  IPv4. IPv6. TCP/IP. UDP/IP. RTP(IDP), RTCP.RTSP. NTP. HTTP. HTTPS, SSL/TLS, DHCP. FTP. SMTP. ICMP, IGMP. SMMPv1/V2c/V3(MIB-2), ARP, DNS, DDNS, QOS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  FM 2.0 (FIPS 140-2 level 2) HTTPS(SSL) login authentication Digest login authentication Digest login authentication Digest login authentication Digest login authentication Praddress filtering User access login authentication Secure boot. Secure firmware  Application Programming Interface ONVIF Profile S/T  Application Programming Interface English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek  Edge Storage Micro SO/SDHC/SDXC 2slots 512GB	<u> </u>		
Video Compression  H.265/H.264: Main/High, MJPEG  G.711 u-law / G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: Selectable G.726: GABPbs, 24Kbps, 32Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz  Smart Codec  WiseStream II  Manual(5ea area), WiseStreamIII  Video Quality Adjustment  H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control  Bitrate Control  H.264/H.265: CBR or VBR MJPEG: VBR MJPEG: VBR  MJPEG: VBR  MJPEG: VBR MJPEG: VBR  MJPEG: VBR  MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPEG: VBR MJPE		Matalabialdad D.J. 45/40/400/4000DACE T)	
Audio Compression  G.711 u-law / G.726 Selectable G.726(ADPCM) 8kHz. G.711 8kHz G.726 SADPCM) 8kHz. G.711 8kHz G.726 SADPCM, SAVEDS, 40kbps AAC-LC: 48kbps at 16kHz  WiseStream II  Manual(5ea area), WiseStreamIII  WiseStreamIII  H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control  H.264/H.265: GBR or VBR MJPEG: VBR  Streaming  Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  IP44, IP46, TCP/IP, UDP/IP, RTP(IUDP), RTP, RTP, RTP, RTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SMMPv1/V2c/V3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  Security  Find 2.0 (FIP5 140-2 level 2) HTTPS(SSL) login authentication Digest login authentication B.202.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPV2) Device certificate(Hamwha Techwin Root CA, pre-installed) Secure boot. Secure firmware  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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			
Audio Compression  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  Video Quality Adjustment  H 264(H 265: Target bitrate level control MJPEG: Target bitrate level control  H 264(H 265: CBR or VBR MJPEG: VBR  Streaming  Unicast(6 users), Multicast Multiple streaming(Up to 3 profiles)  IP44, IP46, TCP/IP, UDP/IP, RTP(IUDP), RTP(ICP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SMMPv1/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 Digest login authentication Digest login authentication P address filtering User access log 802.1X authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2) Device certificate(Hamwha Techwin Root CA, pre-installed) Secure boot, Secure firmware  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	video Compression		
Video Quality Adjustment  H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control  H.264/H.265: CBR or VBR MJPEG: VBR  Streaming  Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  IPv4, 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)  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  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	Audio Compression	G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps	
MJPEG: Target bitrate level control  Bitrate Control  H.264/H.265: CBR or VBR MJPEG: VBR  Streaming  Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)  IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, ISMP, ISMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  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  ONVIF Profile S/T SUNAP(IHTTP API) Wisenet open platform (visible channel only)  General  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	Smart Codec	WiseStream II	Manual (5ea area), WiseStreamIII
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)  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  ONVIF Profile S/T SUNAP(IHTTP API) Wisenet open platform (visible channel only)  General  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	Video Quality Adjustment	H.264/H.265: Target bitrate level control MJPEG: Target bitrate level control	
Multiple streaming(Up to 3 profiles)  IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), 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)  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  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	Bitrate Control	·	
Protocol  SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)  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  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	Streaming		
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) Secure boot, Secure firmware  ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	Protocol	SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP,	
Application Programming Interface  SUNAPI(HTTP API) Wisenet open platform (visible channel only)  General  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	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 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	Application Programming Interface	SUNAPI(HTTP API)	
Polish, Turkish, Dutch, Hungarian, Greek  Edge Storage Micro SD/SDHC/SDXC 2slots 512GB	General		
	Webpage Language		
Memory 4GB RAM, 512MB FLASH	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 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)	Wid	e: 200.1m(656.40ft) / Tele: 583.4m(1913.89ft)
Observe (63PPM/ 19PPF)	Wid	e: 80.0m(262.56ft) / Tele: 233.3m(765.56ft)
Recognize (125PPM/ 38PPF)	Wid	e: 40.0m(131.28ft) / Tele: 116.7m(382.78ft)
	147: -1	20 0 (/ F / 4ft) / T-I F0 0 (404 20ft)
Identify (250PPM/ 76PPF)	WIG	e: 20.0m(65.64ft) / Tele: 58.3m(191.39ft)