



Network

Thermal

## TNM-C4952TD

Bi-spectrum VGA Thermal Visible Sensor Camera

### Key Features

- VGA Thermal Resolution
- IP66, IP67, IK10 Rated
- 8 Frames per second
- 8MP Visible Resolution
- Dual (thermal & visible) channel by one device, one IP
- Lens : 13.5mm fixed thermal & 10.9~29mm motorized varifocal visible
- 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
- Wall & Pole mount all-in-one design

## TNM-C4952TD

Bi-spectrum VGA Thermal Visible  
Sensor Camera



### 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                    |                       | $\leq 60$ mK                                                                       |                                                                                                                                                                                       |
| Pixel Size              |                       | 12 $\mu$ m                                                                         |                                                                                                                                                                                       |
| Min. Illumination (Lux) | Color(1/30sec, 30IRE) |                                                                                    | 0.06                                                                                                                                                                                  |
|                         | BW(1/30sec, 30IRE)    |                                                                                    | 0.005                                                                                                                                                                                 |
| Video Out               |                       | USB: Micro USB Type B. Preview and installation ONLY. Requires WiFi dongle.        |                                                                                                                                                                                       |

### Lens

|                               |            |               |              |
|-------------------------------|------------|---------------|--------------|
| Focal Length (mm)             |            | 13.5          | 10.9~29      |
| Zoom Ratio                    | Optical    |               | 2.6x         |
| Max Aperture Ratio (F number) | Wide       | 1.0           | 1.7          |
|                               | Tele       |               | 1.73         |
| Angular Field of View         | Horizontal | 31.9°         | 42.0°~15.0°  |
|                               | Vertical   | 24.2°         | 22.8°~8.4°   |
|                               | Diagonal   | 39.5°         | 48.7°~17.1°  |
| iFoV                          |            | 0.47mRad      |              |
| Min. Object Distance          |            | 7.6m(24.93ft) | 2.5m(8.20ft) |
| Focus Control                 |            | Fixed         | Simple focus |

## Pan / Tilt / Rotate

|                           |      |               |
|---------------------------|------|---------------|
| Pan / Tilt / Rotate Range | Pan  | -170°~+170°   |
|                           | Tilt | -40° ~ 50°    |
| Sequence                  |      | Preset(255ea) |

## Operational

|                                          |                |                                                                                                                                                                                                                 |
|------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Day & Night                              |                | Auto(ICR)                                                                                                                                                                                                       |
| Backlight Compensation                   |                | BLC, WDR, SSDR                                                                                                                                                                                                  |
| Wide Dynamic Range (dB)                  |                | 120                                                                                                                                                                                                             |
| Digital Noise Reduction                  |                | WiseNR II (Based on AI engine), SSNR V                                                                                                                                                                          |
| Digital Image Stabilization              |                | Support(built-in gyro sensor)                                                                                                                                                                                   |
| Motion Detection                         | Quantity       | 8ea                                                                                                                                                                                                             |
|                                          | Shape          | 8point Polygonal zones                                                                                                                                                                                          |
| Privacy Masking                          | Quantity       | 6ea                                                                                                                                                                                                             |
|                                          | Shape          | Rectangular zones                                                                                                                                                                                               |
|                                          | Color / Option | Gray, Black, White                                                                                                                                                                                              |
| 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                                                                                                                                                                                                 |
| Alarm Interface                          | In/Out         | 4 configurable I/O ports                                                                                                                                                                                        |
| Alarm Triggers                           |                | Analytics, Network disconnect, Alarm input                                                                                                                                                                      |
| Alarm Events When Alarm Trigger Occurred |                | File upload(image): e-mail/FTP,<br>Notification: e-mail,<br>Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output,<br>Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback |
| Audio In                                 |                | Selectable(mic in/line in)                                                                                                                                                                                      |
| Audio Out                                |                | Line out                                                                                                                                                                                                        |
| Color Palettes                           |                | Whitehot, Blackhot, Rainbow, Rainbow2,<br>Sepia, Red, Iron, Custom                                                                                                                                              |

## Analytics

|                        |         |                 |                                            |
|------------------------|---------|-----------------|--------------------------------------------|
| Classified Object Type |         | Person, Vehicle | Person, Face, Vehicle, License plate       |
| Attributes             | Vehicle |                 | Type(car, bus, truck, motorcycle, bicycle) |
| Thumbnail              |         | BestShot        | BestShot                                   |

## Analytics

|                       |                    |                                                                                                                                |                                                                                                                                                                          |
|-----------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analytics Events      | Based on AI Engine | Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam | Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam                                           |
|                       | Normal             | Motion detection, Temperature change detection                                                                                 | Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Loitering, Intrusion, Enter/Exit, Appear/Disappear) |
| Business Intelligence | Normal             | Vehicle counting                                                                                                               | Vehicle counting                                                                                                                                                         |

## 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) 8kHz,G.711 8kHz, G.726: 16kbps,24kbps,32kbps,40kbps, AAC-LC: 48kbps at 16kHz                                                                                           |                       |
| Smart Codec                       |                    | WiseStream II                                                                                                                                                                                                     | Manual, WiseStreamIII |
| Bitrate Control                   |                    | H.265/H.264: CBR or VBR, MJPEG: VBR                                                                                                                                                                               |                       |
| Streaming                         | Unicast            | Up to 6 users                                                                                                                                                                                                     |                       |
|                                   | Multicast          | Support                                                                                                                                                                                                           |                       |
|                                   | 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, IGMPv2, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast) |                       |
| Application Programming Interface | ONVIF              | S, T                                                                                                                                                                                                              |                       |
|                                   | 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                                                   |  |  |
| Network authentication | IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)                      |  |  |
| Secure Communication   | HTTPS, WSS(WebSocket Secure)                                            |  |  |
| Access Control         | IP-based access control                                                 |  |  |
| 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         | HTPM(Hanwha Trusted Platform Module), SDcard partition encrypt(AES-256) |  |  |
| Security Certificate   | TPM 2.0 with FIPS 140-2 level2                                          |  |  |

## General

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

## Environmental & Electrical

|                     |             |                                        |
|---------------------|-------------|----------------------------------------|
| Operating Condition | 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 |
| Storage Condition   | Temperature | -50°C~+60°C(-58°F~+140°F)              |
|                     | Humidity    | 0~95% RH(non-condensing)               |
| 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              | 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 | 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)   |

DRI (Johnson's Criteria)

|                |                  |                 |  |
|----------------|------------------|-----------------|--|
| Detection      | Person(1.67PPM)  | 672m(2,204ft)   |  |
|                | Vehicle(0.65PPM) | 1,717m(5,633ft) |  |
| Recognition    | Person(6.67PPM)  | 168m(551ft)     |  |
|                | Vehicle(2.61PPM) | 429m(1,408ft)   |  |
| Identification | Person(13.33PPM) | 84m(276ft)      |  |
|                | Vehicle(5.22PPM) | 215m(704ft)     |  |

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CAD

Unit: mm [inch]

