



Network

Multi-sensor

# TNM-C4940TDR

Bi-spectrum AI IR Thermal Camera



## Key Features

- Radiometry AI Bi-Spectrum for Outdoor environment
- Bi-spectrum monitoring with 8MP visible & VGA thermal
- AI based Object classification with Both Channels (person/vehicle)
- Remote Temperature Monitoring within -20 ~ 130°C range
- 10 of polygonal ROI areas for temperature monitoring
- Improved All-in-One installation solution (wall&pole)

# TNM-C4940TDR

Bi-spectrum AI IR Thermal Camera



## Specifications

| Video                       | Thermal   | Visible   |
|-----------------------------|---|---|
| Imaging Device              | Uncooled micro bolometer  | 1/1.8" 8MP CMOS   |
| Resolution                  | 640x480 (can be scaled up to 1280x960)<br>1280x960, 1280x720, 1024x768, 800x600,<br>800x448, 720x576, 720x480, 640x480, 640x360 | 3840x2160, 3072x1728, 2592x1944, 2688x1520,<br>2560x1440, 2048x1536, 1920x1080, 1600x1200,<br>1280x1024, 1280x960, 1280x720, 1024x768,<br>800x600, 800x448, 720x576, 720x480, 640x480,<br>640x360 |
| Max. Framerate              | H.265/H.264: Max. 30fps/25fps<br>(Both Channel AI ON - Max. 15fps)<br>MJPEG: Max. 3fps  | H.265/H.264: Max. 30fps/25fps<br>(Both Channel AI ON - Max. 15fps)<br>MJPEG: Max. 1fps  |
| NETD                        | <60mK   |   |
| Pixel Size                  | 12μm  |   |
| Min. Illumination           |   | Color: 0.06Lux(F1.3, 1/30sec)<br>BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)   |
| Video Out                   | USB : Micro USB Type B, 1280x720 for installation   |   |
| <b>Lens</b>                 |   |   |
| Focal Length (Zoom Ratio)   | 9.1mm fixed focal   | 4.4~9.3mm(2.2x) motorized varifocal   |
| Max. Aperture Ratio         | F1.0  | F1.3(Wide)~F2.15(Tele)  |
| Angular Field of View       | H: 50.0°, V: 37.0°, D: 63.8°<br>(iFoV: 1.319 mRad)  | H:112.1°(Wide)~47.5°(Tele) /<br>V:58.0°(Wide)~26.6°(Tele) /<br>D:137.5°(Wide)~54.6°(Tele)   |
| Min. Object Distance        | 3.5m(11.48ft)   | Wide: 1.75m(5.74ft) / Tele: 5.21m(17.09ft)  |
| Focus Control               | Fixed   | Simple focus  |
| <b>Pan / Tilt / Rotate</b>  |   |   |
| Pan / Tilt / Rotate Range   | -170° ~ +170° / -40° ~ 50° / -  |   |
| <b>Operational</b>          |   |   |
| Camera Title                | Displayed up to 85 characters   |   |
| Day & Night                 | Auto(ICR)   |   |
| Backlight Compensation      | BLC, WDR, SDR   |   |
| 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<br>- Color: Gray/Black/White   |   |
| Gain Control                | Low / Middle / High   |   |
| White Balance               | ATW / AWC / Manual / Indoor / Outdoor   |   |
| LDC                         | Support   |   |

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.

|                                   |  |  |
|-----------------------------------|--|--|
| Electronic Shutter Speed          | Minimum / Maximum / Anti flicker(1/5~1/12,000sec)<br>Auto prefer shutter control(Based on AI engine)   |  |
| Analytics                         | <p>Classified object type: Person/Vehicle</p> <p>Support BestShot<br/>Analytics events based on AI engine<br/>- Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit)<br/>Analytics events<br/>- Motion detection</p>  | <p>Classified object type:<br/>Person/Face/Vehicle/License plate<br/>Attributes:<br/>Vehicle(Type:car/bus/truck/motorcycle/bicycle)<br/>Support BestShot<br/>Analytics events based on AI engine<br/>- Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit)<br/>Analytics events<br/>- Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear)</p> <p>* Some of the video analytics only works with people and vehicle detection</p> |
| Business Intelligence             | Temperature Analysis   |  |
| Alarm I/O                         | 4 configurable I/O ports   |  |
| Alarm Triggers                    | Analytics, Network disconnect, Alarm input, MQTT subscription  |  |
| Alarm Events                      | <p>When alarm trigger occurred</p> <ul style="list-style-type: none"> <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>- MQTT: publication</li> </ul> |  |
| Audio In                          | Selectable(mic in/line in)   |  |
| Audio Out                         | Line out   |  |
| Light Type                        | 30m (98.42ft)  |  |
| Color Palettes                    | Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom  |  |
| <b>Radiometry</b>                 |  |  |
| Temperature Detect Range          | -20°C~130°C(-4°F~266°F)  |  |
| Temperature Accuracy              | <p>±5°C(≤100°C), ±20%(&gt;100°C)<br/>* This temperature accuracy is based on testing the minimum object distance (MoD) at room temperature as a reference value.</p>   |  |
| Temperature Detection             | 10 Polygonal ROI zones, whole FoV area   |  |
| Additional                        | Hybrid palettes, Spot temperature reading  |  |
| <b>Network</b>                    |  |  |
| Ethernet                          | Metal shielded RJ-45(10/100/1000BASE-T)  |  |
| Video Compression                 | H.265/H.264: Main/High, MJPEG  |  |
| Audio Compression                 | <p>G.711 u-law / G.726 Selectable<br/>G.726(ADPCM) 8KHz, G.711 8KHz<br/>G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps<br/>AAC-LC: 48Kbps at 16KHz</p>  |  |
| Smart Codec                       | WiseStream II  | Manual(5ea area), WiseStreamIII  |
| Bitrate Control                   | H.264/H.265: CBR or VBR<br>MJPEG: VBR  |  |
| Streaming                         | Unicast(6 users) / Multicast<br>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, CDP, SRTP (TCP, UDP Unicast), MQTT   |  |
| Application Programming Interface | ONVIF Profile S/T/M<br>SUNAPI(HTTP API)<br>Wisenet open platform (visible channel only)  |  |

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.

---

**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 |
| Audit                  | Access / System / Event Log management                           |
| Device ID              | Device Certificate(Hanwha Private Root CA)                       |
| Secure Storage         | HTPM(Hanwha Trusted Platform Module), SDcard partition encrypt   |
| Security Certificate   | TPM with FIPS 140-2 level 2                                      |

---

**General**

|                  |  |
|------------------|--|
| Webpage Language | English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek |
| Edge Storage     | Micro SD/SDHC/SDXC 2slots 512GB  |
| Memory           | 4608MB RAM, 512MB Flash  |

---

**Environmental & Electrical**

|                                  |   |
|----------------------------------|---|
| Operating Temperature / Humidity | -40°C to +60°C(-58°F to +140°F)<br>* Start up should be done at above -30°C<br>0~95% RH(non-condensing) |
| Storage Temperature / Humidity   | -50°C~+60°C(-58°F~+140°F) / 0~90% RH  |
| 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 25.5W, Typ 16.0W<br>12VDC : Max 21.5W, Typ 14.0W   |

---

**Mechanical**

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

---

**Certifications & Standards**

|             |  |
|-------------|--|
| EMC         | FCC 47 CFR 15 Subpart B Class A<br>ICES-3(A)/NMB-3(A)<br>CE/UKCA<br>- EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3<br>VCCI CISPR 32 Class A<br>RCM AS/NZS CISPR 32 Class A |
| Safety      | UL/CSA 62368-1<br>KC 62368-1   |
| Environment | IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10<br>NEMA 250 type 4X, NEMA TS-2   |

# TNM-C4940TDR

Bi-spectrum AI IR Thermal Camera



## CAD

Unit:mm [inch]

