

AI Solutions, COVID-19 and Beyond

HEAD OFFICE

6, Pangyo-ro 319beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, 13488 Rep. of KOREA
Tel: +82.1588.5772
Hanwha-Security.com

Hanwha Techwin America

500 Frank W. Burr Blvd. Suite 43 Teaneck, NJ 07666
Toll Free: +1.877.213.1222
Direct: +1.201.325.6920
Fax: +1.201.373.0124
HanwhaSecurity.com

Hanwha Techwin Europe

Heriot House, Heriot Road, Chertsey, Surrey, KT16 9DT, United Kingdom
Tel: +44.1932.57.8100
Fax: +44.1932.57.8101
Hanwha-Security.eu

Hanwha Techwin Tianjin

No.11 Weiliu Rd., Micro-electronic Industrial Park,
Jingang Road Tianjin 300385, China
Tel: +86-22-2388-7788 (8700)
Hanwha-Security.cn

Hanwha Techwin Middle East FZE

JAFZA View 18, 20th floor, office 2001, 2002, 2003,
Downtown Jebel Ali, Dubai, United Arab Emirates
Hanwha-Security.com

Hanwha Techwin Singapore Branch

4 Shenton Way, #15-06, SGX Centre 2, Singapore, 068807
Tel: +65.6221.7512
Fax: +65.6227.9337
Hanwha-Security.com

Hanwha Techwin Russia Office

7, Bolshaya Serpuhovskaya str., Moscow, Russia, 115093
Tel: +7.499.750.17.30
Hanwha-Security.eu/ru/

Hanwha Techwin Vietnam Hanoi Office

28th Floor, Handico Building, Pham Hung Street, Me Tri ward,
Nam Tu Liem District, Hanoi City, Vietnam
Tel: +84.91.982.40.88
Hanwha-Security.com

© 2021 Hanwha Techwin Co., Ltd. All rights reserved.

DESIGN AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE
Under no circumstances, this document shall be reproduced, distributed or changed,
partially or wholly, without formal authorization of Hanwha Techwin Co., Ltd.
FIRST EDITION 8-2020 (M.H)



Hanwha Techwin's AI based solution for COVID-19

- Real-time Face Mask Detection
- Occupancy Monitoring and Management
- Bi-spectrum camera with Visible and Thermal imaging
- Quickly screening high body temperature
- Social Distancing Detection

From surveillance to safety

While the COVID-19 pandemic is subsiding, its effects on daily life – social distancing, face coverings and limited public gatherings – are likely to remain. Now, surveillance technologies still need to monitor and protect, but also help ensure safety and health.

Hanwha Techwin is making it easier for businesses and managers of public spaces to easily and cost-effectively comply with federal and local guidelines – and keep their employees, customers and visitors safe. Our full suite of health and safety intelligent solutions can readily adapt to the requirements of any changing business environment.



Temperature Detection Thermal Camera(TNM-3620TDY)

Identification

Visible image 2MP 4mm fixed focal (H : 87.6°, V : 46.4°)

Detection

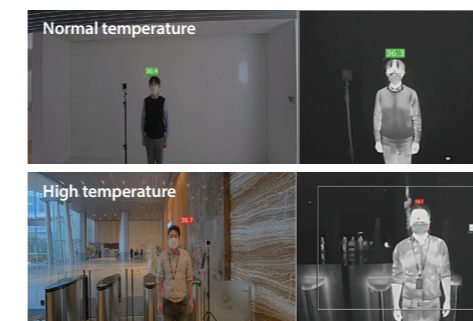
Thermal image QVGA 4.7mm fixed focal (H : 50.0°, V : 36.4°)



Bi-spectrum camera with dual lens for visible and thermal imaging

TNM-3620TDY camera features both QVGA (320x240) thermal camera with 4.7mm fixed focal lens and 2MP (1920x1080) visible camera with 4MP fixed focal lens together. This camera can quickly screen high temperature and can recognize the object (who the person is) with visible camera.

EBT(Estimated Body Temperature) mode

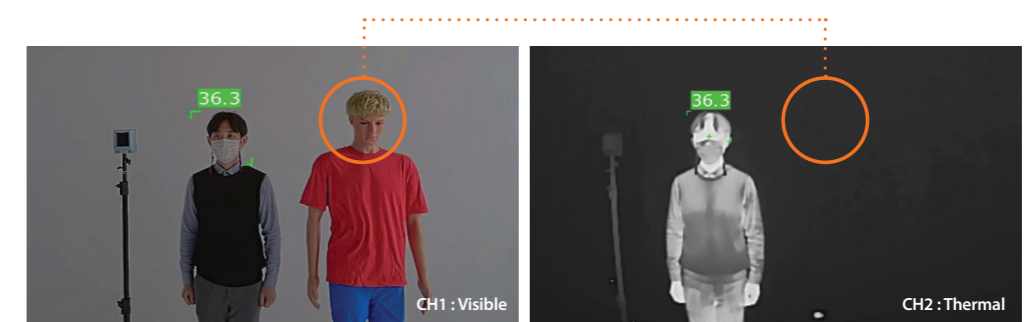


Normal radiometric mode



High accuracy with AI deep-learning technology

TNM-3620TDY utilizes built-in AI deep-learning technology to detect the human faces and generates alarms for only humans, making the monitoring more precise and efficient. Users can choose a channel between visible camera and thermal camera to detect human faces. When the thermal camera is selected as a channel to detect human faces, it only detects faces with fever. And therefore, the faces of mannequins or faces in photographs are not detected as shown in the image below. In addition, users can synchronize images of two channels by calibrating the image grid, so that the camera can detect the exact location of objects' faces and measure body temperature.



* it doesn't detect face of mannequins

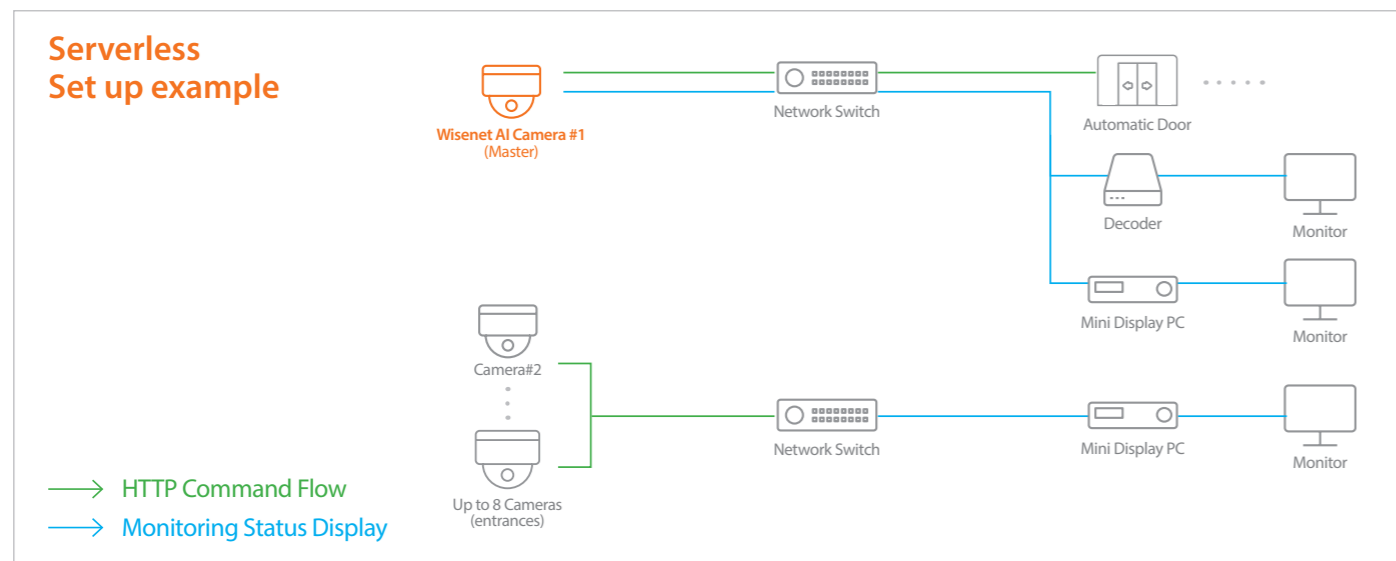
Occupancy Monitoring Application

Real-time Occupancy monitoring and control

Wisenet Occupancy Monitoring Application automatically displays a red 'Wait' message along with the number of people currently inside to help customers conform to social distancing policy when the maximum occupancy of an area is reached. When numbers are below the threshold, a green "Welcome" message is displayed. The public-facing display messages are customizable and can include the name of the business in addition to 'stop' or 'go' indicators. The system can also generate alarm outputs to control automatic doors and traffic beacons for additional control.



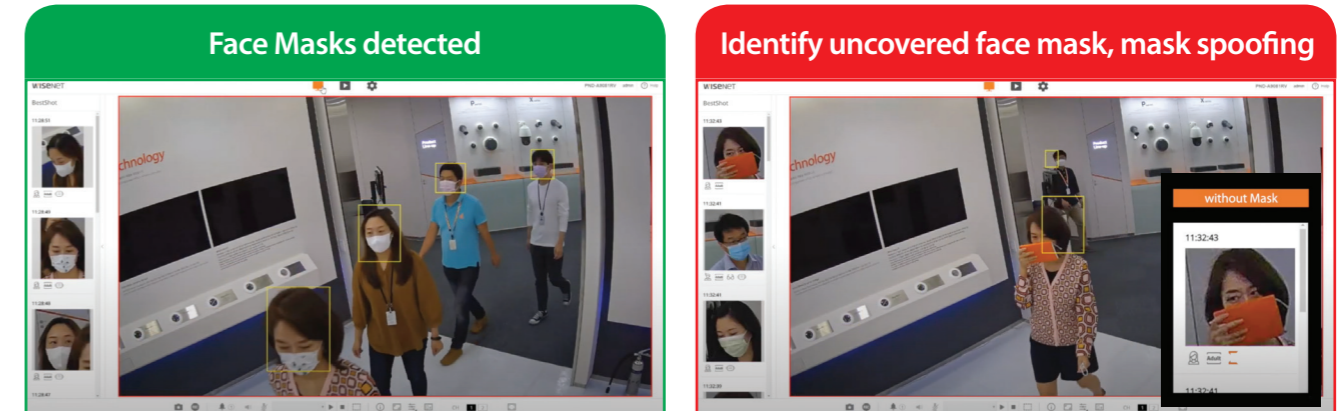
- License-free onboard AI Analytics of Wisenet P series AI cameras (Do not require a dedicated analytics server)
- No need for "top-view" mounting
- Precise edge-based analytics with Deep Learning AI
- Alarm output to automatic doors or traffic light beacons
- Customizable messages and scrolling text
- Aggregates occupancy data from up to 8 cameras at 8 entrances/exits simultaneously



Face Mask Detection

AI-based High accuracy with AI camera

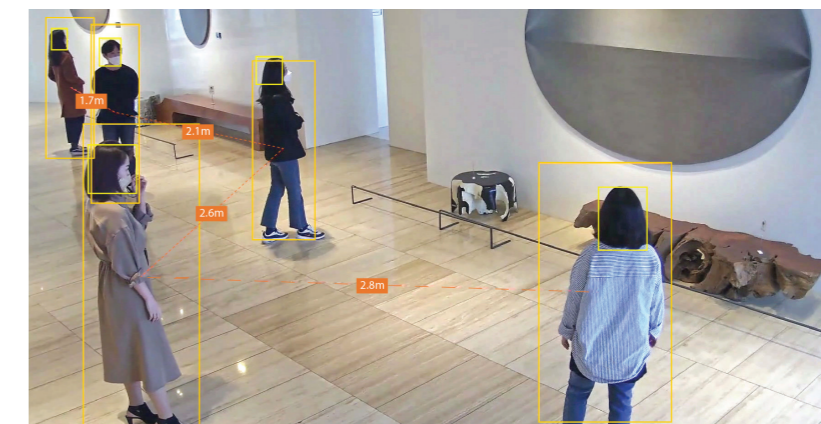
Wisenet AI cameras are ideal for object detection and classification using attribute analytics. Face Masks are now part of the attribute metadata for a forensic review. Wisenet Face Mask Detection can detect if people are wearing/not wearing a face mask in real-time. If a person enters an area without a face mask or improperly wearing a face mask and provide notification to compatible VMS/NVRs.



Social Distancing Detection

Monitor the proximity of people in public spaces with deep learning AI solution.

Hanwha Techwin's Wisenet P series AI cameras, social distancing checks became easy and accurate. Cameras placed in key locations throughout a facility or outdoor space detect distancing violations (violations of preset distance) and trigger an instant event alert on connected NVR/VMS. They can also send out instant alarms to the objects through speakers or other alarm devices connected to them.



- High accuracy with edge-based deep-learning AI video analytics
- Support easy and simple configuration through web viewer
- Detect multiple people simultaneously
- Generate instant alarm (Customizable audio alarm)
- Can be used simultaneously with face mask detection and occupancy monitoring app

Wisenet AI cameras



PNO-A9081R
4K AI IR Bullet Camera



PNV-A9081R
4K AI IR Vandal Dome Camera



PND-A9081RV
4K AI IR Dome Camera

| | | | |
|-----------------------------------|--|--|--|
| Imaging Device | 1/18" CMOS | 1/18" CMOS | 1/18" CMOS |
| Min. Illumination | Color: 0.05Lux(F1.6) BW: 0Lux(IR LED on) | Color: 0.05Lux(F1.6) BW: 0Lux(IR LED on) | Color: 0.05Lux(F1.6) BW: 0Lux(IR LED on) |
| Video Output | CVBS: 1.0 Vp-p | CVBS: 1.0 Vp-p | CVBS: 1.0 Vp-p |
| Focal Length | 4.5~10mm (2.2x) motorized varifocal | 4.5~10mm (2.2x) motorized varifocal | 4.5~10mm (2.2x) motorized varifocal |
| Angular Field of View | H: 101.4°(Wide)~45.5°(Tele) / V: 53.6°(Wide)~25.5°(Tele) / D: 120.7°(Wide)~52.3°(Tele) | H: 101.4°(Wide)~45.5°(Tele) / V: 53.6°(Wide)~25.5°(Tele) / D: 120.7°(Wide)~52.3°(Tele) | H: 101.4°(Wide)~45.5°(Tele) / V: 53.6°(Wide)~25.5°(Tele) / D: 120.7°(Wide)~52.3°(Tele) |
| Pan / Tilt / Rotate | - | 0°~360° / -45°~85° / 0°~355° | 0°~360° / -45°~85° / 0°~355° |
| IR Viewable Length | 30m (98.42ft) | 30m (98.42ft) | 30m (98.42ft) |
| Day & Night | Auto (ICR) | Auto (ICR) | Auto (ICR) |
| Wide Dynamic Range | 120dB | 120dB | 120dB |
| Digital Noise Reduction | SSNRV | SSNRV | SSNRV |
| Digital Image Stabilization | Support (built-in gyro sensor) | Support (built-in gyro sensor) | Support (built-in gyro sensor) |
| Analytics | Object detection(Person/Vehicle/Face/ License plate), Audio detection, Sound classification | Object detection(Person/Vehicle/Face/ License plate), Audio detection, Sound classification | Object detection(Person/Vehicle/Face/ License plate), Audio detection, Sound classification |
| Business Intelligence | People counting, Queue management, Heatmap | People counting, Queue management, Heatmap | People counting, Queue management, Heatmap |
| Alarm I/O | 1/1 | 1/1 | 1/1 |
| Audio I/O | Line in / Line out | Line in / Line out | Line in / Line out |
| Video Compression | H.265, H.264, MJPEG | H.265, H.264, MJPEG | H.265, H.264, MJPEG |
| Resolution / Max. Frame Rate | 8MP/30fps | 8MP/30fps | 8MP/30fps |
| WiseStream | WiseStream II | WiseStream II | WiseStream II |
| Streaming | Up to 3 profiles | Up to 3 profiles | Up to 3 profiles |
| Edge Storage | Micro SD/SDHC/SDXC | Micro SD/SDHC/SDXC | Micro SD/SDHC/SDXC |
| Application Programming Interface | ONVIF Profile S/G/T SUNAPI (HTTP API) Wisenet open platform | ONVIF Profile S/G/T SUNAPI (HTTP API) Wisenet open platform | ONVIF Profile S/G/T SUNAPI (HTTP API) Wisenet open platform |
| Operating Temperature | -40°C ~ +55°C (-40°F ~ +131°F) * Start up above -10°C | -40°C ~ +55°C (-40°F ~ +131°F) * Start up above -10°C | -25°C ~ +50°C (-13°F ~ +122°F) |
| Certification | IP66/IP67, IK10, NEMA4X | IP66/IP67/IP6K9K, IK10+, NEMA4X | IP52, IK10 |
| Power Consumption | PoE+: Max 20.00W, typical 17.00W 12VDC: Max 18.00W, typical 16.00W | PoE+: Max 20.00W, typical 17.00W 12VDC: Max 18.70W, typical 15.00W | PoE+: Max 20.00W, typical 16.00W 12VDC: Max 17.70W, typical 14.00W |
| Dimensions (WxHxD) /Weight | Ø91 x 368.6mm (3.58" x 14.51") (Without sunshield), 2.48kg (5.47lb) | Ø180 x 125mm (7.09" x 4.92") 1.90kg (4.19lb) | Ø160 x 125mm (6.30" x 4.92") 1.60kg (3.53lb) |
| Additional Features | AI : BestShot, Attributes (Person, Vehicle, Face, License plate) | AI : BestShot, Attributes (Person, Vehicle, Face, License plate) | AI : BestShot, Attributes (Person, Vehicle, Face, License plate) |

Wisenet Thermal Camera



PND-A9081RF
4K AI IR Dome Camera



PNB-A9001
4K AI Box Camera



TNM-3620TDY
Temperature Detection Thermal Camera

| | | | | |
|-----------------------------------|--|--|--|---|
| Imaging Device | 1/18" CMOS | 1/18" CMOS | Thermal | Visible |
| | | | Uncooled micro bolometer | 1/2.8" CMOS |
| Min. Illumination | Color: 0.05Lux(F1.6) BW: 0Lux(IR LED on) | Color: 0.03Lux(F1.2, 1/30sec) | - | Color : 0.05 lux (F1.6, 1/30sec) B/W : 0.005 lux (F1.6, 1/30sec) |
| Video Output | CVBS: 1.0 Vp-p | CVBS: 1.0 Vp-p | CVBS : 1.0 Vp-p, Micro USB Type B | |
| Focal Length | 4.5~10mm (2.2x) motorized varifocal | - | 4.7mm fixed focal | 4mm fixed focal |
| Angular Field of View | H: 101.4°(Wide)~45.5°(Tele) / V: 53.6°(Wide)~25.5°(Tele) / D: 120.7°(Wide)~52.3°(Tele) | - | H : 50.0°, V : 36.4°, D : 65.3° | H : 87.6°, V : 46.4°, D : 104.5° |
| Pan / Tilt / Rotate | 0°~360° / -45°~85° / 0°~355° | - | - | - |
| IR Viewable Length | 30m (98.42ft) | - | - | - |
| Day & Night | Auto (ICR) | Auto (ICR) | - | Auto (ICR) |
| Wide Dynamic Range | 120dB | 120dB | - | extreme WDR (150dB) |
| Digital Noise Reduction | SSNRV | SSNRV | - | SSNRV |
| Digital Image Stabilization | Support (built-in gyro sensor) | Support (built-in gyro sensor) | Support (built-in gyro sensor) | |
| Analytics | Object detection(Person/Vehicle/Face/ License plate), Audio detection, Sound classification | Object detection(Person/Vehicle/Face/ License plate), Audio detection, Sound classification | Normal mode : Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection, Temperature detection EBT mode : Temperature detection, Blackbody abnormality | |
| Business Intelligence | People counting, Queue management, Heatmap | People counting, Queue management, Heatmap | - | |
| Alarm I/O | 1/1 | 1/1 | 1 / 2 | |
| Audio I/O | Line in / Line out | Line in / Line out | Selectable (mic in/line in) / Line out | |
| Video Compression | H.265, H.264, MJPEG | H.265, H.264, MJPEG | H.265, H.264, MJPEG | |
| Resolution / Max. Frame Rate | 8MP/30fps | 8MP/30fps | 1280 x 960 / 30fps | 1920 x 1080 / 30fps |
| WiseStream | WiseStream II | WiseStream II | WiseStream II | |
| Streaming | Up to 3 profiles | Up to 3 profiles | Up to 6 Profiles | |
| Edge Storage | Micro SD/SDHC/SDXC | Micro SD/SDHC/SDXC | Micro SD/SDHC/SDXC | |
| Application Programming Interface | ONVIF Profile S/G/T SUNAPI (HTTP API) Wisenet open platform | ONVIF Profile S/G/T SUNAPI (HTTP API) Wisenet open platform | ONVIF Profile S/T, SUNAPI | |
| Operating Temperature | -25°C ~ +50°C (-13°F ~ +122°F) | -10°C ~ +55°C (+14°F ~ +131°F) | EBT mode : +10°C~+35°C (+50°F~+95°F) / Less than 95% RH Normal mode : -10°C~+55°C (+14°F~+131°F) / Less than 95% RH | |
| Certification | IP52, Plenum rate | - | - | |
| Power Consumption | PoE+: Max 20.00W, typical 16.00W 12VDC: Max 17.70W, typical 14.00W | PoE+: Max 16.50W, typical 12.50W 12VDC: Max 13.50W, typical 10.80W | PoE+: Max. 17.0W, typical 12.5W 12VDC: Max. 14.5W, typical 11.0W | |
| Dimensions (WxHxD) /Weight | Ø205 x 163mm (8.07" x 6.42") 1.95kg (4.30lb) | W73.1 x H66.6 x D147.8mm 0.70kg (1.54lb) | W135 x H75 x D188.5mm (5.31" x 2.95" x 7.42") 1712g (3.77lb) | |
| Additional Features | AI : BestShot, Attributes (Person, Vehicle, Face, License plate) | AI : BestShot, Attributes (Person, Vehicle, Face, License plate) | Bi-spectrum camera, Two temperature detection mode, Face detection Blackbody (SPI-35B) is optional | |