Optimized
Education Solutions

Optimized **Education Solutions**

Hanwha Techwin meets the unique security challenges facing educational institutions through the use of high-value, efficient, and cutting-edge technologies.

These technologies include:

- License-free AI camera analytics to increase surveillance accuracy and efficiency
- Future-proof modular designs that ensure economic device upgrade paths
- Cost-saving multi-sensor and specialty devices to replace multi-camera installations

Thermal body temperature detection camera

When properly configured, Hanwha Techwin's TNM-6320TDY can monitor the body temperatures of personnel entering a facility with an accuracy of ±0.9°F (±0.5°C). Its use of AI camera analytics reduces the occurrence of false alarms by removing any non-human entities from the monitoring process.

Identification
Visibile Image
2MP 4mm fixed focal

Distinguish between human temperatures and exothermal objects

98.5   98.5

Detection
Thermal image
QVGA 4.7mm fixed focal

- Estimated body temperature accuracy of ±0.9°F (±0.5°C)*
- Integration with visible camera AI Face Detection analytics
- FDA 510K registered medical device

When used in conjunction with SPI-35B Black Body calibration device

Wisenet WAVE VMS: Simple. Scalable. Powerful.

Hanwha Techwin's lightweight, scalable, and feature rich video management is capable of supporting up to 128 IP video streams per server and is fully integrated with Wisenet NVRs and IP camera video and audio analytics.

WISENET WAVE

WAVE Sync   Desktop   Mobile   Server

- **Easy setup** – complete system install and configuration in minutes
- **Flexibility** – drag and drop interface with resizable viewing panes for intuitive navigation
- **Compatibility** – full integration with SUNAPI 2.0 Wisenet device features and advanced analytics and other popular 3rd party security solutions
- **Reliability** – robust server hive architecture ensures continuous system uptime
- **Portability** – accessible from anywhere via WAVE Sync with mobile client applications
- **Accessibility** – add an unlimited number of users to a single system, each with custom or preset roles

SUPPORTED BROWSERS	SUPPORTED DESKTOP OS	SUPPORTED MOBILE OS	SUPPORTED SERVER OS
Chrome	Windows	Android	Windows
Firefox	Ubuntu	Apple	Ubuntu
Opera	Apple		
Edge			
Safari			

Wisenet P series AI cameras

Hanwha Techwin high-resolution 4K cameras have been equipped with AI-based analytics with attribute extraction that can accurately identify both humans and vehicles. Being able to differentiate and identify objects as humans or vehicles leads to faster and more efficient forensic searches as well as a reduction in bandwidth and storage through metadata tagging.

Indoor Vandal Dome	Outdoor Vandal Dome	Indoor Flush Mount Dome	Bullet	Box
PND-A9081RV	PNV-A9081R	PND-A9081RF	PNO-A9081R	PNB-A9001

✓ The AI camera BestShot feature

All extracted attributes are presented in real time via Hanwha Techwin's BestShot feature, which displays a still image of a detected object for easy identification along with any attributes detected.

Detected Objects	Attribute Category	Supported Attribute Items
Person	Gender	Female, Male
	Upper garment	(Up to 2 colors simultaneously)
	Lower garment	Black, Gray, White, Red, Orange, Yellow, Green, Blue, Purple
	Bag	Carries a bag, does not carry a bag
Face	Gender	Female, Male
	Age	Young/Adult/Middle/Senior
	Glasses	Wearing glasses, not wearing glasses
	Face mask	Wearing mask, not wearing mask
Vehicle	Type	Car (sedan/SUV/van/etc.), bus, truck, motorcycle, bicycle
	Color	(Up to 2 colors simultaneously) Black, Gray, White, Red, Orange, Yellow, Green, Blue, Purple
License plate	License plate	Presence of a license plate

Wisenet 7 powered X series cameras

The Wisenet 7 SoC is our latest and most advanced chipset to date, featuring recording resolutions of up to 4k, license-free video and audio analytics, eXtreme WDR with scene analysis, and best-in-class cybersecurity measures. Powering the updated line of Wisenet X series cameras, these capabilities are available in a variety of form factors that meet the challenges of even the toughest environments.

✓ Vivid 4K Resolution

Hanwha Techwin's F1.2 varifocal lens is implemented into the Wisenet 7 4K camera lineup, allowing the most light into the camera's sensor and producing clear and vivid images.

✓ xtreme WDR with Scene Analysis technology

Hanwha Techwin's improved multi-frame WDR technology lets you take full advantage of image contrast to see detailed objects clearly even in environments with strong backlight conditions.

Conventional

Wisenet 7

Integrity   Security   Data Protection   Secured Hardware
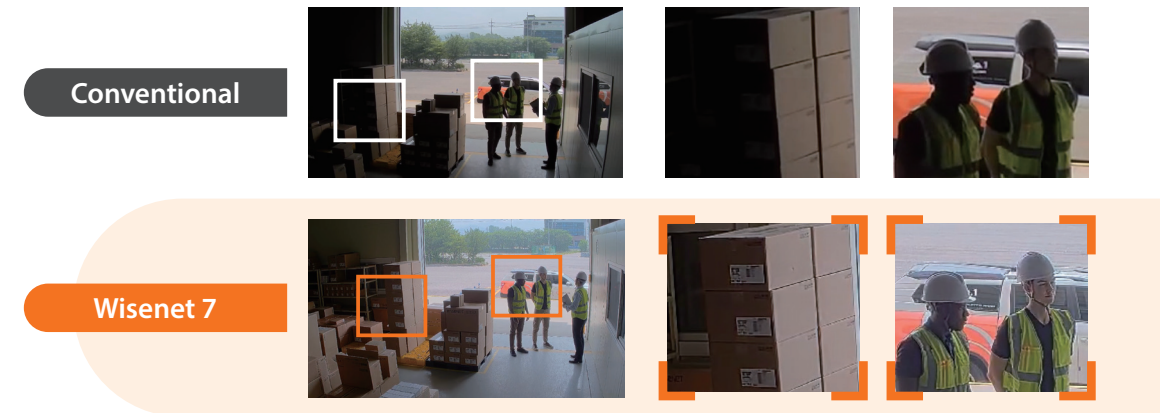
## ✓ End-to-end Cybersecurity

Hanwha Techwin security policies begin at the factory, with our own device certification issuing system embedding certificates and encryption keys into each chip.

UL CAP Certified: Our latest network video surveillance cameras equipped the Wisenet7 SoC acquired the UL CAP (Cybersecurity Assurance Program) certification, meeting all UL evaluation cybersecurity criteria: network penetration, access control, encryption and software updates.

The result: a fully secure end-to-end surveillance workflow, assuring all video is securely stored, encrypted and accessible only by authorized users.

Wisenet X series PLUS Modular Camera Design

Hanwha Techwin's unique modular camera design has been incorporated into both the Wisenet P series AI camera line as well as the Wisenet 7 powered Wisenet X series camera line. The modular design allows camera installers to easily install and configure devices as well as to service and upgrade them after installation using a wide variety of module options.
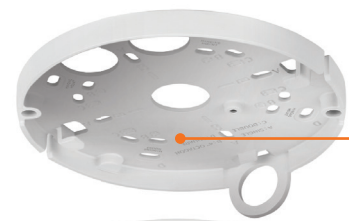
Mounting Plate
Can be installed on site without other camera parts
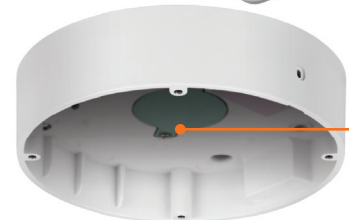
Camera Case
Vandal Resistant Housing

Magentic Camera Module
Camera modules with resolutions of up to 4K and features such as AI camera analytics, PoE extender, and PTRZ can be quickly installed or swapped without extra tools or hardware

Dome Cover
Polycarbonate dome cover

*__Paintable Skin Cover −__ Included with indoor models only. Can be painted to blend into your environment.

Easy to Use Innovation: Multi-sensor Camera Devices

Hanwha Techwin multi-sensor/multi-directional and multi-sensor/panoramic cameras allow you to monitor wide-open areas without blind spots or hallways and intersections with a single device. Cameras with replaceable lens modules allow you to customize the camera to meet your specific needs while PTRZ (Pan/Tilt/Rotate/Zoom) equipped devices can be adjusted remotely without physically accessing the unit. All multi-sensor devices use a single network cable and IP address for quick installation and configuration and can be recorded using a single camera recording license for Wisenet WAVE VMS and most popular video management systems.

- ☑ Eliminate the need for multi-camera installations
- ☑ Require only a single network cable and IP address for installation
- ☑ Record all sensors using a single camera recording license for popular VMS solutions
- ☑ PTRZ models reduce maintenance costs when camera readjustments are needed
- ☑ License-free onboard intelligent video analytics for each sensor
- ☑ Center Mode to remove blind spots below the camera

Quad Mode

Center Mode

Panoramic
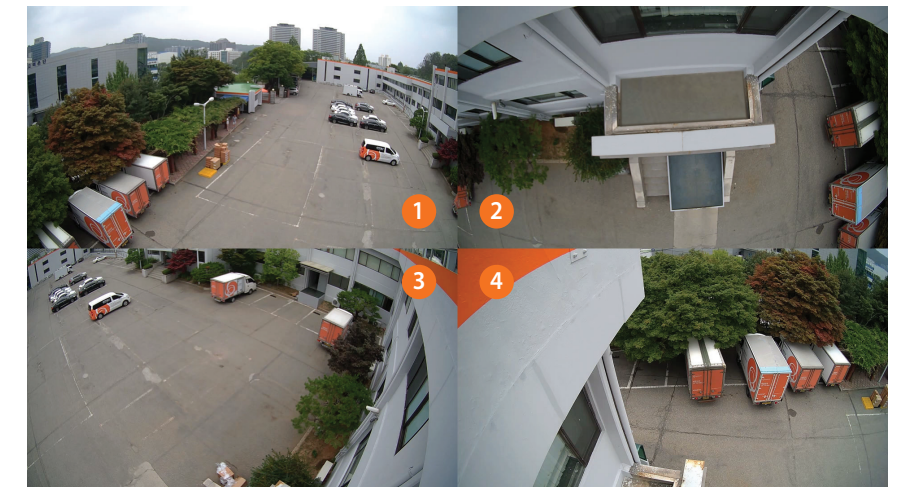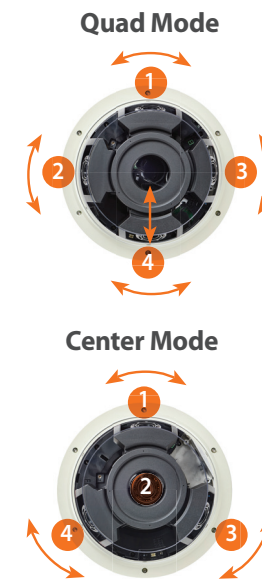
Mobile Solutions

Hanwha Techwin's EN50155 and EN 50121-x compliant mobile solutions include specialty Wisenet7 powered cameras. These hardened devices are designed to minimize service interruptions due to vibration and impact and water ingress while offering the same quality and analytics technologies incorporated into every Hanwha Techwin product.

- ☑ EN50155 and EN 50121-x compliant
- ☑ IK10, IP6K9K, and NEMA 4X rated devices
- ☑ M12 connectors for mobile applications
- ☑ License-free video and audio analytics suites*

Varies by model.

Mobile Models

| **2MP** Windshield Mounted TNO-6010M | **12MP 360°** Mobile Fisheye XNF-9010RVM | **2MP** Mobile Vandal Dome XNV-6013M | **2MP** Mobile Vandal Dome XNV-6012M/6022RM |

UL CAP certified cybersecurity

Hanwha Techwin security products offer the highest cybersecurity possible with unique certificates embedded into every device during each phase of the manufacturing process. This results in a cybersecurity policy that satisfies stringent UL CAP standards as well as our own requirements for product reliability and design innovation.

Secure Boot / Secure Firmware / Secure Open Platform App

Integrity

Secure Storage / Secure OS

Video Storage / Backup Encryption

Secure JTAG / UART

Data Protection

Secured Hardware

Security

Hanwha Techwin's private device certificate Root CA

UL CAP, Secure by Default Certified
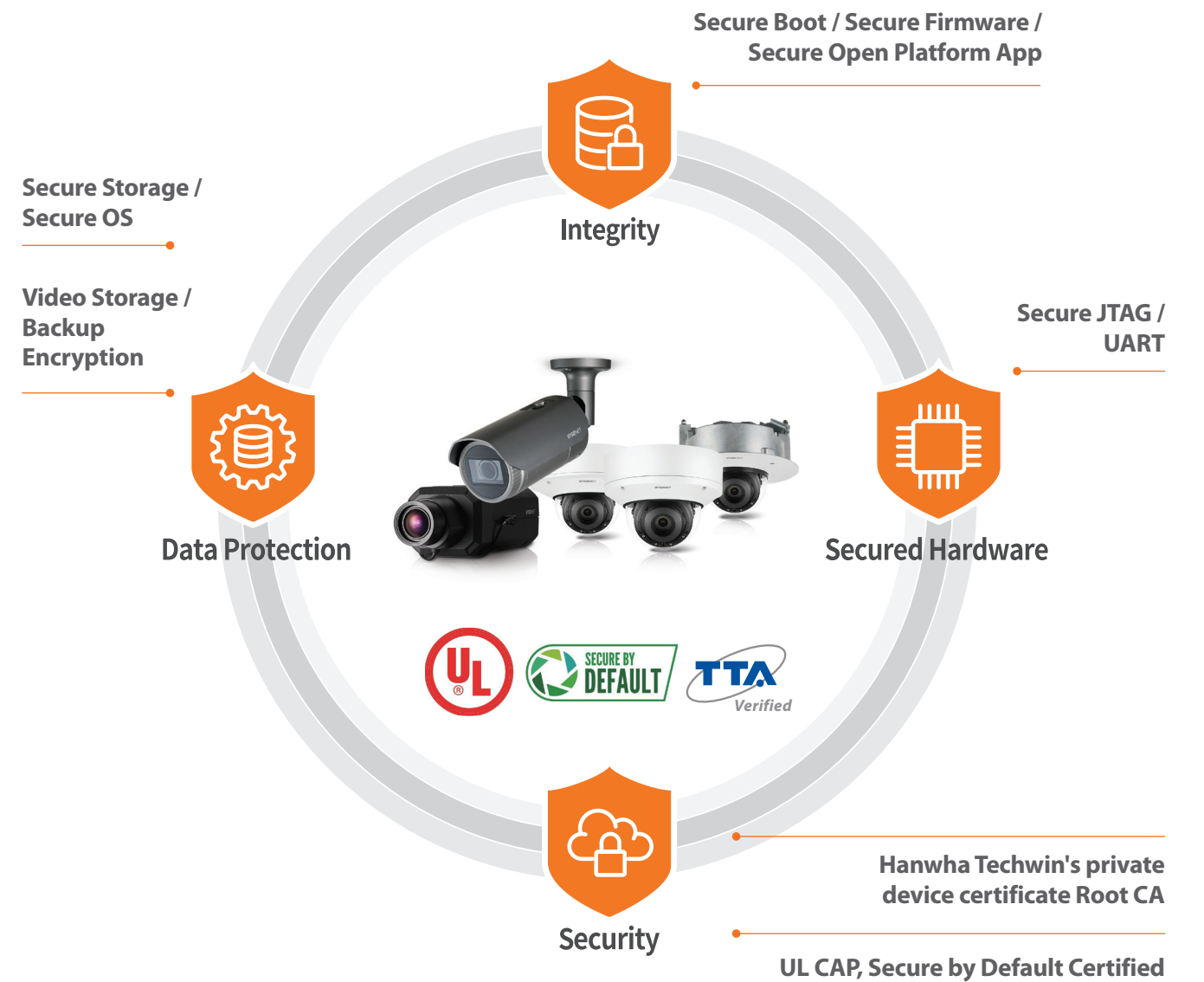
WiseStream II + H.265 compression technology

Hanwha Techwin's WiseStream II is an advanced video compression technology based on motion analytics used to decrease the size of video data transmissions without degrading quality. When used in conjunction with the H.265 video codec, WiseStream II enables storage and bandwidth savings of up to 75% compared to the use of H.264 video compression alone.
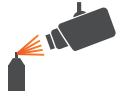
7168kbps

WiseStream II off

72kbps

WiseStream II on

How does it work?

✓ **Dynamic GOV** – Analyzes motion and complexity in video and controls bandwidth consumption in real time.

✓ **Dynamic FPS** – adjusts the number of frames transmitted from the camera based on degree of motion in video.

✓ **Smart ROI** – dynamically applies a different compression rate on parts of the video based on motion activity, or "region of interest", to reduce bandwidth consumption.

✓ **Predictive Bitrate Control** – uses improved logic to detect changes in a video scene to control the rate of compression, optimizing the data stream for transmission.

Smart ROI

Low Quality

ROI: High Quality
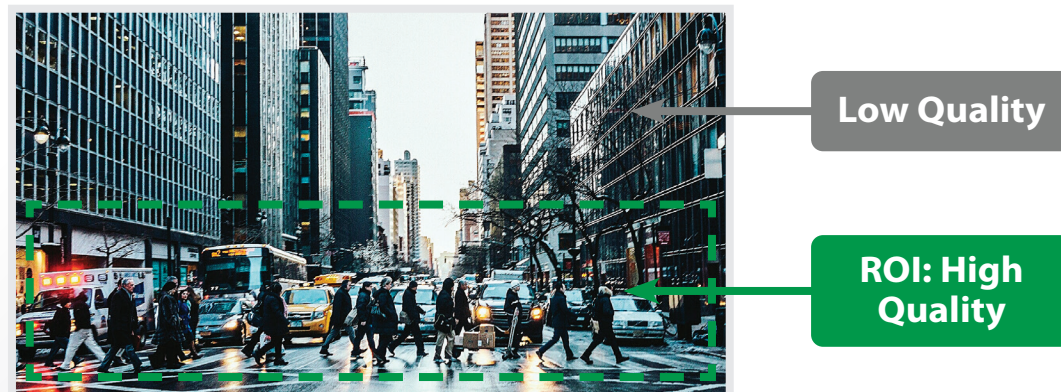
Hanwha Techwin IP camera features and onboard advanced video and audio analytics

Hanwha Techwin's license-free intelligent video and audio analytics technology operates on the edge, alerting operators to abnormal activities in real time. This increase in situational awareness can help to prevent or minimize damage or harm during an event by prompting a rapid and efficient response.

Camera Features	Intelligent Video & Audio Analytics

Tamper detection - Detects when a camera's direction is changed due to impact, sudden loss of focus, painting or blockage

Image stabilization - Cameras can detect shaking or vibration and digitally stabilize the image

Fog detection - Cameras can detect the presence of fog or steam and automatically improve image quality

DIS with gyro sensor - An internal gyroscopic sensor is used to detect vibration in an image and work to stabilize the affected image

HLC - Low light feature that blocks sources of intense light such as vehicle headlights in order to maintain a clear image

PTZ handover - Strategically placed cameras can be used to trigger PTZ presets, patrol patterns, and target tracking based on detected events

Open platform - This policy allows 3rd party software and applications to run on the edge in parallel with normal camera operations, adding utility to your IP camera device beyond surveillance functions

Face detection - Identifies key features of a human face and issues an alert when a face is present

Virtual line crossing detection - Objects crossing a designated virtual line can be detected

Loitering detection - Objects appearing and resting in a designated virtual zone will trigger an event

Intrusion detection - Triggers an event when movement is detected in a designated virtual zone

Appear/disappear - Detects the presence or loss of an item in a designated virtual zone

Enter/exit detection - Detection of objects entering or exiting a designated area

Audio detection - Detects and identifies the sound of explosions, gunshot, screams, and breaking glass

Gunshot   Glass Break   Scream   Explosion

Camera features and analytics vary by model

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