

Explosion proof cameras for hazardous environments

Heavy industrial facilities such as gas pipelines, petrochemical plants or oil refineries are potentially explosive because of flammable gases and dusts emitted. Therefore, it is important that a video surveillance system used in heavy industrial facilities is not the cause of explosions whilst still delivering high quality images. Wisenet T series explosion proof cameras satisfy both requirements by the powerful network camera and stainless steel housing enclosure surrounding it.



Stainless steel 316L enclosure to prevent explosions

T series explosion proof cameras are designed to be safely operated in hazardous areas with the special enclosure made of stainless steel 316L housing. The ATEX certified enclosure has the ability to contain any internal explosions or prevent sparks from escaping the device which may lead to a disaster.



WISENET T series Explosion-proof Cameras for Hazardous area

* TNU-6320E at Hanwha Chemical plant

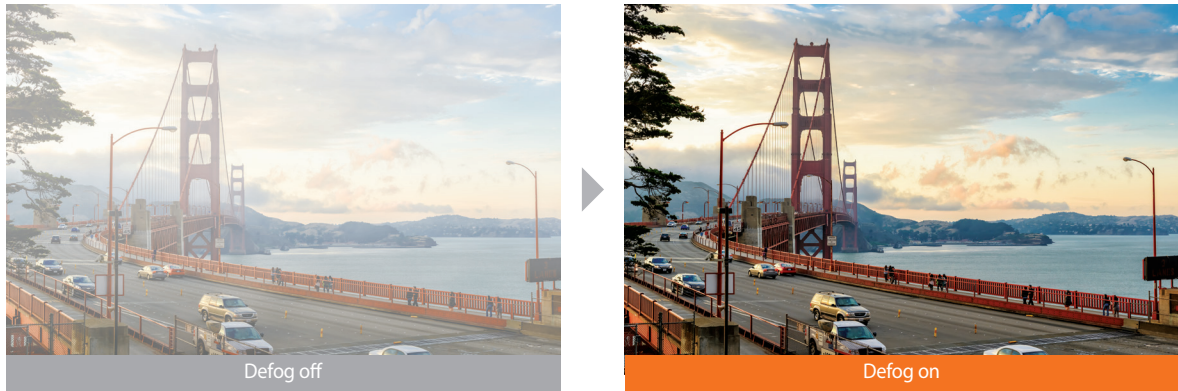
Capture details with 2MP 32x optical zoom

The powerful 2MP optical zoom 32x (4.44~142.6mm) camera SNZ-6320 is built in the explosion proof enclosure. 32x Optical zoom and 16x digital zoom helps users to see more further and clearly, capturing everything with sharpness without losing detail.



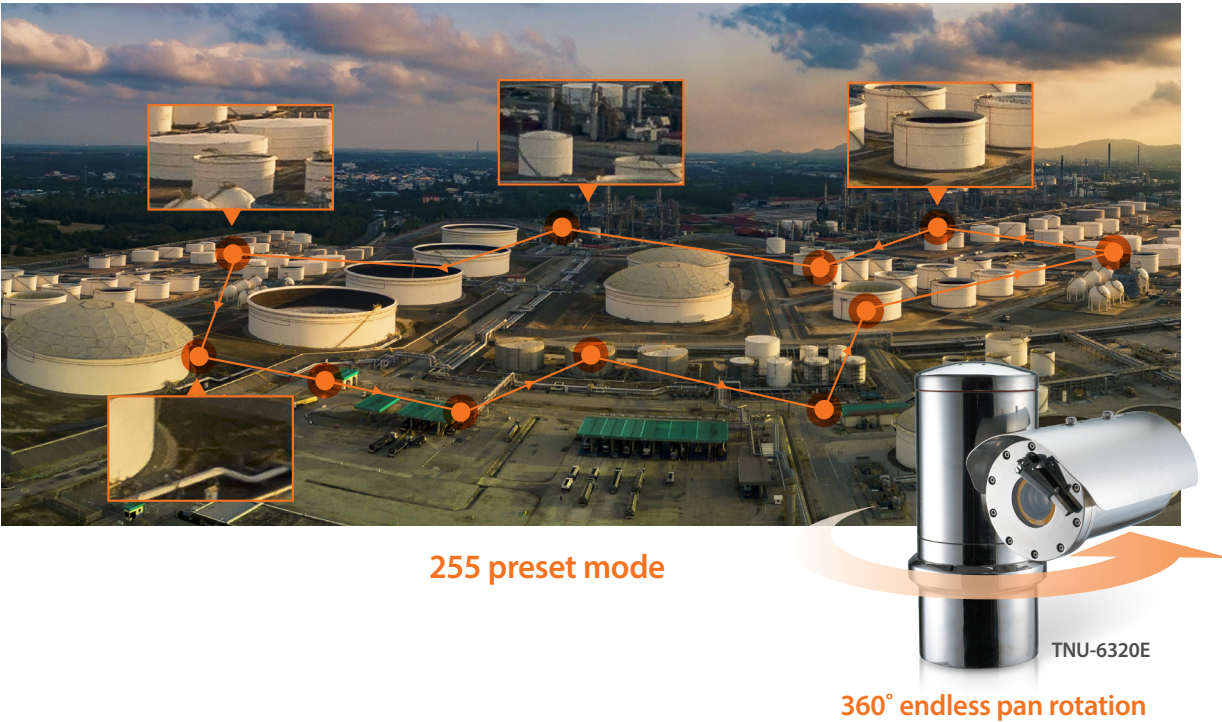
Defog technology to improve image clarity

Defog function is an image processing technology which helps increase image clarity in poor weather conditions such as fog or yellow dust. The visibility of the cameras can be enhanced in any weather condition so that users can monitor full-time.



360° endless pan rotation and 255 preset mode

TNU-6320E is capable of monitoring a broad range, with its 360° endless pan and 180° tilt feature moving at 1~50° /sec preset speed. In addition, the camera's flexibility is increased by 255 preset positions, allowing users to save settings for pan/tilt functions and automatically view the location desired.



True WDR(120dB)

The true WDR function built into the explosion-proof camera provides enhanced picture quality, by resolving different brightness in a scene.



Product Specifications

		
	TNO-6320E	TNU-6320E
Resolution	2MP	
Imaging Device	1/2.8" 2.38M CMOS	
Video Compression	H.264, MJPEG	
Resolution / Frame Rate	2M / 60fps	
Streaming Capacity	Multiple (Up to 10 Profiles)	
Max. User Access	10 (Unicast)	
Min. Illumination	Color : 015Lux, B/W : 0.015Lux	
Lens	4.44 ~ 142.6mm (Optical 32x), F1.6(Wide) / F4.4(Tele)	
Angular Field of View	H : 62.8°(Wide) ~ 2.23°(Tele) / V : 36.8°(Wide) ~ 1.26°(Tele)	
Focus Control	Auto / Manual / One push	
Pan / Tilt / Rotate	-	360° Endless / 180° (-90° ~ 90°) / -
Day & Night	Auto (ICR)	
Backlight Compensation	WDR (120dB)	
Digital Noise Reduction	SSNR III (2D+3D Noise filter)	
Digital Image Stabilization	Support	
Video & Audio Analytics	Motion detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Face detection	
Protocol	ONVIF Profile S, SUNAPI	
Alarm I/O	1 / 1 (Relay)	
Edge Storage	NAS	
Environment Protection	IP67, IK10	
Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F) * Start up above -30°C (-22°F)	
Power	Max. 28.0W - Heater on (24V AC)	Max. 49.0W - Heater on (24V AC)
Dimensions (WxHxD) / Weight	Ø162.0 x 244.0mm (Ø6.38" x 9.61") 7Kg (15.43 lb)	384.0 x 402.0 x 250.0mm (15.12" x 15.83" x 9.84") 35Kg (77.16 lb)
Additional Features	Explosion certification : CE2460 EX II 2 GD Ex d IIC T6 Gb IP67 Ex tb IIIC T85°C Db, Built in wiper	

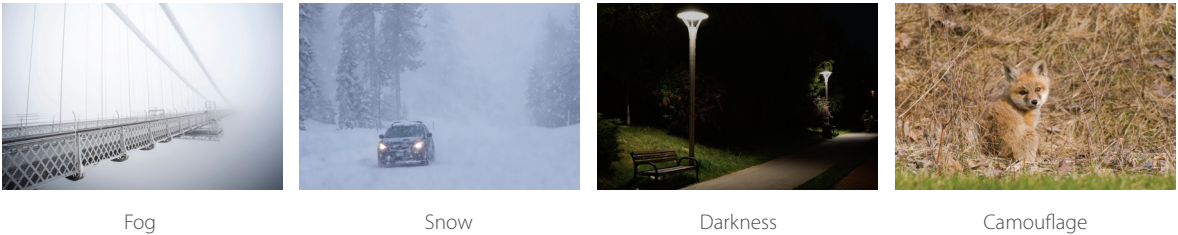
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* The latest product information / sepecification can be found at hanwha-security.com



Wisenet T series
VGA Thermal Network Cameras
for challenging weather
or lighting conditions.

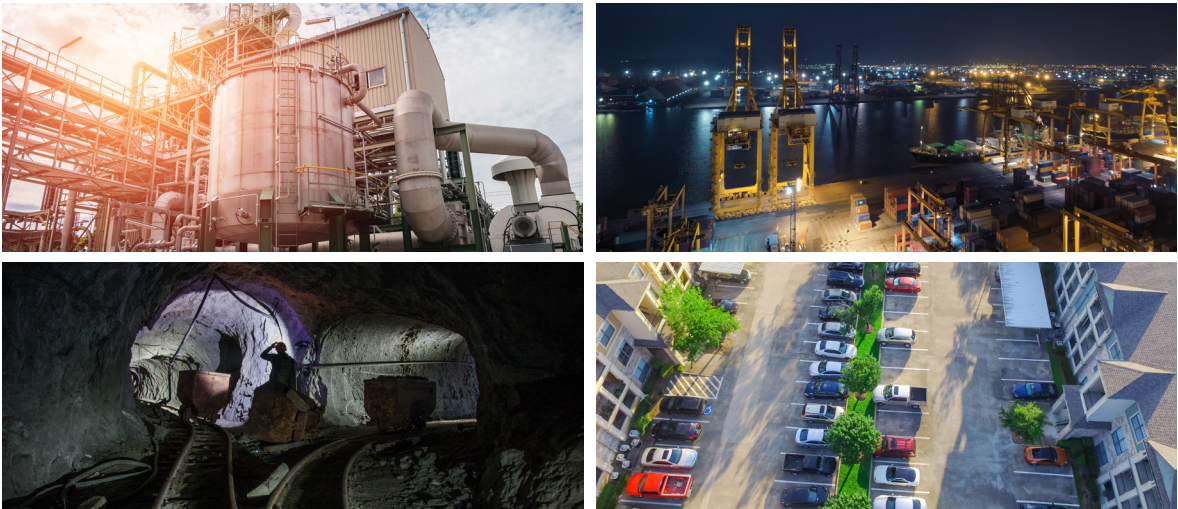
Detect people and objects 24/7 with thermal cameras

In challenging weather(fog, smoke, rain) or lighting conditions(complete darkness, backlight), it can be difficult to distinguish people or objects in a complex background by a visible camera or a human eye. For accurate monitoring purposes, a professional surveillance system is required. Wisenet thermal cameras are the excellent choice : they provide high contrast images based on temperature differences between the object and background, so that users can detect incidents more easily. The advanced thermal imaging technology provides high contrast to make the unseen details visible without additional lighting.



Secure a wide variety of applications

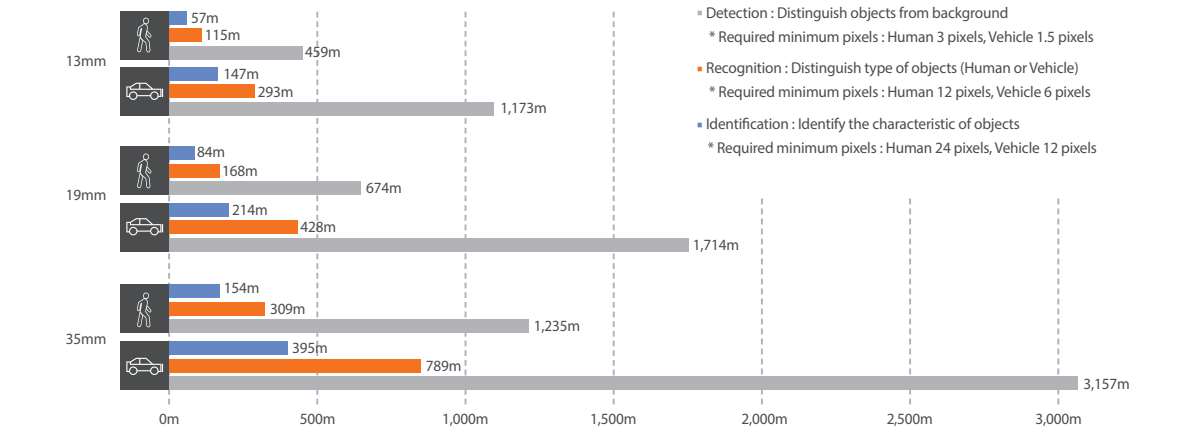
Wisenet thermal cameras can be a powerful tool when monitoring applications where there is very little light, due to their ability to create images based on heat. Thermal cameras are especially applicable in manufacturing and industrial facilities, air and seaports, and mining areas.



- Industrial facilities
- Sea port
- Mining areas
- City surveillance
- Power plants
- Bridges
- Dams
- Pipelines
- Border security
- Warehouse

Long detection range up to 3,157m

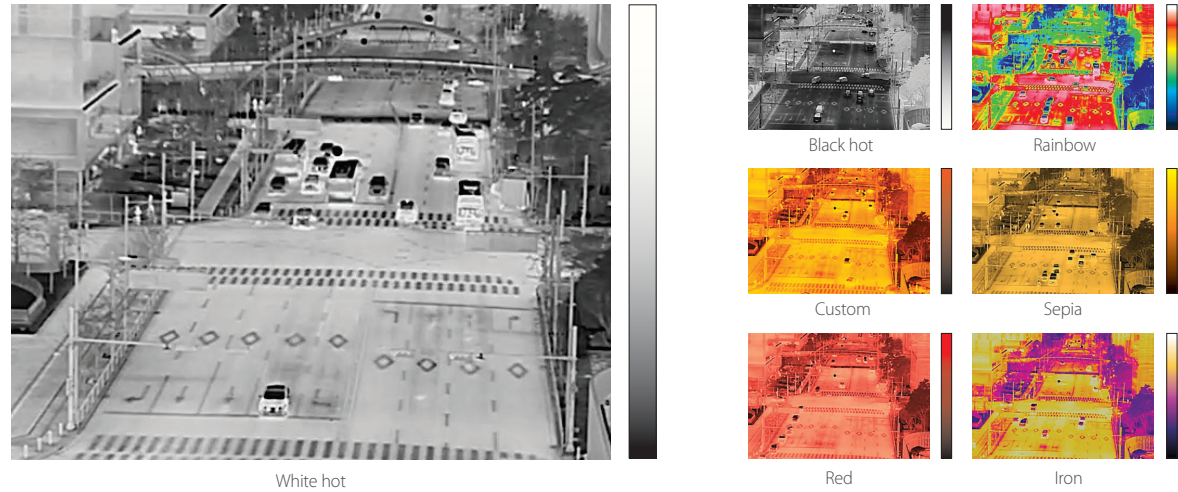
The main task of the thermal camera is to detect events that occur at long distances. Wisenet thermal cameras are equipped with a 35/19/13mm lens(Horizontal FoV 17°/32°/49°) to detect vehicles up to 3,157m away. The camera provides an image with high color contrast according to the temperature, so it can easily distinguish objects and background from a long distance. At closer range it can recognize the type of object or identify the characteristic by capturing details.



* The size of the human is vertically 1.8m(5.9ft) and vehicle is vertically 2.3m(7.5ft)

Multiple color palettes

Wisenet thermal cameras provide seven different types of color palette for users to select the best image in various situations. Each color palette has a specific set of colors which change according to the temperature range of the scene.



Enhanced video & audio analytics

Wisenet T thermal cameras offers reliable video and audio analytics for efficient monitoring. The featured analytics improves the overall security system's efficiency by automatically notifying users when abnormal behavior is detected.

Temperature change detection

Drastic temperature changes can be detected in advance to prevent incidents occurring.
(20/40/60/80/100°C difference from current temperature)



* An alarm will be sent when a drastic temperature change is detected for a duration of 2 minutes.

Virtual line

Alarm events are automatically triggered when the camera detects the moving object crossing the virtual line.



Motion Detection

An alarm is triggered when movement is detected within the defined user area.



Shock detection

Shock detection protects the camera when events such as vibrations, quivers and shocks occur.

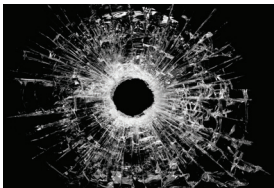


Sound classification

Sound classification can help users respond immediately in dangerous situations, by classifying sounds such as gunshots, breaking glass, screams and explosions.



Gunshot



Glass breakage



Scream



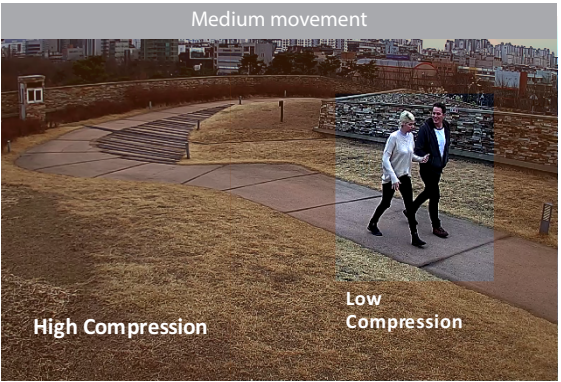
Explosion

Improve bandwidth by up to 99% using WiseStreamII

When Hanwha Techwin's original video compression technology WiseStreamII is combined with H.265 compression, the bitrate data is reduced by up to 99% compared to current H.264 technology. The costs of configuring and maintaining the system are also greatly reduced, while still maintaining the same pixels and high quality.



WiseStream II OFF : 7160kbps **WiseStream II ON : 74kbps**

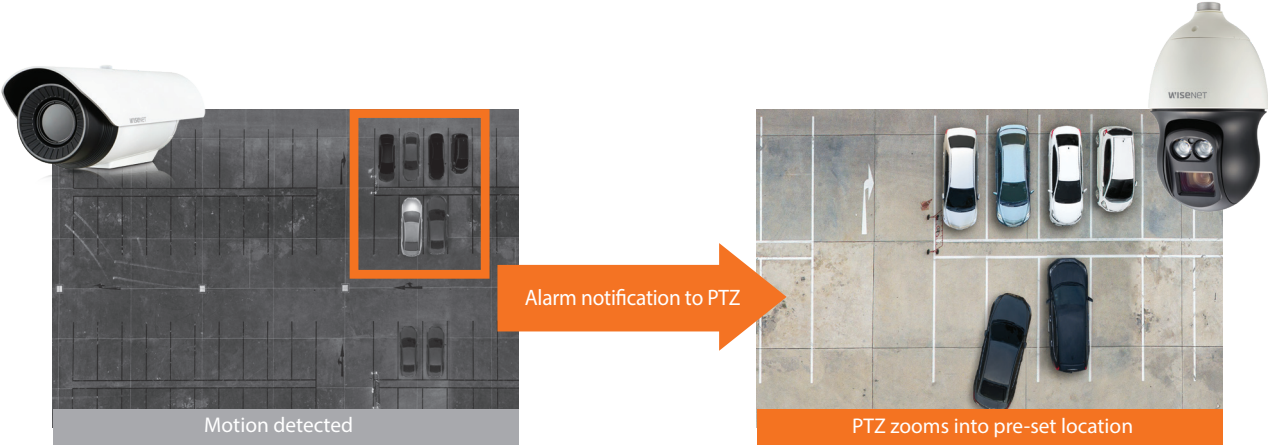


WiseStream II OFF : 7260kbps **WiseStream II ON : 1817kbps**

Handover to PTZ

The handover feature allows a PTZ camera* to receive an alarm from a thermal camera operating on the same IP video surveillance system. Once the notification is received, the PTZ camera will zoom into the assigned camera pre-set location. With this feature, PTZ cameras support the thermal camera by providing high resolution images whenever a specific detail is required.

* XNP-6370RH/6320H/6320, PNP-9200RH



VGA Thermal Radiometric Camera
(TNO-4041TR/4040TR/4030TR)



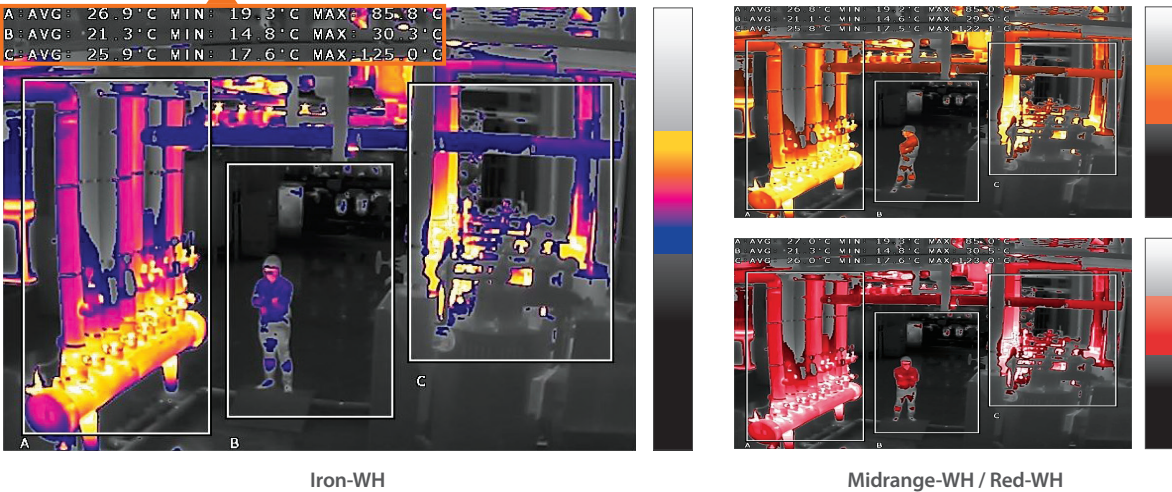
Temperature measurement to monitor incidents

The Wisenet thermal radiometric camera has added a feature to detect the temperature range of -20°C to +130°C. Alarms are generated and sent to users in case the temperature of three areas in the monitoring screen is above or below a defined value or the temperature increases or decreases beyond the preset range. In addition, the screen displays average/minimum/maximum temperature of the three areas for more thorough temperature measurement. With accurate temperature measurement, radiometric cameras are perfect for monitoring areas which can be difficult to detect by a visible camera.

Selected temperature range displayed in vivid colors

Using hybrid color palette, the selected range of temperature can be displayed in vivid colors, helping users observe monitoring areas with greater ease. The temperature out of the defined range is expressed in white hot color of black and white, ensuring the camera covers the entire monitoring areas with thermal detection.

Temperature of 3 areas displayed on screen



Hybrid color palette

VGA Thermal Positioning Camera
(TNU-4051T/4041T)



Broad thermal monitoring with positioning

The TNU-4051T/4041T combines a thermal imaging camera and a positioning unit capable of monitoring a broad range, with its 360° endless pan and -90° to +40° tilt. In addition, the camera's flexibility is increased by 300 preset positions, allowing users to save the settings for pan/tilt functions and automatically view the location desired.



300 preset mode

Product Specifications

			
	TNO-4030T	TNO-4040T	TNO-4041T
Resolution	VGA		
Imaging Device	Uncooled Microbolometer		
Video Compression	H.265, H.264, MJPEG		
Resolution / Frame Rate	640 x 480 / 30fps		
Streaming Capacity	Multiple (Up to 10 Profiles)		
Max. User Access	20 (Unicast)		
Video Output	CVBS 1.0Vpp, Micro USB type B		CVBS 1.0Vpp
Lens	13mm fixed (F1.0)	19mm fixed (F1.0)	19mm fixed (F1.0)
Angular Field of View	H : 48.6° / V : 36.4° / D : 61.6°	H : 32° / V : 24.3° / D : 39.2°	H : 32° / V : 24.3° / D : 39.2°
Focus Control	Fixed		
Digital Image Stabilization	Support (Built in Gyro sensor)		
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection		
Protocol	ONVIF profile S&G, SUNAPI		
Alarm I/O	1 / 2		
Audio	Bi-directional		
Edge Storage	SD/SDHC/SDXC, NAS, Local PC		
Environment Protection	IP66, NEMA4X, IK10		
Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F)		
Power	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)		
Dimensions (WxHxD) / Weight	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.12Kg (6.89 lb)	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.13Kg (6.89 lb)	Ø101.97 x 309mm (Ø4.01" x 12.17") 2.45Kg (5.40 lb)
Additional Features	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, Various Color palettes		Handover, WiseStream II, Advanced video analytics, Sound classification, Various Color palettes, PT type

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* The latest product information / sepecification can be found at hanwha-security.com

		
	TNO-4050T	TNO-4051T
Resolution	VGA	
Imaging Device	Uncooled Microbolometer	
Video Compression	H.265, H.264, MJPEG	
Resolution / Frame Rate	640 x 480 / 30fps	
Streaming Capacity	Multiple (Up to 10 Profiles)	
Max. User Access	20 (Unicast)	
Video Output	CVBS 1.0Vpp	
Lens	35mm fixed (F1.0)	
Angular Field of View	H : 17.2° / V : 13° / D : 22°	
Focus Control	Fixed	
Digital Image Stabilization	Support (Built in Gyro sensor)	
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection	
Protocol	ONVIF profile S&G, SUNAPI	
Alarm I/O	1 / 2	
Audio	Bi-directional	
Edge Storage	SD/SDHC/SDXC, NAS, Local PC	
Environment Protection	IP66, NEMA4X	
Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F)	
Power	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	
Dimensions (WxHxD) / Weight	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.13Kg (6.89 lb)	Ø101.97 x 309mm (Ø4.01" x 12.17") 2.45Kg (5.40 lb)
Additional Features	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, Various Color palettes	Handover, WiseStream II, Advanced video analytics, Sound classification, Various Color palettes, PT type

Product Specifications

		
	TNO-4041TR	TNO-4040TR
Resolution	VGA	
Imaging Device	Uncooled Microbolometer	
Video Compression	H.265, H.264, MJPEG	
Resolution / Frame Rate	640 x 480 / 30fps	
Streaming Capacity	Multiple (Up to 10 Profiles)	
Max. User Access	20 (Unicast)	
Video Output	CVBS 1.0Vpp	CVBS 1.0Vpp, Micro USB type B
Lens	19mm fixed (F1.0)	
Angular Field of View	H : 32° / V : 24.3° / D : 39.2°	
Focus Control	Fixed	
Digital Image Stabilization	Support (Built in Gyro sensor)	
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature detection	
Protocol	ONVIF profile S&G, SUNAPI	
Alarm I/O	1 / 2	
Audio	Bi-directional	
Edge Storage	SD/SDHC/SDXC, NAS, Local PC	
Environment Protection	IP66, NEMA4X, IK10	
Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F)	
Power	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	
Dimensions (WxHxD) / Weight	Ø101.97 x 309mm (Ø4.01" x 12.17") 2.45Kg (5.40 lb)	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.12Kg (6.89 lb)
Additional Features	Handover, WiseStream II, Advanced video analytics, Sound classification, Various Color palettes, PT type, Radiometry	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, Various Color palettes, Radiometry

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* The latest product information / sepecification can be found at hanwha-security.com

		
	TNO-4030TR	TNU-4051T/4041T
Resolution	VGA	
Imaging Device	Uncooled Microbolometer	
Video Compression	H.265, H.264, MJPEG	
Resolution / Frame Rate	640 x 480 / 30fps	
Streaming Capacity	Multiple (Up to 10 Profiles)	
Max. User Access	20 (Unicast)	
Video Output	CVBS 1.0Vpp, Micro USB type B	CVBS 1.0Vpp
Lens	13mm fixed (F1.0)	35mm fixed (F1.0) (TNU-4051T) 19mm fixed (F1.0) (TNU-4041T)
Angular Field of View	H : 48.6° / V : 36.4° / D : 61.6°	H : 17.2° / V : 13° / D : 22° (TNU-4051T) H : 32° / V : 24.3° / D : 39.2° (TNU-4041T)
Focus Control	Fixed	
Digital Image Stabilization	Support (Built in Gyro sensor)	
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature detection	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Protocol	ONVIF profile S&G, SUNAPI	
Alarm I/O	1 / 2	1 / 1
Audio	Bi-directional	
Edge Storage	SD/SDHC/SDXC, NAS, Local PC	
Environment Protection	IP66, NEMA4X, IK10	IP66, NEMA4X, IK10 (TNU-4041T)
Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F)	
Power	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	84W - Heater on, 62W - Heater off (24V AC)
Dimensions (WxHxD) / Weight	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.12Kg (6.88 lb)	219×528×335mm (8.62" x 20.79" x 13.19") 11.7 kg (25.79 lb)
Additional Features	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, Various Color palettes, Radiometry	Handover, WiseStream II, Advanced video analytics, Sound classification, Various Color palettes