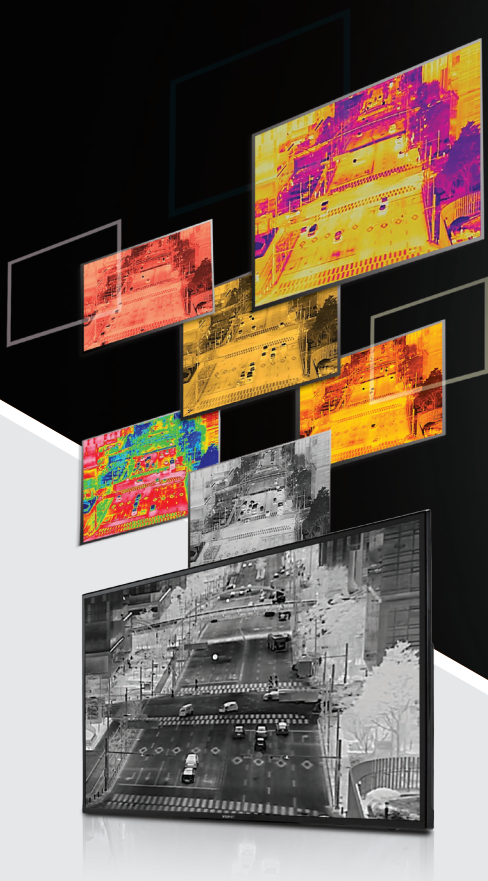


# Seeing Beyond Sight



## **WISENET T** series VGA Thermal network camera

TNO-4051T/4050T/4041T/4040T/4030T

## 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.



Fog



Snow



Darkness



Camouflage

## Multiple color palettes

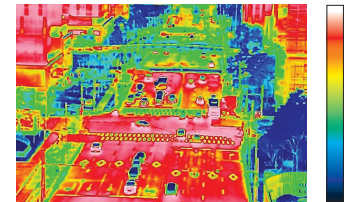
Wisenet thermal cameras provide seven different types of color palette for users to select the best image in various situations. Each color palette has a specific set of colors which change according to the temperature range of the scene.



White hot



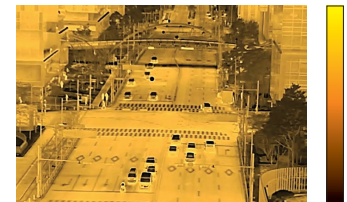
Black hot



Rainbow



Custom

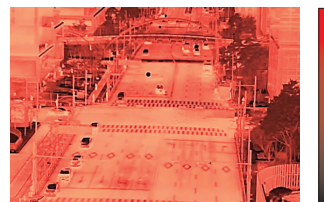


Sepia

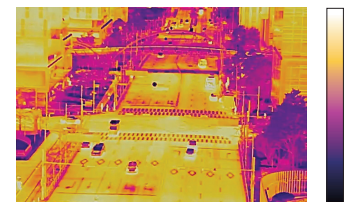


TNO-4051T/4041T

TNO-4050T/4040T/4030T



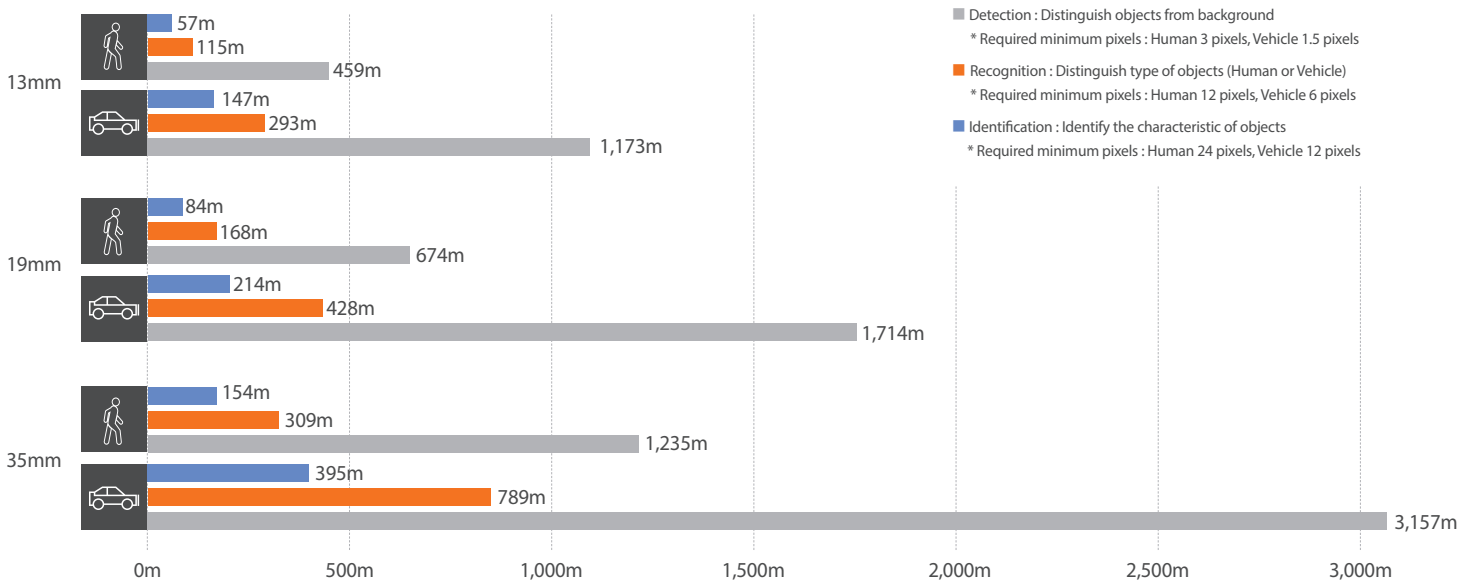
Red



Iron

## 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)

## 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

## 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.

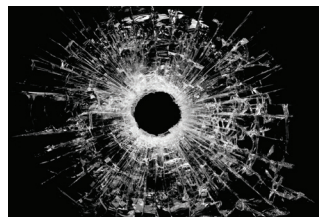


### Sound classification

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 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**

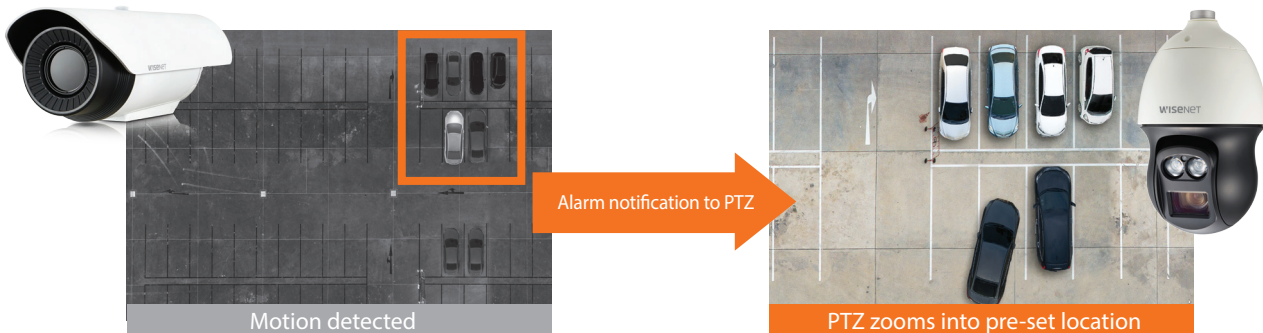


WiseStream II OFF : 7260kbps **WiseStream II ON : 1817kbps**

## 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





**Wisenet T  
TNO-4051T**



**Wisenet T  
TNO-4050T**



**Wisenet T  
TNO-4041T**



**Wisenet T  
TNO-4040T**



**Wisenet T  
TNO-4030T**

Resolution		VGA	VGA	VGA	VGA	VGA
VIDEO	Imaging Device	Uncooled Microbolometer	Uncooled Microbolometer	Uncooled Microbolometer	Uncooled Microbolometer	Uncooled Microbolometer
	Video Compression Format	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG
	Resolution / Max. Frame Rate	640 x 480 / 30fps	640 x 480 / 30fps	640 x 480 / 30fps	640 x 480 / 30fps	640 x 480 / 30fps
	Streaming Capacity	Multiple (Up to 10 Profiles)	Multiple (Up to 10 Profiles)	Multiple (Up to 10 Profiles)	Multiple (Up to 10 Profiles)	Multiple (Up to 10 Profiles)
	Max. User Access	20 (Unicast)	20 (Unicast)	20 (Unicast)	20 (Unicast)	20 (Unicast)
	Min. Illumination	-	-	-	-	-
	Video Output	CVBS 1.0Vpp	CVBS 1.0Vpp, Micro USB type B	CVBS 1.0Vpp	CVBS 1.0Vpp, Micro USB type B	CVBS 1.0Vpp, Micro USB type B
	Lens	35mm fixed (F1.0)	35mm fixed (F1.0)	19mm fixed (F1.0)	19mm fixed (F1.0)	13mm fixed (F1.0)
	Angular Field of View	H: 17.2° / V: 13° / D: 22°	H: 17.2° / V: 13° / D: 22°	H: 32° / V: 24.3° / D: 39.2°	H: 32° / V: 24.3° / D: 39.2°	H: 48.6° / V: 36.4° / D: 61.6°
	Focus Control	Fixed	Fixed	Fixed	Fixed	Fixed
OPERATIONAL	IR Viewable Length	-	-	-	-	-
	Pan / Tilt / Rotate	-	-	-	-	-
	Day & Night	-	-	-	-	-
	Backlight	-	-	-	-	-
	Digital Noise Reduction	-	-	-	-	-
	Digital Image Stabilization	Support (Built in Gyro sensor)	Support (Built in Gyro sensor)	Support (Built in Gyro sensor)	Support (Built in Gyro sensor)	Support (Built in Gyro sensor)
INTELLIGENT VIDEO ANALYTICS	Intelligent Video Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
FEATURES	Protocol	ONVIF profile S&G, SUNAPI	ONVIF profile S&G, SUNAPI	ONVIF profile S&G, SUNAPI	ONVIF profile S&G, SUNAPI	ONVIF profile S&G, SUNAPI
	Alarm I/O	1 / 2	1 / 2	1 / 2	1 / 2	1 / 2
	Audio	Bi-directional	Bi-directional	Bi-directional	Bi-directional	Bi-directional
	Edge Storage	SD/SDHC/SDXC, NAS, Local PC	SD/SDHC/SDXC, NAS, Local PC	SD/SDHC/SDXC, NAS, Local PC	SD/SDHC/SDXC, NAS, Local PC	SD/SDHC/SDXC, NAS, Local PC
	Environment Protection	IP66, NEMA4X	IP66, NEMA4X	IP66, NEMA4X, IK10	IP66, NEMA4X, IK10	IP66, NEMA4X, IK10
	Operating Temperature	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)
	Power	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE)	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 (5.41 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)	Ø101.97 x 401.8mm (Ø4.01" x 15.82") 3.13Kg (6.89 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, 7 Color palettes	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, 7 Color palettes	Handover, WiseStream II, Advanced video analytics, Sound classification, 7 Color palettes	Handover, WiseStream II, Advanced video analytics, Hallway view, 7 Color palettes	Handover, WiseStream II, Advanced video analytics, Sound classification, Hallway view, 7 Color palettes

# TNO-4051T

VGA Thermal Camera

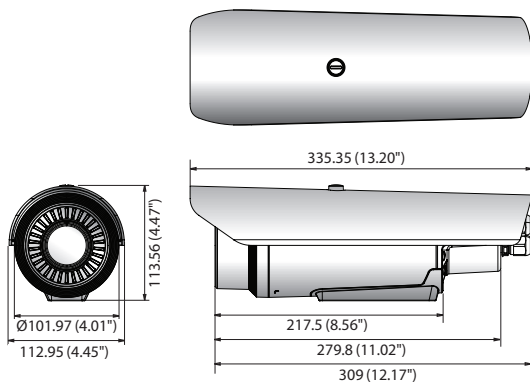


## Key Features

- Max. 640 x 480 resolution support
- Built-in 35mm fixed lens
- H.265, H.264, MJPEG codec
- Max. 30fps@all resolutions (H.265, H.264, MJPEG)
- Motion detection, Handover
- Tampering, Loitering, Directional detection, Audio detection, Sound classification, Shock detection, Temperature change detection
- SD / SDHC / SDXC memory slot (Max. 256GB)
- WiseStreamII support
- PoE, 24V AC, 12V DC
- IP66, NEMA4X

## Dimensions

Unit : mm (inch)



TNO-4051T	
<b>VIDEO</b>	
Imaging Device	Uncooled microbolometer, Pixel size : 17 $\mu$ m
Effective Pixels	640(H) x 480(V)
NETD	<50mK
Video Out	CVBS : 1.0Vpp / 75 $\Omega$ composite, 720 x 480(N), 720 x 576(P), for installation
<b>LENS</b>	
Focal Length (Zoom Ratio)	35mm fixed
Max. Aperture Ratio	F1.0
Angular Field of View	H : 17.2° / V : 13° / D : 22°
Min. Object Distance	36m (118.11ft)
Focus Control	Fixed
Mount Type	Board-in type
<b>OPERATIONAL</b>	
Camera Title	Off / On - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Gray / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Motion Detection	Off / On (8ea, 8point polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Gray / Green / Red / Blue / Black / White - Mosaic
Flip / Mirror	Off / On
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis) Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Alarm I/O	Input 1ea / Output 2ea
Digital Image Stabilization	Off / On (Built-in Gyro sensor)
Remote Control Interface	RS485
RS-485 Protocol	Pelco D/P, Samsung T, Honeywell, Bosch, Panasonic, Sungin, AD, Vicon, GE
Alarm Triggers	Alarm input, Motion detection, Video & Audio analytics, Network disconnect
Alarm Events	File upload Via FTP, E-mail, Notification Via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel count	Support
<b>NETWORK</b>	
Ethernet	RJ-45 (10/100 BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps
WiseStreamII	Support
Video Quality Adjustment	H.265 / H.264 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out, Max output level : 1 Vrms
Audio Compression Format	G.711 u-law / G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 8 / 16 / 32 / 48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTPSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMT, ICMP, IGMP, SNMPv1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast mode
Edge Storage	SD/SDHC/SDXC (up to 256GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage), Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G, SUNAPI (HTTP API), Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only), Apple Safari 11 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 11 (Mac OS X only)
Central Management Software	SmartViewer, SSM
<b>ENVIRONMENTAL</b>	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
<b>ELECTRICAL</b>	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3af)
Power Consumption	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE) Typical 8.9W (24V AC), Typical 7.5W (12V DC), Typical 8.6W (PoE)
<b>MECHANICAL</b>	
Color / Material	White (RAL-9003) / Aluminum
Dimensions (WxH)	Ø101.97 x 309mm (Ø4.01" x 12.17")
Weight	2,452g (5.41 lb)

\* The latest product information / specification can be found at [hanwha-security.com](http://hanwha-security.com)

\* Design and specifications are subject to change without notice.

\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

# TNO-4050T

VGA Thermal Camera

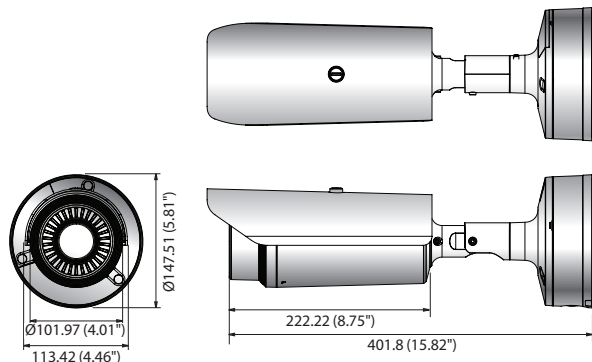


## Key Features

- Max. 640 x 480 resolution support
- Built-in 35mm fixed lens
- H.265, H.264, MJPEG codec
- Max. 30fps@all resolutions (H.265, H.264, MJPEG)
- Motion detection, Handover
- Tampering, Loitering, Directional detection, Audio detection, Sound classification, Shock detection, Temperature change detection
- SD / SDHC / SDXC memory slot (Max. 256GB)
- Hallway View, WiseStreamII support
- PoE, 24V AC, 12V DC
- IP66, NEMA4X

## Dimensions

Unit : mm (inch)



## TNO-4050T

<b>VIDEO</b>	
Imaging Device	Uncooled microbolometer, Pixel size : 17 $\mu$ m
Effective Pixels	640(H) x 480(V)
NETD	<50mK
Video Out	CVBS : 1.0Vpp / 75 $\Omega$ composite, 720 x 480(N), 720 x 576(P), for installation USB : Micro USB type B, 1280 x 720, for installation
<b>LENS</b>	
Focal Length (Zoom Ratio)	35mm fixed
Max. Aperture Ratio	F1.0
Angular Field of View	H : 17.2° / V : 13° / D : 22°
Min. Object Distance	36m (118.11ft)
Focus Control	Fixed
Lens / Mount Type	Board-in type
<b>OPERATIONAL</b>	
Camera Title	Off / On - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Gray / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Motion Detection	Off / On (8ea, 8point polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Gray / Green / Red / Blue / Black / White - Mosaic
Flip / Mirror	Off / On, Hallway : 90° / 270°
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis) Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Alarm I/O	Input 1ea / Output 2ea
Digital Image Stabilization	Off / On (Built-in Gyro sensor)
Alarm Triggers	Alarm input, Motion detection, Video & Audio analytics, Network disconnect
Alarm Events	File upload Via FTP, E-mail, Notification Via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel count	Support
<b>NETWORK</b>	
Ethernet	RJ-45 (10/100 BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps
WiseStreamII	Support
Video Quality Adjustment	H.265 / H.264 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out, Max output level : 1 Vrms
Audio Compression Format	G.711 u-law / G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 8 / 16 / 32 / 48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTPS, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast mode
Edge Storage	SD/SDHC/SDXC (up to 256GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage), Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G, SUNAPI (HTTP API), Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only), Apple Safari 11 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 11 (Mac OS X only)
Central Management Software	SmartViewer, SSM
<b>ENVIRONMENTAL</b>	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
<b>ELECTRICAL</b>	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3af)
Power Consumption	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE) Typical 8.9W (24V AC), Typical 7.5W (12V DC), Typical 8.6W (PoE)
<b>MECHANICAL</b>	
Color / Material	White (RAL-9003) / Aluminum
Dimensions (WxH)	Ø101.97 x 401.8mm (Ø4.01" x 15.82")
Weight	3,126g (6.89 lb)

\* The latest product information / specification can be found at [hanwha-security.com](http://hanwha-security.com)

\* Design and specifications are subject to change without notice.

\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.



# TNO-4041T

VGA Thermal Camera

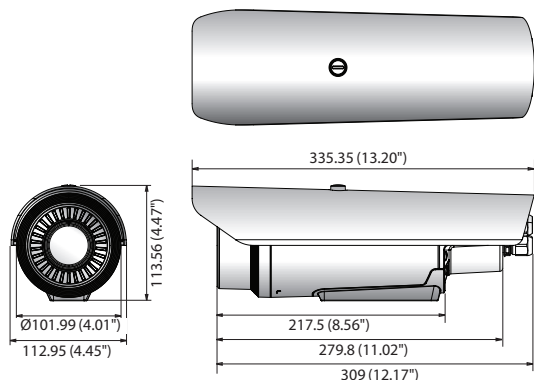


## Key Features

- Max. 640 x 480 resolution support
- Built-in 19mm fixed lens
- H.265, H.264, MJPEG codec
- Max. 30fps@all resolutions (H.265, H.264, MJPEG)
- Motion detection, Handover
- Tampering, Loitering, Directional detection, Audio detection, Sound classification, Shock detection, Temperature change detection
- SD / SDHC / SDXC memory slot (Max. 256GB)
- WiseStreamII support
- PoE, 24V AC, 12V DC
- IP66, NEMA4X, IK10

## Dimensions

Unit : mm (inch)



## TNO-4041T

<b>VIDEO</b>	
Imaging Device	Uncooled microbolometer, Pixel size : 17 $\mu$ m
Effective Pixels	640(H) x 480(V)
NETD	<50mK
Video Out	CVBS : 1.0Vpp / 75 $\Omega$ composite, 720 x 480(N), 720 x 576(P), for installation
<b>LENS</b>	
Focal Length (Zoom Ratio)	19mm fixed
Max. Aperture Ratio	F1.0
Angular Field of View	H : 32° / V : 24.3° / D : 39.2°
Min. Object Distance	11m (36.09ft)
Focus Control	Fixed
Lens / Mount Type	Board-in type
<b>OPERATIONAL</b>	
Camera Title	Off / On - WW : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Gray / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Motion Detection	Off / On (8ea, 8point polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Gray / Green / Red / Blue / Black / White - Mosaic
Flip / Mirror	Off / On
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis) Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Alarm I/O	Input 1ea / Output 2ea
Digital Image Stabilization	Off / On (Built-in Gyro sensor)
Remote Control Interface	RS485
RS-485 Protocol	Pelco D/P, Samsung T, Honeywell, Bosch, Panasonic, Sungin, AD, Vicon, GE
Alarm Triggers	Alarm input, Motion detection, Video & Audio analytics, Network disconnect
Alarm Events	File upload Via FTP, E-mail, Notification Via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel count	Support
<b>NETWORK</b>	
Ethernet	RJ-45 (10/100 BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps
WiseStreamII	Support
Video Quality Adjustment	H.265 / H.264 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out, Max output level : 1 Vrms
Audio Compression Format	G.711 u-law / G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 8 / 16 / 32 / 48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTPC/RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTp, iCMP, iGMP, SNMPv1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast mode
Edge Storage	SD/SDHC/SDXC (up to 256GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage), Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G, SUNAPI (HTTP API), Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only), Apple Safari 11 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 11 (Mac OS X only)
Central Management Software	SmartViewer, SSM
<b>ENVIRONMENTAL</b>	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
Vandal Resistance	IK10
<b>ELECTRICAL</b>	
Input Voltage / Current	24V AC $\pm$ 10%, 12V DC $\pm$ 10%, PoE (IEEE802.3af, class 3)
Power Consumption	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE) Typical 8.9W (24V AC), Typical 7.5W (12V DC), Typical 8.6W (PoE)
<b>MECHANICAL</b>	
Color / Material	White (RAL-9003) / Aluminum
Dimensions (WxH)	$\varnothing$ 101.97 x 309mm ( $\varnothing$ 4.01" x 12.17")
Weight	2,452g (5.41 lb)

\* The latest product information / specification can be found at [hanwha-security.com](http://hanwha-security.com)  
\* Design and specifications are subject to change without notice.  
\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

# TNO-4040T

VGA Thermal Camera

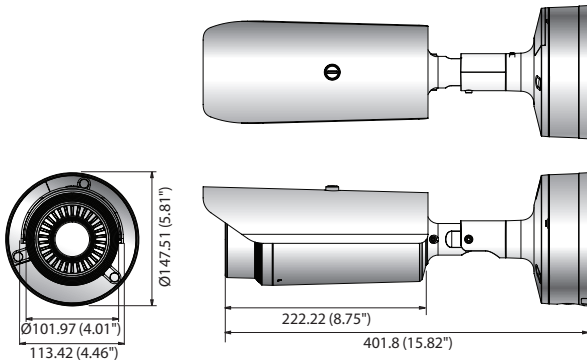


## Key Features

- Max. 640 x 480 resolution support
- Built-in 19mm fixed lens
- H.265, H.264, MJPEG codec
- Max. 30fps@all resolutions (H.265, H.264, MJPEG)
- Motion detection, Handover
- Tampering, Loitering, Directional detection, Audio detection, Sound classification, Shock detection, Temperature change detection
- SD / SDHC / SDXC memory slot (Max. 256GB)
- Hallway View, WiseStreamII support
- PoE, 24V AC, 12V DC
- IP66, NEMA4X, IK10

## Dimensions

Unit : mm (inch)



## TNO-4040T

<b>VIDEO</b>	
Imaging Device	Uncooled microbolometer, Pixel size : 17 $\mu$ m
Effective Pixels	640(H) x 480(V)
NETD	<50mK
Video Out	CVBS : 1.0Vpp / 75 $\Omega$ composite, 720 x 480(N), 720 x 576(P), for installation USB : Micro USB type B, 1280 x 720, for installation
<b>LENS</b>	
Focal Length (Zoom Ratio)	19mm fixed
Max. Aperture Ratio	F1.0
Angular Field of View	H : 32° / V : 24.3° / D : 39.2°
Min. Object Distance	11 m (36.09ft)
Focus Control	Fixed
Lens / Mount Type	Board-in type
<b>OPERATIONAL</b>	
Camera Title	Off / On - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Gray / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Motion Detection	Off / On (8ea, 8point polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Gray / Green / Red / Blue / Black / White - Mosaic
Flip / Mirror	Off / On, Hallway : 90° / 270°
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis) Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Alarm I/O	Input 1ea / Output 2ea
Digital Image Stabilization	Off / On (Built-in Gyro sensor)
Alarm Triggers	Alarm input, Motion detection, Video & Audio analytics, Network disconnect
Alarm Events	File upload Via FTP, E-mail, Notification Via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel count	Support
<b>NETWORK</b>	
Ethernet	RJ-45 (10/100 BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps
WiseStreamII	Support
Video Quality Adjustment	H.265 / H.264 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out, Max output level : 1 Vrms
Audio Compression Format	G.711 u-law / G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 8 / 16 / 32 / 48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTPSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast mode
Edge Storage	SD/SDHC/SDXC (up to 256GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage), Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G, SUNAPI (HTTP API), Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only), Apple Safari 11 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 11 (Mac OS X only)
Central Management Software	SmartViewer, SSM
<b>ENVIRONMENTAL</b>	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
Vandal Resistance	IK10
<b>ELECTRICAL</b>	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3af)
Power Consumption	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE) Typical 8.9W (24V AC), Typical 7.5W (12V DC), Typical 8.6W (PoE)
<b>MECHANICAL</b>	
Color / Material	White (RAL-9003) / Aluminum
Dimensions (WxH)	101.97 x 401.8mm (101.97 x 401.8mm)
Weight	3,126g (6.89 lb)

\* The latest product information / specification can be found at [hanwha-security.com](http://hanwha-security.com)

\* Design and specifications are subject to change without notice.

\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

# TNO-4030T

VGA Thermal Camera

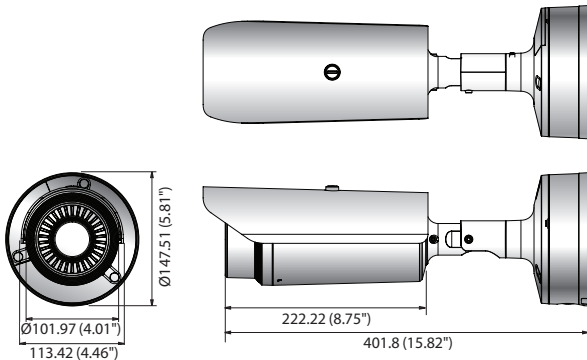


## Key Features

- Max. 640 x 480 resolution support
- Built-in 13mm fixed lens
- H.265, H.264, MJPEG codec
- Max. 30fps@all resolutions (H.265, H.264, MJPEG)
- Motion detection, Handover
- Tampering, Loitering, Directional detection, Audio detection, Sound classification, Shock detection, Temperature change detection
- SD / SDHC / SDXC memory slot (Max. 256GB)
- Hallway View, WiseStreamII support
- PoE, 24V AC, 12V DC
- IP66, NEMA4X, IK10

## Dimensions

Unit : mm (inch)



## TNO-4030T

<b>VIDEO</b>	
Imaging Device	Uncooled microbolometer, Pixel size : 17 $\mu$ m
Effective Pixels	640(H) x 480(V)
NETD	<50mK
Video Out	CVBS : 1.0Vpp / 75 $\Omega$ composite, 720 x 480(N), 720 x 576(P), for installation USB : Micro USB type B, 1280 x 720, for installation
<b>LENS</b>	
Focal Length (Zoom Ratio)	13mm fixed
Max. Aperture Ratio	F1.0
Angular Field of View	H : 48.6° / V : 36.4° / D : 61.6°
Min. Object Distance	5m (16.40ft)
Focus Control	Fixed
Lens / Mount Type	Board-in type
<b>OPERATIONAL</b>	
Camera Title	Off / On - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Gray / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Motion Detection	Off / On (8ea, 8point polygonal zones), Handover
Privacy Masking	Off / On (32ea, polygonal zones) - Color : Gray / Green / Red / Blue / Black / White - Mosaic
Flip / Mirror	Off / On, Hallway : 90° / 270°
Video & Audio Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis) Appear, Audio detection, Motion detection, Sound classification, Shock detection, Temperature change detection
Alarm I/O	Input 1ea / Output 2ea
Digital Image Stabilization	Off / On (Built-in Gyro sensor)
Alarm Triggers	Alarm input, Motion detection, Video & Audio analytics, Network disconnect
Alarm Events	File upload Via FTP, E-mail, Notification Via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel count	Support
<b>NETWORK</b>	
Ethernet	RJ-45 (10/100 BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps
WiseStreamII	Support
Video Quality Adjustment	H.265 / H.264 / MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out, Max output level : 1 Vrms
Audio Compression Format	G.711 u-law / G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 8 / 16 / 32 / 48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTPSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast mode
Edge Storage	SD/SDHC/SDXC (up to 256GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage), Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G, SUNAPI (HTTP API), Wisenet Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Non-plugin Webviewer - Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only), Apple Safari 11 (Mac OS X only) Plug-in Webviewer - Supported Browser : MS Explore 11, Apple Safari 11 (Mac OS X only)
Central Management Software	SmartViewer, SSM
<b>ENVIRONMENTAL</b>	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
Vandal Resistance	IK10
<b>ELECTRICAL</b>	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3af)
Power Consumption	Max. 10.5W (24V AC), Max. 9W (12V DC), Max. 10W (PoE) Typical 8.9W (24V AC), Typical 7.5W (12V DC), Typical 8.6W (PoE)
<b>MECHANICAL</b>	
Color / Material	White (RAL-9003) / Aluminum
Dimensions (WxH)	Ø101.97 x 401.8mm (Ø4.01" x 15.82")
Weight	3,124g (6.89 lb)

\* The latest product information / specification can be found at [hanwha-security.com](http://hanwha-security.com)

\* Design and specifications are subject to change without notice.

\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

---

#### HEAD OFFICE

6, Pangyo-ro 319 beon-gil, Bundang-gu, Seongnam-si,  
Gyeonggi-do, 463-400 Rep. of KOREA  
Tel : +82.70.7147.8753 Fax : +82.31.8018.3740  
<http://hanwha-security.com>

---

#### Hanwha Techwin America

500 Frank W. Burr Blvd. Suite 43 Teaneck, NJ 07666  
Toll Free : +1.877.213.1222  
[www.hanwhasecurity.com](http://www.hanwhasecurity.com)

---

#### Hanwha Techwin Europe

Heriot House, Heriot Road, Chertsey, Surrey, KT16 9DT. UK  
Tel : +44.1932.578.100  
[www.hanwha-security.eu](http://www.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)  
[www.hanwha-security.cn](http://www.hanwha-security.cn)

---

#### Hanwha Techwin Middle East FZE

JAFZA View 18, 20th floor, office 2001, 2002, 2003, DOWNTOWN Jebel Ali,  
Dubai, United Arab Emirates  
<http://hanwha-security.com>

© 2018 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.

\* Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

M.H-1801