Hanwha Vision

OLIO 2024 H2 PRODU

H2 PRODUCT PORTFO

RODUCT PORTFOLIO

HanwhaVision.com

Hanwha Group

Hanwha will continue to embrace bold challenges for a sustainable tomorrow.

Founded in 1952, Hanwha continues to grow by quickly anticipating and responding to rapidly changing business environments with a balanced business portfolio that includes aerospace, energy & materials, finance and retail & services. As of 2022, we are the seventh largest business enterprise in South Korea and a Fortune Global 500 company. Hanwha has become a global leader in a number of industries due to its culture of innovation, focused on breakthrough technologies, and sound financial structures.

Sales
2022

65.3 USD Billions

Business Enterprise in South Korea
Total asset basis, as of end of 2022

TOP 7

Years of History
Founded in 1952

Ranking on Fortune Global 500 in 2023

71

Domestic affiliates
As of end of June 2022

296

Global Networks
As of end of 2022

91

710



History

2023.03 – Changed company name to 'Hanwha Vision' Announced focus on becoming a vision solution provider

2022 – Launched IP audio system

2021 – Launched the X AI camera series
– Launched AI NVR and AI integrated solution
– Developed AI–based infectious disease response solutions

2020 – 30th anniversary of the video security business
– Launched the P AI camera series
– Launched Winsenet 7 SoC, a camera series with Wisenet 7 SoC acquired UL CAP (UL Cybersecurity Assurance Program)

2019 – UK Government official cybersecurity certification
– Acquired 'Secure by Default'
– Launched the world's first 55x IR PTZ camera

2018 – Established Hanwha Techwin Vietnam manufacturing orporation

2017 – Wisenet 5 SoC and X camera series launched
Acquired CES, a UK Government cyber security certification

2016 – Establishment of Hanwha Techwin Middle East FZE

2015 – Launched Hanwha Techwin

2013 – Wisenet 3 SoC and camera series with Wisenet 3 SoC are launched

2012 – Launched the world's first 37x IR PTZ camera

2009 – Establishment of Hanwha Techwin Tianjin and Shanghai

2008 – Launched the world's first 37x PTZ camera

2005 – Developed advanced intruder automatic location tracking system

2004 – Developed Winner 3 Analog ISP chip

2001 – Establishment of Hanwha Techwin Europe

1997 – Launched the world's best ultra–low illumination video surveillance camera
Developed Korea's first Auto Iris lens for CCTV

1993 – Started video surveillance business, establishment of

1990 – Hanwha Techwin America

Hanwha Vision

'Hanwha Vision' will become your vision partner who realizes a sustainable future and provides new values.

Over the past 30 years, we have established ourselves as a global video security specialist based on world–class optical design, manufacturing, and image processing technology.

We have been ensuring safety and security around the world and across society with products and solutions with outstanding performance, high reliability, and industry–leading cybersecurity policies.

Our growth and innovation started with our customers' needs. This began with their desire to improve safety and security, now evolving to answer wider business opportunities and challenges. Ultimately, all our solutions enable our customers to reach their goals.

Our investment in innovation and continually pushing the boundaries of what's possible in video is core to our competitiveness, ensuring our steady success in vision solutions.





CORE COMPETENCIES

Strengthening our technological competitiveness based on vision technology, AI and cybersecurity.

Hanwha Vision has core competitiveness in vision technology based on optical and image processing technology accumulated over 30 years. As image processing technology through AI has become popular, currently, what matters more is how to process information to create valuable information. In response, Hanwha Vision plans to provide valuable information in various fields through technology conversion and expansion through AI capabilities and a cloud platform.

Also, we will continue to enhance our competitiveness in cybersecurity.

Vision technology

Hanwha Vision provides high-quality image and vision information through world-class optical and image processing technology.

AI-based intelligent analysis

Hanwha Vision offers AI-based intelligent solutions through self-developed analytics algorithms while providing optimized information to customers by efficiently analyzing vast amounts of data.

Cybersecurity

Hanwha Vision conducts regular security management under the leadership of S-CERT(a dedicated security emergency response team). Hanwha Vision has been selected as an international CVE program CNA organization to manage program vulnerabilities. In addition, we have obtained numerous cybersecurity certifications from renowned global certification such as UL CAP, FIPS, TTA and more.

R&D POWER

Hanwha Vision continues to accelerate research and development efforts to sustain its competitive edge.

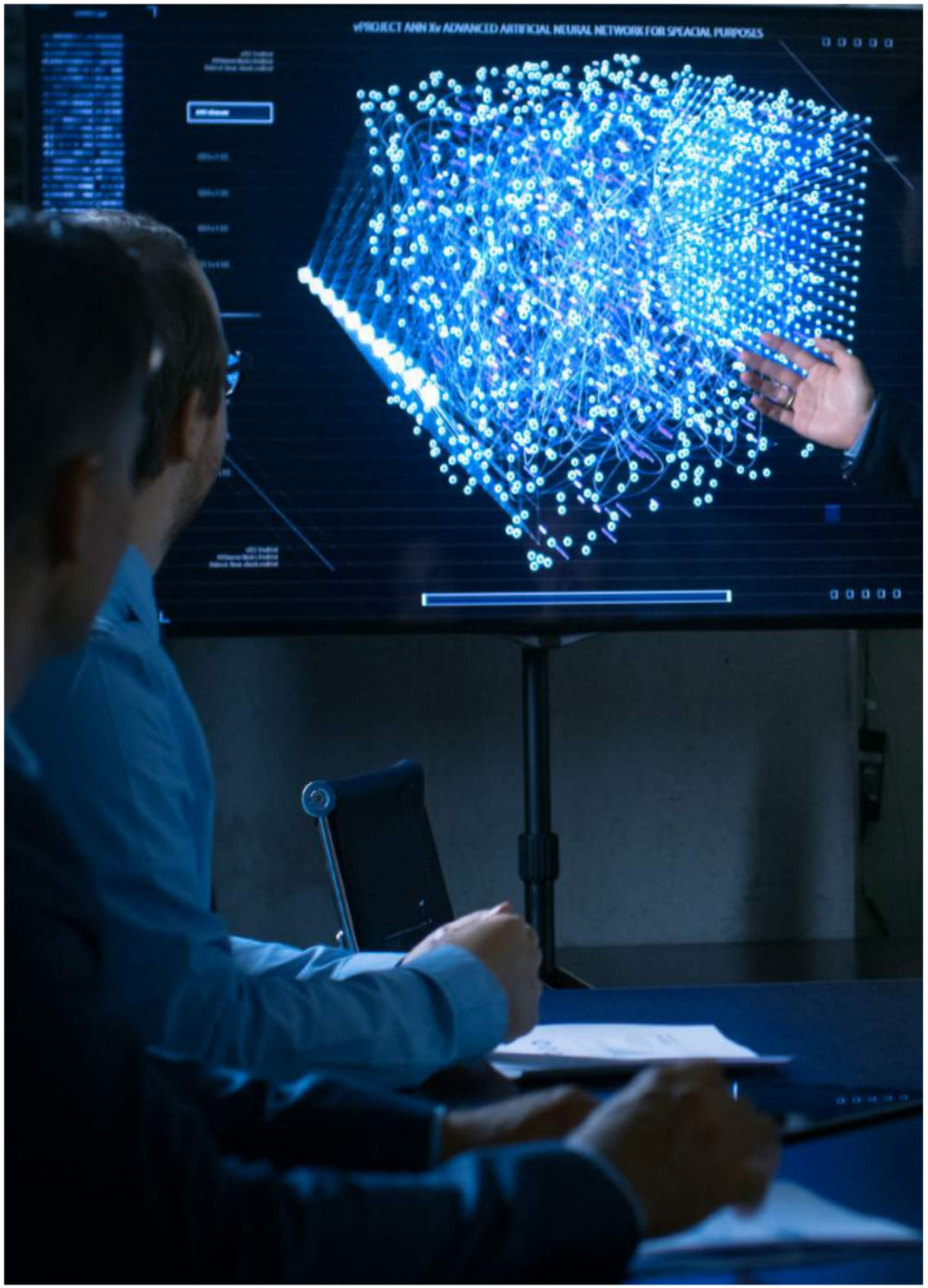
The R&D headquarters, located in Pangyo Techno Valley, Gyeonggi-do, is the central hub of Hanwha Vision's global R&D. Here, we develop and test various vision technology solutions before introducing them commercially.

In 2022, Hanwha Vision established an Innovation Center in the US, with the goal of developing key innovations for the future, such as AI and cloud. Eventually we see these becoming Hanwha Vision's core strengths.

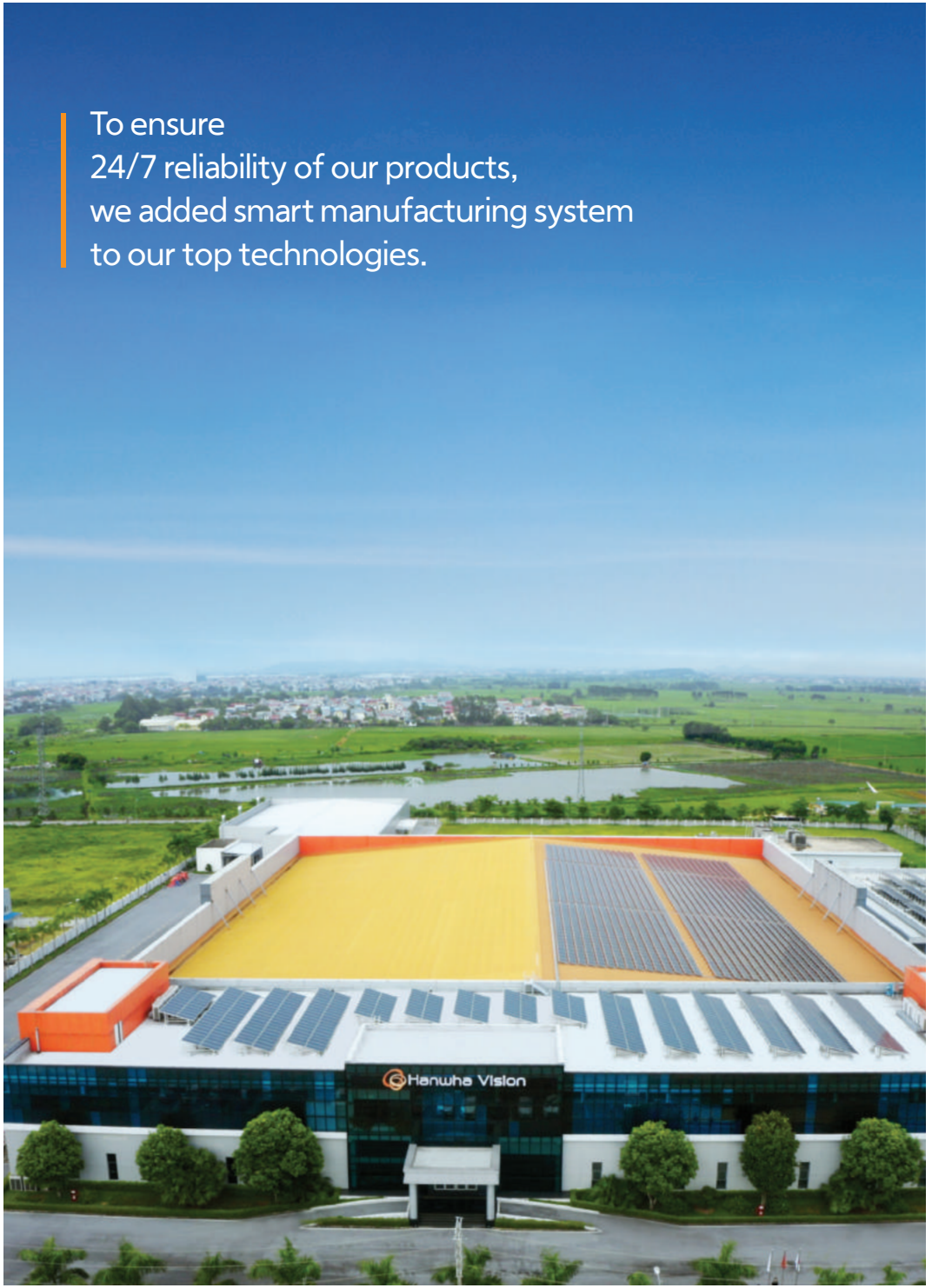
Alongside these efforts, we have established a global AI R&D organization across our headquarters, the US R&D Center, and our AI data lab.
This secures our AI full stack capabilities, from AI strategy to data processing, commercialization, and future development.

This accelerates our R&D to give Hanwha Vision sustainable competitiveness in an ever-changing market.





To ensure
24/7 reliability of our products,
we added smart manufacturing system
to our top technologies.

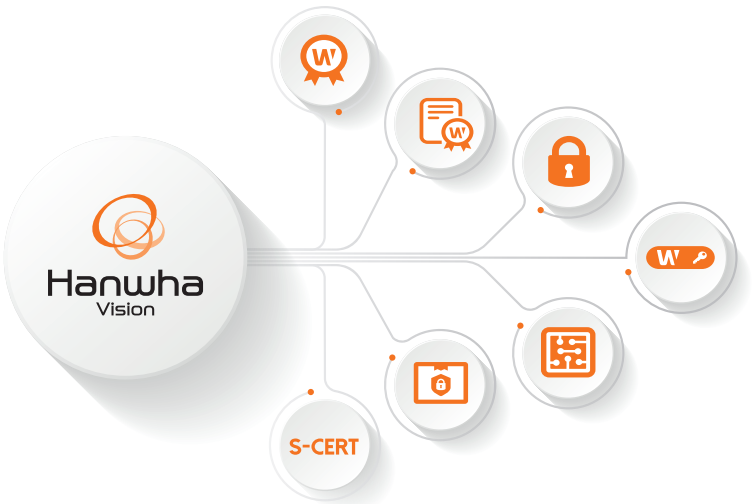


HIGH-TECH POWERED IN VIETNAM

Hanwha Vision's manufacturing subsidiary in Vietnam (HVV) has been in operation since 2018 in order to expand its global production capability as well as to strengthen cost competitiveness. Through automation and smart systems, **Hanwha Vision** has built sophisticated and fast-moving manufacturing lines producing all its product line-ups including cameras and storage devices. All products produced in HVV go through a reliable manufacturing and quality assurance process and sold globally.

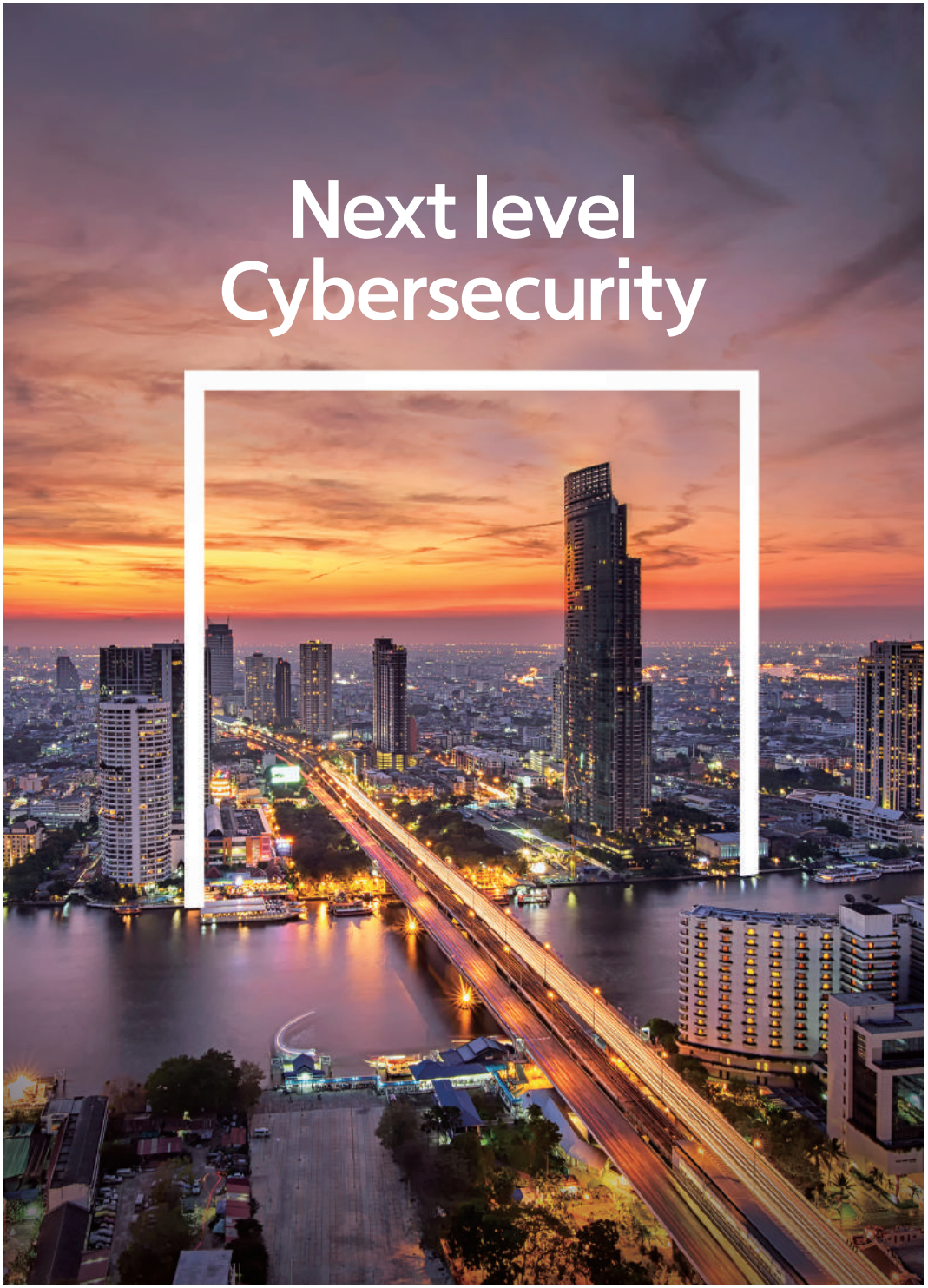
END-TO-END
CYBERSECURITY

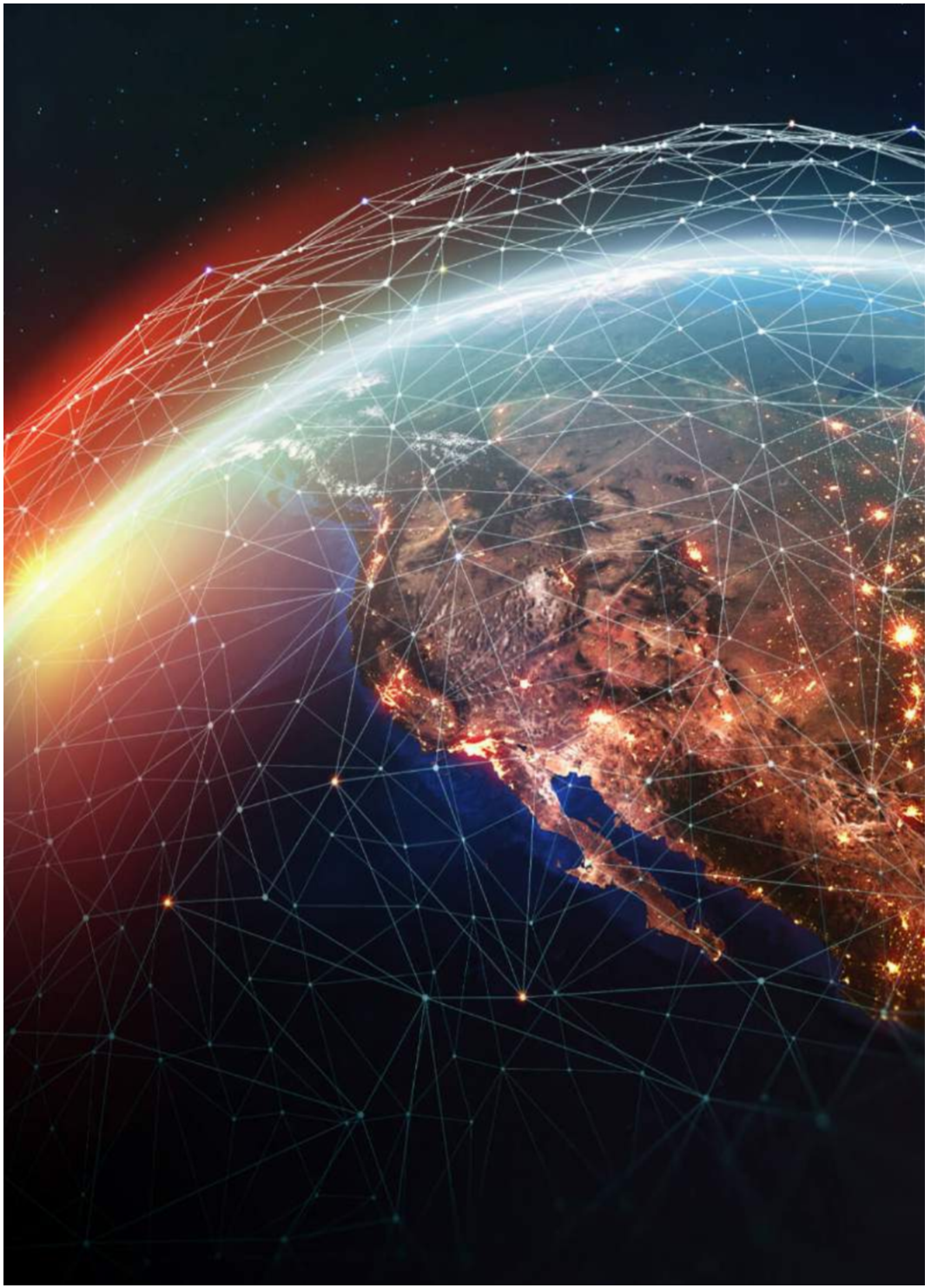
Hanwha Vision offers cybersecurity with the industry's highest levels of cybersecurity policy with secure boot/OS/storage, a signed firmware/open platform app, secure JTAG and more.
Hanwha Vision established its own device certificate issuing system to embed certificates into the product not only in the development progress but also in the manufacturing progress.



- Hanwha Vision Private Device Certification Root CA
- UL CAP, TPM 2.0 (FIPS 140-2)
- Secure Boot, Secure Storage, Secure OS
- Secure Open Platform
- S-CERT : Security Computer Emergency Response Team
  Please contact S-CERT by e-mail (secure.cctv@hanwha.com)

※ Please ask your local representative for UL CAP, TPM 2.0 applied products





GLOBAL NETWORK

Hanwha Vision has a close relationship with customers and partners around the world across R&D, manufacturing and sales.

- Hanwha Vision R&D Center (HQ, South Korea)
- 5 Global Subsidiaries (including Vietnam Manufacturing)
- 11 Branch Offices
- 1 Innovation Center



PRODUCT NAMING RULE

Camera



Series Name
P : Premium
X : Versatile
Q : Quality
H : HD+
L : Entry
T : Vertical(Special)
S : Legacy

Product Type
N : Network cam
C : Analog cam

Shape
B : Box
D : Dome
F : Fisheye
M : Multi-Sensor
O : Bullet
P : PTZ
U : Positioning
V : Vandal
Z : Zoom box
E : Flateye
S: Special

Grade
A : AI
L : Lite
C : Core AI

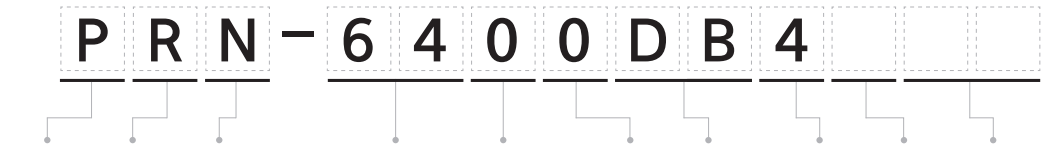
Total Resolution
1 : Small sensor
2 : QQVGA
3 : QVGA
4 : VGA
5 : 1M
6 : 2M
7 : 3 ~ 4M
8 : 5 ~ 7M
9 : 8M ↑
12 : 12MP
15 : 15MP
24 : 24MP
32 : 32MP
34 : 34MP
36 : 36MP
40 : 40MP

Lens
00: No Lens
01 : 3mm ↓ fixed
02 : 3.1 ~ 4mm fixed
03 : 4.1 ~ 6mm fixed
04 : 6.1 ~ 9.9mm fixed
05 : 10mm ↑ fixed
06 : 2X V/F
07 : 2X ~ 9X V/F
08 : 2X ~ 9X M-V/F
09 : 10X ↑ V/F
xx : Zoom (PTZ, Zoom)

Version
0 ~ 9

Feature
A : Revision
B : Black Color
C : Corner
D : Dual eye
E : Explosion Proof or PoE extender or Edge(SSD)
F : Flush or SFP LC (Fiber Channel)
H : Housing
I: Indicator LED
L : White LED
M : Mobile
P : PTZ (for multi)
Q : Quad eye
R : IR or Radiometric
S : Stainless Steel
T : Thermal or Triple eye
V : Vandal
W : Wiper, White Color
X : Modular design
Y : Body Temp
Z : PTRZ
LP : License plate
RV : IR + vandal
1T/2T Capacity of SSD

Recorder



Series Name
P : Premium
X : Versatile
Q : Quality
H : HD+
L : Entry
T : Vertical (Special)
S: Legacy

Product Type
R : Recorder
W : Workstation

Type
D : DVR
X : Pentabrid
M : Mobile
N : NVR
S : S/W
P : PC NVR
V : Viewer
O : recording Only

[NVR: Channel / Mbps]
4 : 4CH
8 : 8CH
16 : 16CH
32 : 32CH
64 : 64CH
128 : 128CH

[Appliance : Max Mbps]

First digit	Second digit
1 : 100 ~ 199Mbps	1 : 36CH
2 : 200 ~ 299Mbps	2 : 72CH
3 : 300 ~ 399Mbps	3 : 128CH
4 : 400 ~ 499Mbps	
5 : 500 ~ 599Mbps	
6 : 600 ~ 699Mbps	

Performance
1 ~ 9 : Major Version
0 : down grade

Version
0 ~ 9

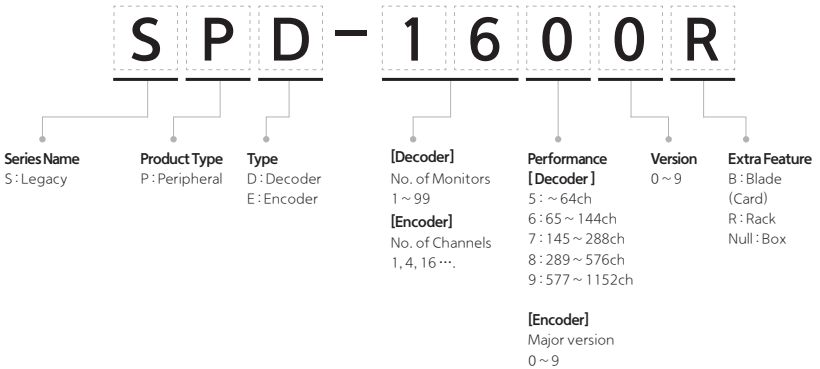
Function
Null : Null
S : PoE Switch
M : PoE Switch with M12 Connector
A : A revision
D : Dual SMPS
G : Government
B : HDD Bay
R : RAID for B2 model
W : Wifi
U : UTP(Hybrid)

Null : Null
1 : 4 Bay
2 : 8 Bay
3 : 12 bay
4 : 16 Bay
5 : 20Bay
6 : 24Bay

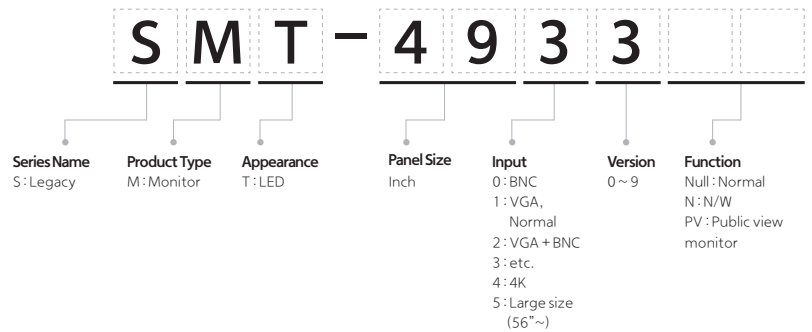
Null : Null
- : HDD

Capacity
3G : 320GB
5G : 520GB
1T ~ 9T : 1 ~ 9 TB
10 ~ 99 : 10~ 99 TB

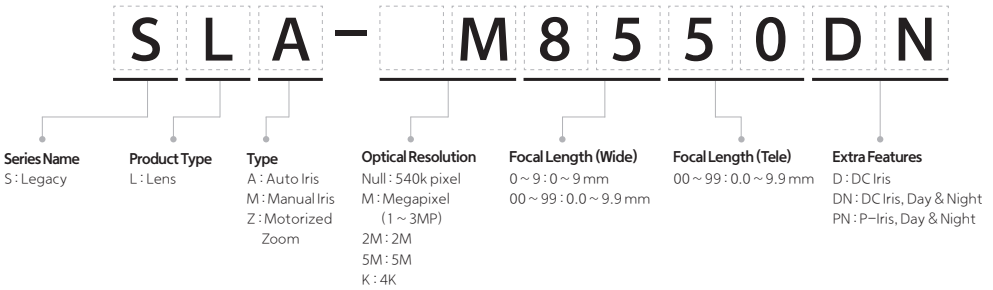
Decoder/Encoder



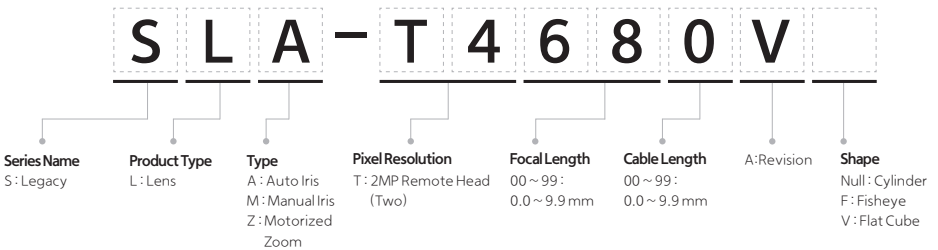
Monitor



Lens : CS Mount



Lens : Remote Head



CONTENTS

NETWORK

Camera
- AI Cameras
- X series
- P series
- Q series
- T series
- L series

NVR

Encoder / Decoder

VMS

Access Control

IP Audio Management System

ANALOG

Camera

DVR

PERIPHERAL

Monitor

Controller

Lens

INSTALLATION SOLUTION

Toolbox Plus

* Product specifications in this brochure may differ as products are continuously updated to meet our customers' needs. We recommend to check out our website for the latest specs: www.HanwhaVision.com

LINE UP **2024 H2** LINE UP 2024 H2 **LINE UP**

AI Camera

	X Plus	X Plus	X Plus	X Plus	X Plus
					
	XNO-9083R 8MP AI IR Bullet Camera	**XNV-9083R** 8MP AI IR Vandal Dome Camera	**XNV-9083RZ** 8MP AI IR PTRZ Dome Camera	**XND-9083RV** 8MP AI IR Dome Camera	**XNB-9003** 8MP AI Box Camera
Imaging Device	1/1.8" progressive CMOS				
Resolution / Max. Frame Rate	8MP / 30fps				
Min. Illumination	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.03Lux(F1.3, 1/30sec, 30IRE) BW: 0.003Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.03Lux(F1.2, 1/30sec, 30IRE) BW: 0.003Lux(F1.2, 1/30sec, 30IRE)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	-	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	4.4~9.3mm(2.1x) motorized varifocal				-
Angular Field of View	H : 112.1° (Wide) ~ 47.5° (Tele) V : 58° (Wide) ~ 26.6° (Tele) D : 137.5° (Wide) ~ 54.6° (Tele)	H : 112.1° (Wide) ~ 47.5° (Tele) V : 58° (Wide) ~ 26.6° (Tele) D : 137.5° (Wide) ~ 54.6° (Tele)	H: 113° (Wide) ~ 47° (Tele) V: 58° (Wide) ~ 26° (Tele) D: 138° (Wide) ~ 54° (Tele)	H : 112.1° (Wide) ~ 47.5° (Tele) V : 58° (Wide) ~ 26.6° (Tele) D : 137.5° (Wide) ~ 54.6° (Tele)	-
Pan / Tilt / Rotate Range	0°~ 360° / 0°~ 90° / 0°~ 360°	0°~ 360° / 0°~ 85° / 0°~ 355°	Remote adjustment(Max. 200cycles) 0°~ 350° / 0°~ 85° / 0°~ 340°	0°~ 360° / 0°~ 85° / 0°~ 355°	-
IR Viewable Length	WiseIR 50m (164.04ft)	WiseIR 50m (164.04ft)	15m (49.21ft) 30m (98.43ft) based on scene	WiseIR 50m (164.04ft)	-
Day & Night	Auto (ICR)				
Wide Dynamic Range	extremeWDR (120dB)				
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ				
Digital Image Stabilization	Support (built-in gyro sensor)				
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)				
Business Intelligence	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	Based on AI engine: People/Vehicle counting	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	Based on AI engine: People/Vehicle counting, Queue management, Heatmap
Alarm I/O	2 configurable I/O ports, DC 12V output (Max. 50mA)	2 configurable I/O ports, DC 12V output (Max. 50mA)	-	2 configurable I/O ports, DC 12V output (Max. 50mA)	2 configurable I/O ports
Audio I/O	Selectable (mic in/line in) / Line out	Selectable(mic in/line in) / Line out	-	Selectable (mic in/line in/built-in mic) / Line out	Selectable (mic in/line in/built-in mic) / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Up to 10 profiles, 3 virtual channel support				
Edge Storage	micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	-50°C~+55°C(-58°F~+131°F) +74°C(+165°F)(Max) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100%RH(condensing) Humidity control with AIR vent	-25°C~+50°C(-13°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent	-10°C~+55°C(-14°F~+131°F) / 0~95% RH(non-condensing)
Certification	IP66, IP67, NEMA4X, IK10	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP52, IK10	-
Power Consumption	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 12.1W	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE: Max 12.95W, typical 9.8W 12VDC: Max 19W, typical 9.5W
Product Dimensions / Weight	ø93.4x298.4mm(ø3.68x11.75"), 2200g(4.85 lb)	ø180x125mm(ø7.09x4.92"), 1900g(4.19 lb)	ø180x135mm(ø7.09x5.31"), 2000g(4.41 lb)	ø160x125mm(ø6.30x4.92"), 1600g(3.53 lb)	81(W)x67(H)x165(D)mm(3.19x2.64x6.48"), 880g(1.94 lb)

AI Camera

	X Plus  **XNV-8093R** 6MP AI IR Vandal Dome Camera	X Plus  **XND-8093RV** 6MP AI IR Dome Camera	X Plus  **XNO-8083R** 6MP AI IR Bullet Camera	X Plus  **XNV-8083R** 6MP AI IR Vandal Dome Camera	X Plus  **XNV-8083RZ** 6MP AI IR Vandal Dome Camera
Imaging Device	1/1.8" progressive CMOS				
Resolution / Max. Frame Rate	6MP/30fps				
Min. Illumination	Color: 0.06Lux(F1.7, 1/30sec, 30IRE) BW: 0.006Lux(F1.7, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.06Lux(F1.7, 1/30sec, 30IRE) BW: 0.006Lux(F1.7, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.03Lux(F1.3, 1/30sec, 30IRE) BW: 0.003Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation				-
Focal Length (Zoom Ratio)	10.9~29mm(2.7x) motorized varifocal	10.9~29mm(2.7x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal
Angular Field of View	H : 42° (Wide) ~ 15° (Tele) V : 22.8° (Wide) ~ 8.4° (Tele) D : 48.7° (Wide) ~ 17.1° (Tele)	H : 42° (Wide) ~ 15° (Tele) V : 22.8° (Wide) ~ 8.4° (Tele) D : 48.7° (Wide) ~ 17.1° (Tele)	H : 112.1° (Wide) ~ 47.5° (Tele) V : 58° (Wide) ~ 26.6° (Tele) D : 137.5° (Wide) ~ 54.6° (Tele)	H : 112.1° (Wide) ~ 47.5° (Tele) V : 58° (Wide) ~ 26.6° (Tele) D : 137.5° (Wide) ~ 54.6° (Tele)	H: 113° (Wide) ~ 47° (Tele) V: 58° (Wide) ~ 26° (Tele) D: 138° (Wide) ~ 54° (Tele)
Pan / Tilt / Rotate Range	0°~360° / 0°~85° / 0°~355°	0°~360° / 0°~85° / 0°~355°	0°~360° / 0°~90° / 0°~360°	0°~360° / 0°~85° / 0°~355°	Remote adjustment(Max. 200cycles) 0°~350° / 0°~85° / 0°~340°
IR Viewable Length	WiseIR 70m (229.66ft)	WiseIR 70m (229.66ft)	WiseIR 50m (164.04ft)	WiseIR 50m (164.04ft)	15m (49.21ft), 30m (98.43ft) based on scene
Day & Night	Auto (ICR)				
Wide Dynamic Range	extremeWDR (120dB)				
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR V				
Digital Image Stabilization	Support (built-in gyro sensor)				
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)				
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Video Compression	H.265 / H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
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Edge Storage	micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)				
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Operating Temperature / Humidity	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-25°C~+50°C(-13°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) +74°C(+165°F)(Max) based on NEMA -TS 2(2.2.7) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100%RH(condensing) Humidity control with AIR vent
Certification	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP52, IK10	IP66, IP67, NEMA4X, IK10	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP66, IP67, IP6K9K, NEMA4X, IK10+
Power Consumption	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE+: Max 22.5W, typical 12.1W
Product Dimensions / Weight	ø 180x125mm(ø 7.09x4.92"), 1900g(4.19 lb)	ø 160x125mm(ø 6.30x4.92"), 1600g(3.53 lb)	ø 93.4x298.4mm(ø 3.68x11.75"), 2200g(4.85 lb)	ø 180x125mm(ø 7.09x4.92"), 1900g(4.19 lb)	ø 180x135mm(ø 7.09x5.31"), 2000g(4.41 lb)

AI Camera

	X Plus	X Plus	X Plus	X Plus	X Plus
					
	XNV-8083Z **6MP AI Vandal Dome Camera**	**XND-8083RV** **6MP AI IR Dome Camera**	**XNB-8003** **6MP AI Box Camera**	**XNO-6123R** **2MP AI IR Bullet Camera**	**XNO-6083R** **2MP AI IR Bullet Camera**
Imaging Device	1/1.8" progressive CMOS	1/1.8" progressive CMOS	1/1.8" progressive CMOS	1/2.8" progressive CMOS	1/2.8" progressive CMOS
Resolution / Max. Frame Rate	6MP/30fps	6MP/30fps	6MP/30fps	2MP / 120fps	2MP/120fps
Min. Illumination	Color: 0.03Lux(F1.3, 1/30sec, 30IRE) BW: 0.003Lux(F1.3, 1/30sec, 30IRE)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.03Lux(F1.2, 1/30sec, 30IRE) BW: 0.003Lux(F1.2, 1/30sec, 30IRE)	Color: 0.03Lux(F1.6, 1/30sec, 30IRE) BW: 0.003Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) BW: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps
Video Out	–	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation / USB: Micro USB Type B, 1280x720 for installation			
Focal Length (Zoom Ratio)	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	–	5.2~62.4mm(12x) zoom (digital 32x, total 384x zoom)	2.8~12mm(4.3x) motorized varifocal
Angular Field of View	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 112.1° (Wide) ~ 47.5° (Tele) V: 58° (Wide) ~ 26.6° (Tele) D: 137.5° (Wide) ~ 54.6° (Tele)	–	H: 55°(Wide) ~ 5°(Tele) V: 35°(Wide) ~ 3°(Tele) D: 62°(Wide) ~ 6°(Tele)	H: 119.5° (Wide) ~ 27.9° (Tele) V: 62.8° (Wide) ~ 15.7° (Tele) D: 142.1° (Wide) ~ 32° (Tele)
Pan / Tilt / Rotate	0° ~ 350° / 0° ~ 85° / 0° ~ 340°	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	–	–	–
IR Viewable Length	–	WiseIR 50m (164.04ft)	–	WiseIR 90m (295.28ft)	WiseIR 50m (164.04ft)
Day & Night	Auto(ICR)				
Wide Dynamic Range	extremeWDR (120dB)	extremeWDR (120dB)	extremeWDR (120dB)	extremeWDR (150dB)	extremeWDR (150dB)
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ				
Digital Image Stabilization	Support(built-in gyro sensor)				
Analytics	**Classified object type**: Person/Face/Vehicle(Type: car/bus/truck/motorcycle/bicycle)/License plate **Attributes**: Vehicle(Type: car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine** – Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Motion detection **Analytics events** – Defocus detection, Tampering, Fog detection, Virtual area(Appear/Disappear) * Audio detection, Sound classification (with NW I/O box SPM-4210)	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)			
Business Intelligence	Based on AI engine: People/Vehicle counting	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	–	Based on AI engine: People/Vehicle counting, Queue management, Heatmap
Alarm I/O	–	2 configurable I/O ports, DC 12V output (Max. 50mA)	2 configurable I/O ports	2 configurable I/O ports, DC 12V output (Max. 50mA)	2 configurable I/O ports, DC 12V output (Max. 50mA)
Audio I/O	–	Selectable (mic in/line in/built-in mic) / Line out	Selectable (mic in/line in/built-in mic) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265/H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles	Up to 10 profiles, 3 virtual channel support
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API), Hanwha Vision Open Platform				
Operating Temperature / Humidity	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100%RH(condensing) Humidity control with AIR vent	-25°C~+50°C(-13°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent	-10°C~+55°C(-14°F~+131°F) / 0~95% RH(non-condensing)	-40°C~+60°C(-40°F~+140°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR Vent	-50°C~+55°C(-58°F~+131°F) +74°C(+165°F) (Max) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent
Certification	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP52, IK10	–	IP66, IP67, IK10, NEMA4X, NEMA-TS 2 (2.2.8, 2.2.9)	IP66, IP67, NEMA4X, IK10
Power Consumption	PoE+: Max 17.0W, typical 12.1W	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover	PoE: Max 12.95W, typical 9.8W 12VDC: Max 19W, typical 9.5W	PoE+: Max 19.5W, typical 15.5W 12VDC: Max 16.5W, typical 13.1W Power redundancy failover	PoE+: Max 22.5W, typical 17.9W 12VDC: Max 20W, typical 15.6W Power redundancy failover
Product Dimensions / Weight	ø 180x135mm(ø 7.09x5.31"), 2000g(4.41 lb)	ø 160x125mm(ø 6.30x4.92"), 1600g(3.53 lb)	81(W)x67(H)x165(D)mm(3.19x2.64x6.48"), 880g(1.94 lb)	ø 93.4x298.4mm(ø 3.68x11.75"), 2300g(5.07 lb)	ø 93.4x298.4mm(ø 3.68x11.75"), 2200g(4.85 lb)

AI Camera

	X Plus  **XNV-6123R** 2MP AI IR Vandal Dome Camera	X Plus  **XNV-6083RZ** 2MP AI IR Vandal Dome Camera	X Plus  **XNV-6083R** 2MP AI IR Vandal Dome Camera	X Plus  **XNV-6083Z** 2MP AI Vandal Dome Camera	X Plus  **XND-6083RV** 2MP AI IR Dome Camera
Imaging Device	1/2.8" progressive CMOS				
Resolution / Max. Frame Rate	2MP / 120fps				
Min. Illumination	Color: 0.03Lux(F1.6, 1/30sec, 30IRE) BW: 0.003Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.03Lux(F1.3, 1/30sec, 30IRE) BW: 0.003Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) BW: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) BW: 0.001Lux(F1.4, 1/30sec, 30IRE), 30/25fps	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) BW: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	–	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	–	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	5.2~62.4mm(12x) zoom (digital 32x, total 384x zoom)	4.4~9.3mm(2.1x) motorized varifocal	2.8~12mm(4.3x) motorized varifocal	2.8~12mm(4.3x) motorized varifocal	2.8~12mm(4.3x) motorized varifocal
Angular Field of View	H: 55°(Wide) ~ 5°(Tele) V: 33°(Wide) ~ 3°(Tele) D: 62°(Wide) ~ 6°(Tele)	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)
Pan / Tilt / Rotate	0°~360° / -45°~80° / 0°~355°	0°~350° / 0°~85° / 0° ~340°	0°~360° / -45°~80° / 0°~355°	0°~350° / 0°~85° / 0°~340°	0°~360° / -45°~85° / 0°~355°
IR Viewable Length	WiseIR 90m (295.28ft)	15m(42.91ft)	WiseIR 50m (164.04ft)	–	WiseIR 50m (164.04ft)
Day & Night	Auto (ICR)				
Wide Dynamic Range	extremeWDR(150dB)				
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V
Digital Image Stabilization	Support (built-in gyro sensor)	Support	Support (built-in gyro sensor)	Support	Support (built-in gyro sensor)
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)				
Business Intelligence	–	Based on AI engine: People/Vehicle counting	Based on AI engine: People/Vehicle counting, Queue management, Heatmap	Based on AI engine: People/Vehicle counting	Based on AI engine: People/Vehicle counting, Queue management, Heatmap
Alarm I/O	2 configurable I/O ports, DC 12V output (Max. 50mA)	–	2 configurable I/O ports, DC 12V output (Max. 50mA)	–	2 configurable I/O ports, DC 12V output (Max. 50mA)
Audio I/O	Selectable (mic in/line in) / Line out	–	Selectable (mic in/line in) / Line out	–	Selectable (mic in/line in/built-in mic) / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Up to 10 profiles	Up to 10 profiles	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles	Up to 10 profiles, 3 virtual channel support
Edge Storage	micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	-40°C~+60°C(-40°F~+140°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100%RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100% RH(condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F~+131°F) * Start up should be done at above -30°C 0~100%RH(condensing) Humidity control with AIR vent	-25°C~+50°C(-13°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent
Certification	IP66, IP67, IP6K9K, NEMA4X, NEMA-TS 2 (2.2.8, 2.2.9), IK10+	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP66, IP67, IP6K9K, NEMA4X, IK10+"	IP66, IP67, IP6K9K, NEMA4X, IK10+	IP52, IK10
Power Consumption	PoE+: Max 19.5W, typical 15.5W 12VDC: Max 16.5W, typical 13.1W Power redundancy failover	PoE+: Max 22.5W, typical 11.0W	PoE+: Max 22.5W, typical 11.0W"	PoE+: Max 17.0W, typical 11.0W	PoE+: Max 17.0W, typical 11.0W
Product Dimensions / Weight	ø180x138mm(ø7.09x5.43"), 2130g(4.70 lb)	ø180x135mm(ø7.09x5.31"), 2000g(4.41 lb)	ø180x125mm(ø7.09x4.92"), 1900g(4.19 lb)	ø180x135mm(ø7.09x5.31"), 2000g(4.41 lb)	ø160x125mm(ø6.30x4.92"), 1600g(3.53 lb)

AI Camera

	X Plus	X Core	X Core	X Core	X Core
					
	XNB-6003 2MP AI Box Camera	**XNO-C9083R** 8MP AI IR Bullet Camera	**XNV-C9083R** 8MP AI IR Vandal Dome Camera	**XND-C9083RV** 8MP AI IR Dome Camera	**XNO-C8083R** 6MP AI IR Bullet Camera
Imaging Device	1/2.8" progressive CMOS	1/1.8" progressive CMOS	1/1.8" progressive CMOS	1/1.8" progressive CMOS	1/1.8" progressive CMOS
Resolution / Max. Frame Rate	2MP / 120fps	8MP / 30fps	8MP / 30fps	8MP / 30fps	6MP / 30fps
Min. Illumination	Color: 0.007Lux(F1.2, 1/30sec, 30IRE) BW: 0.0007Lux(F1.2, 1/30sec, 30IRE), 30/25fps	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	-	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal
Angular Field of View	-	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)
Pan / Tilt / Rotate	-	-	0° ~ 360° / -45° ~ 75° / 0° ~ 355°	0° ~ 360° / -45° ~ 75° / 0° ~ 355°	-
IR Viewable Length	-	WiseIR 40m (131.23ft)	WiseIR 40m (131.23ft)	WiseIR 40m (131.23ft)	WiseIR 40m (131.23ft)
Day & Night	Auto (ICR)				
Wide Dynamic Range	extremeWDR(120dB)				
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ				
Digital Image Stabilization	Support (built-in gyro sensor)				
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)				
Business Intelligence	Based on AI engine: People/Vehicle counting, Queue management, Heatmap				
Alarm I/O	2 configurable I/O ports				
Audio I/O	Selectable (mic in/line in/built-in mic) / Line out				
Video Compression	H.265 / H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Up to 10 profiles, 3 virtual channel support				
Edge Storage	micro SD/SDHC/SDXC 2slot Max. 1TB (512GB * 2)				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidit	-10°C~+55°C(-14°F~+131°F) / 0~95% RH(non-condensing)	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -20°C 0~100%RH(condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -20°C 0~100%RH(condensing) Humidity control with AIR vent	-10°C~+50°C(14°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -20°C 0~100%RH(condensing) Humidity control with AIR vent
Certification	-	IP66, IP67, NEMA4X, IK10	IP66, IP67, NEMA4X, IK10	IP52, IK08	IP66, IP67, NEMA4X, IK10
Power Consumption	PoE: Max 12.95W, typical 9.8W 12VDC: Max 19W, typical 9.5W	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W
Product Dimensions / Weight	81(W)x67(H)x165(D)mm(3.19x2.64x6.48"), 880g(1.94 lb)	ø93.4x276.6mm(ø3.68x10.89"), 1640g(3.62 lb)	ø160x118mm(ø6.30x4.65"), 1450g(3.20 lb)	ø160x118mm(ø6.30x4.65"), 1350g(2.98 lb)	ø93.4x276.6mm(ø3.68x10.89"), 1640g(3.62 lb)

AI Camera

	X Core	X Core	X Core	X Core	X Core
					
	XNV-C8083R 6MP AI IR Vandal Dome Camera	**XND-C8083RV** 6MP AI Dome Camerav	**XNO-C7083R** 4MP AI IR Bullet Camera	**XNV-C7083R** 4MP AI IR Vandal Dome Camera	**XND-C7083RV** 4MP AI IR Dome Camera
Imaging Device	1/1.8" progressive CMOS	1/1.8" progressive CMOS	1/2.8" progressive CMOS	1/2.8" progressive CMOS	1/2.8" progressive CMOS
Resolution / Max. Frame Rate	6MP / 30fps	6MP / 30fps	4MP / 60fps	4MP / 60fps	4MP / 60fps
Min. Illumination	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux(F1.3, 1/30sec, 30IRE) BW: 0.004Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.038Lux(F1.4, 1/30sec, 30IRE) BW: 0.0038Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.038Lux(F1.4, 1/30sec, 30IRE) BW: 0.0038Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.038Lux(F1.4, 1/30sec, 30IRE) BW: 0.0038Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps
Video Out	USB: Micro USB Type B, 1280x720 for installation				
Focal Length (Zoom Ratio)	4.4~9.3mm(2.1x) motorized varifocal	4.4~9.3mm(2.1x) motorized varifocal	2.8~10mm(3.6x) motorized varifocal	2.8~10mm(3.6x) motorized varifocal	2.8~10mm(3.6x) motorized varifocal
Angular Field of View	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 113°(Wide)~47°(Tele) V: 58°(Wide)~26°(Tele) D: 138°(Wide)~54°(Tele)	H: 110°(Wide)~30°(Tele) V: 61°(Wide)~17°(Tele) D: 132°(Wide)~35°(Tele)	H: 110°(Wide)~30°(Tele) V: 61°(Wide)~17°(Tele) D: 132°(Wide)~35°(Tele)	H: 110°(Wide)~30°(Tele) V: 61°(Wide)~17°(Tele) D: 132°(Wide)~35°(Tele)
Pan / Tilt / Rotate	0° ~ 360° / −45° ~ 75° / 0° ~ 355°	0° ~ 360° / −45° ~ 75° / 0° ~ 355°	–	0° ~ 360° / −45° ~ 75° / 0° ~ 355°	0° ~ 360° / −45° ~ 75° / 0° ~ 355°
IR Viewable Length	WiseIR 40m (131.23ft)				
Day & Night	Auto (ICR)				
Wide Dynamic Range	extremeWDR (120dB)				
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ				
Digital Image Stabilization	Support (built-in gyro sensor)				
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)				
Business Intelligence	Based on AI engine: People/Vehicle counting, Queue management, Heatmap				
Alarm I/O	2 configurable I/O ports				
Audio I/O	Selectable (mic in/line in) / Line out				
Video Compression	H.265 / H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ(Based on AI engine)				
Streaming	Up to 10 profiles, 3 virtual channel support				
Edge Storage	micro SD/SDHC/SDXC 1slot 512GB				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	−40° C~+55° C(−40° F~+131° F) * Start up should be done at above −20° C 0~100%RH(condensing) Humidity control with AIR vent	−10° C~+50° C(14° F~+122° F) / 0~100% RH(condensing) Humidity control with AIR vent	−40° C~+55° C(−40° F~+131° F) * Start up should be done at above −20° C 0~100%RH(condensing) Humidity control with AIR vent	−40° C~+55° C(−40° F~+131° F) * Start up should be done at above −20° C 0~100%RH(condensing) Humidity control with AIR vent	−10° C~+50° C(14° F~+122° F) / 0~100% RH(condensing) Humidity control with AIR vent
Certification	IP66, IP67, NEMA4X, IK10	IP52, IK08	IP66, IP67, NEMA4X, IK10	IP66, IP67, NEMA4X, IK10	IP52, IK08
Power Consumption	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W	PoE: Max 12.95W, typical 11.2W 12VDC: Max 13.2W, typical 10.8W	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W
Product Dimensions / Weight	ø160x118mm(ø6.30x4.65"), 1450g(3.20 lb)	ø160x118mm(ø6.30x4.65"), 1350g(2.98 lb)	ø93.4x276.6mm(ø3.68x10.89"), 1640g(3.62 lb)	ø160x118mm(ø6.30x4.65"), 1450g(3.20 lb)	ø160x118mm(ø6.30x4.65"), 1350g(2.98 lb)

AI Camera

	X Core	X Core	X Core	X Plus
				
	XNO-C6083R **2MP AI IR Bullet Camera**	**XNV-C6083R** **2MP AI IR Vandal Dome Camera**	**XND-C6083RV** **2MP AI Dome Camera**	**XNF-9013RV** **12MP AI Fisheye Camera**
Imaging Device	1/2.8" progressive CMOS	1/2.8" progressive CMOS	1/2.8" progressive CMOS	1/2.3" 12MP CMOS
Resolution / Max. Frame Rate	2MP / 60fps	2MP / 60fps	2MP / 60fps	3008 x 3008 / 30fps
Min. Illumination	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) B/W: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) B/W: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.01Lux(F1.4, 1/30sec, 30IRE) BW: 0.001Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.39 Lux (F2.2, 1/30sec), BW : 0Lux(IR LED on)
Video Out	USB: Micro USB Type B, 1280x720 for installation			CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for Installation USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	'2.8~12mm(4.3x) motorized varifocal			1.08mm fixed focal
Angular Field of View	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)	H: 120°(Wide)~27°(Tele) V: 63°(Wide)~15°(Tele) D: 143°(Wide)~32°(Tele)	H: 187° / V: 187° / D: 187°
Pan / Tilt / Rotate	-	0° ~ 360° / -45° ~ 75° / 0° ~ 355°	0° ~ 360° / -45° ~ 75° / 0° ~ 355°	Lens Rotation
IR Viewable Length	WiseIR 40m (131.23ft)	WiseIR 40m (131.23ft)	WiseIR 40m (131.23ft)	Wise IR, PoE : 8m(26.25ft), PoE+ : 13m(42.65ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	extremeWDR (150dB)	extremeWDR (150dB)	extremeWDR (150dB)	extremeWDR (120dB)
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ			
Digital Image Stabilization	Support (built-in gyro sensor)	Support (built-in gyro sensor)	Support (built-in gyro sensor)	-
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit), Motion Detection **Analytics events:** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)			**Classified object type:** Person/Face/Vehicle/License plate **Support DetectionShot** **Analytics events based on AI engine:** Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit) **Analytics events :** Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Virtual area (Appear/Disappear)
Business Intelligence	Based on AI engine: People/Vehicle counting, Queue management, Heatmap			
Alarm I/O	2 configurable I/O ports			
Audio I/O	Selectable (mic in/line in) / Line out			
Video Compression	H.265 / H.264, MJPEG			
WiseStream	Manual(5ea area), WiseStream Ⅲ(Based on AI engine)			
Streaming	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles, 3 virtual channel support	Up to 10 profiles, 5 virtual channel support
Edge Storage	micro SD/SDHC/SDXC 1slot 512GB	micro SD/SDHC/SDXC 1slot 512GB	micro SD/SDHC/SDXC 1slot 512GB	micro SD/SDHC/SDXC 2slots 1TB (512GBx2)
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform			
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -20°C 0~100%RH(condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -20°C 0~100%RH(condensing) Humidity control with AIR vent	-10°C~+50°C(14°F~+122°F) / 0~100% RH(condensing) Humidity control with AIR vent	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 95% RH POE+ Mode 55°C (Hysteresis 5°C) Wise IR 8m(26.25ft)
Certification	IP66, IP67, NEMA4X, IK10	IP66, IP67, NEMA4X, IK10	IP52, IK08	IP66, IK10, NEMA4X
Power Consumption	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W	PoE: Max 12.95W, typical 10.8W 12VDC: Max 12.5W, typical 10W	PoE: Max 12.95W, typical 9.4W, 12VDC: Max 12.9W, typical 9.0W / PoE+: Max 23.0W, typical 9.4W, 12VDC: Max 22.0W, typical 9.0W
Product Dimensions / Weight	ø93.4x276.6mm(ø3.68x10.89"), 1640g(3.62 lb)	ø160x118mm(ø6.30x4.65"), 1450g(3.20 lb)	ø160x118mm(ø6.30x4.65"), 1350g(2.98 lb)	Ø160x72mm(6.23x2.84"), 1,170g (2.58lb)

AI Camera

	AI Focus PTZ	AI PTZ Plus	AI PTZ Plus	AI PTZ Plus	AI PTZ Plus
					
	XNP-C9310R **8MP 31x AI + IR PTZ Camera**	**XNP-C9303RW** **8MP 30x AI + Wiper + IR PTZ Camera**	**XNP-C9253R** **8MP 25x AI + IR PTZ Camera**	**XNP-C9253** **8MP 25x AI PTZ Camera**	**XNP-C8303RW** **6MP 30x AI + Wiper + IR PTZ Camera**
Imaging Device	1/1.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	8MP /30fps	8MP / 30fps	8MP / 30fps	8MP / 30fps	6MP / 30fps
Min. Illumination	Color: 0.06 Lux(F1.36, 1/30sec, 30 IRE) BW: 0.006 Lux(F1.36, IR LED Off), 0Lux (IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0.01Lux(F1.6, 1/30sec)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)
Video Out	–	–	–	–	–
Focal Length (Zoom Ratio)	6.91 ~ 214.7mm(31x) zoom (digital 32x, total 992x zoom) Support Quick zoom	5~150mm(30x) zoom (digital 32x, total 960x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	5~150mm(30x) zoom (digital 32x, total 960x zoom)
Angular Field of View	H : 60.6° (Wide) ~ 2.59° (Tele) V : 35.1° (Wide) ~ 1.45° (Tele) D : 68.8° (Wide) ~ 2.97° (Tele)	H: 57.42° (Wide)~2.19° (Tele) V: 33.54° (Wide)~1.25° (Tele)	H: 57.42° (Wide)~2.71° (Tele) V: 33.54° (Wide)~1.55° (Tele)	H: 57.42° (Wide)~2.71° (Tele) V: 33.54° (Wide)~1.55° (Tele)	H: 57.42° (Wide)~2.19° (Tele) V: 33.54° (Wide)~1.25° (Tele)
Pan / Tilt / Rotate	360° Endless / −20° ~90°				
IR Viewable Length	WiseIR 250m(820ft)	Wise IR 200m (656.17ft)	Wise IR 200m(656.17ft)	–	Wise IR 200m(656.17ft)
Day & Night	Auto (ICR)/Color/BW/Schedule				
Wide Dynamic Range	extremeWDR(120dB)				
Digital Noise Reduction	WiseNR Ⅱ(Based on AI engine), SSNRV				
Digital Image Stabilization	Support(built-in gyro sensor)				
Analytics	**Classified object type** : Person/Face/Vehicle/License plate **Attributes** : Vehicle(Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine**: Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Motion detection **Analytics events**: Tampering, Fog detection, Audio detection, Sound classification(with NW I/O Box : SPM-4210), Shock detection, Virtual area(Appear/Disappear)				
Business Intelligence	–				
Alarm I/O	Compatible with NW I/O Box (Optional: SPM-4210)				
Audio I/O					
Video Compression	H.265/H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Up to 10 profiles				
Edge Storage	Micro SD/SDHC/SDXC 2slots 1TB(512GBx2)				
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	−50°C~+55°(−58°F ~ +131°F)/ +74°C(165°F)(Max) based on NEMA TS-2(2.2.7) * Start up should be done at above −30°C 0~100%RH(Condensing) Humidity control with AIR vent	−40°C~+55°(−58°F ~ +131°F)/ +74°C(165°F)(Max) based on NEMA TS-2(2.2.7) * Start up should be done at above −30°C 0~100%RH(Condensing) Humidity control with AIR vent			
Certification	IP66/IP67, IK10, NEMA4X Safety(UL, KC-SDOC), EMC(FCC, CE, VCCI, RCM, KC) NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)			
Power Consumption	Typical 23W, Max 62W	Typical 26W, Max 46W	Typical 24W, Max 40W	Typical 24W, Max 25.5W	Typical 26W, Max 46W
Product Dimensions / Weight	ø 188x264.9mm(ø 7.40x10.47") / 4400g (9.70lb)	ø 184.9x318.8mm(7.28x12.55") / 5600g (12.34lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 184.9x318.8mm(7.28x12.55") / 5600g (12.34lb)
Additional Features	Upgraded preset accuracy, Object auto tracking, Target lock tracking, Quick zoom, Focus scan, Wise focus	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking

	AI PTZ Plus  XNP-C8253R 6MP 40x AI + IR PTZ Camera	AI PTZ Plus  XNP-C8253 6MP 25x AI PTZ Camera	AI Focus PTZ  XNP-C7310R 4MP 31x AI + IR PTZ Camera	AI PTZ Plus  XNP-C6403RW 2MP 40x AI + Wiper + IR PTZ Camera	AI PTZ Plus  XNP-C6403R 2MP 40x AI + IR PTZ Camera	AI PTZ Plus  XNP-C6403 2MP 40x AI PTZ Camera
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/1.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	6MP / 30fps	6MP / 30fps	4MP /60fps	2MP / 60fps	2MP / 60fps	2MP / 60fps
Min. Illumination	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0.01Lux(F1.6, 1/30sec)	Color: 0.04 Lux (F1.36, 1/30sec, 30 IRE) BW: 0.004 Lux(F1.36, IR LED Off), 0Lux (IR LED On)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec)
Video Out	–	–	–	–	–	–
Focal Length (Zoom Ratio)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	6.91 ~ 214.7mm(31x) zoom (digital 32x, total 992x zoom) Support Quick zoom	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)
Angular Field of View	H: 57.42° (Wide)~2.71° (Tele) V: 33.54° (Wide)~1.55° (Tele)	H: 57.42° (Wide)~2.71° (Tele) V: 33.54° (Wide)~1.55° (Tele)	H : 59.4° (Wide) ~ 2.54° (Tele) V : 35.8° (Wide) ~ 1.49° (Tele)	H: 65.66° (Wide)~1.88° (Tele) V: 39.4° (Wide)~1.09° (Tele)	H: 65.66° (Wide)~1.88° (Tele) V: 39.4° (Wide)~1.09° (Tele)	H: 65.66° (Wide)~1.88° (Tele) V: 39.4° (Wide)~1.09° (Tele)"
Pan / Tilt / Rotate	360° Endless / –20° ~90°					
IR Viewable Length	Wise IR 200m(656.17ft)	–	WiseIR 300m(984ft)	Wise IR 200m (656.17ft)	Wise IR 200m (656.17ft)	–
Day & Night	Auto (ICR)/Color/BW/Schedule					
Wide Dynamic Range	extremeWDR (120dB)	extremeWDR (120dB)	extremeWDR (120dB)	extremeWDR(150dB)	extremeWDR(150dB)	extremeWDR(150dB)
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ					
Digital Image Stabilization	Support (built-in gyro sensor)					
Analytics	**Classified object type :** Person/Face/Vehicle/License plate **Attributes :** Vehicle(Type:car/bus/truck/motorcycle/bicycle) **Support Detection Shot** **Analytics events based on AI engine:** Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Motion detection **Analytics events:** Tampering, Fog detection, Audio detection, Sound classification(with NW I/O Box : SPM-4210), Shock detection, Virtual area(Appear/Disappear)					
Business Intelligence	–					
Alarm I/O	Compatible with NW I/O Box (Optional: SPM-4210)					
Audio I/O	Compatible with NW I/O Box (Optional: SPM-4210)					
Video Compression	H.265/H.264, MJPEG					
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)					
Streaming	Up to 10 profiles					
Edge Storage	Micro SD/SDHC/SDXC 2slots 1TB(512GBx2)					
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform					
Operating Temperature / Humidity	-40°C~+55°C(-40°F ~ +131°F) / +74° C(+165° F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F ~ +131°F)/ +74°C(165°F)(Max) based on NEMA TS-2(2.2.7) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-50°C~+55°C(-58°F ~ +131°F) / +74°C(+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at a bove -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F ~ +131°F) +74°C(+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-40°C~+50°C(-40°F ~ +122°F) / +74°C(+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-40°C~+50° C(-40° F ~ +122° F) / +74° C(+165° F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30° C Humidity control with AIR vent
Certification	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66/67, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7, 2.2.8, 2.2.9)
Power Consumption	Typical 24W, Max 40W	Typical 24W, Max 25.5W	HPoE: Max 62W, typical 23W	Typical 26W, Max 46W	Typical 24W, Max 40W	Typical 24W, Max 25.5W
Product Dimensions / Weight	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 188x264.9mm(ø 7.40x10.47") / 4400g (9.70lb)	ø 184.9x318.8mm(7.28x12.55") / 5600g (12.34lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	Ø 158x293.3mm (6.22x11.55") / 3,200g (7.05lb)
Additional Features	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking, Quick zoom, Focus scan, Wise focus	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking	Upgraded preset accuracy, Object auto tracking, Target lock tracking

	 PNO-A9311R 8MP AI IR Bullet Camera	 PNO-A9081R 8MP AI IR Bullet Camera	 PNV-A9081R 8MP AI IR Vandal Dome Camera	 PND-A9081RV 8MP AI IR Dome Camera	 PND-A9081RF 8MP AI IR Dome Camera	 PNB-A9001 8MP AI Box Camera
Imaging Device	1/1.8" CMOS					
Resolution / Max. Frame Rate	4K / 30fps	8MP / 30fps				
Min. Illumination	Color: 0.075Lux(F1.36, 1/30sec, 30IRE) BW: 0.0075Lux(F1.36, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.03Lux(F1.2, 1/30sec) B/W : 0.003Lux(F1.2, 1/30sec)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation					
Focal Length (Zoom Ratio)	6.91~214.7mm (31x) motorized varifocal	4.5~10mm(2.2x) motorized varifocal				-
Angular Field of View	H: 60.92° (Wide)~2.2° (Tele) V:35.26° (Wide)~1.24° (Tele) D:69.18° (Wide)~2.52° (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)	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°	0°~360° / -45°~85° / 0°~355°	-
IR Viewable Length	WiseIR 70m(229.66ft)	WiseIR 30m(98.42ft)				
Day & Night	Auto(ICR)					
Wide Dynamic Range	120dB					
Digital Noise Reduction	WiseNR Ⅱ (Based on AI ngine),SSNR Ⅴ					
Digital Image Stabilization	Support (built-in gyro sensor)					
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Person(Gender, Color and Bag), Face(Age, Gender, Mask and Glasses), Vehicle(Type: car/bus/truck/motorcycle/bicycle and Color) **Support BestShot per object** **Analytics events based on AI engine** -Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit), Face mask detection, Social distancing detection, Slip&Fall detection **Analytics events** - Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) **Support WiseDetector for Adding custom objects** *Some of the video analytics only works with people and vehicle detection					
Business Intelligence	People/Vehicle/Crowd counting, Queue management, Heatmap based on AI engine					
Alarm I/O	2 configurable I/O ports, DC 12V output(Max. 50mA)					
Audio I/O	Selectable(mic in/line in) / line out	Selectable (mic in/line in) / line out	Selectable (mic in/line in) / line out	Selectable (mic in/line in/ built-in mic) / line out	Selectable (mic in/line in) / line out	Selectable (mic in/line in/ built-in mic) / line out
Video Compression	H.265/H.264: Main/High, MJPEG					
WiseStream	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ(using AI engine)					
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 6 profiles)					
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 512GB(256GBx2)	Micro SD/SDHC/SDXC 2slots 512GB				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform - WiseAI application included(Analytic based on AI, Business intelligence)					
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / 0~100% RH(condensing), Humidity control/with AIR vent * Start up should be done at above -30°C	-50°C~+55°C(-58°F~+131°F) / Less than 90% RH * Start up should be done at above -30° C	-50°C~+55°C(-58°F~+131°F) / Less than 90% RH * Start up should be done at above -30° C	-25°C~+50°C (-13°F~+122°F) / Less than 90% RH	-25°C~+50°C (-13°F~+122°F) / Less than 90% RH	-10°C~+55°C(+14°F~+131°F) / Less than 90% RH
Certification	IP66/IP67, IK10, NEMA4X	IP66/IP67, IK10, NEMA4X	IP66/IP67/IP6K9K, IK10+, NEMA4X	IP52, IK10	IP52, IK10, Plenum rate	-
Power Consumption	PoE+: Max 25.5W, typical 14.0W 12VDC: Max 24.0W, typical 12.7.W	PoE+: Max 20.0W, 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	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
Product Dimensions / Weight	Ø136.2x358.7mm(ø5.36x14.12"") (Without sunshield), 3200g(7.05lb) * backbox: ø160mm(ø6.30"")	Ø91.0x368.6mm (3.58" x 14.51") (Without sunshield), 2.48Kg (5.47lb)	Ø180x125mm(7.09x4.92"), 1.90Kg (4.19lb)	Ø160x125mm(6.30x4.92"), 1.60Kg (3.53lb)	Ø205x163mm(8.07x4.92"), 1.95Kg (4.30lb)	81x67x165mm(3.19x2.64x6.48"), 0.88kg(1.94lb)

AI Camera

					
	PNO-A6081R **2MP AI IR Bullet Camera**	**PNV-A6081R** **2MP AI IR Vandal Dome Camera**	**PND-A6081RV** **2MP AI IR Dome Camera**	**PND-A6081RF** **2MP AI IR Dome Camera**	**PNB-A6001** **2MP AI Box Camera**
Imaging Device	1/2" CMOS	1/2" CMOS	1/2" CMOS	1/2" CMOS	1/2" CMOS
Resolution / Max. Frame Rate	2MP / 120fps	2MP / 120fps	2MP / 120fps	2MP / 120fps	2MP / 120fps
Min. Illumination	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) B/W : 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) B/W : 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) B/W : 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) B/W : 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.006Lux(F1.2, 1/30sec,30IRE) B/W : 0.0006Lux(F1.2, 1/30sec,30IRE), 30/25fps
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	4.38~9.33mm(2.13x) motorized varifocal				-
Angular Field of View	H:103.1°(Wide)~44.5°(Tele) / V:54.2°(Wide)~24.9°(Tele) / D:124°(Wide)~51.1°(Tele)	H:103.1°(Wide)~44.5°(Tele) / V:54.2°(Wide)~24.9°(Tele) / D:124°(Wide)~51.1°(Tele)	H:103.1°(Wide)~44.5°(Tele) / V:54.2°(Wide)~24.9°(Tele) / D:124°(Wide)~51.1°(Tele)	H:103.1° (Wide) ~ 44.5° (Tele) V:54.2° (Wide) ~ 24.9° (Tele) D:124° (Wide) ~ 51.1° (Tele)	-
Pan / Tilt / Rotate	-	0 ° ~360° / -45°~85° / 0 ° ~355 °	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	-
IR Viewable Length	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	-
Day & Night	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)
Wide Dynamic Range	120dB	120dB	120dB	120dB	120dB
Digital Noise Reduction	WiseNR Ⅱ(Based on AI engine),SSNR Ⅴ				
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)
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Person(Gender, Color and Bag), Face(Age, Gender, Mask and Glasses), Vehicle(Type: car/bus/truck/motorcycle/bicycle and Color) **Support BestShot per object** **Analytics events based on AI engine** - Object detection, Virtual line*(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Face mask detection, Social distancing detection, Slip&Fall detection **Analytics events** - Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) **Support WiseDetector for Adding custom objects**				
Business Intelligence	People/Vehicle/Crowd counting, Queue management, Heatmap based on AI engine				
Alarm I/O	2 configurable I/O ports, DC 12V output(Max. 50mA)				
Audio I/O	Line in / Line out	Line in / Line out	Line in / Line out	Line in / Line out	Line in / Line out
Video Compression	Selectable (mic in/line in) / line out	Selectable (mic in/line in) / line out	Selectable (mic in/line in/built-in mic) / line out	Selectable (mic in/line in) / line out	Selectable (mic in/line in/built-in mic) / line out
WiseStream	Manual(5ea area), WiseStream Ⅱ , WiseStream Ⅲ (using AI engine)				
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 6 profiles)				
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB				
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform - WiseAI application included(Analytic based on AI, Business intelligence)				
Operating Temperature / Humidity	-50°C ~ +55°C(-58°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C	-50°C ~ +55°C(-58°F ~ +131°F) Less than 90% RH * Start up should be done at above -30°C	-25°C ~ +50°C (-13°F ~ +122°F) / Less than 90% RH	-25°C ~ +50°C (-13°F ~ +122°F) / Less than 90% RH	-10°C ~ +55°C(+14°F ~ +131°F) / Less than 90% RH
Certification	IP66, IP67, IK10, NEMA4X	IP66, IP67, IP6K9K, IK10+, NEMA4X	IP52, IK10	IP52, IK10, Plenum rate	-
Power Consumption	PoE+: Max 19.50W, typical 16.00W 12VDC: Max 17.00W, typical 13.50W	PoE+: Max 19.50W, typical 16.00W 12VDC: Max 17.00W, typical 13.50W	PoE+: Max 19.50W, typical 16.00W 12VDC: Max 17.00W, typical 13.50W	PoE+: Max 19.50W, typical 16.00W 12VDC: Max 17.00W, typical 13.50W	PoE+: Max 17.5W, Typ 13.7W 12VDC: Max 14W, Typ 10.6W
Product Dimensions / Weight	Ø91.0x368.6mm (3.58" x 14.51") (Without sunshield), 2.48Kg (5.47lb)	Ø180x125mm(7.09x4.92"), 1.90Kg (4.19lb)	Ø160x125mm(6.30x4.92"), 1.60Kg (3.53lb)	Ø205x163mm(8.07x4.92"), 1.95Kg(4.30lb)	81x67x165mm(3.19x2.64x6.48"), 0.88kg(1.94lb)



PNM-C34404RQPZ
4K 4CH PTRZ + 2MP 40x PTZ AI Camera



PNM-C16083RVQ
4MP x 4CH AI Camera



PNM-C32083RVQ
4K x 4CH AI Camera

Imaging Device	1/2.8" CMOS x 4CH	1/2.8" CMOS x 1CH PTZ	1/2.8" CMOS x 4CH	1/2.8" CMOS x 4CH
Resolution / Max. Frame Rate	8MP/20fps	2MP / 60fps	4MP / 30fps	[AI On] 8MP Max. 15fps [AI Off] 8MP Max. 20fps
Min. Illumination	Color: 0.1Lux(F1.5, 1/30sec, 30IRE) BW: 0.01Lux(F1.5, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.075Lux(F1.5, 1/30sec, 30IRE) BW: 0.0075Lux(F1.5, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.1Lux(F1.5, 1/30sec, 30IRE) BW: 0.01Lux(F1.5, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	–		USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	3.3~5.7mm(1.7x) motorized varifocal	4.25~170mm(40x) zoom(digital 32x, total 1280x zoom)	3.3~5.7mm(1.7x) motorized varifocal	3.3~5.7mm(1.7x) motorized varifocal
Angular Field of View	H: 109°(Wide)~56°(Tele) V: 55°(Wide)~31°(Tele) D: 136°(Wide)~65°(Tele)	H: 65.66°(Wide)~1.88°(Tele) V: 39.40°(Wide)~1.09°(Tele)	H: 99.8°(Wide)~53.0°(Tele) V: 53.8°(Wide)~30.7°(Tele) D: 124.3°(Wide)~61.8°(Tele)	H: 108.3°(Wide)~56.4°(Tele) V: 54.7°(Wide)~31.2°(Tele) D: 135.5°(Wide)~65.2°(Tele)
Pan / Tilt / Rotate	0°~360° / 9°~65° / 0°~90° * Tilt angle with Shield IR: 40°~65°	0°~360° / -20°~90°	0~360° / 0~73° /0~90°	0~360° / 0~73° /0~90°
IR Viewable Length	20m (65.62ft)	WiseIR 200m (656.17ft)	WiseIR 15m(49.21ft)	WiseIR 15m(49.21ft)
Day & Night	Auto (ICR)		Auto(ICR)	Auto (ICR)
Wide Dynamic Range	120dB	extremeWDR (150dB)	120dB	120dB
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR V		WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V
Digital Image Stabilization	–	Support	–	–
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type: car/bus/truck/motorcycle/bicycle) **Support BestShot** **Analytics events based on AI engine** :Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) **Analytics events** : Defocus detection, Motion detection, Tampering, Virtual area(Appear/Disappear)	**Analytics events**: Motion detection, Fog detection, Tampering, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear), Virtual line(Crossing/Direction) Support Audio detection, Sound classification via optional I/O box(SPM-4210)	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type: car/bus/truck/motorcycle/bicycle) **Support BestShot** **Analytics events based on AI engine** – Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) **Analytics events** – Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Virtual area(Appear/Disappear)	
Business Intelligence	–	–	–	–
Alarm I/O	–	–	2 configurable I/O ports * Support extra alarm I/O via optional SPM-4210 I/O box	2 configurable I/O ports * Support extra alarm I/O via optional SPM-4210 I/O box
Audio I/O	–	–	Selectable(mic in/line in) / –	Selectable(mic in/line in) / –
Video Compression	H.265/H.264, MJPEG	H.265/H.264, MJPEG	H.265/H.264, MJPEG	H.265/H.264, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)		Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)
Streaming	Unicast(10 users) / Multicast Multiple streaming (Up to 3 profiles)	Unicast(20 users) / Multicast Multiple streaming (Up to 10 profiles)	Unicast(10 users) / Multicast Multiple streaming(Up to 3 profiles per channel)	Unicast(10 users) / Multicast Multiple streaming(Up to 3 profiles per channel)
Edge Storage	Micro SD/SDHC/SDXC 2slot 1TB(512GBx2)		Micro SD/SDHC/SDXC 2slot Max. 2TB(1TBx2)	Micro SD/SDHC/SDXC 2slot Max. 2TB(1TBx2)
Application Programming Interface	ONVIF Profile S/T, SUNAPI (HTTP API) Hanwha Vision Open Platform		ONVIF Profile S/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/T/M, SUNAPI(HTTP API) Wisenet open platform
Operating Temperature / Humidity	'-40°C~+50°C(-40°F~+122°F) +74°C(+165°F)(MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C0~95% RH(non-condensing)		-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -35°C 0~95% RH(non-condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -35°C 0~95% RH(non-condensing) Humidity control with AIR vent
Certification	IP66, IK10, NEMA4X		IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	HPoE: Max 64.00W, typical 45.00W		PoE+: Max 25.5W, typical 22.0W PoE++: Max 33.0W, typical 22.0W	PoE+: Max 25.5W, typical 22.0W PoE++: Max 33.0W, typical 22.0W
Product Dimensions / Weight	ø 140x110.2mm(ø 5.51x4.34"), 875g(1.93 lb)		ø 250x114.2mm(ø 9.84x4.50"), 2730g(6.02 lb)	ø 250x114.2mm(ø 9.84x4.50"), 2820g(6.22 lb)

AI Camera



PNM-C16013RVQ
4MP x 4CH AI Camera



PNM-C12083RVD
6MP x 2CH AI Multi-directional Camera



PNM-C7083RVD
2MP x 2CH AI Multi-directional Camera



PNM-C9022RV
2MP x 4CH AI Multi-directional Camera

Imaging Device	1/2.8" CMOS x 4CH	1/2.8" CMOS x 2CH	1/2.8" CMOS x 2CH	1/2.8" CMOS x 4CH
Resolution / Max. Frame Rate	4MP/15fps	6MP / 15fps	2MP / 30fps	2MP / 20fps x 4CH
Min. Illumination	Color: 0.05Lux(F1.2, 1/30sec, 30IRE) BW: 0.005Lux(F1.2, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.16lux(F1.67, 1/30sec, 30IRE) BW: 0.016lux(F1.67, 1/30sec, 30IRE), 0lux(IR LED on)	Color: 0.035lux(F2.2, 1/30sec, 30IRE) BW: 0.0035lux(F2.2, 1/30sec, 30IRE), 0lux(IR LED on)	Color: 0.1Lux(F2.0, 1/30sec) BW: 0.01Lux(F2.0, 1/30sec), 0Lux(IR LED on)
Video Out	USB: Micro USB Type B, 2592x1520 for installation	USB: micro USB Type B, 1280x720 for installation	USB: micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	3.19mm fixed focal	3.54~6.69mm(1.9x) motorized varifocal	3~6mm(2x) motorized varifocal	2.8mm fixed focal(x4)
Angular Field of View	H: 97° / V: 54° / D: 116°	H: 96° (Wide) ~ 47° (Tele) V: 51° (Wide) ~ 26° (Tele) D: 113° (Wide) ~ 54° (Tele)	H: 107° (Wide) ~ 56° (Tele) V: 57° (Wide) ~ 31° (Tele) D: 126° (Wide) ~ 64° (Tele)	H: 209° / V: 60°
Pan / Tilt / Rotate	0~360° (100° per CH) / 0~75° / 0~90°	0° ~ 355° /0° ~ 78° /0° ~180°	0° ~ 355° /0° ~78° /0° ~ 180°	0° ~ 360° / 0° ~ 65° / –
IR Viewable Length	20m(65.62ft)	25m (82ft)	25m (82ft)	20m (65.62ft)
Day & Night	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)
Wide Dynamic Range	120dB	extremeWDR (120dB)	extremeWDR (120dB)	extremeWDR (120dB)
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V	WiseNR Ⅱ (Based on AI engine), SSNR V
Digital Image Stabilization	–			
Analytics	**Classified object type:** Person/Face/Vehicle/License plate **Attributes:** Vehicle (Type: Car/Bus/Truck/Motorcycle/Bicycle) **Support Detection shot** **Analytics events based on AI engine** – Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) **Analytics events** – Motion detection, Tampering, Virtual area(Appear/Disappear) Audio detection, Sound classification (with NW I/O box SPM-4210)	**Classified object type**: Person/Face/Vehicle/License plate **Attributes:** Vehicle(Type: car/bus/truck/motorcycle/bicycle) **Support BestShot** **Analytics events based on AI engine** – Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) **Analytics events** – Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Virtual area(Appear/Disappear)		
Business Intelligence	–			
Alarm I/O	2 configurable I/O ports * Support extra alarm I/O via optional SPM-4210 I/O box	Support Alarm via optional SPM-4210 I/O box	Support Alarm via optional SPM-4210 I/O box	2 configurable I/O ports
Audio I/O	Selectable(mic in/line in) / –	Audio in/out via optional SPM-4210 I/O box	Audio in/out via optional SPM-4210 I/O box	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG			
WiseStream	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)	WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)
Streaming	Up to 4 profiles per channel	Unicast (10 users) / Multicast 5 profiles per channel	Unicast(10 users) / Multicast 5 profiles per channel	Unicast(20 users) / Multicast Multiple streaming (Up to 3 profiles, 2 virtual channel support)
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 1TB(512GBx2)	micro SD/SDHC/SDXC 1slot Max. 512GB	micro SD/SDHC/SDXC 1slot Max. 512GB	micro SD/SDHC/SDXC 2slot Max. 1TB(512GB * 2)
Application Programming Interface	ONVIF Profile S/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/T, SUNAPI(HTTP API) Open platform	ONVIF Profile S/T, SUNAPI(HTTP API) Open platform	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) * Start up should be done at above -35°C 0~95% RH(non-condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F ~ +131°F) / Less than 95% RH(Non-condensing)	-40°C~+55°C(-40°F ~ +131°F) / Less than 95% RH(Non-condensing)	-40°C~+55°C(-40°F~+131°F) / 0~95% RH(non-condensing)
Certification	IP66, NEMA4X, IK09	IP66, IP67, NEMA4X, IK10	IP66, IP67, NEMA4X, IK10	IP66, IK10, NEMA4X
Power Consumption	–	PoE+: Max 21W, typical 16.5W	PoE+: Max 20W, typical 15.5W	PoE+: Max 24.5W, typical 11.3W 12VDC: Max 22.0W, typical 10.4W Power redundancy failover
Product Dimensions / Weight	ø 200x80mm(ø 7.87x3.15"), 1380g(3.04 lb)	215(W)x135(D)x93.2(H)mm(8.46"x5.31"x3.67"), 1330g	215(W)x135(D)x93.2(H)mm(8.46"x5.31"x3.67"), 1330g	ø 253x170mm(9.96"x6.69"), 2900g(6.39lb)



QNE-C9013RL
8MP AI Dual Light Flateye Camera



QNE-C8013RL
5MP AI Dual Light Flateye Camera



QNO-C9083R
8MP IR Bullet Camera



QNO-C8083R
5MP IR Bullet Camera



QNO-C6083R
2MP IR Bullet Camera

Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	8MP / 30fps	5MP/30fps	8MP/30fps	5MP/30fps	2MP/30fps
Min. Illumination	Color: 0.034Lux (F1.6, 1/30sec) BW: 0.0034Lux (F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.022Lux (F1.2, 1/30sec) BW: 0.0022Lux (F1.2, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.06Lux(F1.6, 1/30sec, 30IRE) BW: 0.006Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.07Lux(F1.6, 1/30sec, 30IRE) BW: 0.007Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux (F1.6, 1/30sec) BW: 0.004Lux (F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	–	–	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	3.0mm fixed focal	3.0mm fixed focal	3.2~10.2mm(3.2x) motorized varifocal	3.2~10.2mm(3.2x) motorized varifocal	3.2~10.2mm(3.2x) motorized varifocal
Angular Field of View	H: 108° / V: 59° / D: 127°	H: 97° / V: 53° / D: 113°	H: 104°(Wide)~31°(Tele) V: 55°(Wide)~17°(Tele) D: 124°(Wide)~35°(Tele)	H: 95°(Wide)~29°(Tele) V: 69°(Wide)~21°(Tele) D: 126°(Wide)~36°(Tele)	H: 102.0°(Wide)~32.2°(Tele) V: 54.2°(Wide)~18.3°(Tele) D: 119.0°(Wide)~36.7°(Tele)
Pan / Tilt / Rotate	0°~350° / 0°~75° / 0°~360°	0°~350° / 0°~75° / 0°~360°	0°~360° / 0°~100° / 0°~360°	0°~360° / 0°~100° / 0°~360°	0°~360° / 0°~100° / 0°~360°
IR Viewable Length	White LED : 30m(98.42ft) IR : 30m(98.42ft)	White LED : 30m(98.42ft) IR : 30m(98.42ft)	30m(98.42ft)	30m(98.42ft)	40m(131.23ft)
Day & Night	Auto(ICR)				
Wide Dynamic Range	120dB	120dB	120dB	120dB	120dB
Digital Noise Reduction	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)
Digital Image Stabilization	–	–	–	–	–
Analytics	**Classified object type:** Person/Vehicle **Attributes:** Person, Vehicle(Type: car/bus/truck/motorcycle/bicycle) **Support BestShot per object** **Analytics events based on AI engine** –Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit), Face mask detection, Social distancing detection, Slip&Fall detection, Motion Detection **Analytics events** – Defocus detection, Tampering, Virtual area(Appear/Disappear) **Support WiseDetector for Adding custom objects** *Some of the video analytics only works with people and vehicle detection				
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap				
Alarm I/O	–	–	Input 1ea / Output 1ea	Input 1ea / Output 1ea	Input 1ea / Output 1ea
Audio I/O	–	–	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out
Video Compression	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)				
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles)				
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API), Hanwha Vision Open Platform				
Operating Temperature / Humidity	–40°C~+60°C(–40°F~+140°F) / 0~95% RH * Start up should be done at above –30°C Humidity control with AIR vent	–40°C~+60°C(–40°F~+140°F) / 0~95% RH * Start up should be done at above –30°C Humidity control with AIR vent	–30°C~+55°C(–22°F~+131°F) / 0~95% RH(non-condensing) * Start up should be done at above –30°C Humidity control with AIR vent	–30°C~+55°C(–22°F~+131°F) / 0~95% RH(non-condensing) * Start up should be done at above –30°C Humidity control with AIR vent	–40°C~+55°C(–40°F ~ +131°F) / 0~95% RH(non-condensing) Humidity control with AIR vent
Certification	IP66/IP67, IK10	IP66/IP67, IK10	IP66, IK10	IP66, IK10	IP66, IK10
Power Consumption	PoE: Max 10.0W, typical 4.5W	PoE: Max 10.0W, typical 4.5W	PoE: Max 12W, typical 5.3W	PoE: Max 12W, typical 5.3W	PoE: Max 8.9W, typical 3.7W
Product Dimensions / Weight	ø 140.0x99.6mm(ø 5.51x3.92"), 790g(1.74 lb)	ø 140.0x99.6mm(ø 5.51x3.92"), 790g(1.74 lb)	ø 93.4x245.8mm(ø 3.68x9.68"), 930g(2.05 lb)	ø 93.4x245.8mm(ø 3.68x9.68"), 930g(2.05 lb)	ø 93.4x245.8mm(ø 3.68x9.68"), 930g(2.05 lb)



QNV-C9083R
8MP IR Vandal Dome Camera



QNV-C8083R
5MP IR Vandal Dome Camera



QNV-C6083R
2MP IR Vandal Dome Camera



QNV-C9011R
8MP IR Vandal Dome Camera

Imaging Device	1/2.8" CMOS			
Resolution / Max. Frame Rate	8MP/30fps	5MP / 30fps	2MP / 30fps	8MP / 30fps
Min. Illumination	Color: 0.06Lux(F1.6, 1/30sec, 30IRE) BW: 0.006Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.07Lux(F1.6, 1/30sec, 30IRE) BW: 0.007Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.04Lux (F1.6, 1/30sec) BW: 0.004Lux (F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.03Lux(F1.6, 1/30sec, 30IRE) BW: 0.003Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation HDMI: 1080p@30/25fps (60/50Hz) * HDMI out is supported through an optional cable(SPP-C1900)	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	3.2~10.2mm(3.2x) motorized varifocal	3.2~10.2mm(3.2x) motorized varifocal	3.2~10.2mm(3.2x) motorized varifocal	3.0mm fixed focal
Angular Field of View	H: 104°(Wide)~31°(Tele) V: 55°(Wide)~17°(Tele) D: 124°(Wide)~35°(Tele)	H: 95°(Wide)~29°(Tele) V: 69°(Wide)~21°(Tele) D: 126°(Wide)~36°(Tele)	H: 102.0°(Wide)~32.2°(Tele) V: 54.2°(Wide)~18.3°(Tele) D: 119.0°(Wide)~36.7°(Tele)	H: 108°/ V: 59°/ D: 127°
Pan / Tilt / Rotate	0°~350° / -35°~70°/ 0°~355°	0°~350° / -35°~70°/ 0°~355°	0°~350° / -35°~70° / 0°~355°	0°~350° / -35°~70° / 0°~355°
IR Viewable Length	30m(98.42ft)	30m(98.42ft)	40m(131.23ft)	20m(65.62ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	120db			
Digital Noise Reduction	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)			
Digital Image Stabilization	-			
Analytics	**Classified object type:** Person/Vehicle **Attributes**: Person, Vehicle(Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine** - Motion detection*, Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** - Defocus detection, Tampering, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection			
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap			
Alarm I/O	Input 1ea / Output 1ea * Alarm I/O is supported through an optional cable(SPP-C7400)			-
Audio I/O	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	-
Video Compression	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅲ	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles)			
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform			
Operating Temperature / Humidity	-30°C~+55°C(-22°F~+131°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C Humidity control with AIR vent	-30°C~+55°C(-22°F~+131°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) / 0~95% RH(non-condensing) Humidity control with AIR vent	-40°C~+55°C(-40°F~+131°F) / 0~95% RH * Start up should be done at above -30°C Humidity control with AIR vent vapor control
Certification	IP66, IK10	IP66, IK10	IP66, IK10	IP66, IK10, NEMA4X
Power Consumption	PoE: Max 12.95W, typical 5.3W	PoE: Max 12.95W, typical 5.3W	PoE: Max 9.8W, typical 4.0W	PoE: Max 8.5W, typical 4.9W
Product Dimensions / Weight	ø140x110.2mm(ø5.51x4.34"), 875g(1.93lb)	ø140x110.2mm(ø5.51x4.34"), 875g(1.93 lb)	ø140x110.2mm(ø5.51x4.34"), 850g(1.87 lb)	ø110x77mm(ø4.33x3.03"), 522g(1.15 lb)

	 QNV-C8011R 5MP IR Vandal Dome Camera	 QNV-C8012 5MP Vandal Dome Camera	 TNO-C8083E 5MP AI Explosion-proof bullet camera
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" 5MP CMOS
Resolution / Max. Frame Rate	5MP / 30fps	5MP / 30fps	5MP / 30fps
Min. Illumination	Color: 0.03Lux(F1.6, 1/30sec, 30IRE) BW: 0.003Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.05Lux(F2.0, 1/30sec, 30IRE) BW: 0.005Lux(F2.0, 1/30sec, 30IRE)	Color: 0.07Lux(F1.6, 1/30sec, 30IRE) BW: 0.007Lux(F1.6, 1/30sec, 30IRE)
Video Out	USB: Micro USB Type B, 1280x720 for installation	USB: Micro USB Type B, 1280x720 for installation	-
Focal Length (Zoom Ratio)	3.0mm fixed focal	2.4mm fixed focal	3.2~10.2mm(3.2x) motorized varifocal
Angular Field of View	H: 100° / V: 73° / D: 129°	H: 123° / V: 91° / D: 159°	H: 95°(Wide)~29°(Tele) V: 69°(Wide)~21°(Tele) D: 126°(Wide)~36°(Tele)
Pan / Tilt / Rotate	0°~350° / -35°~70° / 0°~355°	0°~350° / -35°~70° / 0°~355°	-
IR Viewable Length	20m(65.62ft)	-	-
Day & Night	Auto(ICR)		
Wide Dynamic Range	120dB		
Digital Noise Reduction	SSNR Ⅴ, WiseNR Ⅱ (Based on AI engine)		
Digital Image Stabilization		-	-
Analytics	**Classified object type**: Person/Vehicle **Attributes**: Person, Vehicle(Type:car/bus/truck/motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine** - Motion detection*, Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** - Defocus detection, Tampering, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection		
Business Intelligence	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap		
Alarm I/O	-	-	-
Audio I/O	-	-	-
Video Compression	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 5profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	-
Application Programming Interface	ONVIF Profile S/G/T/M, SUNAPI(HTTP API) Hanwha Vision Open Platform		ONVIF Profile S/T/M SUNAPI(HTTP API)
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / 0~95% RH * Start up should be done at above -30°C Humidity control /w Air vapor control	-40°C~+55°C(-40°F~+131°F) / 0~95% RH * Start up should be done at above -30°C Humidity control /w Air vapor control	-30°C~+55°C(-22°F ~ +131°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X	CE, KC, IP66, IK10, ATEX, II 2 G Ex db IIC T6 Gb II 2 D Ex tb IIIC T80°C Db IECEx, Ex db IIC T6 Gb,Ex tb IIIC T80°C Db, JPEx, KCs
Power Consumption	PoE: Max 7W, typical 4.9W	PoE: Max 7W, typical 4.9W	PoE: Max 9.50W, typical 5.30W
Product Dimensions / Weight	ø110x77mm(ø4.33x3.03"), 522g(1.15lb)	ø110x77mm(ø4.33x3.03"), 522g(1.15lb)	ø110.5x316.2mm(ø4.35x12.44"), 4770g(10.51lb)








	TNO-C3032TRA	TNO-C3022TRA	TNO-C3012TRA	TNO-C3030TRA	TNO-C3020TRA	TNO-C3010TRA
	QVGA Radiometric AI Thermal Camera					
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)					
Resolution	768x576, 384x288(original)					
Max. Frame Rate	8fps			30fps		
NETD	<30mK					
Pixel pitch	17㎛					
Focal Length	9.7mm fixed focal	6.6mm fixed focal	4.4mm fixed focal	9.7mm fixed focal	6.6mm fixed focal	4.4mm fixed focal
Angular Field of View	H: 37.9° / V: 28.7° / D: 46.7° (iFoV: 1.8 mRad)	H: 60° / V: 43.8° / D: 77.8° (iFoV: 2.6 mRad)	H: 90° / V: 65.3° / D: 118.6° (iFoV: 3.9 mRad)	H: 37.9° / V: 28.7° / D: 46.7° (iFoV: 1.8 mRad)	H: 60° / V: 43.8° / D: 77.8° (iFoV: 2.6 mRad)	H: 90° / V: 65.3° / D: 118.6° (iFoV: 3.9 mRad)
Min. Object Distance	2.8m	1.4m	0.6m	2.8m	1.4m	0.6m
Video out	USB: Micro USB Type B, 768x576 for installation					
Analytics	**Classified object type**: Person/Vehicle **Support BestShot** **Analytics events based on AI engine** – WiseMD, Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** – Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection					
Alarm I/O	2 configurable I/O ports					
Audio I/O	Selectable(mic in/line in) Line out					
Temparature Detect Range	−40°C~550°C(−40°F~1,022°F)					
Temparature Accuracy	below 150°C: up to ± 2°C Above 150°C: up to ± 15% * based on measurements in a room temperature environment. Auto Temperature mode					
Temperature Detection	10 Polygonal ROI zones, whole FoV area					
Additional	Hybrid palettes, Spot temperature reading (ROI condition monitoring: Above/ Below/ Increase/ Decrease)					
WiseStream	Manual(5ea area), WiseStream Ⅱ, WiseStream Ⅲ (Based on AI engine)					
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)					
Edge Storage	Micro SD/SDHC/SDXC 1slot Max. 1TB					
Application Programming Interface	ONVIF Profile S/G/T/M , SUNAPI(HTTP API) Hanwha Vision Open Platform					
Memory	2GB RAM, 512MB Flash					
Operating Temperature	−40°C~+60°C(−40°F~+140°F) / 0~95% RH(non-condensing)					
Certification	IP66, IK10, NEMA4X					
Power Consumption	PoE: Max 10.8W, typical 9W 12VDC: Max 9.4W, typical 7.7W					
Dimensions (WxHxD) / Weight	ø 93.8x233.5mm(ø 3.69X/9.19"), 1700g(3.75 lb)					



TNM-C4960TD
Bi-spectrum AI Thermal Camera



TNM-C4950TD
Bi-spectrum AI Thermal Camera

	TNM-C4960TD		TNM-C4950TD	
	Thermal	**Visible**	**Thermal**	**Visible**
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <60mK)	1/1.8" CMOS	Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <60mK)	1/1.8" CMOS
Resolution / Max. Frame Rate	640x480 / 30fps	3840x2160 / 30fps	640x480 / 30fps	3840x2160 / 30fps
Min. Illumination	-	Color: 0.06Lux(F1.7, 1/30sec) BW: 0.005Lux(F1.7, 1/30sec)	-	Color: 0.06Lux(F1.7, 1/30sec) BW: 0.005Lux(F1.7, 1/30sec)
Video Out	USB : Micro USB Type B, 1280x720 for installation		USB : Micro USB Type B, 1280x720 for installation	
Focal Length (Zoom Ratio)	25mm fixed focal	10.9~29mm(2.6x) motorized varifocal	13.5mm fixed focal	10.9~29mm(2.6x) motorized varifocal
Angular Field of View	H: 17.4°, V: 13.1°, D: 21.6° (iFoV: 0.48 mRad)	H:42.0°(Wide)~15.0°(Tele) / V:22.8°(Wide)~8.4°(Tele) / D:48.7°(Wide)~17.1°(Tele)	H: 31.9°V: 24.2°, D: 39.5° (iFoV: 0.89 mRad)	H:42.0°(Wide)~15.0°(Tele) / V:22.8°(Wide)~8.4°(Tele) / D:48.7°(Wide)~17.1°(Tele)
Pan / Tilt / Rotate	−170°~+170°/ −40°~50°/ -		−170°~+170° / −40°~50°/ -	
IR Viewable Length	-		-	
Day & Night	-	Auto(ICR)	-	Auto(ICR)
Wide Dynamic Range	-	WDR(120dB)	-	WDR(120dB)
Digital Noise Reduction	-	SSNR V, WiseNR II	-	SSNR V, WiseNR II
Digital Image Stabilization	-	Support(built-in gyro sensor)	-	Support(built-in gyro sensor)
Analytics	**Analytics events based on AI engine** : Object detection (Person/Vehicle), Bestshot, IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam **Analytics events** : Motion detection	**Analytics events based on AI engine** - Object detection(Person, face, Vehicle(car/bus/truck/motorcycle/bicycle), License plate), Bestshot, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection	**Analytics events based on AI engine** : Object detection (Person/Vehicle), Bestshot, IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam **Analytics events** : Motion detection	**Analytics events based on AI engine** - Object detection(Person, face, Vehicle(car/bus/truck/motorcycle/bicycle), License plate), Bestshot, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection
Business Intelligence	Vehicle counting		Vehicle counting	
Alarm I/O	4 configurable I/O ports		4 configurable I/O ports	
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms		Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	
Video Compression	H.265/H.264: Main/High, MJPEG		H.265/H.264: Main/High, MJPEG	
WiseStream	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅲ	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅲ
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)		Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)	
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB		micro SD/SDHC/SDXC 2slots 512GB	
Application Programming Interface	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform (visible channel only)			
Operating Temperature / Humidity	-40°C to +60°C(-58°F to +140°F) * Start up should be done at above -30°C less than 95% RH(non-condensing)		-40°C to +60°C(-58°F to +140°F) * Start up should be done at above -30°C less than 95% RH(non-condensing)	
Certification	IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)		IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)	
Power Consumption	PoE+ : Max 23.5W, Typ 16.0W 12VDC : Max 19.5W, Typ 14.0W		PoE+ : Max 23.5W, Typ 16.0W 12VDC : Max 19.5W, Typ 14.0W	
Product Dimensions / Weight	353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")/ 4.53kg(9.99lb)		353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")/ 4.53kg(9.99lb)	





	TNM-C4940TD Bi-spectrum AI Thermal Camera		TNM-C4942TDR Radiometric Bi-spectrum AI Thermal Camera	
Imaging Device	Thermal Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <60mK)	Visible 1/1.8" CMOS	Thermal Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <60mK)	Visible 1/1.8" CMOS
Resolution / Max. Frame Rate	640x480 / 30fps	3840x2160 / 30fps	640x480 / 8fps	3840x2160 / 30fps
Min. Illumination	-	Color: 0.06Lux(F1.3, 1/30sec) BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)	-	Color: 0.06Lux(F1.3, 1/30sec) BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)
Video Out	USB : Micro USB Type B, 1280x720 for installation		USB : Micro USB Type B, 1280x720 for installation	
Focal Length (Zoom Ratio)	9.1mm fixed focal	4.4~9.3mm(2.2x) motorized varifocal	9.1mm fixed focal	4.4~9.3mm(2.2x) motorized varifocal
Angular Field of View	H: 50.0° / V: 37.0° / D: 63.8° (iFoV: 1.319 mRad)	H:112.1°(Wide) ~ 47.5°(Tele) / V:58.0°(Wide) ~ 26.6°(Tele) / D:137.5°(Wide) ~ 54.6°(Tele)	H: 50.0° / V: 37.0° / D: 63.8° (iFoV: 1.319 mRad)	H:112.1°(Wide)~47.5°(Tele) / V:58.0°(Wide)~26.6°(Tele) / D:137.5°(Wide)~54.6°(Tele)
Pan / Tilt / Rotate	-170° ~+170° / -40° ~50° / -			
IR Viewable Length	-	30m (98.42ft)	-	30m (98.42ft)
Day & Night	-	Auto(ICR)	-	Auto(ICR)
Wide Dynamic Range	-	WDR(120dB)	-	WDR(120dB)
Digital Noise Reduction	-	SSNR V, WiseNR II	-	SSNR V, WiseNR II
Digital Image Stabilization	-	Support(built-in gyro sensor)	-	Support(built-in gyro sensor)
Analytics	**Analytics events based on AI engine** : Object detection (Person/Vehicle), Bestshot, IVA (Virtual line/ Area, Enter/Exit, Loitering, direction, intrusion), Stopped vehicle, Traffic jam **Analytics events** : Motion detection	**Analytics events based on AI engine** : Object detection(Person, face, Vehicle (car/bus/truck/motorcycle/bicycle), License plate), Bestshot, Virtual line*(Crossing/Direction), Virtual area *(Loitering/Intrusion/Enter/Exit), Stopped vehicle, Traffic jam **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection	**Classified object type** : Person/Vehicle Support BestShot **Analytics events based on AI engine** : Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** : Motion detection, Temperature detection	**Classified object type**: Person/Face/Vehicle/License plate Attributes: Vehicle (Type:car/bus/truck/motorcycle/bicycle) Support BestShot **Analytics events based on AI engine** : Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection
Business Intelligence	Vehicle counting		-	
Alarm I/O	4 configurable I/O ports		4 configurable I/O ports	
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms		Selectable(mic in/line in) Line out Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	
Video Compression	H.265/H.264: Main/High, MJPEG		H.265/H.264: Main/High, MJPEG	
WiseStream	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅲ	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅲ
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)		Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)	
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB		Micro SD/SDHC/SDXC 2slots 512GB	
Application Programming Interface	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform (visible channel only)			
Operating Temperature / Humidity	-40°C to +60°C(-58°F to +140°F) * Start up should be done at above -30°C less than 95% RH(non-condensing)		-40°C to +60°C(-58°F to +140°F) * Start up should be done at above -30°C less than 95% RH(non-condensing)	
Certification	IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)		IP66/IP67, IK10, NEMA4X, NEMA TS 2(2.2.8, 2.2.9)	
Power Consumption	PoE+ : Max 25.5W, Typ 16.0W 12VDC : Max 21.5W, Typ 14.0W		PoE+ : Max 25.5W, Typ 16.0W 12VDC : Max 21.5W, Typ 14.0W	
Product Dimensions / Weight	353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")/ 4.53kg(9.99lb)		353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")/ 4.53kg(9.99lb)	





	TNM-C4940TDR Radiometric Bi-spectrum AI Thermal Camera		TNM-C3622TDR Radiometric Bi-spectrum AI Thermal Camera	
Imaging Device	Thermal Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <60mK)	Visible 1/1.8" CMOS	Thermal Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <50mK)	Visible 1/2.8" 2MP CMOS
Resolution / Max. Frame Rate	640x480 / 30fps	3840x2160 / 30fps	320x240/ 8fps	1920x1080 / 30fps
Min. Illumination	-	Color: 0.06Lux(F1.3, 1/30sec) BW: 0.004Lux(F1.3, 1/30sec), 0Lux(IR LED on)	-	Color: 0.05 lux(F1.6, 1/30sec) B/W: 0.005 lux(F1.6, 1/30sec)
Video Out	USB : Micro USB Type B, 1280x720 for installation		CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB : Micro USB Type B, 1280x720 for installation	
Focal Length (Zoom Ratio)	9.1mm fixed focal	4.4~9.3mm(2.2x) motorized varifocal	4.7mm fixed focal	4mm fixed focal
Angular Field of View	H: 50.0° / V: 37.0° / D: 63.8° (iFoV: 1.319 mRad)	H:112.1°(Wide)~47.5°(Tele) / V:58.0°(Wide)~26.6°(Tele) / D:137.5°(Wide)~54.6°(Tele)	H: 50.0° / V: 36.4° / D: 65.3° (iFoV: 2.553 mRad)	H: 87.6° / V: 46.4° / D: 104.5°
Pan / Tilt / Rotate	-170°~+170° / -40°~50° / -		-	
IR Viewable Length	-		-	
Day & Night	-	Auto(ICR)	-	Auto(ICR)
Wide Dynamic Range	-	WDR(120dB)	-	extremeWDR(150dB)
Digital Noise Reduction	-	SSNR V, WiseNR II	-	SSNR V
Digital Image Stabilization	-	Support(built-in gyro sensor)	-	Support (built-in gyro sensor)
Analytics	**Classified object type** : Person/Vehicle **Support BestShot** **Analytics events based on AI engine** : Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** Motion detection, Temperature detection	**Classified object type** : Person/Face/Vehicle/License plate Attributes: Vehicle(Type:car/bus/truck/motorcycle/bicycle) **Support BestShot** **Analytics events based on AI engine** : Object detection, Virtual line(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection	Directional detection, Motion detection, Enter/Exit, Virtual line, Temperature detection	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection AI based Object detection (person/face, visible channel only)
Business Intelligence	-		-	
Alarm I/O	4 configurable I/O ports		Input 1ea / Output 2ea	
Audio I/O	Selectable (mic in/line in) / Line out		Selectable (mic in/line in) / Line out	
Video Compression	H.265/H.264: Main/High, MJPEG		H.265/H.264: Main/Baseline/High, MJPEG	
WiseStream	WiseStream II	Manual(5ea area), WiseStream III	WiseStream II	Manual(5ea area), WiseStream II
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 3 profiles)		Unicast(20 users) / Multicast Multiple streaming(Up to 6 profiles)	
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB		Micro SD/SDHC/SDXC 1slot 256GB	
Application Programming Interface	ONVIF Profile S/T SUNAPI(HTTP API) Hanwha Vision Open Platform (visible channel only)		ONVIF Profile S/T/M SUNAPI(HTTP API)	
Operating Temperature / Humidity	-40°C to +60° C(-58°F to +140°F) * Start up should be done at above -30°C 0~95% RH(non-condensing)		-10°C~+55°C(+14°F~+131°F) / Less than 95% RH	
Certification	IP66/IP67, IK10, NEMA 4X, NEMA TS 2(2.2.8, 2.2.9)		-	
Power Consumption	PoE+ : Max 25.5W, Typ 16.0W / 12VDC : Max 21.5W, Typ 14.0W		PoE+: Max. 17.0W, typical 12.5W / 12VDC: Max. 14.5W, typical 11.0W	
Product Dimensions / Weight	353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53"), 4.53kg(9.99lb)		135(W)x75(H)x188.5(D)mm, (5.31x2.95x7.42"), 1.7kg(3.77lb)	



TNM-C3620TDR
Radiometric Bi-spectrum AI Thermal Camera



TNB-9000
8K Box Camera



TNV-C7013RC
AI Corner Mount Camera



TNV-C8011RW
AI Wall Mount Camera

	TNM-C3620TDR		TNB-9000	TNV-C7013RC	TNV-C8011RW
Imaging Device	Thermal: Uncooled micro bolometer (Spectral range: 8~14㎛, 12㎛, <50mK)	Visible: 1/2.8" 2MP CMOS	43.3mm Full-frame CMOS	1/1.8" progressive CMOS	1/2.8" progressive 5MP CMOS
Resolution / Max. Frame Rate	320x240 / 30fps	1920x1080 / 30fps	8K / 15fps, 24MP / 20fps, 15MP / 30fps, 4K / 60fps	3MP / 30fps	5MP / 30fps
Min. Illumination	-	Color: 0.05 lux(F1.6, 1/30sec) B/W: 0.005 lux(F1.6, 1/30sec)	Color: 0.015Lux(F1.4) BW: 0.0015Lux(F1.4)	Color: 0.04Lux(F2.0, 1/30sec, 30IRE) BW: 0.04Lux(F2.0, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.038Lux(F1.6, 1/30sec, 30IRE) BW: 0.0038Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED on)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB : Micro USB Type B, 1280x720 for installation		HDMI	-	USB: Micro USB Type B, 1280x720 for installation
Focal Length (Zoom Ratio)	4.7mm fixed focal	4mm fixed focal	-	2.39mm fixed focal	1.6mm fixed focal
Angular Field of View	H: 50.0° / V: 36.4° / D: 65.3 ° (iFoV: 2.553 mRad)	H: 87.6° / V: 46.4° / D: 104.5°	Canon 24mm, H: 57.4° ,Canon 35mm, H: 42.6° Canon 50mm, H: 30.9° ,Canon 85mm, H: 19.1° Canon 100mm, H: 16.0° ,Canon 70-200mm, H: 22.8° ~ 8.0°	H: 128° / V: 100°	H: 175° / V: 125° / D: 175°
IR Viewable Length	-		-	Wise IR 15m (49.21ft), invisible 940mm wavelength	15m(49.21ft)
Day & Night	-	Auto(ICR)	Auto (ICR)	Auto (ICR)	Auto(ICR)
Wide Dynamic Range	-	extremeWDR(150dB)	-	extremeWDR (120dB)	120dB
Digital Noise Reduction	-	SSNR V	SSNR V	SSNR V , WiseNR Ⅱ (Based on AI engine)	SSNR V , WiseNR II (Based on AI engine)
Digital Image Stabilization	-	Support(built-in gyro sensor)	-	Support	-
Analytics	Directional detection, Motion detection, Enter/Exit, Virtual line, Temperature detection	Directional detection, Motion detection, Enter/ Exit, Tampering, Virtual line, Audio detection **AI based Object detection** (person/face, visible channel only)	Intelligent analytics, Audio detection, Sound classification	**Classified object type** : Person/Face/Vehicle/ License plate **Support DetectionShot** **Analytics events based on AI engine** : Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) **Analytics events** : Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Virtual area(Appear/Disappear), **Clothes color detection** (Orange/Black/Red, @400lux)	**Classified object type**: Person/Face/ Vehicle Attributes: Vehicle(Type:car/bus/truck/ motorcycle/bicycle) **Support DetectionShot** **Analytics events based on AI engine** - Motion detection*, Object detection, Virtual line*(Crossing/Direction), Virtual area*(Loitering/Intrusion/Enter/Exit) **Analytics events** - Defocus detection, Tampering, Shock detection, Virtual area(Appear/Disappear) * Some of the video analytics only works with people and vehicle detection
Business Intelligence	-		-	-	Based on AI engine: People counting, Vehicle counting, Queue management, Heatmap
Alarm I/O	Input 1ea / Output 2ea		1 / 1	2 configurable I/O ports * Support Alarm via optional SPM-4210 I/O box	-
Audio I/O	Selectable (mic in/line in) / Line out		Selectable (mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Built-in mic only / -
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG		H.265, H.264, MJPEG	H.265/H.264, MJPEG	H.265/H.264: Main/High, MJPEG
WiseStream	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	WiseStream II	Manual(5ea area), WiseStream Ⅱ , WiseStream Ⅲ (Based on AI engine)	Manual(5ea area), WiseStream Ⅲ (Based on AI engine)
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 6 profiles)		Up to 3 Profiles	Up to 10 profiles, 3 virtual channel support	Unicast(20 users) / Multicast Multiple streaming(Up to 5 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB		micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 1slot 1TB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/T/M SUNAPI(HTTP API)		ONVIF Profile S/G/T SUNAPI	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T/M SUNAPI(HTTP API)
Operating Temperature / Humidity	-10°C~+55°C(+14°F~+131°F) / Less than 95% RH		0℃ ~ +45℃ (32°F ~ +122°F)	-10°C ~ +55°C (14°F ~ +131°F) 0~95% RH(non-condensing) Humidity control with AIR vent	-30° C ~ +55° C(-22° F ~ +131° F) / Less than 95% RH
Certification	-		EMC	IP66, IP6K9K, IK10+	IP66, IK10
Power Consumption	PoE+: Max. 17.0W, typical 12.5W 12VDC: Max. 14.5W, typical 11.0W		PoE: Max 30W, typical 20W 12VDC: Max 26W, typical 18W	PoE: Max 12.95W, typical 9.7W DC : Max 12.7W, typical 9.0W	Max 11.5W / Typ 4.8W
Product Dimensions / Weight	135(W)x75(H)x188.5(D)mm, (5.31x2.95x7.42"), 1.7kg(3.77lb)		120x118.5x179mm, 2.2kg (4.85 lb)	198.3(W)x104.8(H)x198.6(D)mm (7.87"x4.13"x7.82"), 1,935g (4.27lb)	80(W)x167(H)x57(D)mm(3.15x6.56x2.24"), 600g(1.32 lb)

AI ANPR Camera

					
	PNO-A9311RLP **8MP 31x Zoom LPR/ANPR/MMCR IR Bullet Camera**	**PNO-A9081RLP** **8MP AI LPR IR Bullet Camera**	**PNV-A9081RLP** **8MP AI LPR IR Vandal Dome Camera**	**PNB-A9001LP** **8MP AI LPR Box Camera**	**TNO-7180RLP** **3MP AI LPR Box Camera**
Imaging Device	1/1.8" CMOS	1/1.8" CMOS	1/1.8" CMOS	1/1.8" CMOS	1/1.8" CMOS, Global Shutter
Resolution / Max. Frame Rate	4K / 30fps	8MP / 30fps	8MP / 30fps	8MP / 30fps	3MP / 55fps
Min. Illumination	Color: 0.075Lux(F1.36, 1/30sec, 30IRE) BW: 0.0075Lux(F1.36, 1/30sec, 30IRE), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.03Lux(F1.2, 1/30sec) B/W : 0.003Lux(F1.2, 1/30sec)	Color 0.1 Lux (1/30sec, gain 48dB)
Video Out	CVBS: 1.0 Vp-p, Micro USB Type B	CVBS: 1.0 Vp-p, Micro USB Type B	CVBS: 1.0 Vp-p, Micro USB Type B	CVBS: 1.0 Vp-p, Micro USB Type B	CVBS: 1.0 Vp-p, Micro USB Type B
Focal Length (Zoom Ratio)	6.91~214.7mm (31x) motorized varifocal	4.5~10mm(2.2x) motorized varifocal	4.5 ~10mm (2.2x) motorized varifocal	-	6.8~120mm(18x) motorized varifocal
Angular Field of View	H: 60.92°(Wide)~2.2°(Tele) V:35.26°(Wide)~1.24°(Tele) D:69.18°(Wide)~2.52°(Tele)	H:101.4°(Wide)~45.5°(Tele) V:53.6°(Wide)~25.5°(Tele) D:120.7°(Wide)~52.3°(Te le)	H:101.4°(Wide)~45.5°(Tele) V:53.6°(Wide)~25.5°(Tele) D:120.7°(Wide)~52.3°(Tele)	-	H: 54.5 º (Wide)~3.4 º (Tele) V: 42.3 º (Wide)~2.5 º (Tele)
Pan / Tilt / Rotate	-	-	0°~360° / -45°~85° / 0°~355°	-	-
IR Viewable Length	WiseIR 70m(229.66ft)	30m(98.42ft)	30m(98.42ft)	-	WiseIR 50m (164ft)
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto (ICR)
Wide Dynamic Range	120dB	-	-	-	-
Digital Noise Reduction	SSNR V	SSNR V	SSNR V	SSNR V	SSNR V
Digital Image Stabilization	Support (built-in gyro sensor)	Support (built-in gyro sensor)	-	-	-
Analytics	-	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection	Motion detection, Tampering, Virtual line(Crossing/Direction), Virtual Area(Loitering/Intrusion/Enter/Exit, Appear/Disappear)
Business Intelligence	-	-	-	-	-
Alarm I/O	2 configurable I/O ports, DC 12V output (Max. 50mA)	1/1	1/1	1/1	4 configurable I/O ports
Audio I/O	Selectable(mic in/line in) / Line out	Selectable (mic in/line in/built-in mic) / Line out	Selectable(mic in/line in/built-in mic) / Line out	Selectable(mic in/line in/built-in mic) / Line out	Selectable(mic in/line in) / Line out
Video Compression	H.265/H.264: Main/High, MJPEG	H.265 / H.264, MJPEG	H.265/H.264, MJPEG	H.265/H.264: Main/High, MJPEG	H.265 / H.264, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ
Streaming	Micro SD/SDHC/SDXC 1slot (32GB Card preinstalled)	Up to 3 profiles	Up to 3 profiles	Up to 3 profiles	Up to 10 Profiles
Edge Storage	Micro SD/SDHC/SDXC 1slot (32GB Card preinstalled)	Pre-installed with 32GB Micro SD to support 10,000 LPR images	Pre-installed with 32GB Micro SD to support 10,000 LPR images	Pre-installed with 32GB Micro SD to support 10,000 LPR images	Micro SD/SDHC/SDXC 1slot (32GB Card preinstalled)
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API)	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Operating Temperature / Humidity	-40°C ~ +55°C(-40°F ~ +131°C) / Less than 90% RH * Start up should be done at above -30°C	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C	-10°C ~ +55°C(+14°F ~ +131°F) / Less than 90% RH	-40°C~+55°(-40°F ~ +131°F) / Less than 95% RH(Noncondensing
Certification	IP66/IP67, IK10, NEMA4X	IP66/IP67, IK10, NEMA4X	IP66/IP67/IP6K9K, IK10+, NEMA4X	-	IP66, IK10, NEMA 4X, NEMA TS 2(2.2.8, 2.2.9)
Power Consumption	PoE+: Max 25.5W, typical 14.0W 12VDC: Max 24.0W, typical 12.7.W	PoE+: Max 20.0W, 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 16.50W, typical 12.50W 12VDC: Max 13.50W, typical 10.80W	PoE : Max 50W, Typical 27W 12VDC : Max 47.5W, Typical 25W
Product Dimensions / Weight	Ø136.2x358.7mm(ø5.36x14.12"") (Without sunshield), 3200g(7.05lb) * backbox: ø160mm(ø6.30"")	Ø91.0x368.6mm (3.58" x 14.51") (Without sunshield), 2.48Kg (5.47lb)	Ø180x125mm(7.09x4.92"),1.90Kg (4.19lb)	81x67x165mm(3.19x2.64x6.48"), 0.88kg(1.94lb)	186.9(W) x259.3(H) x 293.7(D) (mm) / 4.8kg (10.5 lb)

	SolidEDGE  **PNV-A6081R-E1T** **2MP Camera with 1TB Rugged SSD**	SolidEDGE  **PNV-A6081R-E2T** **2MP Camera with 2TB Rugged SSD**	 **TNS-9050IBC** **Barcode Reader Camera**
Imaging Device	1/2" CMOS	1/2" CMOS	Global Shutter Mono 1" CMOS / Global Shutter Color 1" CMOS
Resolution / Max. Frame Rate	2MP/120fps	2MP/120fps	Mono: Max 4096x2160, Max 20fps Color: Max 4096x2160, Max 20fps
Min. Illumination	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) BW: 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	Color: 0.007Lux(F1.3, 1/30sec, 30IRE) BW: 0.0007Lux(F1.3, 1/30sec, 30IRE), 0Lux(IR LED on), 30/25fps	–
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation	–
Focal Length (Zoom Ratio)	4.38~9.33mm(2.13x) motorized varifocal	4.38~9.33mm(2.13x) motorized varifocal	25mm
Angular Field of View	H: 104°(Wide)~44°(Tele) V: 55°(Wide)~24°(Tele) D: 124°(Wide)~51°(Tele)	H: 104°(Wide)~44°(Tele) V: 55°(Wide)~24°(Tele) D: 124°(Wide)~51°(Tele)	Mono: H30.4° / V16.6° / D34.2° Color: H30.4° / V16.6° / D34.2°
Pan / Tilt / Rotate Range	0°~360° / 0°~85° / 0°~355°	0°~360° / 0°~ 85° / 0°~355°	–
IR Viewable Length	40m(131.23ft)	40m(131.23ft)	–
Day & Night	Auto(ICR)	Auto(ICR)	–
Wide Dynamic Range	120dB	120dB	–
Digital Noise Reduction	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ	WiseNR Ⅱ (Based on AI engine), SSNR Ⅴ	SSNR Ⅴ
Digital Image Stabilization	–	–	–
Analytics	**Classified object type**: Person/Face/Vehicle/License plate Attributes: Person(Gender, Color and Bag), Face(Age, Gender, Mask and Glasses), Vehicle(Type: car/bus/truck/motorcycle/bicycle and Color) **Support BestShot per object** **Analytics events based on AI engine** – Object detection, Virtual line*(Crossing/Direction), Virtual area *(Loitering/Intrusion/Enter/Exit), Face mask detection, Social distancing detection **Analytics events** – Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear) *Some of the video analytics only works with people and vehicle detection		Barcode recognition – Barcode type: 1D Code, Code128 / Codabar / ITF(Interleaved 2 of 5)
Business Intelligence	–	–	–
Alarm I/O	Input 1ea / Output 1ea	Input 1ea / Output 1ea	–
Audio I/O	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	–
Video Compression	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅲ	Manual(5ea area), WiseStream Ⅲ	–
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 5 profiles)	Unicast(6 users) / Multicast Multiple streaming(Up to 5 profiles)	Unicast(6 users) / Multicast Mono: (1) 4096x2160 @ 15/18/20fps all codec Color: (1) 4096x2160 @ 15/18/20fps all codec (2) 640x360 @ 15/18/20fps all codec
Edge Storage	1TB SSD included(WAVE pre-installed) Possible to register the maximum number of camera – up to 6 camera(Host + 5 camera) – Total bandwidth: up to 33Mbps * Cannot support the camera when host camera use AI mode	2TB SSD included(WAVE pre-installed) Possible to register the maximum number of camera – up to 6 camera(Host + 5 camera) – Total bandwidth: up to 33Mbps * Cannot support the camera when host camera use AI mode	–
Application Programming Interface	ONVIF Profile S/T/M, SUNAPI(HTTP API)	ONVIF Profile S/T/M, SUNAPI(HTTP API)	SUNAPI(HTTP API), Wisenet Open Platform
Operating Temperature / Humidity	-30°C~+55°C(-22°F~+131°F) / 0~95%RH(non-condensing) * Start up should be done at above -20°C Humidity control with AIR Vent		-40°C~+55°C(-40°F ~ +131°F) / 0~95% RH * Start up should be done at above -30°C NEMA TS-2: 74° C – / 0~95% RH
Certification	IP66/IP67/IP6K9K, NEMA4X, IK10	IP66/IP67/IP6K9K, NEMA4X, IK10	IP67, IP66, IK10(Exclude Window), NAME 4X
Power Consumption	PoE+: Max 19.2W, typical 14.4W / 12VDC: Max 17.5W, typical 12.7W Power redundancy failover	PoE+: Max 19.2W, typical 14.4W / 12VDC: Max 17.5W, typical 12.7W Power redundancy failover	Max 28.6W, Typical 13.7W * Max: LED On Typical: LED Off
Product Dimensions / Weight	ø 180x130mm(ø 7.09x5.12"), 1900g(4.19 lb)	ø 180x130mm(ø 7.09x5.12"), 1900g(4.19 lb)	Camera: 218x104.1x127.1mm, 1897g LED: 255.8x73.8x49.8mm, 996g Total: 255.8x181x127.1mm, 3438g(with install bracket)

	 XNO-9082R 8MP IR Bullet Camera	 XNV-9082R 8MP IR Vandal Dome Camera	 XND-9082RF 8MP IR Dome Camera	 XND-9082RV 8MP IR Dome Camera	 XNB-9002 8MP Box Camera
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	4K / 30fps				
Min. Illumination	Color: 0.05Lux(F1.2, 1/30sec, 30IRE) BW: 0.005Lux(F1.2, 1/30sec, 30IRE), 0Lux(IR LED on)				Color: 0.05Lux(F1.2, 1/30sec, 30IRE) BW: 0.005Lux(F1.2, 1/30sec, 30IRE)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation				
Focal Length (Zoom Ratio)	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	-
Angular Field of View	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	-
Pan / Tilt / Rotate Range	0°~360° / 0°~100° / 0°~360°	0°~360° / 0°~ 85° / 0°~355°	0°~360° / 0°~ 85° / 0°~355°	0°~360° / 0°~85° / 0°~355°	-
IR Viewable Length	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	-
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)
Wide Dynamic Range	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)
Digital Noise Reduction	SSNR V	SSNR V	SSNR V	SSNR V	SSNR V
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)
Analytics	**Analytics events** - Defocus detection, Directional detection, Motion detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering, Tampering, Fog detection, Virtual line, Audio detection, Sound classification, Shock detection, Face/upper body detection				
Business Intelligence	People counting, Queue management, Heatmap				
Alarm I/O	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports
Audio I/O	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in/built-in mic) / Line out	Selectable(mic in/line in/built-in mic) / Line out
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles, 3 virtual channel support)				
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 1TB(512GBx2)				
Application Programming Interface	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C	-50°C~+60°C(-58°F~+140°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C	-25°C~+60°C(-13°F~+140°F) / 0~95% RH(non-condensing)	-25°C~+60°C(-13°F~+140°F) / 0~95% RH(non-condensing)	-10°C~+55°C(+14°F~+131°F) / 0~95% RH (non-condensing)
Certification	IP66/IP67, NEMA4X, IK10	IP66/IP67/IP6K9K, IK10+, NEMA4X	IP52, Plenum rated, IK10	IP52, IK10	-
Power Consumption	PoE: Max 12.95W, typical 10.5W 12VDC: Max 12.5W, typical 9.4W 24VAC: Max 14.5W, typical 11.2W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W 24VAC: Max 13.5W, typical 11.0W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W Power redundancy failover	PoE: Max 12.95W, typical 8.2W 12VDC: Max 11.5W, typical 7.5W 24VAC: Max 13.5W, typical 8.9W Power redundancy failover
Product Dimensions / Weight	ø91x368.6mm(ø3.85x14.51"), 2200g(4.85 lb)	ø180x125mm(ø7.09x4.92"), 1900g(4.19 lb)	ø205x163mm(ø8.07x6.42"), 1950g(4.29 lb)	ø160x125mm(ø6.30x4.92"), 1600g(3.53 lb)	81(W)x67(H)x165(D)mm(3.19x2.64x6.48"), 880g(1.94 lb)
Additional Features	UL CAP, Secure by Default				

					
	XNO-8082R 6MP IR Bullet Camera	**XNV-8082R** 6MP IR Vandal Dome Camera	**XND-8082RF** 6MP IR Dome Camera	**XND-8082RV** 6MP IR Dome Camera	**XNB-8002** 6MP Box Camera
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	6MP / 30fps				
Min. Illumination	Color: 0.05Lux(F1.2, 1/30sec, 30IRE) BW: 0.005Lux(F1.2, 1/30sec, 30IRE), 0Lux(IR LED on)				Color: 0.05Lux(F1.2, 1/30sec, 30IRE) BW: 0.005Lux(F1.2, 1/30sec, 30IRE)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation				
Focal Length (Zoom Ratio)	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	2.8~8.4mm(3x) motorized varifocal	-
Angular Field of View	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	H: 114°(Wide)~40°(Tele) V: 62°(Wide)~22°(Tele) D: 133°(Wide)~46°(Tele)	-
Pan / Tilt / Rotate Range	0°~360° / 0°~100° / 0°~360°	0°~360° / 0°~ 85° / 0°~355°	0°~360° / 0°~ 85° / 0°~355°	0°~360° / 0°~85° / 0°~355°	-
IR Viewable Length	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	WiseIR 40m(131.23ft)	-
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)
Wide Dynamic Range	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)	extremeWDR(120dB)
Digital Noise Reduction	SSNR V	SSNR V	SSNR V	SSNR V	SSNR V
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)
Analytics	**Analytics events** - Defocus detection, Directional detection, Motion detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering, Tampering, Fog detection, Virtual line, Audio detection, Sound classification, Shock detection, Face/upper body detection				
Business Intelligence	People counting, Queue management, Heatmap				
Alarm I/O	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports	2 configurable I/O ports
Audio I/O	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/line in/built-in mic) / Line out	Selectable(mic in/line in/built-in mic) / Line out
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles, 3 virtual channel support)				
Edge Storage	Micro SD/SDHC/SDXC 2slot Max. 1TB(512GBx2)				
Application Programming Interface	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform				
Operating Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C	-50°C~+60°C(-58°F~+140°F) / 0~95% RH(non-condensing) * Start up should be done at above -30°C	-25°C~+60°C(-13°F~+140°F) / 0~95% RH(non-condensing)	-25°C~+60°C(-13°F~+140°F) / 0~95% RH(non-condensing)	-10°C~+55°C(+14°F~+131°F) / 0~95% RH (non-condensing)
Certification	IP66/IP67, NEMA4X, IK10	IP66/IP67/IP6K9K, IK10+, NEMA4X	IP52, Plenum rated, IK10	IP52, IK10	-
Power Consumption	PoE: Max 12.95W, typical 10.5W 12VDC: Max 12.5W, typical 9.4W 24VAC: Max 14.5W, typical 11.2W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W 24VAC: Max 13.5W, typical 11.0W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W Power redundancy failover	PoE: Max 12.95W, typical 10.7W 12VDC: Max 11.5W, typical 9.0W Power redundancy failover	PoE: Max 12.95W, typical 8.2W 12VDC: Max 11.5W, typical 7.5W 24VAC: Max 13.5W, typical 8.9W Power redundancy failover
Product Dimensions / Weight	ø91x368.6mm(ø3.85x14.51"), 2200g(4.85 lb)	ø180x125mm(ø7.09x4.92"), 1900g(4.19 lb)	ø205x163mm(ø8.07x6.42"), 1950g(4.29 lb)	ø160x125mm(ø6.30x4.92"), 1600g(3.53 lb)	81(W)x67(H)x165(D)mm(3.19x2.64x6.48"), 880g(1.94 lb)
Additional Features	UL CAP, Secure by Default				

	 **XND-8081VZ** **5MP Dome Camera**	 **XND-8081FZ** **5MP Flush Mount Dome Camera**	 **XND-8081RV** **5MP IR Dome Camera**	 **XND-8081RF** **5MP IR Flush Mount Dome Camera**	 **XNV-8081Z** **5MP Vandal Dome Camera**
Imaging Device	1/1.8" CMOS				
Resolution / Max. Frame Rate	5MP / 30fps				
Min. Illumination	Color : 0.07Lux (F1.2) B/W : 0.007Lux (F1.2)	Color : 0.07Lux (F1.2) B/W : 0.007Lux (F1.2)	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)	Color : 0.07 Lux (F1.2) B/W : 0.007 Lux (F1.2)
Video Out	Micro USB Type B	Micro USB Type B	CVBS 1.0 Vp-p, Micro USB Type B	CVBS 1.0 Vp-p, Micro USB Type B	Micro USB Type B
Focal Length (Zoom Ratio)	3.6 ~ 9.4mm (2.6x) motorized varifocal	3.6 ~ 9.4mm (2.6x) motorized varifocal	3.9 ~ 9.4mm (2.4x) motorized varifocal	3.9 ~ 9.4mm (2.4x) motorized varifocal	3.6 ~ 9.4mm (2.6x) motorized varifocal
Angular Field of View	H : 102.5° (Wide) ~ 38.7° (Tele) V : 74.2° (Wide) ~ 29° (Tele) D : 135.5° (Wide) ~ 48.6° (Tele)	H : 102.5° (Wide) ~ 38.7° (Tele) V : 74.2° (Wide) ~ 29° (Tele) D : 135.5° (Wide) ~ 48.6° (Tele)	H : 92.1° (Wide) ~ 38.7° (Tele) V : 67.2° (Wide) ~ 29° (Tele) D : 119.9° (Wide) ~ 48.6° (Tele)	H : 92.1° (Wide) ~ 38.7° (Tele) V : 67.2° (Wide) ~ 29° (Tele) D : 119.9° (Wide) ~ 48.6° (Tele)	H : 102.5° (Wide) ~ 38.7° (Tele) V : 74.2° (Wide) ~ 29° (Tele) D : 135.5° (Wide) ~ 48.6° (Tele)
Pan / Tilt / Rotate Range	± 175° / 0 ~ 85° / ± 175° (Remote)	± 175° / 0 ~ 85° / ± 175° (Remote)	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	± 175° / 0 ~ 85° / ± 175° (Remote)
IR Viewable Length	-	-	50m (164.04ft)	50m (164.04ft)	-
Day & Night	Auto (ICR)				
Wide Dynamic Range	120dB				
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support (Built-in Gyro sensor)				
Analytics	Intelligent analytics, Audio detection, Sound classification, Audio Playback, Shock detection				
Business Intelligence	-				
Alarm I/O	1 / 1				
Audio I/O	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 10 Profiles				
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF Profile S/T, SUNAPI Hanwha Vision Open Platform				
Operating Temperature / Humidity	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉) / 0~90% RH	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-50℃ ~ +60℃ (-58℉ ~ +140℉) * Start up above -35℃ (-31℉)
Certification	IP52, IK10	IP52, Plenum rate	IP52, IK10	IP52, Plenum rate	IP67, IP66, IP6K9K, IK10+, NEMA4X
Power Consumption	PoE : Max 11W 12VDC : Max 9W	PoE : Max 11W 12VDC : Max 9W	PoE : Max 12.95W 12VDC : Max 11.7W	PoE : Max 12.95W 12VDC : Max 11.7W	PoE : Max 12.3W 12VDC : Max 10W 24VAC : Max 12.3W
Product Dimensions / Weight	Ø160 x 125mm (Ø6.3" x 4.92") 1.45kg (3.20lb)	Ø205 x 155mm(Ø8.07" x 6.1") 1.85kg (4.08lb)	Ø160 x 125mm(Ø6.3" x 4.92") 1.45kg (3.20lb)	Ø205 x 155mm(Ø8.07" x 6.1") 1.8kg (3.97lb)	Ø180 x 125mm(Ø7.1" x 4.9") 1.75kg (3.86lb)
Additional Features	Modular structure, Motorized PTRZ, Anti dust	Modular structure, Motorized PTRZ, Anti dust	Modular structure, Anti dust	Modular structure, Anti dust	Modular structure, Motorized PTRZ

	 XNV-8081R 5MP IR Vandal Dome Camera	 XND-6081V 2MP Dome Camera	 XND-6081F 2MP Flush Mount Dome Camera	 XND-6081VZ 2MP Dome Camera	 XND-6081FZ 2MP Flush Mount Dome Camera
Imaging Device	1/1.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	5MP / 30fps	2MP / 60fps	2MP / 60fps	2MP / 60fps	2MP / 60fps
Min. Illumination	Color: 0.07Lux (F1.3) BW: 0Lux (IR LED)	Color : 0.015Lux (F1.4) B/W : 0.0015Lux (F1.4)	Color : 0.015Lux (F1.4) B/W : 0.0015Lux (F1.4)	Color : 0.015Lux (F1.4) B/W : 0.0015Lux (F1.4)	Color : 0.015Lux (F1.4) B/W : 0.0015Lux (F1.4)
Video Out	CVBS 1.0 Vp-p, Micro USB type B	CVBS 1.0Vp-p, Micro USB type B	CVBS 1.0Vp-p, Micro USB type B	Micro USB type B	Micro USB type B
Focal Length (Zoom Ratio)	3.9 ~ 9.4mm (2.4x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal
Angular Field of View	H : 92.1°(Wide) ~ 38.7°(Tele) V : 67.2° (Wide) ~ 29°(Tele) D : 119.9°(Wide) ~ 48.6°(Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8°(Wide) ~ 15.7° (Tele) D : 142.1°(Wide) ~ 32° (Tele)	H : 119.5°(Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 119.5°(Wide) ~ 27.9°(Tele) V : 62.8°(Wide) ~ 15.7°(Tele) D : 142.1°(Wide) ~ 32° (Tele)	H : 119.5°(Wide) ~ 27.9°(Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)
Pan / Tilt / Rotate Range	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	± 175° / 0 ~ 85° / ± 175° (Remote)	± 175° / 0 ~ 85° / ± 175°(Remote)
IR Viewable Length	50m (164.04ft)	–	–	–	–
Day & Night	Auto (ICR)				
Wide Dynamic Range	120dB	150dB	150dB	150dB	150dB
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)	Support
Analytics	Intelligent analytics, Audio detection, Sound classification, Audio Playback, Shock detection				
Business Intelligence	–				
Alarm I/O	1 / 1				
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 10 Profiles				
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF Profile S/T, SUNAPI Hanwha Vision Open Platform				
Operating Temperature / Humidity	-50℃ ~ +60℃ (-58℉ ~ +140℉) * Start up above -35℃ (-31℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)
Certification	IP67, IP66, IP6K9K, IK10+, NEMA4X	IP52, IK10	IP52, Plenum rate	IP52, IK10	IP52, Plenum rate
Power Consumption	PoE : Max 12.95W 12VDC : Max 11.7W 24VAC : Max 14.9W	PoE : Max 7W 12VDC : Max 5.4W	PoE : Max 7W 12VDC : Max 5.4W	PoE : Max 10W 12VDC : Max 8.5W	PoE : Max 10W 12VDC: Max 8.5W
Product Dimensions / Weight	Ø180 x 125mm(Ø7.1" x 4.9") 1.75kg (3.86lb)	Ø160 x 125mm (Ø6.3" x 4.92") 1.45kg (3.2lb)	Ø205 x 155mm (Ø8.07" x 6.1") 1.8kg (3.97lb)	Ø160 x 125mm (Ø6.3" x 4.92") 1.45kg (3.2lb)	Ø205 x 155mm (Ø8.07" x 6.1") 1.85kg (4.08lb)
Additional Features	Modular structure	Modular structure, Anti dust	Modular structure, Anti dust	Modular structure, Motorized PTRZ, Anti dust	Modular structure, Motorized PTRZ, Anti dust

	 XND-6081RV 2MP IR Dome Camera	 XND-6081RF 2MP Flush Mount IR Dome Camera	 XNV-6081Z 2MP Vandal Dome Camera	 XNV-6081R 2MP IR Vandal Dome Camera
Imaging Device	1/2.8" CMOS			
Resolution / Max. Frame Rate	2MP / 60fps			
Min. Illumination	Color : 0.015 Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.015 Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.015 lux (F1.4) B/W : 0.0015 Lux (F1.4)	Color : 0.015Lux (F1.4) BW : 0Lux (IR LED)
Video Out	CVBS 1.0Vp-p, Micro USB type B	CVBS 1.0Vp-p, Micro USB type B	Micro USB type B	CVBS 1.0Vp-p, Micro USB type B
Focal Length (Zoom Ratio)	2.8 ~ 12mm (4.3x) motorized varifocal			
Angular Field of View	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)			
Pan / Tilt / Rotate Range	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	0° ~ 360° / -45° ~ 85° / 0° ~ 355	± 175° / 0° ~ 85° / ± 175° (Remote)	0° ~ 360° / -45° ~ 85° / 0° ~ 355
IR Viewable Length	50m (164.04ft)	50m (164.04ft)	-	50m (164.04ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	150dB			
Digital Noise Reduction	SSNR V			
Digital Image Stabilization	Support (Built-in Gyro sensor)			
Analytics	Intelligent analytics, Audio detection, Sound classification, Audio Playback, Shock detection			
Business Intelligence	-			
Alarm I/O	1 / 1			
Audio I/O	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 10 Profiles			
Edge Storage	micro SD/SDHC/SDXC			
Application Programming Interface	ONVIF Profile S/T, SUNAPI Hanwha Vision Open Platform			
Operating Temperature / Humidity	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-25℃ ~ +60℃ (-13℉ ~ +140℉)	-50℃ ~ +60℃ (-58℉ ~ +140℉) * Start up above -35℃ (-31℉)	-50℃ ~ +60℃ (-58℉ ~ +140℉) * Start up above -35℃ (-31℉)
Certification	IP52, IK10	IP52, Plenum rate	IP67, IP66, IP6K9K, IK10+, NEMA4X	IP67, IP66, IP6K9K, IK10+, NEMA4X
Power Consumption	PoE : Max 12.95W 12VDC : Max 10.8W	PoE : Max 12.95W 12VDC : Max 10.8W	PoE : Max 11W 12VDC : Max 9.5W 24VAC : Max 11W	PoE : Max 12.95W 12VDC : Max 10.8W 24VAC : Max 13.3W
Product Dimensions / Weight	Ø160 x 125mm (Ø6.3" x 4.92") 1.45kg (3.2lb)	Ø205 x 155mm (Ø8.07" x 6.1") 1.8kg (3.97lb)	Ø180 x 125mm (Ø7.1" x 4.9") 1.75kg (3.86lb)	Ø180 x 125mm (Ø7.1" x 4.9") 1.75kg (3.86lb)
Additional Features	Modular design, Anti dust	Modular design, Anti dust	Modular structure, Motorized PTRZ	Modular structure

	 XNV-6081 2MP Vandal Dome Camera	 XNB-8000 5MP Box Camera	 XNO-8080R 5MP IR Bullet Camera	 XNO-8020R/8030R/8040R 5MP IR Bullet Camera
Imaging Device	1/2.8" CMOS	1/1.8" CMOS	1/1.8" CMOS	1/1.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps	5MP / 30fps	5MP / 30fps	5MP / 30fps
Min. Illumination	Color : 0.015 Lux (F1.4) B/W : 0.0015 Lux (F1.4)	Color : 0.07Lux (F1.2) B/W : 0.007Lux (F1.2)	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)	Color : 0.16Lux ((F1.6) B/W : 0Lux (IR LED on)
Video Out	CVBS 1.0Vp-p, Micro USB type B	CVBS 1.0 Vp-p, Micro USB Type B	CVBS 1.0 Vp-p, Micro USB Type B	CVBS 1.0 Vp-p, Micro USB Type B
Focal Length (Zoom Ratio)	2.8 ~ 12mm (4.3x) motorized varifocal	-	3.7 ~ 9.4mm (2.5x) motorized varifocal	3.7mm fixed (XNO-8020R) 4.6mm fixed (XNO-8030R) 7.0mm fixed (XNO-8040R)
Angular Field of View	H : 119.5°(Wide) ~ 27.9°(Tele) V : 62.8°(Wide) ~ 15.7° Tele) D : 142.1°(Wide) ~ 32°(Tele)	-	H : 100.2 °(Wide) ~ 38.7° (Tele) V : 67.2°(Wide) ~ 29° (Tele) D : 119.9° (Wide) ~ 48.6° (Tele)	H : 97.5° / V : 71.9° / D : 126.2° (XNO-8020R) H : 77.9° / V : 57.9° / D : 98.7° (XNO-8030R) H : 50.7° / V :37.8° / D : 63.8° (XNO-8040R)
Pan / Tilt / Rotate Range	0° ~ 360° / -45° ~ 85° / 0° ~ 355°	-	-	-
IR Viewable Length	-	-	50m (164.04ft)	30m (98.43ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	150dB	120dB	120dB	120dB
Digital Noise Reduction	SSNR V			
Digital Image Stabilization	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)	Support	Support
Analytics	Intelligent analytics Audio detection Sound classification Audio Playback Shock detection	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification
Business Intelligence	-	-	-	People counting, Queue management, Heatmap
Alarm I/O	1 / 1			
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/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	H.265, H.264, MJPEG
WiseStream	WiseStream Ⅱ			
Streaming	Up to 10 Profiles			
Edge Storage	micro SD/SDHC/SDXC			
Application Programming Interface	ONVIF Profile S/T, SUNAPI Hanwha Vision Open Platform			
Operating Temperature / Humidity	-50℃ ~ +60℃ (-58℉ ~ +140℉) * Start up above -35℃ (-31℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)
Certification	IP67, IP66, IP6K9K, IK10+, NEMA4X	-	IP67, IP66, NEMA4X, IK10	IP67, IP66, NEMA4X, IK10
Power Consumption	PoE : Max 7W 12VDC : Max 5.4W 24VAC : Max 7.1W	PoE : Max 8.5W 12VDC : Max 7.5W 24VAC : Max 8.5W	PoE : Max 12.95W 12VDC : Max 12.5W 24VAC : Max 14.5W	PoE : Max 10.3W 12VDC : Max 9.3W
Product Dimensions / Weight	Ø180 x 125mm (Ø7.1" x 4.9") 1.45kg (3.20lb)	W 73.1 x H 66.6 x D 147.8mm (2.88" x 2.62" x 5.82") 420g (0.93lb)	Ø91 x 368.6mm (Ø6.3" x 4.67") 2.18kg (4.81lb)	Ø70 x 296mm (Ø2.76" x 11.65") 1.22kg (2.69lb)
Additional Features	Modular structure	Handover, Hallway View	Handover, Hallway View	Handover, Hallway View

				
	XND-8080R/8080RV **5MP IR Dome Camera**	**XND-8020R/8030R/8040R** **5MP IR Dome Camera**	**XND-8020F** **5MP Flush Mount Dome Camera**	**XNV-8080R** **5MP IR Vandal Dome Camera**
Imaging Device	1/1.8" CMOS			
Resolution / Max. Frame Rate	H.265, H.264, MJPEG			
Min. Illumination	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)	Color : 0.16Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.16Lux (F1.6) B/W : 0.16Lux (F1.6)	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)
Video Out	CVBS 1.0 Vp-p, Micro USB type B	CVBS 1.0Vp-p, Micro USB type B	Micro USB type B	CVBS 1.0 Vp-p, Micro USB type B
Focal Length (Zoom Ratio)	3.9 ~ 9.4m (2.4x) motorized varifocal	3.7mm fixed (XND-8020R) 4.6mm fixed (XND-8030R) 7.0mm fixed (XND-8040R)	3.7mm fixed	3.9 ~ 9.4mm (2.4x) motorized varifocal
Angular Field of View	H : 92.1°(Wide) ~ 38.7°(Tele) V : 67.2°(Wide) ~ 29°(Tele) D : 119.9°(Wide) ~ 48.6°(Tele)	H : 97.5° / V : 71.9° / D : 126.2° (XND-8020R) H : 77.9° / V : 57.9° / D : 98.7° (XND-8030R) H : 50.7° / V : 37.8° / D : 63.8° (XND-8040R)	H : 97.5° / V : 71.9° / D : 126.2°	H : 92.1° (Wide) ~ 38.7° (Tele) V : 67.2° (Wide) ~ 29° (Tele) D : 119.9° (Wide) ~ 48.6° (Tele)
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 355° / 0° ~ 47° / 0° ~ 353°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	30m (98.43ft)	30m (98.43ft)	-	50m (164.04ft)
Day & Night	Auto (ICR)	Auto (ICR)	Auto (Electrical)	Auto (ICR)
Wide Dynamic Range	120dB	120dB	-	120dB
Digital Noise Reduction	SSNR V			
Digital Image Stabilization	Support	Support (Built-in Gyro sensor)	Support	Support
Analytics	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification
Business Intelligence	-	People counting, Queue management, Heatmap	People counting, Queue management, Heatmap	-
Alarm I/O	1 / 1	1 / 1	-	1 / 1
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Built-in mic / -	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 10 Profiles			
Edge Storage	micro SD/SDHC/SDXC			
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)
Certification	IK08	IK08	-	IP67, IP66, NEMA4X, IK10
Power Consumption	PoE : Max 10W 12VDC : Max 9W	PoE : Max 9W 12VDC : Max 8W	PoE : Max 4.7W	PoE : Max 12.95W 12VDC : Max 11.5W 24VAC : Max 14W
Operating Temperature / Humidity	Ø140.8 x 113mm (Ø5.54" x 4.45") 628g (1.38lb) (XND-8080R) 732g (1.61lb) (XND-8080RV)	Ø110 x 90mm (Ø4.33" x 3.54") 380g (0.84lb)	Ø98.9 x 129.1mm (Ø3.89" x 5.08") 275g (0.61lb)	Ø160 x 118.5mm (Ø6.3" x 4.67") 1.01kg (2.23lb)
Additional Features	Handover, Hallway View			

	 XNV-8080RSA 5MP Stainless IR Vandal Dome Camera	 XNV-8020R/8030R/8040R 5MP IR Vandal Dome Camera	 XNF-9010RV/9010RVM 12MP IR Fisheye Camera
Imaging Device	1/1.8" CMOS	1/1.8" CMOS	1/2.3" 12MP CMOS
Resolution / Max. Frame Rate	5MP / 30fps	5MP / 30fps	3008 x 3008 / 30fps
Min. Illumination	Color : 0.07Lux (F1.3) B/W : 0Lux (IR LED on)	Color : 0.16Lux (F1.6) B/W : 0Lux (IR LED on)	Color: 0.39 Lux (F2.2) BW : 0Lux (IR LED on)
Video Out	CVBS 1.0 Vp-p, Micro USB type B		
Focal Length (Zoom Ratio)	3.9 ~ 9.4mm (2.4x) motorized varifocal	3.7mm fixed (XNV-8020R) 4.6mm fixed (XNV-8030R) 7.0mm fixed (XNV-8040R)	1.08mm fixed focal
Angular Field of View	H : 92.1° (Wide) ~ 38.7° (Tele) V : 67.2° (Wide) ~ 29° (Tele) D : 119.9° (Wide) ~ 48.6° (Tele)	H : 97.5° / V : 71.9° / D : 126.2° (XNV-8020R) H : 77.9° / V : 57.9° / D : 98.7° (XNV-8030R) H : 50.7° / V : 37.8° / D : 63.8° (XNV-8040R)	H: 187° / V: 187° / D: 187°
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	-
IR Viewable Length	50m (164.04ft)	30m (98.43ft)	10m (32.8ft), Wise IR
Day & Night	Auto (ICR)		
Wide Dynamic Range	120dB	120dB	extremeWDR (120dB)
Digital Noise Reduction	SSNR V		
Digital Image Stabilization	Support	Support (Built-in Gyro sensor)	-
Analytics	Intelligent analytics, Audio detection, Sound classification		
Business Intelligence	-	People counting, Queue management, Heatmap	People counting, Queue management, Heatmap
Alarm I/O	1 / 1	1 / 1	2 configured I / O
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out
Video Compression	H.265 / H.264, MJPEG		
WiseStream	WiseStream Ⅱ		
Streaming	Up to 10 Profiles		
Edge Storage	micro SD/SDHC/SDXC		
Application Programming Interface	ONVIF profile S/G, SUNAPI Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40°F ~ +131°F)	-30℃ ~ +55℃ (-22°F ~ +131°F)	-40℃ ~ +60℃ (-40°F ~ +140°F) / 0~95% RH
Certification	IP66, NEMA4X, IP6K9K, IK10+	IP66, IP67, IK10	IP66, IK10, NEMA4X, EN50155 class T3 (XNF-9010RVM only)
Power Consumption	PoE : Max 12.95W 12VDC : Max 11.5W 24VAC : Max 14W	PoE : Max 9W 12VDC: Max 8W	PoE: Max 12.95W, typical 11W 12VDC: Max 11W, typical 9.1W
Product Dimensions / Weight	Ø160 X 120.5mm (Ø6.38" x 4.74") 2.8kg (6.17lb)	Ø120 x 97.5mm (Ø4.72" x 3.84") 615g (1.36lb)	Ø160 x 72mm (Ø6.38" x 2.83") 1.1kg (2.43lb)
Additional Features	Handover, Hallway View	Handover, Hallway View	Various mode support (Original, Double panorama, Single panorama, Quad view) M12 Connector (XNF-9010RVM)

	 XNF-9010RS 12MP IR Fisheye Camera	 XNF-8010R/8010RV/8010RVM 6MP IR Fisheye Camera	 XNB-6005 2MP Box Camera (extraLUX)	 XNB-6000 2MP Box Camera
Imaging Device	1/2.3" 12MP CMOS	1/1.8" CMOS	1/2" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	3008 x 3008 / 30fps	2048 x 2048 / 30fps	2MP / 60fps	2MP / 60fps
Min. Illumination	Color: 0.39 Lux (F2.2, 1/30sec) BW : 0Lux (IR LED on)	Color : 0.1Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.006Lux (F1.2) B/W : 0.0006Lux (F1.2)	Color : 0.01Lux (F1.2) B/W : 0.001Lux (F1.2)
Video Out	CVBS : 1.0 Vp-p, Micro USB Type B			
Focal Length (Zoom Ratio)	1.08mm fixed focal	1.6mm fixed	–	–
Angular Field of View	H: 187° / V: 187° / D: 187°	H : 192° / V : 192° / D : 192°	–	–
Pan / Tilt / Rotate Range	–	–	–	–
IR Viewable Length	9m (29.53ft), Wise IR	15m (49.21ft)	–	–
Day & Night	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)
Wide Dynamic Range	extremeWDR (120dB)	120dB	150dB	150dB
Digital Noise Reduction	SSNR V	SSNR V	SSNR V	SSNR V
Digital Image Stabilization	–	–	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)
Analytics	Intelligent analytics, Audio detection, Sound classification			
Business Intelligence	People counting, Queue management, Heatmap	People counting, Queue management, Heatmap	–	–
Alarm I/O	2 configured I/O	1 / 1	1 / 1	1 / 1
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in), Built-in mic / Line out
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 10 Profiles			
Edge Storage	micro SD/SDHC/SDXC			
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	-40℃ ~ +50℃ (-40℉ ~ +122℉) / 0~95% RH	-10℃ ~ +55℃ (+14℉ ~ +131℉) (XNF-8010R) -40℃ ~ +55℃ (-40℉ ~ +131℉) (XNF-8010RV/8010RVM)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)
Certification	IP66, IP67, IP6K9K, NEMA4X, IK10, IK10+ (it can resist impacts of 40 joules), NSF, ANSI Standard 169 - Special Purpose Food Equipment and Devices.	IP66, IK10 (XNF-8010RV/8010RVM)	–	–
Power Consumption	PoE: Max 12.95W, typical 11W 12VDC: Max 11W, typical 9.1W	PoE : Max 12W, 12VDC : Max 11W (XNF-8010R) PoE : Max 12.95W, 12VDC : Max 12W (XNF-8010RV/8010RVM)	PoE : Max. 8.5W 12VDC : Max 8W 24VAC : Max 9W	PoE : Max 7.5W 12VDC : Max 6.5W 24VAC : Max 8W
Product Dimensions / Weight	Ø 167.9 x 72.1mm (Ø66.1" x 28.38") 2.98kg (6.57lb)	Ø 146 x 54.8mm (Ø5.75" x 2.16") 730g (1.61lb) (XNF-8010R) Ø 146 x 65.8mm (Ø5.75" x 2.59") 785g (1.73lb) (XNF-8010RV) 790g (1.74lb) (XNF-8010RVM)	W 73.1 x H 66.6 x D 147.8mm (2.88" x 2.62" x 5.82") 420g (0.93lb)	W 73.1 x H 66.6 x D 147.8mm (2.88" x 2.62" x 5.82") 420g (0.93lb)
Additional Features	Various mode support (Original, Double panorama, Single panorama, Quad view)	M12 Connector (XNF-8010RVM), Built-in MIC, On board dewarpping	Handover, Hallway View	Handover, Hallway View

				
	XNB-6001 **2MP Remote Head Camera**	**SLA-T4680/T4680V** **2MP lens for XNB-6001**	**SLA-T2480/T2480V** **2MP lens for XNB-6001**	**SLA-T1080F** **2MP lens for XNB-6001**
Imaging Device	-	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps	-	-	-
Min. Illumination	-	Color : 0.06Lux (F2.5) B/W: 0.06Lux (F2.5)	Color : 0.45Lux (F2.0) B/W : 0.45Lux (F2.0)	Color : 0.03Lux (F1.6)
Video Out	CVBS 1.0Vp-p, Micro USB type B	-	-	-
Focal Length (Zoom Ratio)	-	4.6mm Pinhole	2.4mm fixed	1.6mm fisheye
Angular Field of View	-	H : 73° / V : 39° / D : 85°	H : 138° / V : 73° / D : 168°	H : 187° / V : 113.9°
Pan / Tilt / Rotate Range	-			
IR Viewable Length	-			
Day & Night	-	Auto (Electrical)	Auto (Electrical)	Auto (Electrical)
Wide Dynamic Range	120dB	-	-	-
Digital Noise Reduction	SSNR V	-	-	-
Digital Image Stabilization	Support	-	-	-
Analytics	Intelligent analytics Audio detection	-	-	-
Business Intelligence	People counting, Queue management, Heatmap	-	-	-
Alarm I/O	1 / 1	-	-	-
Audio I/O	Selectable (mic in/line in) / Line out	-	-	-
Video Compression	H.265 / H.264, MJPEG	-	-	-
WiseStream	WiseStream Ⅱ	-	-	-
Streaming	Up to 10 Profiles	-	-	-
Edge Storage	SD/SDHC/SDXC	-	-	-
Application Programming Interface	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	-	-	-
Operating Temperature / Humidity	-10℃ ~ +55℃ (+14℉ ~ +131℉)			
Certification	-			
Power Consumption	PoE : Max 6W 12VDC : Max 6.5W	-	-	-
Product Dimensions / Weight	W 131.1 x H 28 x D 86mm (5.16" x 1.1" x 3.39") 245g (0.54lb)	Ø24 x 42mm (Ø0.94" x 1.65") (Lens) 8m (314.96") (Cable) 310g (0.68lb) (SLA-T4680) 30 x 20.2 x 45mm (1.18" x 0.8" x 1.77") (Lens) 8m (314.96") (Cable) 321g (0.71lb) (SLA-T4680V)	Ø24 x 49.8mm (Ø0.94" x 1.96") (Lens) 8m (314.96") (Cable) 318g (0.70lb) (SLA-T2480) 30 x 27.9 x 45mm (1.18" x 0.1" x 1.77") (Lens) 8m (314.96") (Cable)328g (0.72lb) (SLA-T2480V)	Ø35 x 68.9mm (Ø1.38" x 2.71") (Lens) 8m (314.96") (Cable) 321g (0.71lb)
Additional Features	Handover, Hallway View	-	-	-

	 XNO-6120R 2MP IR Bullet Camera	 XNO-6085R 2MP IR Bullet Camera (extraLUX)	 XNO-6080R 2MP IR Bullet Camera	 XNO-L6080R 2MP IR Bullet Camera	 XNO-6010R/6020R 2MP IR Bullet Camera
Imaging Device	1/2.8" CMOS	1/2" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps				
Min. Illumination	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.004Lux (F0.94) B/W : 0Lux (IR LED on)	Color : 0.015Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.03ux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.055lux (F2.0) (XNO-6010R) Color : 0.015lux (F1.4) (XNO-6020R) B/W: 0 Lux (IR LED On)
Video Out	CVBS 1.0Vp-p, Micro USB type B				
Focal Length (Zoom Ratio)	5.2 ~ 62.4mm (Optical 12x)	4.1 ~ 16.4mm (Optical 4x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	3.2 ~ 10mm (3.1x) motorized varifocal	2.4mm fixed (XNO-6010R) 4mm fixed (XNO-6020R)
Angular Field of View	H : 54.58° (Wide) ~ 5.3° (Tele) V : 32.19° (Wide) ~ 3° (Tele) D : 61.4°(Wide) ~ 6.06° (Tele)	H : 100° (Wide) ~ 26.2° (Tele) V : 54° (Wide) ~ 14.8° (Tele) D : 116° (Wide) ~ 30° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide)) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)	H : 139° V : 73° / D : 167° (XNO-6010R) H : 88.6° / V : 47.5° / D : 104.8° (XNO-6020R)
Pan / Tilt / Rotate Range	-				
IR Viewable Length	70m (229.66ft)	70m (229.66ft)	50m (164.04ft)	30m (98.42ft)	20m (65.62ft) (XNO-6010R) 30m (98.43ft) (XNO-6020R)
Day & Night	Auto (ICR)				
Wide Dynamic Range	150dB				
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support	Support	Support	Support	Support
Analytics	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics	Intelligent analytics Audio detection Sound classification
Business Intelligence	-	-	-	-	People counting, Queue management, Heatmap
Alarm I/O	1 / 1	1 / 1	1 / 1	-	1 / 1
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	-	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 10 Profiles				
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF profile S/G, SUNAPI, Wisenet open platform	ONVIF profile S/G, SUNAPI, Wisenet open platform	ONVIF profile S/G/T, SUNAPI, Wisenet open platform	ONVIF profile S/G, SUNAPI, Wisenet open platform	ONVIF profile S/G/T, SUNAPI, Wisenet open platform
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40℉ ~ +131℉) * Start up above -35℃ (-31℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉) * Start up above -35℃ (-31℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃
Certification	IP67, IP66, NEMA 4X, IK10	IP67, IP66, NEMA 4X, IK10	IP67, IP66, NEMA 4X, IK10	IP66, IK10	IP67, IP66, NEMA 4X, IK10
Power Consumption	PoE : Max 12.95W 12VDC : Max 12.5W 24VAC : Max 14.5W	PoE : Max 12.95W 12VDC : Max 11.5W 24VAC : Max 12.95W	PoE : Max 12.95W 12VDC : Max 12W 24VAC : Max 15W	PoE : Max. 11W	PoE : Max 9.7W 12VDC : Max 8.8W
Product Dimensions / Weight	Ø91 x 368.6mm (Ø3.58" x 14.51") 2.18kg (4.81lb)	Ø91 x 388.6mm (Ø3.58" x 15.3") 2.35kg (5.18lb)	Ø91 x 368.6.mm (Ø3.58" x 14.51") 2.18kg (4.81lb)	Ø91 x 322.9mm (Ø3.58" x 12.71") 1.29kg (4.25lb)	Ø70 x 301.5mm (Ø2.76" x 11.87") (XNO-6010R) Ø70 x 296mm (Ø2.76" x 11.65") (XNO-6020R) 1.22kg (2.69lb)
Additional Features	Handover, Hallway View				

					
	XND-6085/6085V **2MP Dome Camera (extraLUX)**	**XND-6080/6080V** **2MP Dome Camera**	**XND-6080R/6080RV** **2MP IR Dome Camera**	**XND-L6080R/L6080RV** **2MP IR Dome Camera**	**XND-L6080V** **2MP Dome Camera**
Imaging Device	1/2" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps				
Min. Illumination	Color : 0.004Lux (F0.94) B/W : 0.0004Lux (F0.94)	Color : 0.015Lux (F1.4) B/W : 0.0015Lux (F1.4)	Color : 0.015Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F1.6) B/W : 0.01Lux (F1.6)
Video Out	CVBS 1.0Vp-p, Micro USB type B				
Focal Length (Zoom Ratio)	4.1~16.4mm (Optical 4x)	2.8~12mm (4.3x) motorized varifocal	2.8~12mm (4.3x) motorized varifocal	3.2~10mm (3.1x) motorized varifocal	3.2~10mm (3.1x) motorized varifocal
Angular Field of View	H : 100° (Wide) ~ 26.2° (Tele) V : 54° (Wide) ~ 14.8° (Tele) D : 116° (Wide) ~ 30° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)
Pan / Tilt / Rotate Range	± 175° / ± 73° / ± 175°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	–	–	30m (98.43ft)	30m (98.42ft)	–
Day & Night	Auto (ICR)				
Wide Dynamic Range	–	150dB	150dB	120dB	120dB
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support (Built-in Gyro sensor)	Support	Support	Support	Support
Analytics	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics	Intelligent analytics
Business Intelligence	–				
Alarm I/O	1 / 1	1 / 1	1 / 1	–	–
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in), Built-in mic / Line out	–	–
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 10 Profiles				
Edge Storage	SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC
Application Programming Interface	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform
Operating Temperature / Humidity	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)
Certification	IK08				
Power Consumption	PoE : Max 10.2W 12VDC : Max 8.6W	PoE : Max 6.5W 12VDC : Max 6W	PoE : Max 10W 12VDC : Max 9W	PoE : Max 8W	PoE : Max 6W
Product Dimensions / Weight	Ø160 x 140mm (Ø6.3" x 5.51") 1.1 kg (2.43lb) (XND-6085) 1.25 kg (2.76lb) (XND-6085V)	Ø140.8 x 113mm (Ø5.54" x 4.45") 610g (1.34lb) (XND-6080) 714g (1.57lb) (XND-6080V)	Ø140.8 x 113mm (Ø5.54" x 4.45") 624g (1.38lb) (XND-6080R) 724g (1.60lb) (XND-6080RV)	Ø140.8 x 113mm (Ø5.54" x 4.45") 580g (1.28lb) (XND-L6080R) 690g (1.52lb) (XND-L6080RV)	Ø140.8 x 113mm (Ø5.54" x 4.45") 675g (1.49lb)
Additional Features	Handover, Hallway View	Handover, Hallway View	Handover, Hallway View	Defog, Hallway View	Defog, Hallway View

	 XND-6020R 2MP IR Dome Camera	 XND-6011F 2MP Flush Mount Dome Camera	 XND-6010 2MP Dome Camera	 XNV-6120/6120R 2MP Vandal / IR Vandal Dome Camera
Imaging Device	1/2.8" CMOS			
Resolution / Max. Frame Rate	2MP / 60fps			
Min. Illumination	Color : 0.015 Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.055Lux (F2.0) B/W : 0.055Lux (F2.0)	Color : 0.055Lux (F2.0) B/W : 0.055Lux (F2.0)	Color : 0.03Lux (F1.6), B/W : 0.003Lux (F1.6) (XNV-6120) Color : 0.03Lux (F1.6), B/W : 0Lux (IR LED on) (XNV-6120R)
Video Out	CVBS 1.0Vp-p, Micro USB type B	Micro USB type B	CVBS 1.0Vp-p, Micro USB type B	CVBS 1.0Vp-p, Micro USB type B
Focal Length (Zoom Ratio)	4mm fixed	2.8mm fixed	2.4mm fixed	5.2 ~ 62.4mm (Optical 12x)
Angular Field of View	H : 88.6° / V : 47.5° / D : 104.8°	H : 112° / V : 62° / D : 130°	H : 139° / V : 73° / D : 167°	H : 54.58° (Wide) ~ 5.3° (Tele) V : 32.19° (Wide) ~ 3° (Tele) D : 61.4° (Wide) ~ 6.06° (Tele)
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 355° / 0° ~ 47° / 0° ~ 353°	0° ~ 354° / 0° ~ 75° / 0° ~ 355°	0° ~ 354° / 0° ~ 75° / 0° ~ 355°
IR Viewable Length	30m (98.43ft)	–	–	70m (229.66ft) (XNV-6120R)
Day & Night	Auto (ICR)	Auto (Electrical)	Auto (ICR)	Auto (ICR)
Wide Dynamic Range	150dB	–	150dB	150dB
Digital Noise Reduction	SSNR V			
Digital Image Stabilization	Support	Support	Support	Support (Built-in Gyro sensor)
Analytics	Intelligent analytics, 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	Selectable (mic in/line in), Built-in mic / Line out	Built-in mic / –	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 10 Profiles			
Edge Storage	SD/SDHC/SDXC	SD/SDHC/SDXC	micro SD/SDHC/SDXC	SD/SDHC/SDXC
Application Programming Interface	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉) * Start up above -35℃ (-31℉)
Certification	IK08	–	IK08	IP67, IP66, NEMA 4X, IK10
Power Consumption	PoE : Max 9W 12VDC : Max 8W	PoE : Max 4.7W	PoE : Max 6.5W 12VDC : Max 6W	PoE : Max. 7.8W, 12V DC : Max 7W, 24V AC : Max. 8.2W (XNV-6120) PoE : Max. 12.95W, 12V DC : Max. 11.5W, 24V AC : Max. 14W (XNV-6120R)
Product Dimensions / Weight	Ø110 x 90mm (Ø4.33" x 3.54") 380g (0.84lb)	Ø98.9 x 129mm (Ø3.89" x 5.08") 275g (0.61lb)	Ø140.8 x 113mm (Ø5.54" x 4.45") 610g (1.34lb)	Ø160 x 128.5mm (Ø6.3" x 5.06") 985g (2.17lb) (XNV-6120) 995g (2.19lb) (XNV-6120R)
Additional Features	Handover, Hallway View			

	 XNV-6085 2MP Vandal Dome Camera (extraLUX)	 XNV-6080 2MP Vandal Dome Camera	 XNV-6080R 2MP IR Vandal Dome Camera	 XNV-6080RSA 2MP Stainless IR Vandal Dome Camera	 XNV-L6080 2MP Vandal Dome Camera
Imaging Device	1/2" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps				
Min. Illumination	Color : 0.004Lux (F0.94) B/W : 0.0004Lux (F0.94)	Color : 0.015Lux (F1.4) B/W : 0.015Lux (F1.4)	Color : 0.015Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.015Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F1.6) B/W : 0.01Lux (F1.6)
Video Out	CVBS 1.0Vp-p, Micro USB type B				
Focal Length (Zoom Ratio)	4.1 ~ 16.4mm (Optical 4x)	2.8 ~ 12mm (4.3x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	2.8 ~ 12mm (4.3x) motorized varifocal	3.2 ~ 10mm (3.1x) motorized varifocal
Angular Field of View	H : 100° (Wide) ~ 26.2° (Tele) V : 54° (Wide) ~ 14.8° (Tele) D : 116° (Wide) ~ 30° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 119.5° (Wide) ~ 27.9° (Tele) V : 62.8° (Wide) ~ 15.7° (Tele) D : 142.1° (Wide) ~ 32° (Tele)	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)
Pan / Tilt / Rotate Range	±175° / ±73° / ±175°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	–	–	50m (164.04ft)	50m (164.04ft)	–
Day & Night	Auto (ICR)				
Wide Dynamic Range	150dB	150dB	150dB	150dB	120dB
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support (Built-in Gyro sensor)	Support	Support	Support	Support
Analytics	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection, Sound classification	Intelligent analytics Audio detection, Sound classification	Intelligent analytics Audio detection, Sound classification	Intelligent analytics
Business Intelligence	–				
Alarm I/O	1 / 1	1 / 1	1 / 1	1 / 1	–
Audio I/O	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	–
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 10 Profiles				
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40℉ ~ +131℉) * Start up above -35℃ (-31℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉)
Certification	IP67, IP66, NEMA 4X, IK10	IP67, IP66, NEMA4X, IK10	IP67, IP66, NEMA4X, IK10	IP66, NEMA4X, IP6K9K, IK10+	IP66, IK10
Power Consumption	PoE : Max 12.1W 12VDC : Max 11.1W 24VAC : Max 13.5W	PoE : Max 7.8W 12VDC : Max 7W 24VAC : Max 8.2W	PoE : Max 12.95W 12VDC : Max 11.5W 24VAC : Max 14W	PoE : Max 12.95W 12VDC : Max 11.5W 24VAC : Max 14W	PoE : Max 8W
Product Dimensions / Weight	Ø160 x 140mm (Ø6.3" x 5.51") 1.4kg (3.09lb)	Ø160 x 118.5mm (Ø6.3" x 4.67") 985g (2.17lb)	Ø160 x 118.5mm (Ø6.3" x 4.67") 995g (2.19lb)	Ø160 x 120.5mm (Ø6.38" x 4.74") 2.8kg (6.17lb)	Ø160 x 118.5mm (Ø6.3" x 4.67") 940g (2.1lb)
Additional Features	Handover, Hallway View				

	 XNV-L6080R 2MP IR Vandal Dome Camera	 XNV-6022R/6022RM 2MP Mobile IR Flat Camera	 XNV-6020R 2MP IR Vandal Dome Camera	 XNV-6013M 2MP Mobile Camera	 XNV-6012M/6012 2MP Mobile Flat Camera
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	2MP / 60fps				
Min. Illumination	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.04Lux (F2.0) B/W : 0Lux (IR LED on)	Color : 0.015Lux (F1.4) B/W : 0Lux (IR LED on)	Color : 0.04Lux (F2.0) B/W : 0.04Lux (F2.0)	Color : 0.04Lux (F2.0) B/W : 0.04Lux (F2.0)
Video Out	CVBS 1.0Vp-p, Micro USB type B	Micro USB Type B	CVBS 1.0Vp-p, Micro USB type B	Micro USB Type B	Micro USB type B
Focal Length (Zoom Ratio)	3.2 ~ 10mm (3.1x) motorized varifocal	3.6mm fixed	4mm fixed	2.8mm fixed	2.4mm fixed
Angular Field of View	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)	H : 94.8° / V : 49.3° / D : 114.3°	H : 88.6° / V : 47.5° / D : 104.8°	H : 107.4° / V : 62.2° / D : 122°	H : 135.4° / V : 71.2° / D : 161.6°
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	±5° / 0° ~ 67° / ±90°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	±5° / ±10° / ±90°	±5° / 0 ~ 67° / ±90°
IR Viewable Length	30m (98.43ft)	15m (49.21ft)	30m (98.43ft)	-	-
Day & Night	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (Electrical)	Auto (Electrical)
Wide Dynamic Range	120dB	150dB	150dB	150dB	150dB
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support	Support (Built-in Gyro sensor)	Support	Support (Built-in Gyro sensor)	Support (Built-in Gyro sensor)
Analytics	Intelligent analytics	Intelligent analytics Audio detection Sound classification (w/ external MIC)	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification	Intelligent analytics Audio detection Sound classification (w/ external MIC)
Business Intelligence	-	-	People counting, Queue management, Heatmap	-	-
Alarm I/O	-	-	1 / 1	-	-
Audio I/O	-	Selectable (mic in/line in), Built-in mic / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out	Selectable (mic in/line in), Built-in mic / Line out
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 5 Profiles	Up to 10 Profiles	Up to 10 Profiles	Up to 10 Profiles	Up to 10 Profiles
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform				
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃(-4℉)	-40℃ ~ +60℃ (-40℉ ~ +140℉) * Start up above -30℃ (-22℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)
Certification	IP66, IK10	IP66, IK10, NEMA4X	IP67, IP66, IK10	IP67, IP6K9K, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE : Max 11W	PoE : Max 6.7W	PoE : Max 9W 12V DC : Max 8W	PoE : Max 7.2W	PoE : Max 6.5W
Product Dimensions / Weight	Ø160 x 118.5mm (Ø6.3" x 4.67") 940g (2.07lb)	W 98.9 x H 52 x D 100mm (3.89" x 2.05" x 3.94") 295g (0.65lb)	Ø120 x 97.5mm (Ø4.72" x 3.84") 615g (1.36lb)	W 103.7 x H 72.3 x D 126.8mm (4.08" x 2.85" x 4.99") 478g (1.04lb)	W 98.9 x H 52 x D 100mm (3.89" x 2.05" x 3.94") 295g (0.65lb)
Additional Features	Handover, Hallway View	M12 Connector (XNV-6022RM) Handover, Hallway View	Handover, Hallway View	M12 Connector Handover, Hallway View	M12 Connector (XNV-6012M) Handover, Hallway View

			PTZ PLUS 	PTZ PLUS 	PTZ PLUS 
	XNV-6011 **2MP Vandal Dome Camera**	**XNV-6010** **2MP Vandal Dome Camera**	**XNP-9300RW** **8MP 30x Wiper + IR PTZ Camera**	**XNP-8300RW** **6MP 30x Wiper + IR PTZ Camera**	**XNP-6400RW** **2MP 40x Wiper + IR PTZ Camera**
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	2MP / 60fps	2MP / 60fps	4K / 30fps	6MP / 30fps	2MP / 60fps
Min. Illumination	Color : 0.055Lux (F2.0) B/W : 0.055Lux (F2.0)	Color : 0.055Lux (F2.0) B/W : 0.0055Lux (F2.0)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)
Video Out	CVBS 1.0Vp-p, Micro USB type B	CVBS 1.0Vpp, Micro USB type B	–	–	–
Focal Length (Zoom Ratio)	2.8mm fixed	2.4mm fixed	5~150mm(30x) zoom (digital 32x, total 960x zoom)	5~150mm(30x) zoom (digital 32x, total 960x zoom)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)
Angular Field of View	H : 112° / V : 62° / D : 130°	H : 139° / V : 73° / D : 167°	H: 57.42°(Wide)~2.19°(Tele) V: 33.54°(Wide)~1.25°(Tele)	H: 57.42°(Wide)~2.19°(Tele) V: 33.54°(Wide)~1.25°(Tele)	H: 65.66°(Wide)~1.88°(Tele) V: 39.40°(Wide)~1.09°(Tele)
Pan / Tilt / Rotate	0° ~ 353° / 0° ~ 59° / 0° ~ 353°	0° ~ 354° / 0° ~ 67° / 0° ~ 355°	360° Endless / 110°(-20°~90°) / –	360° Endless / 110°(-20°~90°) / –	360° Endless / 110°(-20°~90°) / –
IR Viewable Length	–	–	200m(656.17ft), Wise IR	200m(656.17ft), Wise IR	200m(656.17ft), Wise IR
Day & Night	Auto (Electrical)	Auto (ICR)	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule
Wide Dynamic Range	150dB	150dB	Extreme WDR(120dB)	Extreme WDR(120dB)	Extreme WDR(150dB)
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	Support	Support	Support (built-in gyro sensor)	Support (built-in gyro sensor)	Support (built-in gyro sensor)
Analytics	Intelligent analytics	Intelligent analytics Audio detection Sound classification	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection * Audio detection, Sound classification(with NW I/O Box)		
Business Intelligence	People counting, Queue management, Heatmap	People counting, Queue management, Heatmap	–	–	–
Alarm I/O	–	1 / 1	Compatible with NW I/O Box (Optional: SPM-4210)		
Audio I/O	–	Selectable (mic in/line in) / Line out	Compatible with NW I/O Box (Optional: SPM-4210)		
Video Compression	H.265, H.264, MJPEG				
WiseStream	WiseStream Ⅱ	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Up to 10 Profiles				
Edge Storage	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 2slots 1TB(512GBx2)		
Application Programming Interface	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G, SUNAPI, Hanwha Vision Open Platform	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform		
Operating Temperature	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-40°C~+55°C(-40°F ~ +131°F) / +74°C/+165°F (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent		
Certification	IP66, IK10, NEMA4X	IP67, IP66, IK10	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.7,2.2.8, 2.2.9)		
Power Consumption	PoE : Max 6.5W	PoE : Max 6W / 12V DC : Max 5.5W	Typical 20W, Max 42W		
Dimensions (WxHxD) / Weight	Ø112.8 x 63.7mm (Ø4.44" x 2.51") 420g (0.93lb)	Ø120 x 97.5mm (Ø4.72" x 3.84") 625g (1.38lb)	ø 184.9x318.8mm(7.28x12.55") / 5400g(11.90lb)	ø 184.9x318.8mm(7.28x12.55") / 5400g(11.90lb)	ø 184.9x318.8mm(7.28x12.55") / 5400g(11.90lb)
Additional Features	Handover, Hallway View	Handover, Hallway View	Upgraded preset accuracy, built-in wiper, object auto tracking, Target lock tracking Included SFP slot in HPoE injector		

	PTZ PLUS  XNP-9250R 8MP 25x IR PTZ Camera	PTZ PLUS  XNP-8250R 6MP 25x IR PTZ Camera	PTZ PLUS  XNP-6400R 2MP 40x IR PTZ Camera	PTZ PLUS  XNP-9250 8MP 25x PTZ Camera	PTZ PLUS  XNP-8250 6MP 25x PTZ Camera	PTZ PLUS  XNP-6400 2MP 40x PTZ Camera
Imaging Device	1/2.8" CMOS					
Resolution / Max. Frame Rate	4K / 30fps	6MP / 30fps	2MP / 60fps	4K / 30fps	6MP / 30fps	2MP / 60fps
Min. Illumination	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0Lux(IR LED On)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0.01Lux(F1.6, 1/30sec)	Color: 0.1Lux(F1.6, 1/30sec) BW: 0.01Lux(F1.6, 1/30sec)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec)
Video Out	–					
Focal Length (Zoom Ratio)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	5~125mm(25x) zoom (digital 32x, total 800x zoom)	4.25~170mm(40x) zoom (digital 32x, total 1280x zoom)
Angular Field of View	H: 57.42°(Wide)~2.71°(Tele) V: 33.54°(Wide)~1.55°(Tele)	H: 57.42°(Wide)~2.71°(Tele) V: 33.54°(Wide)~1.55°(Tele)	H: 65.66°(Wide)~1.88°(Tele) V: 39.40°(Wide)~1.09°(Tele)	H: 57.42°(Wide)~2.71°(Tele) V: 33.54°(Wide)~1.55°(Tele)	H: 57.42°(Wide)~2.71°(Tele) V: 33.54°(Wide)~1.55°(Tele)	H: 65.66°(Wide)~1.88°(Tele) V: 39.40°(Wide)~1.09°(Tele)
Pan / Tilt / Rotate Range	360° Endless / 110°(–20°~90°) / –	360° Endless / 110°(–20°~90°) / –	360° Endless / 110°(–20°~90°) / –	360° Endless / 110°(–20°~90°) / –	360° Endless / 110°(–20°~90°) / –	360° Endless / 110°(–20°~90°) / –
IR Viewable Length	200m(656.17ft), Wise IR	200m(656.17ft), Wise IR	200m(656.17ft), Wise IR	–	–	–
Day & Night	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule	Auto(ICR)/Color/BW/Schedule
Wide Dynamic Range	Extreme WDR(120dB)	Extreme WDR(120dB)	Extreme WDR(150dB)	Extreme WDR(120dB)	Extreme WDR(120dB)	Extreme WDR(150dB)
Digital Noise Reduction	SSNR V					
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)	Support(built-in gyro sensor)
Analytics	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection * Audio detection, Sound classification(with NW I/O Box)					
Business Intelligence	–					
Alarm I/O	Compatible with NW I/O Box (Optional: SPM-4210)					
Audio I/O	Compatible with NW I/O Box (Optional: SPM-4210)					
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG					
WiseStream	Manual(5ea area), WiseStream Ⅱ					
Streaming	Up to 10 profiles					
Edge Storage	Micro SD/SDHC/SDXC 2slot 1TB	Micro SD/SDHC/SDXC 2slot 1TB	Micro SD/SDHC/SDXC 2slot 1TB	Micro SD/SDHC/SDXC 2slot 1TB	Micro SD/SDHC/SDXC 2slot 1TB	Micro SD/SDHC/SDXC 2slot 1TB
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform					
Operating Temperature / Humidity	–40°C~+55°C(–40°F ~ +131°F) / +74°C (+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above –30°C 0~100%RH(Condensing) Humidity control with AIR vent		–40°C~+50°C(–40°F ~ +122°F) / +74°C (+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above –30°C 0~100%RH(Condensing) Humidity control with AIR vent	–40°C~+55°C(–40°F ~ +131°F) / +74°C/+165° F (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above –30°C 0~100%RH(Condensing) Humidity control with AIR vent	–40°C~+55°C(–40°F ~ +131°F) / +74°C (+165°F) (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above –30°C 0~100%RH(Condensing) Humidity control with AIR vent	–40°C~+50°C (–40°F ~ +122°F) / +74°C/+165°F (MAX) based on NEMA-TS 2(2.2.7) * Start up should be done at above –30°C 0~100%RH(Condensing) Humidity control with AIR vent
Certification	IP66, IK10, NEMA4X, NEMA-TS 2(2.2.8, 2.2.9)					
Power Consumption	Typical 20W, Max 40W	Typical 20W, Max 40W	Typical 20W, Max 40W	Typical 20W, Max 25W	Typical 20W, Max 25W	Typical 20W, Max 25W
Product Dimensions / Weight	ø 158x293.3mm(6.22x11.55"") / 3200g(7.05lb)"	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)	ø 158x293.3mm(6.22x11.55") / 3200g(7.05lb)
Additional Features	Upgraded preset accuracy,object auto tracking, Target lock tracking Included SFP slot in HPoE injector					

	 XNP-6550RH 2MP 55x IR PTZ Camera	 XNP-6371RH 2MP 37x IR PTZ Camera	 XNP-6120H 2MP 12x PTZ Camera	 XNP-6040H 2MP 4.3x PTZ Camera	 XNZ-6320A 2MP 32x Zoom Camera	 XNZ-L6320A 2MP 32x Zoom Camera
Imaging Device	1/2.8" 2MP CMOS	1/2" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	
Resolution / Max. Frame Rate	2MP / 60fps				2MP/ 60fps	
Min. Illumination	Color : 0.02Lux (F1.6) B/W : 0Lux (IR LED on)	Color: 0.01Lux (F1.5, 1/30sec) BW: 0Lux (IR LED)	Color: 0.03 Lux (1/30sec, F1.6, 30IRE) B/W: 0.003 Lux (1/30sec, F1.6, 30IRE)	Color: 0.015Lux(F1.4, 1/30sec) BW: 0.0015Lux(F1.4, 1/30sec)	Color: 0.05Lux (1/30sec, F1.6) B/W: 0.005Lux (1/30sec, F1.6)	Color: 0.05Lux (1/30sec, F1.6) B/W: 0.005Lux (1/30sec, F1.6)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation		CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation		CVBS 1.0 Vp-p, Micro USB Type B	CVBS 1.0 Vp-p
Focal Length (Zoom Ratio)	4.75~261.4mm(55x) zoom	6~222mm(37x) zoom	5.2~62.4mm(12x) zoom (digital 32x, total 512x zoom)	2.8~12mm(4.3x) zoom (digital 32x, total 137.6x zoom)	4.44 ~ 142.6mm (Optical 32X) (digital 32x, total 1024x zoom)	4.44 ~ 142.6mm (Optical 32X) (digital 32x, total 1024x zoom)
Angular Field of View	H: 58.6°(Wide)~1.23°(Tele) V: 34.8°(Wide)~0.71°(Tele)	H: 59.3°(Wide)~1.90°(Tele) V: 35.8°(Wide)~1.1°(Tele)	H: 54.58°(Wide)~5.30°(Tele) V: 32.19°(Wide)~3.00°(Tele)	H: 119.5°(Wide)~27.9°(Tele) V: 62.8°(Wide)~15.7°(Tele) D: 142.1°(Wide)~32.0°(Tele)	H: 64.66°(Wide)~2.29°(Tele) V: 38.08°(Wide)~1.30°(Tele)	H: 64.66°(Wide)~2.29°(Tele) V: 38.08°(Wide)~1.30°(Tele)
Pan / Tilt / Rotate Range	360° Endless / 95°(-5°~90°) / -	360° Endless / '190°(-5°~185°) / -	360° Endless / 190°(-5°~185°) / -	0°~355° / 0°~90°	-	-
IR Viewable Length	500m(1,640.42ft)	350m(1,148.29ft)	-	-	-	-
Day & Night	Auto(ICR)				Auto(ICR)	Auto(ICR)
Wide Dynamic Range	150dB				120dB	120dB
Digital Noise Reduction	SSNR V					
Digital Image Stabilization	Support(built-in gyro sensor)					
Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification, Shock detection		Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification		Intelligent analytics, Audio detection, Sound classification Shock detection	Intelligent analytics, Audio detection Sound classification
Business Intelligence	-	-	-	-	-	-
Alarm I/O	Input 4ea / Output 2ea	Input 4ea / Output 2ea	Input 1ea / Output 1ea	Input 1ea / Output 1ea	1 / 2	1 / 1
Audio I/O	Selectable(mic in/line in), Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms				Selectable (mic in/line in) / Line out	Selectable (mic in/line in) / Line out
Video Compression	H.265/H.264, MJPEG					
WiseStream	Manual(5ea area), WiseStream Ⅱ					
Streaming	Up to 10 profiles				Up to 10 profiles	Up to 10 profiles
Edge Storage	Micro SD/SDHC/SDXC 2slot 512GB	SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 2slot 512GB	Micro SD/SDHC/SDXC 2slot 512GB	Micro SD/SDHC/SDXC 2 slot 512GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform					
Operating Temperature / Humidity	24VAC : -50°C~+55°C (-58°F~+131°F), Less than 95% RH-Non-Condensing HPoE : -40°C~+55°C (-40°F~+131°F) / Less than 95% RH-Non-Condensing * Start up should be done at above -35°C FAN/Heater included	-50°C ~ +55 C°(-58°F ~ +131°F)	-30°C~+55°C (-22°F~+131°F) / Less than 90% RH	-30°C~+55°C (-22°F~+131°F) / Less than 90% RH	-10°C ~ +55°C(-14°F ~ +131°F) / Less than 90% RH	-10°C ~ +55°C(-14°F ~ +131°F) / Less than 90% RH
Certification	IP66, IK10	IP66, IK10	IP66, IK10	IP66, IK10	-	-
Power Consumption	24VAC: Max. 92W (typical : 30W) HPoE : Max. 60W (typical : 30W)	24VAC: Max 90W	Max. 12W	DC12V: Max. 8.6W PoE : Max. 9.6W	PoE: Max 7.5W, Typical 4.5W 12VDC: Max 7.0W, Typical 4.0W	PoE: Max 7.5W, Typ 5.0W 12VDC: Max 5.7W, Typ 3.7W
Product Dimensions / Weight	ø 236.9x407.7mm(9.33x16.05"), 7.1Kg(15.65 lb)	ø 236.9x407.7mm(9.33x16.05"), 7.1Kg(15.65 lb)	ø 168x161.5mm(6.61x6.36"), 1.9kg(4.19 lb)	ø 136x106mm(5.35x4.17"), 780g(1.72 lb)	96 x 76 x 143.5mm(3.78x2.99x5.65"), 578g (1.27 lb)	72 x 63.9 x 135.4mm(2.83x2.52x5.33"), 480g(1.06 lb)
Additional Features	Defog, Auto tracking				Defog	Defog

	 PNM-9031RV 15MP 192° IR Panoramic Camera	 PNM-9030V 15MP 180° / 220° Panoramic Camera	 PNM-9022V 8.3MP 180° / 220° Panoramic Camera	 PNM-9085RQZ1 5MP x 4CH IR PTRZ Multi-directional Camera	 PNM-9084RQZ1 2MP x 4CH IR PTRZ Multi-directional Camera
Imaging Device	1/2.8" 5MP CMOS (x4)	1/2.8" 4CH	1/2.8" 4CH	1/1.8" 5MP CMOS x 4CH	1/2.8" CMOS x 4CH
Resolution / Max. Frame Rate	15MP / 20fps	15.5MP / 30fps	8.3MP / 30fps	8MP / 30fps	8MP / 60fps
Min. Illumination	Color: 0.1Lux(F1.6, 1/30sec) BW: 0Lux(IR LED on)	Color : 0.15Lux (F2.0) B/W : 0.01Lux (F2.0)	Color: 0.3Lux(F1.6) Color: 0.03Lux(F1.6)	Color: 0.11lux(F1.92, 30 IRE) BW: 0Lux(IR LED on)	Color: 0.05lux(F1.6,30 IRE) BW: 0Lux(IR LED on)
Video Out	Micro USB Type B	Micro USB Type B	Micro USB Type B	–	–
Focal Length (Zoom Ratio)	4.3mm Fixed	4mm fixed	2.8mm fixed focal	4.13~9.4mm(2.3x)motorized varifocal	3.2~10mm(3.1x) motorized varifocal
Angular Field of View	H: 196° / V: 64° (Min distance 5m) H: 197° / V: 64° (Max distance 100m)	[180° mode] H : 180° / V : 70 ° [220° mode] H : 220° / V : 52 °	H: 209°, V: 83.3°	H: 87.58° (Wide)~37.34° (Tele) / V: 64.58° (Wide)~28.04° (Tele) / D: 112.46° (Wide)~46.85° (Tele)	H: 109.0° (Wide)~33.2° (Tele) V: 57.4° (Wide)~18.7° (Tele) D: 132.0° (Wide)~38.0° (Tele)
Pan / Tilt / Rotate Range	0~360° / 0~60° / –	0° ~ 355° / 0° ~ 60° / –	0° ~355° / 0° ~60° / –	Remote adjustment (Max. 200cycles) 0~360° / 35~80° / 0~90	Remote adjustment (Max. 200cycles) 0~360° / 35~80° / 0~90
IR Viewable Length	20m(65.62ft)	–	–	30m(98.43ft)	30m(98.43ft)
Day & Night	Auto(ICR)				
Wide Dynamic Range	120dB	120dB	extreme WDR(120dB)	120dB	120dB
Digital Noise Reduction	SSNR V				
Digital Image Stabilization	–	–	–	Support	Support
Analytics	Defocus detection, Motion detection, Appear/ Disappear, Enter/Exit, Tampering, Virtual line, Audio detection	Intelligent analytics Audio detection Sound classification	Defocus detection, Motion detection, Appear/Disappear, Enter/Exit, Tampering, Virtual line, Audio detection	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection
Business Intelligence	Heatmap	Heatmap	Heatmap	–	–
Alarm I/O	2 / 1.	1 / 1	1 / 1.	1 / 1	1 / 1
Audio I/O	Selectable (mic in/line in)	Line in / Line out	Selectable(mic in/line in) / Line out	Selectable(mic in/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	H.265/H.264, MJPEG	H.265/H.264, MJPEG
WiseStream	WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ	WiseStream Ⅱ
Streaming	Up to 3 profiles	Up to 5 or 3 profiles for each CH	Up to 10 profiles	Up to 10 profiles	Up to 10 profiles
Edge Storage	Micro SD/SDHC/SDXC 2slots 512GB (256GBx2)	Micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 4slot 256GB(each CH)	Micro SD/SDHC/SDXC 4slot 256GB(each CH)
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API)	ONVIF profile S/G, SUNAPI	ONVIF Profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform
Operating Temperature / Humidity	−40°C~+55°C (−40°F~+131°F) * Startup should be above −30°C Less than 95% RH(Non-condensing)	−40°C ~ +55°C (−40°F ~ +131°F) * Start up above −30°C (−22°F)	−40°C ~ +60°C(−40°F ~ +131°F) / Less than 95% RH(Non-condensing) * Maximum temperature : +60°C (intermittent)	−40°C~+55°C(−40°F~+131°F) / Less than 90% RH	−40°C~+55°C(−40°F~+131°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE+: Max 23.5W, Typical 18.0W 12VDC: Max 20.5W, Typical 16.0W"	PoE+ : Max 25.5W 12VDC : Max 21.0W	PoE+: Max 18W, Typical 10.4W	PoE: Max. 45 W, Typical 33.7 W 12VDC: Max. 42 W, Typical 32 W	PoE: Max. 42 W, Typical 30 W 12VDC: Max. 38 W, Typical 28.2 W
Product Dimensions / Weight	Ø253x170mm / 2.6Kg	Ø253 x H165mm (Ø9.96"" x 6.5"") 3.2Kg (7.1lb)	Ø253 x 165mm (Ø9.96"" x 6.5"") 3200g	Ø315x145.9 mm(12.40"x5.74") / 5.2 kg(11.5lb)	Ø315x145.9 mm(12.40"x5.74") / 5.2 kg(11.5lb)
Additional Features	–	Defog	4CH Stitching	Motorized PTRZ	Motorized PTRZ

				
	PNM-9084QZ1 **2MP x 4CH PTRZ Multi-directional Camera**	**PNM-8082VT** **2MP x 3CH Multi-directional Camera**	**PNM-12082RVD** **6MP x 2CH Multi-directional Camera**	**PNM-7082RVD** **2MP x 2CH Multi-directional Camera**
Imaging Device	1/2.8" CMOS x 4CH	1/2.8" CMOS 3CH	1/2.8" CMOS x 2CH	1/2.8" CMOS x 2CH
Resolution / Max. Frame Rate	8MP / 60fps	2MP / 30fps	6MP / 15fps	2MP / 30fps
Min. Illumination	Color: 0.04lux(F2.2, 1/30sec) BW: 0.004lux(F2.2, 1/30sec)	Color: 0.04lux(F2.2) BW: 0.004lux(F2.2)	Color: 0.16lux(F1.67, 1/30sec, 30IRE) BW: 0lux(IR LED on)	Color: 0.035lux(F2.2, 1/30sec, 30IRE) BW: 0lux(IR LED on)
Video Out	-	CVBS: 1.0 Vp-p	micro USB Type B	micro USB Type B
Focal Length (Zoom Ratio)	3~6mm(2x) motorized varifocal	3~6mm(2x) motorized varifocal	3.54~6.69mm(1.9x) motorized varifocal	3~6mm(2x) motorized varifocal
Angular Field of View	H: 107° (Wide)~56.3° (Tele) V: 57° (Wide)~31.5° (Tele) D: 126° (Wide)~64.3° (Tele)	H: 107° (Wide)~56.3° (Tele) V: 57° (Wide)~31.5° (Tele) D: 126° (Wide)~64.3° (Tele)	H: 96° (Wide)~47° (Tele) V: 51° (Wide)~26° (Tele) D: 113° (Wide)~54° (Tele)	H: 107° (Wide)~56° (Tele) V: 57° (Wide)~31° (Tele) D: 126° (Wide)~64° (Tele)
Pan / Tilt / Rotate Range	Remote adjustment (Max. 200cycles) 0~360° / 0~73° / 0~90°	0~360° / 0~73° / 0~90°	0~355° /0~78° /0~180°	0~355° / 0~78° / 0~180°
IR Viewable Length	-	-	25m(82ft)	25m(82ft)
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)	Auto(ICR)
Wide Dynamic Range	120dB	extreme WDR(150dB)	extremeWDR(120dB)	extremeWDR(150dB)
Digital Noise Reduction	SSNR V	SSNR V	WiseNR, SSNR V	WiseNR, SSNR V
Digital Image Stabilization	Support	Support	-	-
Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection	Defocus detection, Directional detection, Motion detection, Enter/Exit,Tampering, Virtual line	**Analytics events*** - Defocus detection, Motion detection, Tampering, Virtual line(Crossing/Direction), Virtual area(Loitering/Enter/Exit) * Support Audio detection, Sound classification via optional SPM-4210 I/O box	
Business Intelligence	-	-	-	-
Alarm I/O	1 / 1	-	-	-
Audio I/O	Selectable(mic in/line in) / Line out	-	-	-
Video Compression	H.265/H.264, MJPEG	H.265, H.264, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	WiseStream Ⅱ	WiseStream II	WiseStream Ⅱ	WiseStream Ⅱ
Streaming	Up to 10 profiles	Up to 10 profiles	Up to 10 profiles	Up to 10 profiles
Edge Storage	Micro SD/SDHC/SDXC 4slot 256GB(each CH)	Micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 1slot Max. 512GB	Micro SD/SDHC/SDXC 1slot Max. 512GB
Application Programming Interface	ONVIF Profile S/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API)	ONVIF Profile S/T SUNAPI(HTTP API) Open platform	ONVIF Profile S/T SUNAPI(HTTP API) Open platform
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / Less than 90% RH *Start up should be above at -35°C			
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X	IP66/IP67, NEMA4X, IK10	IP66/IP67, NEMA4X, IK10
Power Consumption	Max. 33W, Typical 20W	PoE+: Max : 16.5W, Typical : 8.2W	PoE+: Max 18.3W, typical 13.5W	PoE+: Max 17W, typical 12.5W
Product Dimensions / Weight	Ø251x116.5mm / 3Kg	Ø251 x 116.5mm (Ø9.88"" x 4.59"") 3kg (6.6lb)	215(W)x135(D)x93.2(H)mm(8.46"x5.31"x3.67") / 1330g	215(W)x135(D)x93.2(H)mm(8.46"x5.31"x3.67") / 1330g
Additional Features	Motorized PTRZ	3CH Multi-directional	-	-

				
	PNM-9000QB **2MP x 4CH Remote Head Camera**	**SLA-T4680A/T4680VA** **2MP lens for PNM-9000QB**	**SLA-T2480A/T2480VA** **2MP lens for PNM-9000QB**	**SLA-T1080FA** **2MP lens for PNM-9000QB**
Imaging Device	-	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS
Resolution / Max. Frame Rate	2MP / 30fps	-	-	-
Min. Illumination	-	Color: 0.06Lux(F2.5)	Color: 0.045Lux(F2.0)	Color: 0.03Lux(F1.6)
Video Out	HDMI(1920x1080, Quad view support)	-	-	-
Focal Length (Zoom Ratio)	-	4.6mm fixed focal	2.4mm fixed focal	1.6mm fixed focal
Angular Field of View	-	H: 73° / V: 39° / D: 85°	H: 138° / V: 73° / D: 165°	H: 187° / V: 113.9°
Pan / Tilt / Rotate Range	-	-	-	-
IR Viewable Length	-	-	-	-
Day & Night	Auto(electrical)	-	-	-
Wide Dynamic Range	extreme WDR(150dB)	-	-	-
Digital Noise Reduction	SSNRV	-	-	-
Digital Image Stabilization	Support	-	-	-
Analytics	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line	-	-	-
Business Intelligence	-	-	-	-
Alarm I/O	1 / 1.	-	-	-
Audio I/O	Selectable(mic in/line in) / Line out	-	-	-
Video Compression	H.265, H.264, MJPEG	-	-	-
WiseStream	WiseStream II	-	-	-
Streaming	Up to 10 profiles	-	-	-
Edge Storage	Micro SD/SDHC/SDXC	-	-	-
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	-	-	-
Operating Temperature / Humidity	-10°C ~ +45°C(-40°F ~ +113°F) / Less than 95% RH(Non condensing)	-	-	-
Certification	-	-	-	-
Power Consumption	PoE : Max 22W, Typical 16.70W DC : Max 19W, Typical : 14W	-	-	-
Product Dimensions / Weight	W 200 x H 37 x D 146mm (7.87" x 1.46" x 5.75") 715g (1.58lb)	Ø 24 x L49.8mm, 310g (SLA-T4681) W30 x H27.9 x D45mm, 321g (SLA-T4681V)	Ø 24 x L49.8mm, 318g (SLA-T2481) W30 x H27.9 x D45mm, 328g (SLA-T2481V)	Ø 35 x L68.9mm 430g
Additional Features	Optional pinhole/fixed lens	-	-	-

					
	QNO-8080R **5MP IR Bullet Camera**	**QNO-8020R** **5MP IR Bullet Camera**	**QNO-8010R** **5MP IR Bullet Camera**	**QND-8080R** **5MP IR Dome Camera**	**QND-8020R** **5MP IR Dome Camera**
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	5MP / 30fps	5MP / 30fps	5MP / 30fps	5MP / 30fps	5MP / 30fps
Min. Illumination	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F2.0) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)
Video Out	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p
Focal Length (Zoom Ratio)	3.2 ~ 10mm (3.1x) motorized varifocal	4.0mm fixed	2.8mm fixed	3.2 ~ 10mm (3.1x) motorized varifocal	4.0mm fixed
Angular Field of View	H : 100.3° (Wide) ~ 31.2° (Tele) / V : 72.3° (Wide) ~ 23.5° (Tele) / D : 133.1° (Wide) ~ 38.8° (Tele)	H : 79.8° / V : 58.1° / D : 105.9°	H : 104.7° / V : 76.5° / D : 136.0°	H : 100.3° (Wide) ~ 31.2° (Tele) / V : 72.3° (Wide) ~ 23.5° (Tele) / D : 133.1° (Wide) ~ 38.8° (Tele)	H : 79.8° / V : 58.1° / D : 105.9°
Pan / Tilt / Rotate Range	-	-	-	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	30m (98.43ft)	25m (82.02ft)	20m (65.62ft)	20m (65.62ft)	20m (65.62ft)
Day & Night	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)	Auto (ICR)
Wide Dynamic Range	120dB	120dB	120dB	120dB	120dB
Digital Noise Reduction	SSNR	SSNR	SSNR	SSNR	SSNR
Digital Image Stabilization	-	-	-	-	-
Analytics	Intelligent analytics	Intelligent analytics	Intelligent analytics	Intelligent analytics	Intelligent analytics
Business Intelligence	-	-	-	-	-
Alarm I/O	1/1				
Audio I/O	-	-	-	-	-
Video Compression	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
WiseStream	WiseStream II	WiseStream II	WiseStream II	WiseStream II	WiseStream II
Streaming	Up to 3 Profiles	Up to 3 Profiles	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	Micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	-30°C ~ +55°C (-22°F ~ +131°F) * Start up above -20°C (-4°F)	-30°C ~ +55°C (-22°F ~ +131°F) * Start up above -20°C (-4°F)	-30°C ~ +55°C (-22°F ~ +131°F) * Start up above -20°C (-4°F)	-10°C ~ +50°C (+14°F ~ +122°F)	-10°C ~ +50°C (+14°F ~ +122°F)
Certification	IP66, IK10	IP66, IK10	IP66, IK10	-	-
Power Consumption	PoE : Max 9.5W, typical 7.3W	PoE : Max 7.5W, typical 6.1W	PoE : Max 7.5W, typical 6.1W	PoE : Max 8.9W, typical 6.6W	PoE : Max 6.8W, typical 5.0W
Dimensions (WxHxD) / Weight	Ø91 x 322.9mm (Ø3.58"" x 12.71"") 1190g (2.624 lb)	Ø70.0 x 246.0mm (Ø2.76"" x 9.69"") 680g (1.499 lb)	Ø70.0 x 246.0mm (Ø2.76"" x 9.69"") 680g (1.499 lb)	Ø120.3 x 102.0mm (Ø4.74"" x 4.02"") 430g (0.948 lb)	Ø110.6 x 89.5mm (Ø4.35"" x 3.52"") 360g (0.794 lb)
Additional Features	Hallway View	Hallway View	Hallway View	Hallway View	Hallway View

			Q mini 		Q mini 
	QND-8010R 5MP IR Dome Camera	**QND-8012** 5MP/4MP Dome Camera	**QND-8021** 5MP Dome Camera	**QND-8022** 5MP/4MP Dome Camera	**QND-8011** 5MP Dome Camera
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	5MP / 30fps	5MP / 4MP / 30fps	5MP / 30fps	5MP / 4MP / 30fps	5MP / 30fps
Min. Illumination	Color : 0.15Lux (F2.0) B/W : 0Lux (IR LED on)	Color: 0.15Lux(F2.0, 1/30sec, 30IRE) BW: 0.15Lux(F2.0, 1/30sec, 30IRE)	Color : 0.15Lux (F1.6)	Color: 0.15Lux(F1.6, 1/30sec, 30IRE) BW: 0.15Lux(F1.6, 1/30sec, 30IRE)	Color : 0.15Lux (F2.0)
Video Out	CVBS 1.0 Vp-p	Micro HDMI: 1080p@30/25fps(60/50Hz)	Micro HDMI	Micro HDMI: 1080p@30/25fps(60/50Hz)	Micro HDMI
Focal Length (Zoom Ratio)	2.8mm fixed	2.8mm fixed focal	4mm fixed	4.0mm fixed focal	2.8mm fixed
Angular Field of View	H : 104.7° / V : 76.5° / D : 136°	H: 105° / V: 77° / D: 137°	H : 80.1° / V : 58° / D : 105.8°	H: 81° / V: 58° / D: 106°	H : 104.4° / V : 76.7° / D : 136.1°
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0°~350° / 0 ° ~69° / 0 ° ~355 °	0°~ 350° / 0° ~69° / 0°~ 355°	0°~350° / 0°~69° / 0°~355 °	0° ~ 350° / 0° ~ 69° / 0° ~ 355°
IR Viewable Length	20m (65.62ft)	-	-	-	-
Day & Night	Auto (ICR)	Auto(Electrical)	Auto (Electrical)	Auto(Electrical)	Auto (Electrical)
Wide Dynamic Range	120dB				
Digital Noise Reduction	SSNR				
Digital Image Stabilization	-				
Analytics	Intelligent analytics	Defocus detection, Motion detection, Tampering	Intelligent analytics	Defocus detection, Motion detection, Tampering	Intelligent analytics
Business Intelligence	-	People counting	People counting	People counting	People counting
Alarm I/O	1 / 1	-	-	-	-
Audio I/O	-				
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 3 Profiles				
Edge Storage	micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 1slot 128GB	micro SD/SDHC/SDXC	Micro SD/SDHC/SDXC 1slot 128GB	micro SD/SDHC/SDXC
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	-10℃ ~ +50℃ (+14°F ~ +122°F)	-10°C~+40°C(+14°F~+104°F) 0~90% RH(non-condensing)	-10°C ~ +40°C (+14°F ~ +104°F)	-10°C~+40°C(+14°F~+104°F) 0~90% RH(non-condensing)	-10°C ~ +40°C (+14°F ~ +104°F)
Certification	-	IP42, IK08	IP42, IK08	IP42, IK08	IP42, IK08
Power Consumption	PoE : Max 7.5W, typical 5.8W	PoE: Max 5.00W, typical 4.00W	PoE : Max 5W, typical 4W	PoE: Max 5.00W, typical 4.00W	PoE : Max 5W, typical 4W
Product Dimensions / Weight	Ø 110.6 x 89.5mm (Ø4.35" x 3.52") 360g (0.794lb)	ø 99.0x56.0mm(ø 3.9x2.2"), 165g(0.36 lb)	Ø99 x 56mm (Ø3.9" x 2.2") 165g (0.364lb)	ø 99.0x56.0mm(ø 3.9x2.2"), 165g(0.36 lb)	Ø99 x 56mm (Ø3.9" x 2.2") 165g (0.364lb)
Additional Features	Hallway View	Hallway View	Super compact design, Hallway View	Hallway View	Super compact design, Hallway View

	 QNV-8080R 5MP IR Vandal Dome Camera	 QNV-8020R 5MP IR Vandal Dome Camera	 QNV-8010R 5MP IR Vandal Dome Camera	 QNB-8002 5MP Box Camera	 QNE-8011R 5MP IR Flateye Camera
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	5MP / 30fps				
Min. Illumination	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.15Lux (F2.0) B/W : 0Lux (IR LED on)	Color : 0.07Lux (F1.2)	Color : 0.15Lux (F2.0) B/W : 0Lux (IR LED on)
Video Out	CVBS 1.0 Vp-p				
Focal Length (Zoom Ratio)	3.2 ~ 10mm (3.1x) motorized varifocal	4.0mm fixed	2.8mm fixed	-	2.8mm fixed
Angular Field of View	H : 100.3° (Wide) ~ 31.2° (Tele) V : 72.3° (Wide) ~ 23.5° (Tele) D : 133.1° (Wide) ~ 38.8° (Tele)	H : 79.8° / V : 58.1° / D : 105.9°	H : 104.7° / V : 76.5° / D : 136°	-	H : 104.4° V : 76.7° D : 136.1°
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	-	0° ~ 350° / 0° ~ 75° / 0° ~ 360°
IR Viewable Length	30m (98.42ft)	25m (82.02ft)	20m (65.62ft)	-	20m (65.62ft)
Day & Night	Auto (ICR)				
Wide Dynamic Range	120dB				
Digital Noise Reduction	SSNR				
Digital Image Stabilization	-				
Analytics	Intelligent analytics				
Business Intelligence	-				
Alarm I/O	1 / 1	1 / 1	1 / 1	1 / 1	-
Audio I/O	-	-	-	Line in / Line out	-
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 3 Profiles				
Edge Storage	micro SD/SDHC/SDXC				
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform				
Operating Temperature / Humidity	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)
Certification	IP66, IK10	IP66, IK10	IP66, IK10	-	IP67, IK10
Power Consumption	PoE : Max 8.9W, typical 6.6W	PoE : Max 7.2W, typical 5.4W	PoE : Max 7.5W, typical 5.8W	PoE : Max 6.4W, typical 4.6W 12VDC : Max 5.8W, typical 4.1W	PoE : Max 7.4W, typical 5.5W
Product Dimensions / Weight	Ø137 x 106.1mm (Ø5.39" x 4.18") 700g (1.543lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124lb)	W 73.8 x H 66.6 x D 136.2mm (2.91" x 2.62" x 5.36") 320g (0.71lb)	Ø125 x 87.35mm (Ø4.92" x 3.44") 645g (1.422lb)
Additional Features	Hallway View				

				
	QNO-7082R **4MP IR Bullet Camera**	**QNO-7032R** **4MP IR Bullet Camera**	**QNO-7022R** **4MP IR Bullet Camera**	**QNO-7012R** **4MP IR Bullet Camera**
Imaging Device	1/3" CMOS			
Resolution / Max. Frame Rate	4MP / 30fps			
Min. Illumination	Color : 0.1Lux (F1.6, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F1.6, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)
Video Out	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS: 1.0 Vp-p	CVBS: 1.0 Vp-p
Focal Length (Zoom Ratio)	3.2~10mm (3.1x) motorized varifocal	6mm fixed focal	4mm fixed focal	2.8mm fixed focal
Angular Field of View	H : 98.6°(Wide) ~ 30.8°(Tele) V : 52.3°(Wide) ~ 17.3°(Tele) D : 115.7°(Wide) ~ 35.3°(Tele)	H : 49.0° / V : 27.6° / D : 55.6 °	H : 78.2° / V : 41.2° / D : 92°	H : 107.5° / V : 59.7° / D : 122°
Pan / Tilt / Rotate Range	-	-	-	-
IR Viewable Length	30m (98.42ft)	30m (98.42ft)	25m (82.02ft)	20m (65.62ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	120dB			
Digital Noise Reduction	SSNR			
Digital Image Stabilization	-	-	-	-
Analytics	Motion detection, Tampering, Defocus detection , Virtual area(Intrusion/Enter/Exit), Virtual line(Crossing/Direction)	Intelligent analytics	Motion detection, Tampering, Defocus detection , Virtual area(Intrusion/Enter/Exit), Virtual line(Crossing/Direction)	Motion detection, Tampering, Defocus detection , Virtual area(Intrusion/Enter/Exit), Virtual line(Crossing/Direction)
Business Intelligence	-	-		
Alarm I/O	1/1	1/1	1/1	1/1
Audio I/O	Line in / -	Selectable (mic in/line in) / -	Selectable (mic in/line in) / -	Selectable (mic in/line in) / -
Video Compression	H.265 / H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG
WiseStream	WiseStream Ⅱ			
Streaming	Up to 3 Profiles			
Edge Storage	micro SD/SDHC/SDXC 1slot 128GB			
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF Profile S/G/T, SUNAPI (HTTP API)
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40℉ ~ +131℉) / 0~95% RH * Start up should be done at -30℃ or above			
Certification	IP66, IK10	IP66, IK10	IP66, IK10	IP66, IK10
Power Consumption	PoE: Max 11.4W, typical 8W 12VDC: Max 9.6W, typical 7W	PoE: Max 10.7W, typical 8W 12VDC: Max 9.1W, typical 6.8W	PoE: Max 10.7W, typical 8W 12VDC: Max 9.1W, typical 6.8W	PoE: Max 10.7W, typical 8W 12VDC: Max 9.1W, typical 6.8W
Product Dimensions / Weight	Ø78.0 x 259.8mm (Ø3.07 x 10.23""), 900g (1.984 lb)	Ø70.0 x 246.0mm (Ø2.76 x 9.69""), 700g (1.543 lb)	PoE: Max 10.7W, typical 8W 12V DC: Max 9.1W, typical 6.8W	PoE: Max 10.7W, typical 8W 12VDC: Max 9.1W, typical 6.8W
Additional Features	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line			

	 QNO-6082R/6082R1 2MP IR Bullet Camera		 QNO-6072R/6072R1 2MP IR Bullet Camera		 QNO-6022R/6022R1 2MP IR Bullet Camera		 QNO-6012R/6012R1 2MP IR Bullet Camera	
Imaging Device	1/2.8" CMOS							
Resolution / Max. Frame Rate	2MP / 30fps							
Min. Illumination	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)							
Video Out	CVBS 1.0 Vp-p							
Focal Length (Zoom Ratio)	3.2 ~ 10mm (3.1x) motorized varifocal		3.2 ~ 10mm (3.1x) manual varifocal		4mm fixed		2.8mm fixed	
Angular Field of View	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)		H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)		H : 87.6° / V : 46.4° / D : 104.5°		H : 113.74° / V : 61.5° / D : 134.45°	
Pan / Tilt / Rotate Range	-							
IR Viewable Length	30m (98.43ft)		30m (98.43ft)		25m (82.02ft)		20m (65.62ft)	
Day & Night	Auto (ICR)							
Wide Dynamic Range	120dB							
Digital Noise Reduction	SSNR							
Digital Image Stabilization	-							
Analytics	Intelligent analytics							
Business Intelligence	-							
Alarm I/O	1 / 1							
Audio I/O	Selectable (mic in/line in)	-	Selectable (mic in/line in)	-	Selectable (mic in/line in)	-	Selectable (mic in/line in)	-
Video Compression	H.265 / H.264, MJPEG							
WiseStream	WiseStream Ⅱ							
Streaming	Up to 3 Profiles							
Edge Storage	micro SD/SDHC/SDXC							
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Wisenet open platform							
Operating Temperature / Humidity	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)							
Certification	IP66, IK10							
Power Consumption	PoE : Max 7.4W, typical 5.4W 12VDC : Max 6.5W, typical 4.8W		PoE : Max 7.4W, typical 5.4W 12VDC : Max 6.5W, typical 4.8W		PoE : Max 7W, typical 5.2W 12VDC : Max 6.1W, typical 4.5W		PoE : Max 7W, typical 5.2W 12VDC : Max 6.1W, typical 4.5W	
Product Dimensions / Weight	Ø78 x 259.8mm (Ø3.07" x 10.23") 900g (1.984lb)		Ø70 x 246mm (Ø2.76" x 9.69") 730g (1.609lb)		Ø70 x 246mm (Ø2.76" x 9.69") 700g (1.543lb)		Ø70 x 246mm (Ø2.76" x 9.69") 700g (1.543lb)	
Additional Features	Hallway View							

				
	QND-7082R **4MP IR Dome Camera**	**QND-7032R** **4MP IR Dome Camera**	**QND-7022R** **4MP IR Dome Camera**	**QND-7012R** **4MP IR Dome Camera**
Imaging Device	1/3" CMOS			
Resolution / Max. Frame Rate	4MP / 30fps			
Min. Illumination	Color : 0.1Lux (F1.6, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)
Video Out	CVBS 1.0 Vp-p			
Focal Length (Zoom Ratio)	3.2~10mm (3.1x) motorized varifocal	6mm fixed focal	4mm fixed focal	2.8mm fixed focal
Angular Field of View	H : 98.6°(Wide) ~ 30.8°(Tele) V : 52.3°(Wide) ~ 17.3°(Tele) D : 115.7°(Wide) ~ 35.3°(Tele)	H : 49.0° / V : 27.6° / D : 55.6°	H : 78.2° / V : 41.2° / D : 92°	H : 107.5° / V : 59.7° / D : 122°
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°			
IR Viewable Length	20m (65.62ft)			
Day & Night	Auto (ICR)			
Wide Dynamic Range	120dB			
Digital Noise Reduction	SSNR			
Digital Image Stabilization	-			
Analytics	Intelligent analytics			
Business Intelligence	-			
Alarm I/O	1/1			
Audio I/O	Built-in mic / -			
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 3 Profiles			
Edge Storage	micro SD/SDHC/SDXC 1slot 128GB			
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI (HTTP API)			
Operating Temperature / Humidity	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~95% RH			
Certification	-			
Power Consumption	PoE: Max 8.6W, typical 6.3W 12VDC: Max 7.6W, typical 5.4W	PoE: Max 7.9W, typical 6.1W 12VDC: Max 7.1W, typical 5.1W	PoE: Max 7.9W, typical 6.1W 12VDC: Max 7.1W, typical 5.1W	PoE: Max 7.9W, typical 6.1W 12VDC: Max 7.1W, typical 5.1W
Product Dimensions / Weight	Ø119.8 x 98.8mm (Ø4.72" x 3.89") 320g (0.705 lb)	Ø110.0 x 86.0mm (Ø4.33 x 3.39"), 255g (0.562 lb)	Ø110 x 86mm (Ø4.33" x 3.39") 255g (0.562 lb)	Ø110 x 86mm (Ø4.33" x 3.39") 255g (0.562 lb)
Additional Features	Defocus detection, Directional detection, , Motion detection, Enter/Exit, Tampering, Virtual line			

	 QND-6082R/6082R1 2MP IR Dome Camera		 QND-6072R/6072R1 2MP IR Dome Camera		 QND-6022R/6022R1 2MP IR Dome Camera		 QND-6012R/6012R1 2MP IR Dome Camera	
Imaging Device	1/2.8" CMOS							
Resolution / Max. Frame Rate	2MP / 30fps							
Min. Illumination	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)		Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)		Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)		Color : 0.03Lux (F2.0) B/W : 0Lux (IR LED on)	
Video Out	CVBS 1.0 Vp-p							
Focal Length (Zoom Ratio)	3.2~10mm (3.1x) motorized varifocal		3.2~10mm (3.1x) manual varifocal		4mm fixed		2.8mm fixed	
Angular Field of View	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)		H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)		H : 87.6° / V : 46.4° / D : 104.5°		H : 113.74° / V : 61.5° / D : 134.45°	
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°							
IR Viewable Length	20m (65.62ft)							
Day & Night	Auto (ICR)							
Wide Dynamic Range	120dB							
Digital Noise Reduction	SSNR							
Digital Image Stabilization	-							
Analytics	Intelligent analytics							
Business Intelligence	-							
Alarm I/O	1 / 1							
Audio I/O	Buit-in mic	-	Buit-in mic	-	Buit-in mic	-	Buit-in mic	-
Video Compression	H.265 / H.264, MJPEG							
WiseStream	WiseStream Ⅱ							
Streaming	Up to 3 Profiles							
Edge Storage	micro SD/SDHC/SDXC							
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform							
Operating Temperature / Humidity	-10℃ ~ +55℃ (+14℉ ~ +131℉)							
Certification	-							
Power Consumption	PoE : Max 7.7W, typical 6W 12VDC : Max 6.5W, typical 5.1W		PoE : Max 7.7W, typical 6W 12VDC : Max 6.5W, typical 5.1W		PoE : Max 7.4W, typical 6W 12VDC : Max 6.4W, typical 5.1W		PoE : Max 7.4W, typical 6W 12VDC : Max 6.4W, typical 5.1W	
Product Dimensions / Weight	Ø119.8 x 98.8mm (Ø4.72" x 3.89") 320g (0.705lb)		Ø119.8 x 98.8mm (Ø4.72" x 3.89") 320g (0.705lb)		Ø110 x 86mm (Ø4.33" x 3.39") 255g (0.562lb)		Ø110 x 86mm (Ø4.33" x 3.39") 255g (0.562lb)	
Additional Features	Hallway View							

	Q mini  **QND-6021** 2MP Dome Camera	Q mini  **QND-6011** 2MP Dome Camera	 **QNV-7082R** 4MP IR Vandal Dome Camera
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/3" CMOS
Resolution / Max. Frame Rate	2MP / 30fps	2MP / 30fps	4MP / 30fps
Min. Illumination	Color : 0.03Lux (F1.6)	Color : 0.03Lux (F2.0)	Color : 0.1Lux (F1.6, 1/30sec) B/W : 0Lux (IR LED On)
Video Out	–	–	CVBS 1.0 Vp-p
Focal Length (Zoom Ratio)	4mm fixed	2.8mm fixed	3.2~10mm (3.1x) motorized varifocal
Angular Field of View	H : 87.6° / V : 46.4° / D : 104.5°	H : 113.74° / V : 61.5° / D : 134.45°	H : 98.6° (Wide) ~ 30.8° (Tele) V : 52.3° (Wide) ~ 17.3° (Tele) D : 115.7° (Wide) ~ 35.3° (Tele)
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 69° / 0° ~ 355°	0° ~ 350° / 0° ~ 69° / 0° ~ 355°	0° ~350° / 0° ~67° / 0° ~355°
IR Viewable Length	–	–	30m (98.42ft)
Day & Night	Auto (Electrical)	Auto (Electrical)	Auto (ICR)
Wide Dynamic Range	120dB		
Digital Noise Reduction	SSNR		
Digital Image Stabilization	–		
Analytics	Intelligent analytics	Intelligent analytics	Intelligent analytics
Business Intelligence	People counting	People counting	–
Alarm I/O	–	–	1 / 1
Audio I/O	–	–	Line in / –
Video Compression	H.265 / H.264, MJPEG		
WiseStream	WiseStream Ⅱ		
Streaming	Up to 3 Profiles		
Edge Storage	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC 1slot 128GB
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF Profile S/G/T, SUNAPI (HTTP API)
Operating Temperature / Humidity	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-40℃ ~ +55℃ (-40℉ ~ +131℉) / 0~95% RH * Start up should be done at -30℃ or above
Certification	IP42, IK08	IP42, IK08	IP66, IK10
Power Consumption	PoE : Max 4.8W, typical 2.8W	PoE : Max 4.8W, typical 2.8W	PoE: Max 11.4W, typical 8.5W 12VDC: Max 9.6W, typical 7.2W
Product Dimensions / Weight	Ø99 x 56mm (Ø3.9" x 2.2") 145g (0.320lb)	Ø99 x 56mm (Ø3.9" x 2.2") 145g (0.320lb)	Ø137 x 106.1mm (Ø5.39" x 4.18") 710g (1.565 lb)
Additional Features	Super compact design, Hallway View	Super compact design, Hallway View	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line

	 QNV-7032R 4MP IR Vandal Dome Camera	 QNV-7022R 4MP IR Vandal Dome Camera	 QNV-7012R 4MP IR Vandal Dome Camera	 QNV-6082R/6082R1 2MP IR Vandal Dome Camera	 QNV-6072R/6072R1 2MP IR Vandal Dome Camera
Imaging Device	1/3" CMOS	1/3" CMOS	1/3" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	4MP / 30fps	4MP / 30fps	4MP / 30fps	2MP / 30fps	2MP / 30fps
Min. Illumination	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F1.6, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.15Lux (F2.0, 1/30sec) B/W : 0Lux (IR LED On)	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)
Video Out	CVBS 1.0 Vp-p				
Focal Length (Zoom Ratio)	6mm fixed focal	4mm fixed focal	2.8mm fixed focal	3.2 ~ 10mm (3.1x) motorized varifocal	3.2 ~ 10mm (3.1x) manual varifocal
Angular Field of View	H : 49.0° / V : 27.6° / D : 55.6°	H : 78.2° / V : 41.2° / D : 92°	H : 78.2° / V : 41.2° / D : 92°	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)	H : 109° (Wide) ~ 33.2° (Tele) V : 57.4° (Wide) ~ 18.7° (Tele) D : 132° (Wide) ~ 38° (Tele)
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~ 355°				
IR Viewable Length	30m (98.42ft)	25m (82.02ft)	20m (65.62ft)	30m (98.42ft)	30m (98.42ft)
Day & Night	Auto (ICR)				
Wide Dynamic Range	120dB				
Digital Noise Reduction	SSNR				
Digital Image Stabilization	-				
Analytics	Intelligent analytics				
Business Intelligence	-				
Alarm I/O	1 / 1				
Audio I/O	Selectable (mic in/line in) / -				
Video Compression	H.265 / H.264, MJPEG				
WiseStream	WiseStreamII Ⅱ				
Streaming	Up to 3 Profiles				
Edge Storage	Micro SD/SDHC/SDXC 1slot 128GB	micro SD/SDHC/SDXC 1slot 128GB	micro SD/SDHC/SDXC 1slot 128GB	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF Profile S/G/T, SUNAPI (HTTP API)	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	-40℃ ~ +55℃ (-40℉ ~ +131℉) / 0~95% RH * Start up should be done at -30℃ or above	-40℃ ~ +55℃ (-40℉ ~ +131℉) / 0~95% RH * Start up should be done at -30℃ or above	-40℃ ~ +55℃ (-40℉ ~ +131℉) / 0~95% RH * Start up should be done at -30℃ or above	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -20℃ (-4℉)
Certification	IP66, IK10	IP66, IK10	-	IP66, IK10	IP66, IK10
Power Consumption	PoE: Max 10.7W, typical 8.1W 12VDC: Max 9.1W, typical 6.5W				
Product Dimensions / Weight	Ø120.3 x 91.7mm (Ø4.74 x 3.61"), 510g (1.124 lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124 lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124 lb)	Ø137 x 106.1mm (Ø5.39" x 4.18") 710g (1.565lb)	Ø137 x 106.1mm (Ø5.39" x 4.18") 710g (1.565lb)
Additional Features	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line			Hallway View	Hallway View

	 QNV–6022R/6022R1 2MP IR Vandal Dome Camera	 QNV–6012R/6012R1 2MP IR Vandal Dome Camera	 QNV–6024RM 2MP IR Flat Camera	 QNP–6320 2MP 32x Indoor PTZ Camera
Imaging Device	1/2.8" CMOS			
Resolution / Max. Frame Rate	2MP / 30fps			
Min. Illumination	Color : 0.03Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F2.0) B/W : 0Lux (IR LED on)	Color : 0.03Lux (F2.0) B/W : 0Lux (IR LED on)	Color: 0.05Lux (F1.6, 1/30sec) BW: 0.005Lux (F1.6, 1/30sec)
Video Out	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	–
Focal Length (Zoom Ratio)	4mm fixed	2.8mm fixed	3.6mm fixed	4.44~142.6mm(32x) zoom (digital 32x, total 1024x zoom)
Angular Field of View	H : 87.6° / V : 46.4° / D : 104.5°	H : 113.74° / V : 61.5° / D : 134.45°	H : 94.8° / V : 49.3° / D : 114.3°	H: 64.66° (Wide)~2.29° (Tele) V: 38.08° (Wide)~1.30° (Tele)
Pan / Tilt / Rotate Range	0° ~ 350° / 0° ~ 67° / 0° ~355°	0° ~ 350° / 0° ~ 67° / 0° ~355°	±5° / 0 ~ 67° / ±90°	360° Endless / −105° (90° ~ −15°)
IR Viewable Length	25m (82.02ft)	20m (65.62ft)	15m (49.21ft)	–
Day & Night	Auto (ICR)			
Wide Dynamic Range	120dB			
Digital Noise Reduction	SSNR	SSNR	SSNR	SSNR V
Digital Image Stabilization	–	–	–	Support(built-in gyro sensor)
Analytics	Intelligent analytics	Intelligent analytics	Intelligent analytics	**Analytics events** – Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection
Business Intelligence	–	–	–	–
Alarm I/O	1 / 1	1 / 1	–	Input 4ea / Output 2ea
Audio I/O	Selectable (mic in/line in)	Selectable (mic in/line in)	Selectable (mic in/line in/built-in mic)/ Line out	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms
Video Compression	H.265 / H.264, MJPEG			
WiseStream	WiseStream Ⅱ			Manual(5ea area), WiseStream Ⅱ
Streaming	Up to 3 Profiles	Up to 3 Profiles	Up to 3 Profiles	Up to 10 profiles
Edge Storage	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform	ONVIF profile S/G/T, SUNAPI, Hanwha Vision Open Platform
Operating Temperature / Humidity	−30℃ ~ +55℃ (−22℉ ~ +131℉) * Start up above −20℃ (−4℉)	−30℃ ~ +55℃ (−22℉ ~ +131℉) * Start up above −20℃ (−4℉)	−30℃ ~ +55℃ (−22℉ ~ +131℉)	−10° C~+55° C(14° F~+131° F) / 0~95% RH(Non-condensing)
Certification	IP66, IK10	IP66, IK10	IP66, IK10, NEMA4X	–
Power Consumption	PoE : Max 7.4W, typical 6W 12VDC : Max 6.4W	PoE : Max 7.4W, typical 6W 12VDC : Max 6.4W	PoE : Max 6.7W, typical 5W	PoE+: Max 14.5W, typical 12W
Product Dimensions / Weight	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.124 lb)	W 98.9 x H 52 x D 100mm (3.89" x 2.05" x 3.94") 295g (0.65lb)	ø 152x218mm(ø 5.98x8.58"), 1 700g(3.75 lb)
Additional Features	Hallway View	Hallway View	M12 connector, Hallway View	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection



QNP-6320R
2MP 32x IR PTZ Camera



QNP-6320H
2MP 32x Outdoor PTZ Camera



QNP-6250
2MP 32x Outdoor PTZ Camera



QNP-6250R
2MP 25x IR PTZ Camera

Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps	2MP / 60fps	2MP / 60fps	2MP / 60fps
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED On)	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE)	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE)	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE), 0Lux(IR LED On)
Video Out	–	–	–	–
Focal Length (Zoom Ratio)	4.44~142.6mm(32x) zoom (digital 32x, total 1024x zoom)	4.44~142.6mm(32x) zoom (digital 32x, total 1024x zoom)	4.44~111mm(25x) zoom (digital 32x, total 800x zoom)	4.44~111mm(25x) zoom (digital 32x, total 800x zoom)
Angular Field of View	H: 64.66°(Wide)~2.29°(Tele) V: 38.08°(Wide)~1.30°(Tele)	H: 64.66°(Wide)~2.29°(Tele) V: 38.08°(Wide)~1.30°(Tele)	H: 64.66°(Wide)~2.99°(Tele) V: 38.08°(Wide)~1.68°(Tele)	H: 64.66°(Wide)~2.99°(Tele) V: 38.08°(Wide)~1.68°(Tele)
Pan / Tilt / Rotate Range	360° Endless / −110° (90° ~ −20°)	360° Endless / 105°(90°~−15°)	360° Endless / 105°(90°~−15°)	360° Endless / −110° (90° ~ −20°)
IR Viewable Length	100m(328.08ft)	–	–	100m(328.08ft)
Day & Night	Auto(ICR)			
Wide Dynamic Range	120dB			
Digital Noise Reduction	SSNR V			
Digital Image Stabilization	Support(built-in gyro sensor)			
Analytics	**Analytics events** – Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(Via optional I/O box SPM-4210)		**Analytics events** – Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection	**Analytics events** – Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(Via optional I/O box SPM-4210)
Business Intelligence	–	–	–	–
Alarm I/O	Compatible with NW I/O Box (Optional: SPM-4210)		Input 4ea / Output 2ea	Compatible with NW I/O Box (Optional: SPM-4210)
Audio I/O	Compatible with NW I/O Box (Optional: SPM-4210)		Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Compatible with NW I/O Box (Optional: SPM-4210)
Video Compression	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG	H.265/H.264: Main/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ			
Streaming	Up to 10 profiles			
Edge Storage	Micro SD/SDHC/SDXC 1slot Max. 256GB	Micro SD/SDHC/SDXC 1slot Max. 256GB	Micro SD/SDHC/SDXC 1slot Max. 256GB	Micro SD/SDHC/SDXC 1slot Max. 256GB
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) **Hanwha Vision** Open Platform			
Operating Temperature / Humidity	−35°C~+55°(−31°F ~ +131°F) * Start up should be done at above −30°C 0~100%RH(Condensing) Humidity control with AIR vent	−35°C~+55°(−31°F ~ +131°F) * Start up should be done at above −30°C 0~100%RH(Condensing) Humidity control with AIR vent	−10°C~+55°C(14°F~+131°F) / 0~95% RH (Non-condensing)	−35°C~+55°(−31°F ~ +131°F) * Start up should be done at above −30°C 0~100%RH(Condensing) Humidity control with AIR vent
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X	–	IP66, IK10, NEMA4X
Power Consumption	PoE+: Max. 25.5W, typical 14.7W	PoE+: Max. 23W, typical 14W	PoE+: Max 14.5W, typical 12W	PoE+: Max. 25.5W, typical 14.7W
Product Dimensions / Weight	ø 158x293.3mm(ø 6.22x11.55"), 3100g(6.83lb)	ø 204.3x265mm(ø 8.04x10.43"), 2700g(5.95lb)	ø 152x218mm(ø 5.98x8.58"), 1700g(3.75 lb)	ø 158x293.3mm(ø 6.22x11.55"), 3100g(6.83lb)
Additional Features	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(with NW I/O Box)			

	 **QNP-6250H** **2MP 25x Outdoor PTZ Camera**	 **QNP-6320HS** **2MP 32x Stainless Steel PTZ Camera**	 **QNB-6002** **2MP Box Camera**	 **QNF-9010** **12MP Fisheye Camera**	 **QNF-8010** **6MP Fisheye Camera**
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.3" CMOS	1/1.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps	2MP / 30fps	2MP / 30fps	9MP / 30fps	4MP / 30fps
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE)	Color: 0.05Lux(F1.6, 1/30sec, 30IRE) BW: 0.005Lux(F1.6, 1/30sec, 30IRE)	Color : 0.01Lux (F1.2)	Color: 0.39 Lux (F2.2, 1/30sec)	Color : 0.2 Lux (F2.5)
Video Out	–	–	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p	CVBS 1.0 Vp-p
Focal Length (Zoom Ratio)	4.44~111mm(25x) zoom (digital 32x, total 800x zoom)	4.44~142.6mm(32x) zoom (digital 32x, total 1024x zoom)	–	1.08mm fixed	1.14mm fixed
Angular Field of View	H: 64.66°(Wide) ~ 2.99°(Tele) V: 38.08°(Wide) ~ 1.68°(Tele)	H: 64.66° (Wide) ~ 2.29° (Tele) V: 38.08° (Wide) ~ 1.30° (Tele)	–	H : 187° / V : 187° / D : 187°	H: 187° / V: 187° / D: 187°
Pan / Tilt / Rotate Range	360° Endless / -105° (90°~-15°)	360° Endless / -105° (90°~-15°)	–	–	–
IR Viewable Length	–	–	–	–	–
Day & Night	Auto(ICR)	Auto (ICR)	Auto (ICR)	Auto (Electrical)	Auto (Electrical)
Wide Dynamic Range	120dB	120dB	120dB	120dB	120dB
Digital Noise Reduction	SSNR V	SSNR V	SSNR	SSNR V	SSNR V
Digital Image Stabilization	Support(built-in gyro sensor)	Support(built-in gyro sensor)	–	–	–
Analytics	**Analytics events** -Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(Via optional I/O box SPM-4210)		Intelligent analytics	Defocus detection, Motion detection, Tampering	Intelligent analytics
Business Intelligence	–	–	–	People counting, Heatmap	People counting, Heatmap
Alarm I/O	Compatible with NW I/O Box (Optional: SPM-4210)		1 / 1.	–	–
Audio I/O	Compatible with NW I/O Box (Optional: SPM-4210)		Line in / Line out	–	–
Video Compression	H.265, H.264, MJPEG				
WiseStream	Manual(5ea area), WiseStream Ⅱ		WiseStream II	WiseStream II	WiseStream II
Streaming	Up to 10 profiles		Up to 3 Profiles	Up to 3 profiles	Up to 3 profiles
Edge Storage	Micro SD/SDHC/SDXC 1slot Max. 256GB	micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC	micro SD/SDHC/SDXC	micro SD/SDHC/SDXC
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) **Hanwha Vision** Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G/T, SUNAPI, **Hanwha Vision** Open Platform	ONVIF profile S/G, SUNAPI, **Hanwha Vision** Open Platform
Operating Temperature / Humidity	-35°C~+55°(-31°F~+131°F) * Start up should be done at above -30°C 0~100%RH(Condensing) Humidity control with AIR vent	-35°C~+55°(-31°F~+131°F) / * Start up should be done at above -25°C 0~95% RH(non-condensing)	-10℃~+55℃ (-14℉~+131℉)	-10℃~+40℃ (+14℉~+104℉)	-10℃~+55℃ (+14℉~+131℉)
Certification	IP66, IK10, NEMA4X	IP66, IP67, IK10, NEMA4X	–	–	IP42
Power Consumption	Max. 23W, Typ. 14W	Max. 23W, Typ. 14W	PoE : Max 6.4W, typical 4.6W 12VDC : Max 5.8W, typical 4.1W	PoE: Max 7.7W, typical 6.4W	PoE : Max 6.4W, typical 4.6W
Product Dimensions / Weight	ø 204.3x265mm(ø 8.04x10.43"), 2700g(5.95lb)	Ø227x299.2mm(8.94x11.78"), 5400g(11.93 lb)	W 73.8 x H 66.6 x D 136.2mm (2.91" x 2.62" x 5.36") 320g (0.71lb)	Ø99 x 49 mm (Ø3.9" x 1.93") 370g (0.82lb)	Ø99 x 49 mm (Ø3.9" x 1.93") 320 g (0.705lb)
Additional Features	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line * Audio detection(with NW I/O Box)	Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, SUS316L * Audio detection(with NW I/O Box)	Hallway View	Panorama view, Busieness Intelligence	Panorama view, Busieness Intelligence

	 **TNO-4050T** **VGA Thermal Bullet Camera**	 **TNO-4040T** **VGA Thermal Bullet Camera**
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	640x480(original), 640x360, 320x240	640x480(original), 640x360, 320x240
Max. Frame Rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	＜50mK	＜50mK
Pixel Pitch	17㎛	17㎛
Focal Length	35mm fixed focal	19mm fixed focal
Angular Field of View	H: 17.2° / V: 13° / D: 22° (iFoV: 0.47 mRad)	H: 32° / V: 24.3° / D: 39.2° (iFoV: 0.895 mRad)
Min. Object Distance	36m(118.11ft)	11m(36.09ft)
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Analytics	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms
Temperature Detect Range	-	-
Temperature Accuracy	-	-
Temperature Detection	-	-
Additional	-	-
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W
Dimensions (WxHxD) / Weight	Φ101.97x401.8mm(4.01x15.82") / 3175g(7.01 lb)	Φ101.97x401.8mm(4.01x15.82"") / 3175g(7.01 lb)





	TNO-4030T VGA Thermal Bullet Camera	TNO-3010T QVGA Thermal Bullet Camera
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	640x480, 640x360, 320x240	320x240
Max. Frame Rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	＜50mK	＜60mK
Pixel Pitch	17㎛	12㎛
Focal Length	13mm fixed focal	2.7mm fixed focal
Angular Field of View	H: 48.6° / V: 36.4° / D: 61.6° (iFoV: 1.308 mRad)	H:92.0° / V:65.5° / D:125.7° (iFoV: 1.308 mRad)
Min. Object Distance	5m(16.40ft)	0.3m(0.98ft)
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Analytics	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms
Temperature Detect Range	-	-
Temperature Accuracy	-	-
Temperature Detection	-	-
Additional	-	-
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T , SUNAPI(HTTP API) Hanwha Vision Open Platform
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0W
Dimensions (WxHxD) / Weight	Φ101.97x401.8mm(4.01x15.82") / 3124g(6.89 lb)	Φ147.51x375.3mm(5.80x14.77") / 2512g(5.54lb)

	 **TNO-3020T** QVGA Thermal Bullet Camera	 **TNO-3030T** QVGA Thermal Bullet Camera	 **TNO-3040T** QVGA Thermal Bullet Camera
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	320x240	320x240	320x240
Max. Frame Rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	＜60mK	＜60mK	＜60mK
Pixel Pitch	12㎛	12㎛	12㎛
Focal Length	4.7mm fixed focal	13.7mm fixed focal	19mm fixed focal
Angular Field of View	H:50.0°/ V:36.4°/ D:65.3° (iFoV: 2.73 mRad)	H:16.0°/ V:12.0°/ D:20.0° (iFoV: 2.73 mRad)	H: 11.5°/ V: 8.7°/ D: 14.4° (iFoV: 2.73 mRad)
Min. Object Distance	1m(3.28ft)	8m(26.25ft)	15m(49.21ft)
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation		
Analytics	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection		
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms
Temperature Detect Range	-	-	-
Temperature Accuracy	-	-	-
Temperature Detection	-	-	-
Additional	-	-	-
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / MulticastMultiple streaming(Up to 10 profiles)		
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB		
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0W	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0W	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0W
Dimensions (WxHxD) / Weight	Φ147.51x375.3mm(58.07x147.76") / 2512g(5.538lb)	Φ147.51x375.3mm(58.07x147.76") / 2512g(5.538lb)	Φ147.51x375.3mm(5.81x14.78") / 2495g (5.50lb)

	 **TNO-3050T** QVGA Thermal Bullet Camera	 **TNO-L3030T** QVGA Thermal Bullet Camera	 **TNO-L4030T** VGA Thermal Bullet Camera
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	320x240	320x240	640x480(original), 640x360, 320x240
Max. Frame Rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264/MJPEG: Max. 8fps	H.265/H.264/MJPEG: Max. 8fps
NETD	＜60mK	＜60mK	＜50mK
Pixel Pitch	12㎛	12㎛	17㎛
Focal Length	35mm fixed focal	13.7mm fixed focal	13mm fixed focal
Angular Field of View	H: 6.3° / V: 4.7° / D: 7.8° (iFoV: 0.34 mRad)	H: 16.0° / V: 12.0° / D: 20.0° (iFoV: 0.87 mRad)	H: 48.6° / V: 36.4° / D: 61.6° (iFoV: 1.308 mRad)
Min. Object Distance	51m	8m(26.25ft)	5m(16.40ft)"
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation		
Analytics	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection		
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Temperature Detect Range	–	–	–
Temperature Accuracy	–	–	–
Temperature Detection	–	–	–
Additional	–	–	–
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash"	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40° C~+60° C(-40° F~+140° F) / Less than 90% RH	-40° C to +60° C(-40° F to +140° F) / Less than 90% RH	-40° C~+60° C(-40° F~+140° F) / Less than 90% RH
Certification	IP66, NEMA4X	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0W	PoE: Max. 8.7W, typical 7.5W 12VDC: Max. 7.8W, typical 6.7W 24VAC: Max. 9.2W, typical 8.0	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W
Dimensions (WxHxD) / Weight	Φ147.51x401.3mm(5.81x15.79") / 2742g(6.05lb)	Φ147.51x375.3mm(58.07x147.76") / 2512g(5.538lb)	Φ101.97x401.8mm(4.01x15.82") / 3124g(6.89 lb)





	TNO-L4040T VGA Thermal Bullet Camera	TNO-L4050T VGA Thermal Bullet Camera
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	640x480(original), 640x360, 320x240	640x480(original), 640x360, 320x240
Max. Frame Rate	H.265/H.264/MJPEG: Max. 8fps	H.265/H.264/MJPEG: Max. 8fps
NETD	＜50mK	＜50mK
Pixel Pitch	17㎛	17㎛
Focal Length	19mm fixed focal	35mm fixed focal
Angular Field of View	H: 32° / V: 24.3° / D: 39.2° (iFoV: 0.895 mRad)	H: 17.2° / V: 13° / D: 22° (iFoV: 1.308 mRad)
Min. Object Distance	11m(36.09ft)	36m(118.11ft)
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	
Analytics	◻Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature ditection, Sound classification, Shock detection	
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms
Temperature Detect Range	-	-
Temperature Accuracy	-	-
Temperature Detection	-	-
Additional	-	-
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/G/T SUNAPI(HTTP API) Hanwha Vision Open Platform
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40° C~+60° C(-40° F~+140° F) / Less than 90% RH	-40° C~+60° C(-40° F~+140° F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W
Dimensions (WxHxD) / Weight	ø 101.97x401.8mm(4.01x15.82") / 3,124g(6.89lb)	ø 101.97x401.8mm(4.01x15.82") / 3,124g(6.89lb)

	 **TNO-4040TR** **VGA Radiometric Thermal Camera**	 **TNO-4030TR** **VGA Radiometric Thermal Camera**
Imaging Device	Uncooled micro bolometer (Spectral range: 8~14㎛)	Uncooled micro bolometer (Spectral range: 8~14㎛)
Resolution	640x480, 640x360, 320x240	640x480, 640x360, 320x240
Max. Frame Rate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
NETD	＜50mK	＜50mK
Pixel Pitch	17㎛	17㎛
Focal Length	19mm fixed focal	13mm fixed focal
Angular Field of View	H: 32° / V: 24.3° / D: 39.2° (iFoV: 0.895 mRad)	H: 48.6° / V: 36.4° / D: 61.6° (iFoV: 1.308 mRad)
Min. Object Distance	11m(36.09ft)	5m(16.40ft) (iFoV: 1.308 mRad)
Video Output	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Analytics	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature detection, Sound classification, Shock detection	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Temperature detection, Sound classification, Shock detection
Alarm I/O	Input 1ea / Output 2ea	Input 1ea / Output 2ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Temperature Detect Range	-20°C~130°C(-4°F~266°F)	-20°C~130°C(-4°F~266°F)
Temperature Accuracy	±5°C(≤100°C), ±20%(>100°C)	±5°C(≤100°C), ±20%(>100°C)
Temperature Detection	6 Quadrangle ROI zones, whole FoV area	6 Quadrangle ROI zones, whole FoV area
Additional	Hybrid palettes, Spot temperature reading	Hybrid palettes, Spot temperature reading
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 256GB
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
Memory	1024MB RAM, 256MB Flash	1024MB RAM, 256MB Flash
Operating Temperature/ Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X	IP66, IK10, NEMA4X
Power Consumption	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W	PoE: Max. 10W, typical 8.6W 12VDC: Max. 9W, typical 7.5W 24VAC: Max. 10.5W, typical 8.9W
Dimensions (WxHxD) / Weight	Φ101.97x401.8mm(4.01x15.82") / 3,175g(7.01lb)	Φ101.97x401.8mm(4.01x15.82") / 3,124g(6.89lb)

	 **TNV-7011RC** **3MP Corner Mount Camera**	 **TNV-8011C** **5MP Corner Mount Camera**	 **TID-600R** **2MP Intercom**
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	3MP / 30fps	5MP / 30fps	2MP / 30fps
Min. Illumination	Color: 0.3 lux (F2.0, 1/30sec) B/W: 0 lux (F2.0, 1/30sec)	Color: 0.1 lux (F2.3, 1/30sec) B/W: 0.02 lux (F2.3, 1/30sec)	Color: 0.018Lux(F1.6, 1/30sec) BW: 0Lux(IR LED on)
Video Out	CVBS: 1.0 Vp-p	CVBS: 1.0 Vp-p, Micro USB Type B	CVBS: 1.0Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation
Focal Length (Zoom Ratio)	2.8mm fixed focal	2.3mm fixed focal	1.6mm fixed focal
Angular Field of View	H: 102° / V: 75° / D: 129°	H: 131° / V: 93.4° / D: 174°	H: 180° / V: 114° / D: 180°
Pan / Tilt / Rotate Range	- / 30°~60° / -	-	-
IR Viewable Length	10m(32.8ft)	-	-
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)
Wide Dynamic Range	120dB	120dB	150dB
Digital Noise Reduction	SSNR V	SSNR	SSNR V
Digital Image Stabilization	Support	Support	Support
Analytics	Tampering, Loitering, Directional detection, Defocus detection, Fog detection, Virtual line, Enter/Exit, Appear/Disappear, Audio detection, Face detection, Motion detection, Digital auto tracking, Sound classification, Shock detection	Defocus detection, Directional detection, Motion detection, Enter/Exit, Tampering, Virtual line, Audio detection	Directional detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Shock detection, Sound classification
Business Intelligence	-	-	-
Alarm I/O	1 / 1	1 / 1	Input 2ea / Output 1ea, Relay out 1ea (12VDC Max. 550mA with 2A adapter), Tampering switch, Touchless call
Audio I/O	Selectable(mic in/line in) / Line out	Selectable(mic in/line in) / Line out	Built-in mic / Built-in speaker: 85dB at 0.5m(1.64ft)
Video Compression	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	WiseStream Ⅱ	WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Up to 10 profiles	Up to 3 profiles	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Edge Storage	Micro SD/SDHC/SDXC 1slot 256GB	Micro SD/SDHC/SDXC 1slot 128GB	Micro SD/SDHC/SDXC 1slot 256GB
Application Programming Interface	SUNAPI(HTTP API) Hanwha Vision Open Platform	SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S, SUNAPI(HTTP API), Hanwha Vision Open Platform
Operating Temperature / Humidity	-10℃~+55℃(+14°F~+131°F) / Less than 90% RH	-10℃~+55℃(+14°F~+131°F) / Less than 95% RH	-30° C~+55° C(-22° F~+131° F) / 0~95% RH
Certification	IP66, IP6K9K, IK10+	IP66, IP6K9K, IK10	IP65, IK08, NEMA4X, Safety(UL), EMC(FCC, CE)
Power Consumption	PoE: Max 12W, typical 10.1W, 12VDC: Max. 11W, typical 8.6W	PoE: Max 6.49W, typical 4.6W,	PoE: Max 12.95W, typical 9.1W, 12VDC: Max 17.6W, typical 7W * 12VDC power consumption includes 12VDC/550mA relay out.
Product Dimensions / Weight	Ø295.5x113.5mm(11.6x4.47") / 2.1kg (4.63lb)	170(W)x165(H)x78.8(D)mm(6.69x6.49x3.10") / 830g(1.83lb)	49(W)x165(H)x48(D)mm(1.93x6.50x1.89") / 490g(1.08lb)

	 **TNO-6322ER** **2MP Explosion-proof IR Camera**	 **TNU-6324E** **2MP Explosion-proof IR Camera**	 **TNU-6324ER** **2MP Explosion-proof IR Camera**
Imaging Device	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution / Max. Frame Rate	2MP / 60fps	2MP / 60fps	2MP / 60fps
Min. Illumination	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec), 0Lux(IR LED on)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec)	Color: 0.05Lux(F1.6, 1/30sec) BW: 0.005Lux(F1.6, 1/30sec)
Video Out	–	–	–
Focal Length (Zoom Ratio)	4.44~142.6mm(32x) zoom	4.44~142.6mm(Optical 32X)	4.44~142.6mm(Optical 32X)
Angular Field of View	H: 61.8°(Wide)~2.19°(Tele) / V: 36.2°(Wide)~1.24°(Tele)	H: 64.66°(Wide)~2.29°(Tele) / V: 38.08°(Wide)~1.30°(Tele)	H: 64.66°(Wide)~2.29°(Tele) / V: 38.08°(Wide)~1.30°(Tele)
Pan / Tilt / Rotate Range	–	Pan Range – 360° Endless Pan Speed – Preset: 50°/sec, Manual: 0.1°/sec~40°/sec Tilt Range – 180°(–90°~90°) Tilt Speed – Preset: 50°/sec, Manual: 0.1°/sec~40°/sec Sequence – Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule Preset Accuracy – ±0.25°	Pan Range – 360° Endless Pan Speed – Preset: 50°/sec, Manual: 0.1°/sec~40°/sec Tilt Range – 180°(–90°~90°) Tilt Speed – Preset: 50°/sec, Manual: 0.1°/sec~40°/sec Sequence – Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule Preset Accuracy – ±0.25°
IR Viewable Length	70m (229.66ft)	–	–
Day & Night	Auto(ICR)	Auto(ICR)	Auto(ICR)
Wide Dynamic Range	120dB	120dB	120dB
Digital Noise Reduction	SSNR V	SSNR V	SSNR V
Digital Image Stabilization	Support	Support	Support
Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection"	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line	Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line
Business Intelligence	–	–	–
Alarm I/O	Input 1ea / Output 1ea	Input 1ea / Output 1ea	Input 1ea / Output 1ea
Audio I/O	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm Line out, Max.output level: 1Vrms	–	–
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG	H.265/H.264: Main/Baseline/High, MJPEG
WiseStream	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ	Manual(5ea area), WiseStream Ⅱ
Streaming	Unicast(20 users) / Multicast, Multiple streaming(Up to 10 profiles)		
Edge Storage	–	–	–
Application Programming Interface	ONVIF Profile S/G/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	ONVIF Profile S/T, SUNAPI(HTTP API) Hanwha Vision Open Platform	
Operating Temperature / Humidity	IR Off: –40°C~+60°C(–40°F~+140°F) / Less than 95% RH IR On: –40°C~+55°C(–40°F~+131°F) / Less than 95% RH	–40°C~+60°C(–40°F~+140°F) / Less than 95% RH * Start up should be done at above –30°C	–40°C~+60°C(–40°F~+140°F) / Less than 95% RH * Start up should be done at above –30°C
Certification	IECEx, ATEX, KCs, KC, CE IP67, IK10, PESO certified	IECEx, ATEX, KCs, KC, CE/UKCA IP67, IK10 certified	IECEx, ATEX, KCs, KC, CE/UKCA IP67, IK10 certified
Power Consumption	24VAC: Max. 45W	1.4A, Max. 87W	1.7A, Max. 120W
Product Dimensions / Weight	175(W)x242.5(H)x320(D)mm(6.89x9.59x12.59"), 11.5kg(25.35lb)	355(W)x427(H)x235(D)mm(13.97x16.81x9.25"), 26kg(57.32lb)	611(W)x438(H)x235(D)mm(24.06x17.24x9.25"), 38kg(83.78lb)
Additional Features	Stainless(SUS316L) housing, Built in wiper	Stainless(SUS316L) housing, Built in wiper	Stainless(SUS316L) housing, Built in wiper

					
	LNO-6012R **2MP IR Bullet Camera**	**LNO-6022R** **2MP IR Bullet Camera**	**LNO-6072R** **2MP IR Bullet Camera**	**LND-6012R** **2MP IR Dome Camera**	**LND-6022R** **2MP IR Dome Camera**
Imaging Device	1/2.8" CMOS				
Resolution / Max. Frame Rate	2MP / 30fps				
Min. Illumination	Color: 0.03Lux (F2.0, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F2.0, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F1.6, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F2.0, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F1.6, 1/30sec) BW : 0Lux (IR LED on)
Video Out	–				
Focal Length (Zoom Ratio)	2.8mm fixed focal	4.0mm fixed focal	3.2~10mm (3.1x) manual varifocal	2.8mm fixed focal	4.0mm fixed focal
Angular Field of View	H: 113.7° / V: 61.5° / D: 134.4°	H: 84.3° / V: 45.6° / D: 98.3°	H: 109°(Wide) ~ 33.2°(Tele) V: 57.4°(Wide) ~ 18.7°(Tele) D: 132°(Wide)~ 38°(Tele)	H: 113.7° / V: 61.5° / D: 134.4°	H: 84.3° / V: 45.6° / D: 98.3°
Pan / Tilt / Rotate Range	–	–	–	0°~ 350° / 0°~ 67° / 0°~355°	0°~ 350° / 0°~ 67° / 0°~355°
IR Viewable Length	30m (98.43ft)	30m (98.43ft)	30m (98.43ft)	20m (65.62ft)	20m (65.62ft)
Day & Night	Auto (ICR)				
Wide Dynamic Range	120dB				
Digital Noise Reduction	SSNR				
Digital Image Stabilization	–				
Analytics	Motion detection, Tampering				
Business Intelligence	–				
Alarm I/O	–				
Audio I/O	–				
Video Compression	H.264, MJPEG				
WiseStream	WiseStream Ⅱ				
Streaming	Up to 3 profiles				
Edge Storage	micro SD/SDHC 1slot 32GB				
Operating Temperature / Humidity	ONVIF Profile S/G/T SUNAPI (HTTP API)				
Operating Temperature	-30℃ ~ +55℃ (-22℉ ~ +131℉) / 0~90% RH * Start up should be done at above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) / 0~90% RH * Start up should be done at above -20℃ (-4℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) / 0~90% RH * Start up should be done at above -20℃ (-4℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH
Certification	IP66	IP66	IP66	–	–
Power Consumption	Max 6.4W, Typical 5W				
Product Dimensions / Weight	Ø78 x 262mm (Ø3.07" x 10.31") 390g (0.86lb)	Ø78 x 262mm (Ø3.07" x 10.31") 390g (0.86lb)	Ø78 x 262mm (Ø3.07" x 10.31") 420g (0.93lb)	Ø110 x 86mm (Ø4.33" x 3.39") 270g (0.59lb)	Ø110 x 86mm (Ø4.33" x 3.39") 270g (0.59lb)

	 **LND-6072R** **2MP IR Dome Camera**	 **LNV-6012R** **2MP IR Vandal Dome Camera**	 **LNV-6022R** **2MP IR Vandal Dome Camera**	 **LNV-6072R** **2MP IR Vandal Dome Camera**
Imaging Device	1/2.8" CMOS			
Resolution / Max. Frame Rate	2MP / 30fps			
Min. Illumination	Color: 0.03Lux (F1.6, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F2.0, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F2.0, 1/30sec) BW : 0Lux (IR LED on)	Color: 0.03Lux (F1.6, 1/30sec) BW : 0Lux (IR LED on)
Video Out	–			
Focal Length (Zoom Ratio)	3.2~10mm (3.1x) manual varifocal	2.8mm fixed focal	4.0mm fixed focal	3.2~10mm (3.1x) manual varifocal
Angular Field of View	H: 109°(Wide)~33.2°(Tele) V: 57.4°(Wide)~18.7°(Tele) D: 132°(Wide)~38°(Tele)	H: 113.7° / V: 61.5° / D: 134.4°	H: 84.3° / V: 45.6° / D: 98.3°	H: 109°(Wide)~33.2°(Tele) V: 57.4°(Wide)~18.7°(Tele) D: 132°(Wide)~38°(Tele)
Pan / Tilt / Rotate Range	0°~350° / 0°~67° / 0°~355°			
IR Viewable Length	20m (65.62ft)	30m (98.43ft)	30m (98.43ft)	30m (98.43ft)
Day & Night	Auto (ICR)			
Wide Dynamic Range	120dB			
Digital Noise Reduction	SSNR			
Digital Image Stabilization	–			
Analytics	Motion detection, Tampering			
Business Intelligence	–			
Alarm I/O	–			
Audio I/O	–			
Video Compression	H.264, MJPEG			
WiseStream	WiseStream Ⅱ			
Streaming	Up to 3 profiles			
Edge Storage	micro SD/SDHC 1slot 32GB			
Application Programming Interface	ONVIF Profile S/G/T SUNAPI (HTTP API)			
Operating Temperature / Humidity	−10℃~+55℃ (+14℉~+131℉) / 0~90% RH	−30℃~+55℃ (−22℉~+131℉) / 0~90% RH * Start up should be done at above −20℃ (−4℉)	−30℃~+55℃ (−22℉~+131℉) / 0~90% RH * Start up should be done at above −20℃ (−4℉)	−30℃~+55℃ (−22℉~+131℉) / 0~90% RH * Start up should be done at above −20℃ (−4℉)
Certification	–	IP66, IK10	IP66, IK10	IP66, IK10
Power Consumption	Max 6.4W, Typical 5W			
Product Dimensions / Weight	Ø119.8 x 98.8mm (Ø4.72" x 3.89") 315g (0.69lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 410g (0.9lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 410g (0.9lb)	Ø137.8x106.1mm (Ø5.43" x 4.18") 525g (1.16lb)

High performance NVR

High resolution and great efficiency. Quick and precise search enabled by Hanwha Vision NVR



Hanwha Vision's NVR allows recording and streaming of videos in super high resolution and enhanced the efficiency of event and channel management with the new UI.
It also offers AI based quick and precise object detection and classification on top of smart search.

Monitor all sub channels without registering them all

With the new Virtual Channel View, user can register only 1 main channel for recording and monitor sub channels without registering them to the NVR. In other words, no need to record every sub channel that needs to be simply streamed for live monitoring.

Registered channel
Recording and monitoring

CAMERA A
Channel #01

Using 1 channel on NVR
(can monitor up to 4CH)

Unregistered channel
Monitoring sub channels without recording

CAMERA A
Channel
#02

CAMERA A
Channel #03

CAMERA A
Channel #04

Installation Wizard for easy auto recognition and setup

Local/web based installation wizard with a single UI provides easy and quick auto camera recognition and registration as well as configuration of each channel.

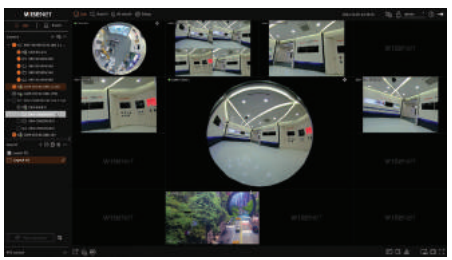


Local

Web

Design your own monitoring channels with the Dynamic layout

Dynamic layout allows users to freely customize the channel display.
Set the best channel display and create the most intuitive monitoring environment.



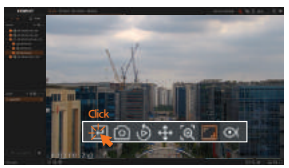
Code your own event action with SUNAPI command and Integrate with the Software Key

Users can code their own event action using SUNAPI commands and integrate it with the Software Key. Then, a simple click on the Software Key appears on the channel display will run the event action. Customized codes run separately.

1. Code event action* and integrate with the Software key
   * Simple focus, Day&Night (ICR), Alarm Out, etc.



2. Click the Software key to initiate the event action



AI NVR

AI enhances accuracy and efficiency

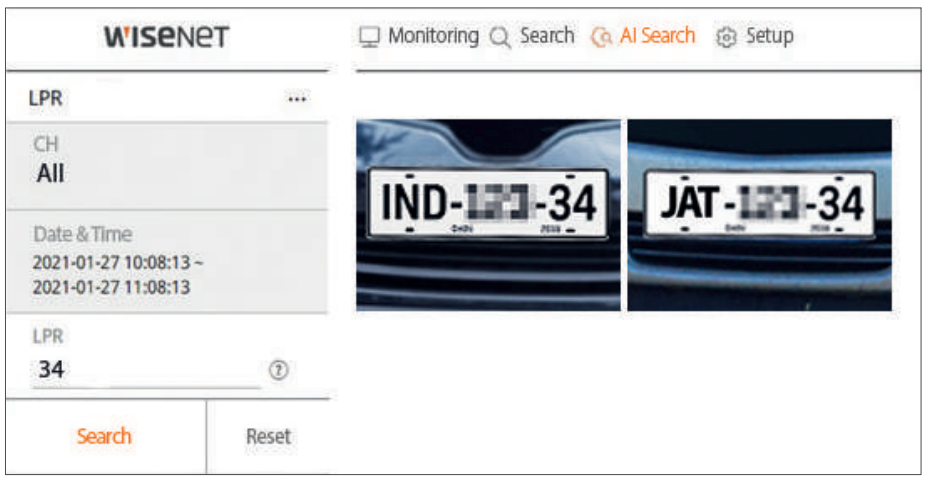
Hanwha AI NVR with AI algorithms provides accurate object detection/ classification/search, increasing the efficiency of monitoring operation.



License Plate Recognition LPR (Search)

Through OCR (Optical Character Recognition) processing, the BestShot images of the license plates are converted into machine–readable text and numbers then stored in the AI NVR in the form of digital data together with the images of license plates. Users can easily search license plates by typing in the numbers or characters of the license plate.

* Attributes : People (Clothing colors for top and bottom/ Wearing or carrying a bag) / Face (Age group, gender, mask/glasses wearing) when integrated with Wisenet cameras, Vehicle (Types, colors) / License plate (Optical technology converts images into texts for storage, supporting search in text

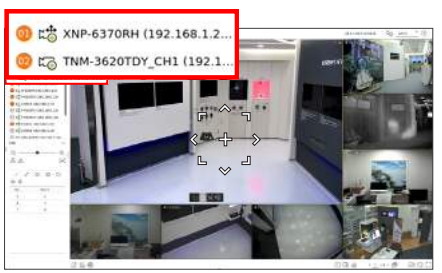


When managing multi channels, the Hanwha's AI NVR greatly improves search efficiency by allowing users to preview images and videos by simply hovering mouse cursor on the timeline. Moreover, users can configure event and alarm for all channels within a single page.

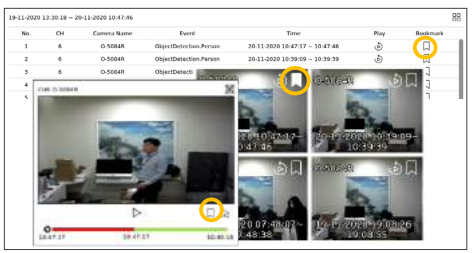


Live monitoring and bookmarks

With Live Monitoring, users can configure the split mode as desired to view video footage in real time or find information such as system malfunction, overload or recording status for each channel. In the PTZ control mode, users can click arrow keys to move the PTZ in eight directions or zoom in to a certain area for more detailed monitoring. With Bookmark feature, users can designate up to 100 events for easy and quick event search.



Live monitoring and PTZ control



Bookmark setup and event search



PRN-6400DB4
64CH AI NVR



PRN-6400B4
64CH AI NVR



PRN-3200B4
32CH AI NVR



PRN-3200B2
32CH AI NVR



PRN-1600B2
16CH AI NVR

OS	Linux	Linux	Linux	Linux	Linux
Supported Compression	H.265, H.264, MJPEG				
Max. Recording Bit Rate	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 250 Mbps Normal mode : Up to 150 Mbps RAID mode : Up to 250 Mbps
Max # of Cameras	Max. 64CH	Max. 64CH	Max. 32CH	Max. 32CH	Max. 16CH
Network Camera Resolution	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF
HDD Slot	SATA 16ea(Max. 160TB, Non-RAID mode), Hot swap	SATA 16ea(Max. 160TB, Non-RAID mode), Hot swap	SATA 16ea(Max. 160TB, Non-RAID mode), Hot swap	SATA 8ea(Max. 80TB, Non-RAID mode)	SATA 8ea(Max. 80TB, Non-RAID mode)
Record Mode	Normal, Dual Stream, Schedule (Continuous/Event), Event (Pre/Post), Bookmark	Normal, Dual Stream, Schedule (Continuous/Event), Event (Pre/Post), Bookmark	Normal, Dual Stream, Schedule (Continuous/Event), Event (Pre/Post), Bookmark	Normal, Dual Stream, Schedule(Continuous/ Event), Event (Pre/Post), Bookmark	Normal, Dual Stream, Schedule(Continuous/ Event), Event (Pre/Post), Bookmark
Event Trigger	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event				
Event Action	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown
External Storage	iSCSI				
RAID	RAID-5/6(Array Size : 8 HDD x 2 Array)	RAID-5/6(Array Size : 8 HDD x 2 Array)	RAID-5/6(Array Size : 8 HDD x 2 Array)	RAID-5/6(Single, 1 Array)	RAID-5/6(Single, 1 Array)
Hot Swap	Support				
Network Viewer Software	SSM, Webviewer, WAVE, WisenetViewer, Wisenet, mobile Support CGI(SUNAPI) for integration to 3rd party VMS				
Local Monitor	- Dynamic layout, Virtual channel view - Clone Mode : Up to 64 Division - Expand Mode : HDMI1 up to 36 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	- Dynamic layout, Virtual channel view - Clone Mode : Up to 64 Division - Expand Mode : HDMI1 up to 36 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	- Dynamic layout, Virtual channel view - Clone Mode : Up to 36 Division - Expand Mode : HDMI1 up to 36 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	- Dynamic layout, Virtual channel view - Clone Mode : Up to 36 Division - Expand Mode : HDMI1 up to 36 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	- Dynamic layout, Virtual channel view - Clone Mode : Up to 16 Division - Expand Mode : HDMI1 up to 16 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9
Network Camera Protocol	Wisenet, ONVIF	Wisenet, ONVIF	Wisenet, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Power Input	100 ~ 240 VAC ± 10%; 50/60 Hz (Dual SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.1A	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.1A
Power Consumption	Max. 285W (972.5 BTU with HDD 16ea)	Max. 285W (972.5 BTU with HDD 16ea)	Max. 285W (972.5 BTU with HDD 16ea)	SUNAPI, ONVIF	Max. 205W (With 10TB HDDs 8EA)
PoE Budget	-	-	-	-	-
Additional Features	-				

				
	XRN-6420DB4/B4 **64CH NVR**	**XRN-6410DB4/6410B4** **64CH NVR**	**XRN-6410RB2** **64CH NVR**	**XRN-6410B2** **64CH NVR**
OS	Linux	Linux	Linux	Linux
Supported Compression	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG
Max. Recording Bit Rate	Distributed mode : Up to 520 Mbps Normal mode : Up to 300 Mbps {RAID mode} Normal : Up to 520 Mbps Degrade/ Rebuild : Up to 520 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps
Max of Cameras	Max. 64CH	Max. 64CH	Max. 64CH	Max. 64CH
Network Camera Resolution	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF
HDD Slot	SATA 16ea(Max. 160TB, Non-RAID mode), Hot swap	SATA 16ea(Max. 160TB, Non-RAID mode), Hot swap	SATA 8ea(Max. 80TB, Non-RAID mode), Hot swap	SATA 8ea(Max. 80TB)
Record Mode	Normal, Dual Stream, Schedule (Continuous/Event), Event (Pre/Post), Bookmark			
Event Trigger	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event			
Event Action	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown			
External Storage	iSCSI			
RAID	RAID-5/6	RAID-5/6	RAID-5/6	-
Hot Swap	Support	Support	Support	-
Network Viewer Software	SSM, Webviewer, Wave, Wisenet Viewer, Wisenet mobile, Support CGI(SUNAPI) for integration to 3rd party VMS			
Local Monitor	- Dynamic layout, Virtual channel view - Clone Mode : Up to 64 Division - Expand Mode : HDMI1 up to 36 Div. HDMI2 up to 32 Div.[Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9			
Network Camera Protocol	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Power Input	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.7A (Dual SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.7A (Dual SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 1.7A (Single SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 1.5A (Single SMPS)
Power Consumption	Max. 265W (904.2 BTU with HDD 16ea)	Max. 265W (904.2 BTU with HDD 16ea)	Max. 160W (with 10TB HDD 8EA)	Max. 138W (with 10TB HDD 8EA)
PoE Budget	-	-	-	-
Additional Features	• N+1 failover supported • AI search (BestShot, Attribute) - When integrated with Wisenet AI cameras • PTZ camera configuration and control • Dual SMPS (6410DB4) • Dynamic layout • Virtual channel view • Fisheye dewarping	• N+1 failover supported • AI search (BestShot, Attribute) - When integrated with Wisenet AI cameras • PTZ camera configuration and control • Dual SMPS (6410DB4) • Dynamic layout • Virtual channel view • Fisheye dewarping	• N+1 failover supported • AI search (BestShot, Attribute) - When integrated with Wisenet AI cameras • PTZ camera configuration and control • Dynamic layout • Virtual channel view • Fisheye dewarping	• N+1 failover supported • AI search (BestShot, Attribute) - When integrated with Wisenet AI cameras • PTZ camera configuration and control • Fisheye dewarping

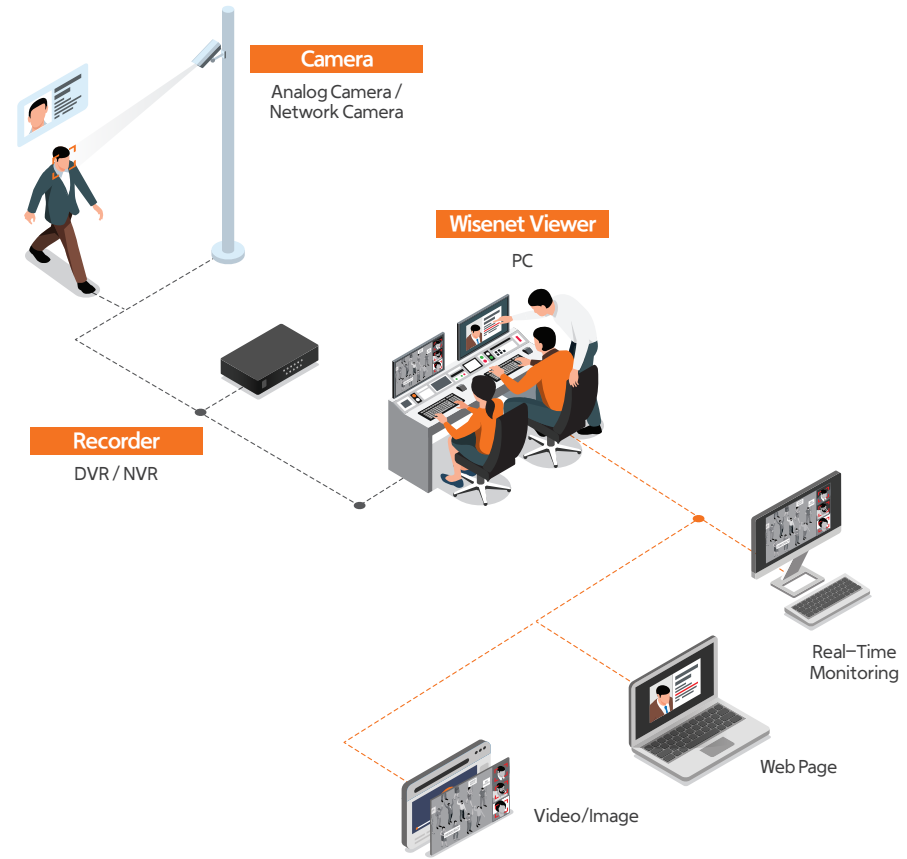
	 XRN-3220B4 32CH AI NVR	 XRN-3210B4 32CH NVR	 XRN-3210RB2 32CH NVR	 XRN-3210B2 32CH NVR
OS	Linux	Linux	Linux	Linux
Supported Compression	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG
Max. Recording Bit Rate	Distributed mode : Up to 520 Mbps Normal mode : Up to 300 Mbps {RAID mode} Normal : Up to 520 Mbps Degrade/ Rebuild : Up to 520 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps {RAID mode} Normal : Up to 400 Mbps Degrade/ Rebuild : Up to 320 Mbps	Distributed mode : Up to 400 Mbps Normal mode : Up to 150 Mbps
Max of Cameras	Max. 32CH	Max. 32CH	Max. 32CH	Max. 32CH
Network Camera Resolution	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF
HDD Slot	SATA 16ea(Max. 160TB, Non-RAID mode)	SATA 16ea(Max. 160TB, Non-RAID mode)	SATA 8ea(Max. 80TB, Non-RAID mode)	SATA 8ea(Max. 80TB)
Record Mode	Normal, Dual Stream, Schedule(Continuous/Event), Event (Pre/Post), Bookmark			
Event Trigger	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event
Event Action	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command,Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command,Shutdown
External Storage	iSCSI			
RAID	RAID-5/6	RAID-5/6	RAID-5/6	-
Hot Swap	Support			
Network Viewer Software	SSM, Webviewer, WAVE, Wisenet Viewer, Wisenet mobile, Support CGI(SUNAPI) for integration to 3rd party VMS			
Local Monitor	Dynamic layout, Virtual channel view Clone Mode : Up to 32 Division Expand Mode : HDMI1 up to 32 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	Dynamic layout, Virtual channel view Clone Mode : Up to 64 Division Expand Mode : HDMI1 up to 32 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	Dynamic layout, Virtual channel view Clone Mode : Up to 64 Division Expand Mode : HDMI1 up to 32 Div. HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9/ 13/ 16/ 25/ 36/ Sequence [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9
Network Camera Protocol	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Power Input	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.7A (Single SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 2.7A (Single SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 1.7A (Single SMPS)	100 ~ 240 VAC ± 10%; 50/60 Hz, 1.5A (Single SMPS)
Power Consumption	Max. 265W (904.2 BTU with HDD 16ea)	Max. 265W (904.2 BTU with HDD 16ea)	Max. 160W (with 10TB HDD 8EA)	Max. 138W (with 10TB HDD 8EA)
PoE Budget	-	-	-	-
Additional Features	• N+1 failover supported • AI search (BestShot, Attribute) - When integrated with Wisenet AI cameras • PTZ camera configuration and control • Dynamic layout • Virtual channel view • Fisheye dewarping			

					
	XRN-1620SB1 **16CH NVR**	**XRN-1620B2** **16CH NVR**	**XRN-820S** **8CH NVR**	**XRN-815S** **8CH NVR**	**XRN-420S** **4CH NVR**
OS	Linux	Linux	Linux	Linux	Linux
Supported Compression	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
Max. Recording Bit Rate	Max. 140Mbps	Max. 140Mbps	Max. 120Mbps	Max. 100Mbps	Max. 50Mbps
Max # of Cameras	Max. 16CH	Max. 16CH	Max. 8CH	Max. 8CH	Max. 4CH
Network Camera Resolution	32MP ~ CIF	32MP ~ CIF	32MP ~ CIF	12MP ~ CIF	8MP ~ CIF
HDD Slot	SATA 4ea(Max. 24TB)	SATA 8ea(Max. 80TB)	SATA 2ea(Max. 12TB)	SATA 2ea(Max. 20TB)	SATA 1ea(Max. 6TB)
Record Mode	Normal, Dual Stream, Schedule(Continuous/Event), Event (Pre/Post), Bookmark				
Event Trigger	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event				
Event Action	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown				
External Storage	-	-	-	-	-
RAID	RAID-1	-	RAID-1	-	-
Hot Swap	-	-	-	-	-
Network Viewer Software	WAVE, SSM, Webviewer, Wisenet Viewer, Wisenet Viewer, Wisenet mobile, Support CGI(SUNAPI) for integration to 3'rd party VMS				
Local Monitor	Dynamic layout, Virtual channel view Clone mode : Up to 16 Division Expand mode : Up to 9 Division[Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9			Clone Mode : Dynamic layout Expand Mode : HDMI1 Dynamic layout, HDMI2 up to 9 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	1/ 2V/ 2H/ 3V/ 4/ Sequence [Web] 1/ 2V/ 2H/ 3V/ 4
Network Camera Protocol	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Power Input	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz	100 ~ 240 VAC ± 10%; 50/60 Hz
Power Consumption	Max. 310W	130W	Max 160W	Max 165W (563 BTU with 2HDD, PoE On)	Max 67W(1HDD, PoE On)
PoE Budget	200W	-	100W	100W	50W
Additional Features	• PoE supported • N+1 failover supported • AI search (BestShot, Attribute) – When integrated with Wisenet AI cameras • PTZ camera configuration and control				

	 QRN-1630S 16CH NVR	 QRN-830S 8CH NVR	 QRN-430S 4CH NVR
OS	Linux	Linux	Linux
Supported Compression	H.265, H.264, MJPEG	H.265, H.264, MJPEG	H.265, H.264, MJPEG
Max. Recording Bit Rate	Max. 128Mbps	Max. 80Mbps	Max. 40Mbps
Max of Cameras	Max. 16CH	Max. 8CH	Max. 4CH
Network Camera Resolution	8MP ~ CIF	8MP ~ CIF	8MP ~ CIF
HDD Slot	SATA 2ea(Max. 20TB)	SATA 1ea(Max. 6TB)	SATA 1ea(Max. 6TB)
Record Mode	Normal, Dual Stream, Schedule(Continuous/Event), Event (Pre/Post), Bookmark		
Event Trigger	Alarm Input, Video Loss, Camera Event (Sensor, MD, Video Analytics, Defocus, Audio), Dynamic Event, User Event		
Event Action	"e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown"	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out, FTP, SUNAPI Command, Shutdown	e-Mail, Event Push, PTZ Preset, Alarm Out, Buzzer, Monitor Out
External Storage	-	-	-
RAID	-	-	-
Hot Swap	-	-	-
Network Viewer Software	WAVE, SSM, Webviewer, Wisenet Viewer, Wisenet mobile Support CGI(SUNAPI) for integration to 3rd party VMS		
Local Monitor	Clone Mode : Dynamic layout Expand Mode : HDMI1 Dynamic layout, HDMI2 up to 16 Div. [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	Dynamic layout [Web] 1/ 2H/ 2V/ 3V/ 4/ 6/ 8/ 9	1/ 2V/ 2H/ 3V/ 4/ Sequence [Web] 1/ 2V/ 2H/ 3V/ 4
Network Camera Protocol	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Power Input	100 ~ 240 VAC ± 10%; 50/60 Hz	54VDC / 1.55A	100 ~ 240 VAC ± 10%; 50/60 Hz
Power Consumption	Max. 200W(682 BTU with 2HDD, PoE ON)	Max 84W (287 BTU with 1HDD, PoE ON)	Max 52W(1HDD, PoE On)
PoE Budget	130W	65W	35W
Additional Features	• PoE supported • N+1 failover supported • ARB (Auto Recovery Backup) redundancy supported • PTZ camera configuration and control • Easy configuration (Setup Wizard, P2P (QR Code))		

Wisenet Viewer

Costless yet powerful NVR·DVR Management Software





Available on Windows, macOS, Linux

Monitoring with PC gets easier

- Supports multiple OS (Windows, macOS, Linux)
- Flexible channel division and custom layout
- AI search (Person, Face, Vehicle, LPR)
- Fisheye de-warping
- Displays web pages (ex. NVR web-viewer) and video tutorials
- Allows videos to be directly saved to PC
- Event trigger and action rule management
- Remote connection (DDNS/P2P)

Effective monitoring with essential features

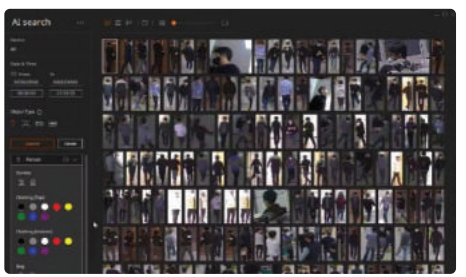
Customizable channel layout & Timeline



Easy monitoring with **Fisheye Dewarping**



Intelligent monitoring powered by **AI Search**



Encoder





	SPE–1630 16CH Encoder	SPE–420 4CH Encoder
Max. # of Cameras	16	4
Supported Compression	H.265 / H.264, MJPEG	H.265 / H.264, MJPEG
Max. Resolution	5MP/4MP/1080p/720p/WD1/4CIF/CIF	5MP/4MP/1080p/720p/WD1/4CIF/CIF
Max. Frame Rate per Channel	5MP : 12fps/CH, 4MP : 15fps/CH, 1080p/720p/WD1/4CIF/CIF : 30fps/CH(N), 25fps/CH(P)	5MP : 12fps/CH, 4MP : 15fps/CH, 1080p/720p/WD1/4CIF/CIF : 30fps/CH(N), 25fps/CH(P)
Bi–Directional Audio	Support	Support
RS–485	Support	Support
Alarm I/O	4 / 1	4 / 2
Application Programming Interface	ONVIF profile S, SUNAPI	ONVIF profile S, SUNAPI
Power	MAX : 20W (12V, 1.67A)	MAX : 5W (PoE & 12VDC)

Decoder



	SPD–152 1 Monitor Decoder
Video Out	HDMI (2ea)
Resolution	HDMI#1 up to 4K, HDMI#2 up to 1080p
Display	Max. 64ch decoding Decoding performance : 8M@60fps, 2M@360fps
Power	Dual Power : 12VDC, PoE (IEEE802.3af)
Additional Features	Multi adapter for monitor back mount (VESA)

AI Box



	AIB–800 AI Box
Inputs	Max. 8CH
Resolution	CIF ~ 32MP
Protocols	SUNAPI, ONVIF
Analytics	**Classified object type** : Person/Vehicle Attributes : Vehicle (Type:car/bus/truck/motorcycle/bicycle) **Support Bestshot** **Analytics events based on AI engine**: – Motion Detection*, Object detection, Virtual line* (Crossing/Direction), Virtual area* (Loitering/Intrusion/Enter/Exit) * Some of the video analytics only works with people/vehicle detection **Analytics events** : Virtual area(Appear/Disappear) Business Intelligence : – Based on AI engine: People counting, Vehicle counting, Queuemanagement, Heatmap
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTSP, NTP, HTTP, DHCP (Server, Client), SMTP, ICMP, IGMP, ARP, DNS, DDNS, uPnP, HTTPS, SNMP, ONVIF (Profile–S), SUNAPI(Server, Client), SRTP
DDNS	Hanwha DDNS
Max Manipulated Streams	80 Streams (10 Streams per 1CH)
IP Version	IPv4/v6
Security	IP address filtering, User access Log, 802.1x, Encryption Device certificate(Hanwha Techwin Root CA)
OS	Windows 11/10, macOS 10.13
Web Browser	Google Chrome, Microsoft Edge, Mac Safari
Viewer/CMS	WebViewer, WAVE, SSM, Genetec, Milestone Support SDK/CGI(SUNAPI) for interworking with 3'rd party VMS
Ethernet	RJ–45 1ea (1Gbps)
Alarm	In(8EA, Terminal Block), Alarm Reset(1EA), Out(4EA, Terminal Block) – Relay Out1(NO/NC/COM), – Relay Out2~4(NO/COM)
USB	1EA(Rear 1 x USB 3.0) for DEBUG
Log List	Max. 3,000 (System 1,000, Access 1,000, EVENT 1,000)
CPU	NVIDIA ORIN NX 8GB (SOM)
Operating Temperature / Humidity	+0°C to +40°C(+32°F to +104°F), 20% ~ 85% RH
Power Consumption	100 ~ 240 VAC ± 10%; 50/60 Hz, 12V, 4A Adaptor, 28W
Color / Material	Black / Metal
Product Dimensions / Weight	300 x 47.6 x 240.9 mm (11.81 x 1.87 x 9.48 inch), 1.39kg

Wisenet WAVE

Video Management System

Intuitive and Easy to Use

- An intuitive 'drag & drop' tool makes it extremely easy for operators to set up a display of live and recorded images on a single screen or video wall, with customizable layouts and sizes.
- Zoom windows which, with just simple clicks of a mouse, enables operators to zoom in to see close up detail of any suspicious activity.
- Motion detection and video analytics support can be configured to generate alerts when user defined incidents occur.
- A wide range of smart, keyword, calendar and preview search options facilitate rapid retrieval of recorded video.

Wisenet WAVE targets the needs of projects in the mid-market with an emphasis on simplified user experience.

An Operating System to Suit Your Needs

Wisenet WAVE has applications for all major operating systems so our users are not limited by what device or operating system they choose to use on their desktops, mobile devices, rack mount servers, or even low-powered embedded devices. (For embedded devices, please contact Hanwha Vision Support)



WAVE Sync

A cloud-based service that enables simple, centralized remote access and insight into any Wisenet WAVE system.



Desktop

A rich media player designed to view and manage a single Wisenet WAVE system from a desktop or laptop PC.



Mobile

A mobile app designed for viewing Wisenet WAVE system video and archives while on-the-go.



Server

A media server responsible for discovering, connecting to, and managing system devices and data.

Supported Browsers	Desktop OS Support	Mobile OS Support	Server OS Support
Google Chrome	Microsoft Windows	Google Android	Microsoft Windows
Mozilla Firefox	Ubuntu Linux	Apple iOS	Ubuntu Linux
Opera / Opera Neon	Apple macOS		
Micosoft Edge			
Apple Safari			

Cloud

Wisenet WAVE Sync Simplifies Everything

A cloud-based service which can be remotely accessed by an unlimited number of authorized users from anywhere in the world.

Setup in Seconds

Step 1: Create Wisenet WAVE Sync Account
Step 2: Link your System to Wisenet WAVE Sync
Step 3: Connect, View and Manage from anywhere





Wisenet WAVE

Desktop

The Ultimate Flexibility

Wisenet WAVE offers a wide range of options to allow users to choose how and where to manage their video surveillance systems with minimal hardware requirements. Wisenet WAVE is offered as software which can be installed onto a user's desktop running Windows, Linux or Apple devices.



Mobile

Smart Phone. Smart Video.

A mobile app provides the opportunity to remotely access the key functions of Wisenet WAVE from a smart device to enable 'on-the-road' users to view and respond to any incidents captured by connected cameras.



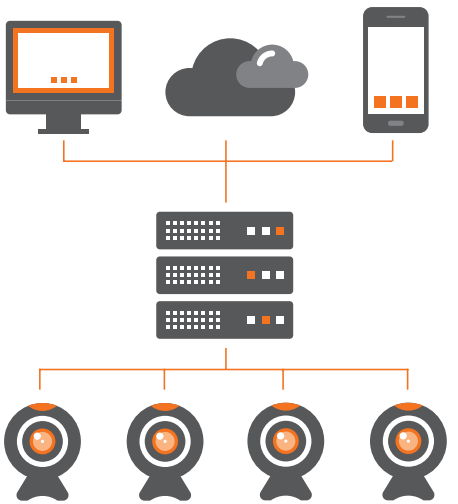
Server

Lightweight. Powerful. Server Hive.

The Wisenet WAVE server application is the foundation of the entire platform - with the ability to operate alone or as one part of a hive.

Wisenet WAVE is available as a downloadable software application from the Hanwha Vision website which enables the installers to easily and effortlessly install and configure.

The supporting web-based application enables each Wisenet WAVE platform to be managed as a stand alone system or as part of a larger, scalable video management solution. The application also provides an audit trail, real-time health monitoring and camera failover support, as well as reports on server health and storage status.



Server Hive

Connect to any Server w/ any Client

- Instant synchronization
- No single point of failure
- Automatic failover
- One-click upgrades

Wisenet SSM

Ideal choice for integrated monitoring

Wisenet SSM (Smart Security Manager) is a video monitoring software that maximizes the operational efficiency of Wisenet products (Network camera, Encoder, DVR and NVR). **Hanwha Vision** provides video surveillance products and also in-house developed Wisenet software to monitor whole systems. It provides seamless system integration and central monitoring with cost effectiveness and reliability.



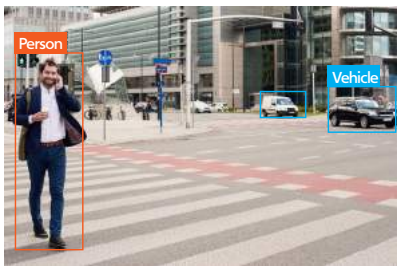
Cost Competitiveness	High reliability	Convenient Operation
Off er major features of video surveillance in reasonable price	Superb device compatibility off ered as a VMS of device manufacturer	A single manufacturer providing unifi ed user experience
One time licensing cost (No cost for upgrades and maintenance)	Integrated operation of H/W and S/W for efficient maintenance and management	Be the first to use the latest device features
High quality VMS features for the price	Dashboard that can monitor device status	Offer various solutions for user environments

AI video search

Connect **Hanwha** AI cameras to SSM for various search features adopting AI algorithms.

• Best Shot search using unique attributes

System operators can utilize SSM's 'AI video search' feature to easily search specific events in the video by designating distinctive attributes of objects such as persons, faces, and vehicles. If a user searches specific attributes such as red motorcycle or a man wearing short pants, the best still cuts (Best Shot) of the classified objects in the video will be retrieved. Best Shots can be used as forensic data for accident investigations, playing back video that includes Best Shots.







Hanwha SSM search
Support quick search using attributes

Best Shot
Object detection & classification (Person, face, vehicle, license plate)

Parking management solution

Connect ANPR cameras to Wisenet SSM for various parking management features.

• Vehicle management & event search

Hanwha SSM's parking management solution utilizes ANPR (Automatic number plate recognition) cameras off ering real-time parking entrance/exit monitoring. Users can register and manage vehicles without additional parking management software, while simple search feature quickly searches and retrieves vehicle footage.

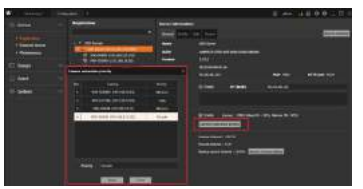


Stable monitoring

SSM provides safe and stable monitoring environment through Failover.

• Vehicle management & event search

Failover priority (High, medium, never) can be confi gured for each channel. If a camera is failed, high priority cameras will be failed over at fi rst. Users can record and save important footages without loss of data.







	XRP-4310DB4 128CH Server NVR (SSM Appliance)	XRP-4210B4 72CH Server NVR (SSM Appliance)
OS	Windows 10 IoT Enterprise (SSM preinstalled)	
Supported Compression	H.265, H.264, MJPEG, WiseStream	
Max. Recording Bit Rate	400Mbps	
Max # of Cameras	128CH (If clustering, 132CH)	72CH (If clustering, 132CH)
Network Camera Resolution	32MP ~ CIF	
HDD Slot	SATA 16ea (3.5" 16ea Hot Swap – Volume 2ea)	
Record Mode	Normal, Schedule (Continuous / Event), Event (Pre / Post), Event Profile, ARB, Dual-Track	
Event Trigger	Video loss, Camera event(Sensor, MD, Passing, Entering, Exiting, Disappearing (Appearing), Tampering, Tracking, Face Detection, Audio Detection, ANPR, Bestshot), AI Event (Face, Appearance, Face mask, Vehicle)	
Event Action	Instant Viewer, Preset, Alarm Out, Pop-up, Sound and E-mail notification	
External Storage	–	
RAID	RAID 1 / 5 / 6 / 10 / 50	
Hot Swap	Yes	
Network Viewer Software	SSM Client, SSM Mobile	
Local Monitor	Dual if Full HD monitor, Single if UHD monitor	
Network Camera Protocol	Wisenet, ONVIF	
Power Input	100 ~ 240VAC, 50 ~ 60Hz	
Power Consumption	250W Dual	
PoE Budget	–	
Additional Features	• SSM Preinstalled • Redundant Power Support • ARB (Auto Recovery Backup) redundancy supported • AI Event (Face, Appearance, Face mask, Vehicle) Trigger	• SSM Preinstalled • ARB (Auto Recovery Backup) redundancy supported • AI Event (Face, Appearance, Face mask, Vehicle) Trigger

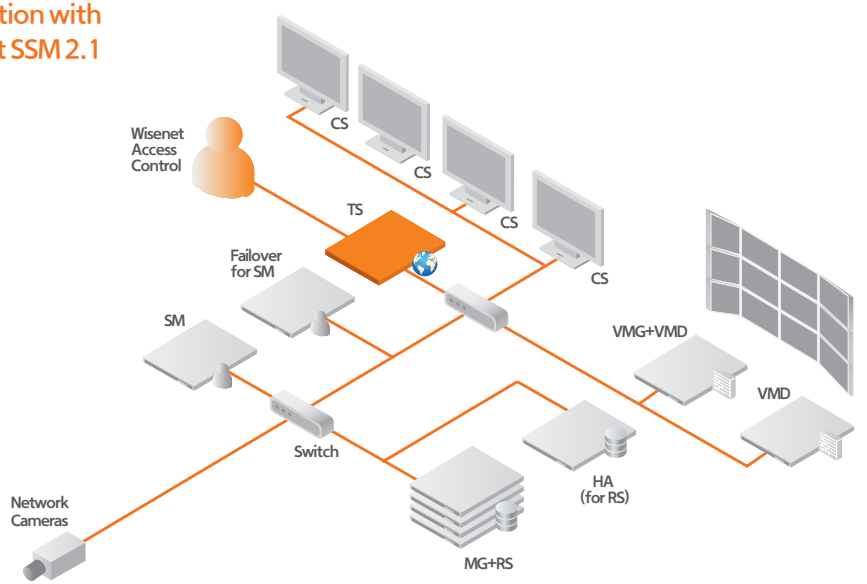
Wisenet Access Software 2.2

Wisenet Access Software is access control management software integrated with Wisenet SSM, WAVE for Total security solution. It is highly scalable up to unlimited doors system and has robust software architecture.

ACS Monitoring | Fire Alarm | Lift Control



Integration with Wisenet SSM 2.1



Key Features

- **Interlocking**
  Control the locking of two or more doors
  If one door is opened or unlocked, the remaining doors refuse access
- **Mustering Report**
  Provide information of the occupants in the fire grouping area based in Fire event
- **Visitor management**
  Providing visitor management features :Visitor/Host information, Visit history, Check in/out and archive
- **LDAP integration**
  Synchronize Active Directory "Security group" users to have the same "Access Group", "Company", "Department" in WACS
- **Lift access control**
  Provide Access control for LIfT up to 12floors per output board (V300, X300)
- **Guard Tour**
  Provide Guard Tour : Sequential, Time Bound types



Configuration



Monitoring



Mustering Report

Access Control	Device auto discovery Cardholder management Batch uploads Card (s) pre-registration Lift Control Role based ACS Device maintenance	Unlimited access groups, Time schedules Interlocking Area / Zone management Biometric readers (FP, Face) Visitor Management Global APB, I/O Guard Tour
Monitoring	Real time access events & alarm monitoring Graphic maps Remote door management (Close / Open) I/O monitoring	Mustering Configure Event Specific Instructions for Operators Event Filtering for Monitoring Control Door Monitoring/ Management permissions per User
Card Design and Printing	Create multiple design templates Auto-fill card holder data from system database Print cards	
Fire Groups	Create fire-groups for each fire sensor input	
Advanced Reporting	Extensive reporting options Export to multiple formats (excel, pdf, word etc.) Meal Count Report	
Video Integration	Seamless Integration with **Hanwha Vision**'s VMS in event monitoring Review video of the access & alarms events Real-time access & alarms events notification to Wisenet WAVE, SSM	
Maintenance	User group & user privileges Manual & scheduled database backup Database restore	Data export & import Custom fields Auditing & user activity logs
System	Unlimited doors Very simple and intuitive user interface Highly scalable	

Reader



Signo 20/20K/40/40K
Card / Keypad Reader



U90
Long Range UHF Reader



BioEntry W2
Fingerprint / Card Reader



BioMini
Fingerprint Scanner

	Signo 20/20K/40/40K Card / Keypad Reader	U90 Long Range UHF Reader	BioEntry W2 Fingerprint / Card Reader	BioMini Fingerprint Scanner
Credential Compatibility	125KHz/ 13.56Mhz	902 ~ 928 MHz	13.56Mhz	–
Communication	Wiegand/Clock & Data/BLE/NFC	Wiegand	Wiegand	USB 2.0
Compatible Access Cards	Standard Profile : iClass SE/SEOS, MIFARE (Classic/SIO), HID Prox, EM4102, MIFARE DESFire EV1/EV2 (CSN/SIO) SEOS Profle : iClass SEOS	UHF Card	iCLASS SE/SEOS, MIFARE (Classic) / DESFire EV1 CSN	–
Keypad	No / Yes (6x2) / No / Yes (4x3)	–	–	–
Operating Voltage Range	12V DC	12V DC or 24V DC	12V DC	USB 2.0
Operating Temperature	−35°C ~ 66°C (−31°F ~ 150°F)	−35°C ~ +65°C (−31°F ~ +150°F)	−20°C ~ +50°C (−4°F ~ +122°F)	−10°C ~ +50°C (+14°F ~ +122°F)
Ingress Protection	IP65	IP65	IP67	–
Impact Protection	–	–	IK08	–
Panel Connnection	Pigtail	Pigtail	Pigtail	–
Color	Black with silver	Black	Dark Gray	Dark Gray
OSDP	Support	–	–	–
Max. User	–	–	500,000 (1 : 1), 100,000 (1 : N)	–
Max. Fingerprint Template	–	–	1,000,000 (1 : 1), 200,000 (1 : N)	–
Ethernet	–	–	10/100Mbps	–

Controller



X1100
Hybrid controller



X100/X200/X300
Expansion Reader / Input / Output Module

	X1100 Hybrid controller	X100/X200/X300 Expansion Reader / Input / Output Module
Communication	Ethernet (10/100)/ RS-485	RS-485
Reader interface	2ea	2ea / –
Max. expansion board	32ea	–
Max. card holders	250,000	–
Max. Event buffers	50,000	–
Input port	7ea	7ea/ 19ea/ 3ea
Output port	4ea	4ea/ 2ea/ 12ea
Operating Temperature	0°C ~ 70°C (32°F ~158°F)	0°C ~ 70°C (32°F ~158° F)
PoE	–	–
Color	Gray	Gray
OSDP	Yes	Yes

Peripheral



SSA-X300
Power Package

	SSA-X300 Power Package
Controller/ Interface On Board	Max. 2ea Boards in enclosure
Input Power	100 ~ 240V AC (50Hz/60Hz) / 2.0A
Power Consumption	13.5V ±5%, 4.7A (Strobe, Horn 12.5V DC ±5%)
Charging Current	700mA
Back up Battery	12V, 18Ah, rechargeable
SMPS Status Transmission	AC loss, Battery fail (Non battery)
AC Input Protection	by Fuse in input port
Operation Temperature	0°C ~ +45°C (+32°F ~ +113°F)
Case Lock	Lock on front door with keys
Dimension (mm)	W410 x H410 x D97mm (16.14" x 16.14" x 3.82")

Card



iCLASS SEOS (Elite)
13.56MHz

- 13.56Mhz
- Compatible with Signo 20 (K)/40K, R10 EXP
- Encoded by Hanwha Vision unique format (Elite)



Mobile Subscription

- Bluetooth/NFC via mobile device (Android, IOS)

UHF Card
902–928 MHz Card

- Long range card (3~5m)

IP Audio System

IP audio meets
network surveillance system for
better safety and operational
efficiency in daily life.

Please stay away from the fence

Motion Detection



TTS
Text To Speech

PoE & PoE+
Dual Support +

SIP
PBX integration

Scheduler
Day, Week, Month and Year

IP Speakers



* US only

SPA–C110B/SPA–C110W
Ceiling Speaker



SPA–C100B / SPA–C100W
Ceiling Speaker



SPA–P100B/SPA–P100W
Pendant speaker



SPA–W100B / SPA–W100W
Wall speaker



SPA–H100B/SPA–H100W
Horn speaker

Amplifier	Built in 10W Class D				
Ethernet	10/100 Base–T				
Internal Memory	1 GBytes				
Max. Sound Pressure Level	100dB	100dB	101dB	101dB	125dB
Frequency Range (–10dB)	120Hz~20kHz	120Hz~20kHz	130Hz~20kHz	120Hz~20kHz	650Hz~5.3kHz
Sensitivity (1Watt)	90dB	90dB	91dB	91dB	111dB
Power	PoE/ PoE+				
TTS	Korean, English(US, UK), German, French, Spanish, Russian				

IP Audio Module



SPA–D1000
IP Audio Module

Amplifier	Built in 10W Class D
Power	PoE (IEEE 802.3 af type 1 Class 3), PoE+(IEEE 802.3 at type 2 Class 4)
Multi–source Dynamic PA control	Multi–source up to 48 (Multicast) (Audio 24CH + Mic 24CH) Up to 256 Zone Control (Multicast) Up to 20 Zone Control (Unicast) Up to 255 Groups
TTS	English(US, UK), German, French, Spanish, Russian

IP Audio Server



SPA–S1000
IP Audio Server

Ethernet	100/1000 Base–T
Power	AC 120–240V, 50/60Hz, 10W DC 24V, 350mA
Multi–source Dynamic PA control	Multi–source up to 48 (Multicast) (Audio 24CH + Mic 24CH) Up to 256 Zone Control (Multicast) Up to 20 Zone Control (Unicast) Up to 255 Groups

SIP Microphone



SPA–M2000
SIP Microphone

Mic input Level	AUX (Input Volume Max) –7dBV
Supported Protocols	IPv4, HTTP, HTTPs, SIP, mDNS, DNS, NTP, TCP, UDP, DHCP, ARP, ICMP
Power	Max.10W, DC24V PoE (IEEE 802.3 af type 1 Class 3)

IP Audio Bridge



SPA–B1000
IP Audio Bridge

Power	PoE (IEEE 802.3 af type 1 Class 3) DC 24V
Supported Audio Format	File Streaming : WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Sampling rate from 16 kHz up to 48 kHz
Supported Protocols	IPv4, HTTP, HTTPs, mDNS, DNS, NTP, TCP, UDP, DHCP, ARP, ICMP

					
	HCB-7000A **QHD Box Camera**	**HCO-7070RA** **QHD IR Bullet Camera**	**HCO-7010RA/20RA/30RA** **QHD IR Bullet Camera**	**HCD-7070RA** **QHD IR Dome Camera**	**HCD-7010RA/20RA/30RA** **QHD IR Dome Camera**
Imaging Device	1/3" CMOS				
Resolution	2560 x 1440				
Min. Illumination	Color : 0.16Lux (F1.2) B/W : 0.009Lux (F1.2)	Color : 0.16Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.26Lux (F1.8) (HCO-7010R) 0.27Lux (F2.0) (HCO-7020R/7030R) B/W : 0Lux (IR LED on)	Color : 0.16Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.26Lux (F1.8) (HCD-7010RA) 0.27Lux (F2.0) (HCD-7020R/7030RA) B/W : 0Lux (IR LED on)
Focal Length	-	3.2 ~ 10mm (3.1x) varifocal	2.8mm fixed (HCO-7010R) 4.0mm fixed (HCO-7020R) 6.0mm fixed (HCO-7030R)	3.2 ~ 10mm (3.1x) varifocal	2.8mm fixed (HCD-7010RA) 4.0mm fixed (HCD-7020RA) 6.0mm fixed (HCD-7030RA)
Angular Field of View	-	H : 93.48° (Wide) ~ 29.44° (Tele) V : 50.47° (Wide) ~ 16.64° (Tele) D : 112.53° (Wide) ~ 33.7° (Tele)	H : 107.48° / V : 59.67° / D : 122.01° (HCO-7010RA) H : 78.22° / V : 41.21° / D : 87.91° (HCO-7020RA) H : 49.01° / V : 27.61° / D : 55.6° (HCO-7030RA)	H : 93.48° (Wide) ~ 29.44° (Tele) V : 50.47° (Wide) ~ 16.64° (Tele) D : 112.53° (Wide) ~ 33.7° (Tele)	H : 107.48° / V : 59.67° / D : 122.01° (HCD-7010RA) H : 78.22° / V : 41.21° / D : 87.91° (HCD-7020RA) H : 49.02° / V : 27.61° / D : 55.6° (HCD-7030RA)
Pan / Tilt / Rotate	-	-	-	0° ~ 350° / 0° ~ 63° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	-	30m (98.43ft)	20m (65.62ft) (HCO-7010R) 25m (82.02ft) (HCO-7020R) 30m (98.43ft) (HCO-7030R)	20m (65.62ft)	20m (65.62ft) (HCD-7010RA) 25m (82.02ft) (HCD-7020RA) 30m (98.43ft) (HCD-7030RA)
Day & Night	Auto (ICR)				
Backlight Compensation	BLC/HLC/DWDR				
Digital Noise Reduction	2D DNR				
Motion detection	Support				
Privacy Masking	2 Zones				
Alarm I/O	0/1	0/1	0/0	0/1	0/0
Protocol	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron) RS-485 : Samsung T, Pelco D/P	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)
Operating Temperature	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)	-30℃ ~ +55℃ (-22℉ ~ +13℉) * Start up above -10℃ (+14℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)
Certification	-	IP66, IK10	IP66, IK10	-	-
Power Consumption	12VDC & 24VAC : Max 3.6W	12VDC & 24VAC : Max 5.8W	12VDC : Max 5W	12VDC & 24VAC : Max 5.8W	12VDC : Max 5W
Dimensions (WxHxD) / Weight	W 59.6 x H 68.4 x 92.7mm (2.35" x 2.69" x 3.65") 186g (0.41lb)	Ø78 x 259.8mm (Ø3.07" x 10.23") (Without sunshield) 914g (2.02lb)	Ø70 x 246mm (Ø2.76" x 9.69") (Without sunshield) 670g (1.48lb)	Ø119.8 x 98.5mm (Ø4.72" x 3.88") 320g (0.71lb)	Ø110.1 x 86.1mm (Ø4.33" x 3.39") 240g (0.53 lb)
Additional Features	Video Transmission up to 500m (5C2V Coaxial Cable)				

	 HCV-7070RA QHD IR Vandal Dome Camera	 HCV-7010RA/20RA/30RA QHD IR Vandal Dome Camera	 HCB-6001 1080p HD Box Camera	 HCB-6000 1080p HD Box Camera	 HCO-6080R 1080p HD IR Bullet Camera
Imaging Device	1/3" CMOS	1/3" CMOS	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Resolution	2560 x 1440	2560 x 1440	1920 x 1080	1920 x 1080	1920 x 1080
Min. Illumination	Color : 0.16Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.26Lux (F1.8) (HCV-7010R) 0.27Lux (F2.0) (HCV-7020R/7030R) B/W : 0Lux (IR LED on)	Color : 0.09Lux (F1.2) B/W : 0.009Lux (F1.2)	Color : 0.09Lux (F1.2) B/W : 0.009Lux (F1.2)	Color : 0.11Lux (F1.6) B/W : 0Lux (IR LED on)
Focal Length	3.2 ~ 10mm (3.1x) varifocal	2.8mm fixed (HCV-7010R) 4.0mm fixed (HCV-7020R) 6.0mm fixed (HCV-7030R)	-	-	3.2 ~ 10mm (3.1x) motorized varifocal
Angular Field of View	H : 93.48° (Wide) ~ 29.44° (Tele) V : 50.47° (Wide) ~ 16.64° (Tele) D : 112.53° (Wide) ~ 33.7° (Tele)	H : 107.48° / V : 59.67° / D : 122.01° (HCV-7010R) H : 78.22° / V : 41.21° / D : 87.91° (HCV-7020R) H : 49.01° / V : 27.61° / D : 55.6° (HCV-7030R)	-	-	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)
Pan / Tilt / Rotate	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	-	-	-
IR Viewable Length	30m (98.43ft)	20m (65.62ft) (HCV-7010R) 25m (82.02ft) (HCV-7020R) 30m (98.43ft) (HCV-7030R)	-	-	30m (98.43ft)
Day & Night	Auto (ICR)				
Backlight Compensation	BLC / HLC / DWDR	BLC/HLC/DWDR	WDR (120dB)	WDR (120dB)	WDR (120dB)
Digital Noise Reduction	2D DNR	2D DNR	SSNR Ⅳ	SSNR Ⅳ	SSNR Ⅳ
Motion detection	Support				
Privacy Masking	2 Zones	2 Zones	4 Zones	8 Zones	8 Zones
Alarm I/O	MD Output 1				
Protocol	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol), RS-485 : Samsung T, Pelco D/P, Panasonic, Bosch , Honeywell, Vicon, GE, AD	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol), RS-485 : Samsung T, Pelco D/P, Panasonic, Bosch , Honeywell, Vicon, GE, AD	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol)
Operating Temperature	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)
Certification	IP66, IK10	IP66, IK10	-	-	IP66, IK10
Power Consumption	12VDC & 24VAC : Max 5.8W	12VDC : Max 5W	12VDC & 24VAC : Max 6W	12VDC & 24VAC : Max 3.5W	12VDC & 24VAC : Max 5.8W
Dimensions (WxHxD) / Weight	Ø137 × 106.1mm (Ø5.39" × 4.18") 715g (1.58 lb)	Ø120.3 x 91.7mm (Ø4.74" x 3.61") 510g (1.12lb)	W 130.9 × H 73.1 × D 67.2mm (5.15" × 2.88" × 2.65") 287g (0.63 lb)	W 68.4 × H 59.6 × D 92.7mm (2.69" × 2.35" × 3.65") 186g (0.41 lb)	Ø78 x 259.8mm (Ø3.07" x 10.23") (Without sunshield) 948g (2.09lb)
Additional Features	Video Transmission up to 500m (5C2V Coaxial Cable), Simple Focus (HCD-6080R, HCB-6001)				

				
	HCO-6070R **1080p HD IR Bullet Camera**	**HCO-6020R** **1080p HD IR Bullet Camera**	**HCD-6080R/6070R** **1080p HD IR Dome Camera**	**HCD-6020R** **1080p HD IR Dome Camera**
Imaging Device	1/2.8" CMOS			
Resolution	1920 x 1080			
Min. Illumination	Color : 0.11Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.17Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.11Lux (F1.6) B/W : 0Lux (IR LED on)	Color : 0.17Lux (F1.6) B/W : 0Lux (IR LED on)
Focal Length	3.2 ~ 10mm (3.1x) varifocal	4mm fixed (F1.6)	3.2 ~ 10mm (3.1x) motorized varifocal (HCD-6080R) varifocal (HCD-6070R)	4mm fixed (F1.6)
Angular Field of View	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)	H : 87.6° / V : 46.4° / D : 104.5°	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)	H : 87.6° / V : 46.4° / D : 104.5°
Pan / Tilt / Rotate	-	-	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	30m (98.43ft)	30m (98.43ft)	20m (65.62ft)	20m (65.62ft)
Day & Night	Auto (ICR)			
Backlight Compensation	WDR (120dB)			
Digital Noise Reduction	SSNR Ⅳ			
Motion detection	Support			
Privacy Masking	8 Zones			
Alarm I/O	0/1	-	0/1	-
Protocol	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol)			
Operating Temperature	-30℃ ~ +55℃ (-22℉ ~ +131℉) *Start up above -10℃ (+14℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) *Start up above -10℃ (+14℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉)
Certification	IP66, IK10	IP66	-	-
Power Consumption	12VDC & 24VAC : Max 6W	12VDC : Max 5.4W	12VDC & 24VAC : Max 5.8W (HCD-6080R) 12VDC & 24VAC : Max 4.2W (HCD-6070R)	12VDC : Max 5.4W
Dimensions (WxHxD) / Weight	Ø78 x 259.8mm (Ø3.07" x 10.23") (Without sunshield) 914g (2.02lb)	Ø58.6 x 165.2mm (Ø2.31" x 6.5") (Without sunshield) 279g (0.62 lb)	Ø119.8 x 98.5mm (Ø4.72" x 3.88") 330g (0.73lb) (HCD-6080R) 320g (0.71lb) (HCD-6070R)	Ø110 x 86mm (Ø4.33" x 3.39") 227g (0.71lb)
Additional Features	Video Transmission up to 500m (5C2V Coaxial Cable), Simple Focus (HCD-6080R only)			

				
	HCD-6010 **1080p HD Dome Camera**	**HCV-6080R/6070R** **1080p HD IR Vandal Dome Camera**	**SCB-6005** **1080p HD Box Camera**	**SCO-6085R** **1080p HD IR Bullet Camera**
Imaging Device	1/2.8" CMOS			
Resolution	1920 x 1080			
Min. Illumination	Color : 0.27Lux (F2.0) B/W : 0.017 Lux (F2.0)	Color : 0.11Lux (F1.6) B/W : 0Lux (IR LED on)	Color: 0.04Lux (F1.2, 1/30sec) BW: 0.004Lux (F1.2)	Color : 0.11Lux (F1.6) B/W : 0Lux (IR LED on)
Focal Length	2.8mm fixed (F2.0)	3.2 ~ 10mm (3.1x) motorized varifocal (HCV-6080R) varifocal (HCV-6070R)	–	3.2 ~ 10mm (3.1x) manual varifocal
Angular Field of View	H : 113.7° / V : 61.5° / D : 134.5°	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)	–	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)
Pan / Tilt / Rotate	0° ~350° / 0° ~67° / 0° ~355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	–	–
IR Viewable Length	–	30m (98.43ft)	–	30m (98.42ft)
Day & Night	Auto (ICR)			
Backlight Compensation	WDR(120dB)		DWDR	
Digital Noise Reduction	SSNR Ⅳ			
Motion detection	Support			
Privacy Masking	8 Zones			
Alarm I/O	–	0 / 1	0 / 1	0 / 1
Protocol	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron), CCP (CVI Coax Protocol), TCP (TVI Coax Protocol)	ACP (AHD Coax Protocol) CVBS: Pelco-C (Coaxitron)	AHD : ACP (AHD Coax Protocol), CVBS : Pelco-C (Coaxitron)
Operating Temperature	-10℃ ~ +55℃ (+14℉ ~ +131℉)	-30℃ ~ +55℃ (-22℉ ~ +131℉) * Start up above -10℃ (+14℉)	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH	-30℃ ~ +55℃ (-22℉ ~ +131℉)
Certification	–	IP66, IK10	–	IP66, IK10
Power Consumption	12VDC : Max 3.6W	12VDC & 24VAC : Max 5.8W (HCV-6080R) 12VDC & 24VAC : Max 4.2W (HCV-6070R)	AC 24V / 0.37A (Max 3.6W) DC 12V / 0.32A (Max 3.5W)	24VAC: Max 5.4W, typical 3.4W 12VDC: Max 5.4W, typical 3.4W
Dimensions (WxHxD) / Weight	Ø110 x 86mm (Ø4.33" x 3.39") 225g (0.49lb)	Ø137 x 106.1mm (Ø5.39" x 4.18") 725g (1.60lb) (HCV-6080R) 715g (1.58lb) (HCV-6070R)	W 68.4 x H 59.6 x D 92.7mm (2.69" x 2.35" x 3.65") 186g (0.41lb)	Ø78 x 259.8mm (Ø3.07" x 10.23") 887g (1.95lb)
Additional Features	Video transmisstion up to 500m (5C2V Coaxial Cable), Simple Focus (HCV-6080R only)			

				
	SCO-6025R **1080p HD IR Bullet Camera**	**SCD-6085R** **1080p HD IR Dome Camera**	**SCD-6025R** **1080p HD IR Dome Camera**	**SCV-6085R** **1080p HD IR Vandal Dome Camera**
Imaging Device	1/2.8" CMOS			
Resolution	1920 x 1080			
Min. Illumination	Color: 0.11Lux (F1.6, 1/30sec) BW: 0Lux (IR LED on)	Color: 0.11Lux (F1.6, 1/30sec) BW: 0Lux (IR LED on)	Color: 0.17Lux (F1.6, 1/30sec) BW: 0Lux (IR LED on)	Color: 0.11Lux (F1.6, 1/30sec) BW: 0Lux (IR LED on)
Focal Length	4mm fixed	3.2~10mm (3.1x) varifocal	4mm fixed	3.2~10mm (3.1x) varifocal
Angular Field of View	H : 87.6° / V : 46.4° / D : 104.5°	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)	H : 87.6° / V : 46.4° / D : 104.5°	H : 110.2° (Wide) ~ 32° (Tele) V : 55.4° (Wide) ~ 18° (Tele) D : 128.4° (Wide) ~ 36.6° (Tele)
Pan / Tilt / Rotate	-	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°	0° ~ 350° / 0° ~ 67° / 0° ~ 355°
IR Viewable Length	30m (98.42ft)	20m (65.62ft)	20m (65.62ft)	30m (98.43ft)
Day & Night	Auto (ICR)			
Backlight Compensation	BLC, HLC, DWDR			
Digital Noise Reduction	SSNR Ⅳ			
Motion detection	Support			
Privacy Masking	8 Zones			
Alarm I/O	0 / 1	0 / 1	0 / 1	0 / 1
Protocol	ACP (AHD Coax Protocol) CVBS: Pelco-C (Coaxitron)			
Operating Temperature	-30℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH * Start up should be done at above -10℃	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH	-10℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH	-30℃ ~ +55℃ (+14℉ ~ +131℉) / 0~90% RH * Start up should be done at above -10℃
Certification	IP66	-	-	IP66, IK10
Power Consumption	DC 12V/0.45A (Max 5.4W)	AC 24V / 0.45A DC 12V / 0.46A	DC 12V/0.45A (Max 5.4W)	AC 24V / 0.45A DC 12V / 0.46A
Dimensions (WxHxD) / Weight	Ø58.6 x 165.2 mm (Ø 2.31" x 6.5") (without sunshield) 279g (0.62lb)	Ø119.8 x 98.5mm (Ø4.72" x 3.88") 320g (0.7lb)	Ø110 x 86mm (Ø4.33" x 3.39") 227g (0.5lb)	Ø137 x 106.1mm (Ø5.39" x 4.18") 715g (1.57lb)
Additional Features	Video transmisstion up to 500m (5C2V Coaxial Cable)			

	 **HRX-1635** 16CH 8MP Pentabrid Recorder	 **HRX-1634** 16CH 8MP Pentabrid Recorder	 **HRX-835A** 8CH 8MP Pentabrid Recorder	 **HRX–435** 4CH 8MP Pentabrid Recorder	 **HRX–434** 4CH 8MP Pentabrid Recorder
OS	Linux	Linux	Linux	Linux	Linux
Compression	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
Signal Type	AHD(8MP, 5MP, 4MP, 1080p, 720p) HDTVI(8MP, 5MP, 4MP, 1080p, 720p) HDCVI(5MP, 4MP, 1080p, 720p) CVBS(NTSC/PAL)				
Inputs	Analog Camera – 16CH(1Vp–p 75ohm, BNC) Network Camera – 2CH (Up to 18CH)	Analog Camera – 16CH(1Vp–p 75ohm, BNC) Network Camera – 2CH (Up to 18CH)	Analog Camera – 8CH(1Vp–p 75ohm, BNC) Network Camera – 2CH (Up to 10CH)	"Analog Camera – 4CH(1Vp–p 75ohm, BNC) Network Camera – 2CH (Up to 6CH)"	"Analog Camera – 4CH(1Vp–p 75ohm, BNC) Network Camera – 2CH (Up to 6CH)"
Record Rate	(Main Stream, NT/PAL) 8M 8/8fps, 5M 12/12fps, 4M 15/12fps, 2M 30/25fps, 720p 30/25fps, Under 960H 30/25fps/CH (Sub Stream) 720p/CH or Higher : 640x368 Full fps, SD : up to SD Full fps * The maximum recording framerate depends on the frame rate of the input camera.				
HDD Slot	SATA 8ea(Max. 48TB)	SATA 2ea(Max. 12TB)	SATA 4ea(Max 24TB)	SATA 2ea(Max 12TB)	SATA 1ea(Max 6TB)
Viewer Software	SSM, Webviewer, Wisenet Mobile, Wisenet Viewer				
Local Display	1x HDMI, 1x VGA (Dual monitor) HDMI: 3840 x 2160, 2560x1440, 1920x1080, 1280x1024, 1280x720 VGA: 1920x1080, 1280x1024, 1280x720, 1024x768	1x HDMI, 1x VGA (Dual monitor) HDMI: 3840 x 2160, 2560x1440, 1920x1080, 1280x1024, 1280x720 VGA: 1920x1080, 1280x1024, 1280x720, 1024x768	1x HDMI, 1x VGA (Dual monitor) HDMI: 3840 x 2160, 2560x1440, 1920x1080, 1280x1024, 1280x720 VGA: 1920x1080, 1280x1024, 1280x720, 1024x768	1x HDMI, 1x VGA (simultaneous output) HDMI: 3840 x 2160, 2560x1440, 1920x1080, 1280x1024, 1280x720 VGA: 1920x1080, 1280x1024, 1280x720	1x HDMI, 1x VGA (simultaneous output) HDMI: 3840 x 2160, 2560x1440, 1920x1080, 1280x1024, 1280x720 VGA: 1920x1080, 1280x1024, 1280x720
Audio In/Out	16 Lline in (RCA 4 Line, Option : Audio Extension Cable) / 1Line line out	4 Line in / 1 Line out	8 Lline in (RCA 4 Line, Option : Audio Extension Cable) / 1Line line out	4 Line in / 1 Line out	4 Line in / 1 Line out
Alarm In/Out	In 16EA, Out 4EA – Relay Out1(NO/NC/COM) – Relay Out2~4(NO/COM)	In 16EA, Out 4EA – Relay Out1(NO/NC/COM) – Relay Out2~4(NO/COM)	In 8EA, Out 4EA – Relay Out1(NO/NC/COM) – Relay Out2~4(NO/COM)	In 4EA, Out 2EA – Relay Out1(NO/NC/COM) – Relay Out2(NO/COM)	In 4EA, Out 1EA – Relay Out1(NO/NC/COM)
N/W Camera Support	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF	SUNAPI, ONVIF
Additional Features	–	–	–	–	–

AI PVM



SMT-3231PV
32" AI PVM with PIP/PBP



SMT-3221PV
32" AI PVM



SMT-2731PV
27" AI PVM with PIP/PBP



SMT-2721PV
27" AI PVM



SMT-1031PV
10" AI PVM



SMT-1031PVW
10" AI PVM

Monitor	Screen Size	31.5"	31.5"	27"	27"	10.1"	10.1"
	Max. Resolution	1920*1080	1920*1080	1920*1080	1920*1080	1024*600	1024*600
	Brightness	400 cd/m²	400 cd/m²	300 cd/m²	300 cd/m²	500cd/m²	500cd/m²
	Contrast Ratio	1300:1	1300:1	1000:1	1000:1	500:1	500:1
	Aspect Ratio	16:9	16:9	16:9	16:9	16:9	16:9
	Viewing Angle(H/V)	178° /178°	178° /178°	178° /178°	178° /178°	140° /120°	140° /120°
	Video	Camera(Internal), HDMI(2), PIP/PBP	Camera(Internal), HDMI(2)	Camera(Internal), HDMI(2), PIP/PBP	Camera(Internal), HDMI(2)	Camera(Internal)	Camera(Internal)
	VESA Mount(mm)	100*100/200*100/200*200	100*100/200*100/200*200	100*100/200*100/200*200	100*100/200*100/200*200	75*75	75*75
	Power	DC24V, HPOE 802.3bt	DC24V, HPOE 802.3bt	DC24V, HPOE 802.3bt	DC24V, HPOE 802.3bt	DC24V, PoE+ 802.3at	DC24V, PoE+ 802.3at
	Cabinet Color	Black	Black	Black	Black	Black	White
Camera	Imaging Device	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS	1/2.8" 2MP CMOS
	Min. Illumination	Color: 0.03Lux (F1.6, 1/30sec)	Color: 0.03Lux (F1.6, 1/30sec)	Color: 0.03Lux (F1.6, 1/30sec)	Color: 0.03Lux (F1.6, 1/30sec)	Color: 0.03Lux (F1.6, 1/30sec)	Color: 0.03Lux (F1.6, 1/30sec)
	Focal Length	3.06mm fixed focal					
	Max. Aperture Ratio	F1.6					
	Angular Field of View	H: 107.7° / V: 59.0° / D: 126.7°					
	Analytics	**Classified object type**: Person/Face Attributes: Not support, **Support DetectionShot** **Analytics events based on AI engine** : Motion detection, Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit) Analytics events : Defocus detection, Tampering, Virtual area(Appear/Disappear)					
	Business Intelligence	People counting, Queue management, Heatmap based on AI engine					
	Additional Features	Loss prevention and Advertisement					

LED Monitor



SMT-4343
43" LED Monitor



SMT-3240
32" LED Monitor



SMT-3215
31.5" LED Monitor



SMT-2740
27'' LED Monitor



SMT-2710
27'' LED Monitor



SMT-2431
24" LED Monitor



SMT-2212
22" LED Monitor

Screen Size	43"	32"	31.5"	27''	27''	24"	22"
Max. Resolution	3840 x 2160	3840 x 2160	1920*1080, 60Hz (FHD)	3840 x 2160, 60Hz (UHD)	1920 x 1080, 60Hz (FHD)	1920 x 1080	1920 x 1080
Brightness	300 cd/m²	300 cd/m²	300cd/m²	300 cd/m²	250 cd/m²	250 cd/m²	250 cd/m²
Contrast Ratio	1000:1	1000:1	4000:1	1200:1	4000:1	4000:1	3000 : 1
Aspect Ratio	16:9						
Viewing Angle(H/V)	178°/178°						
Response Time	8.5ms	14ms	20ms	–	6.5ms	14ms	6.5ms
Interface	HDMI (1), DP (1)	HDMI 2.0(1), DP1.2(1)	VGA(1), HDMI 1.4(1), DP 1.2(1)	HDMI 2.0(2), DP1.4(1), two windows PIP/PBP	VGA(1), HDMI 1.4(1), DP 1.2(1)	HDMI (1), VGA (1)	HDMI(1), VGA(1)
Audio In/Out	–/1	–/1	1/1	–/–	1/1	–/–	–/–
Built-in Speakers	Yes	Yes	Yes	Yes	Yes	–	–
VESA Mount(mm)	100*100/400*200	100*100	100*100	100*100	100*100	100*100	100*100
Power	100V ~ 240V AC	100V ~ 240V AC	100V~240V AC	100V~240V AC	100V~240V AC	100V ~ 240V AC	DC 12V 5A
Stand	Optional	Yes	Yes	Yes	Yes	Yes	Yes
Tempered Glass Screen	–						
Additional Features	Remote Controller	–	–	–	–	–	–

Controller



SPC-7000
System Controller



SPC-2010
PTZ / DVR System Controller



SPC-2001
PTZ / DVR System Controller



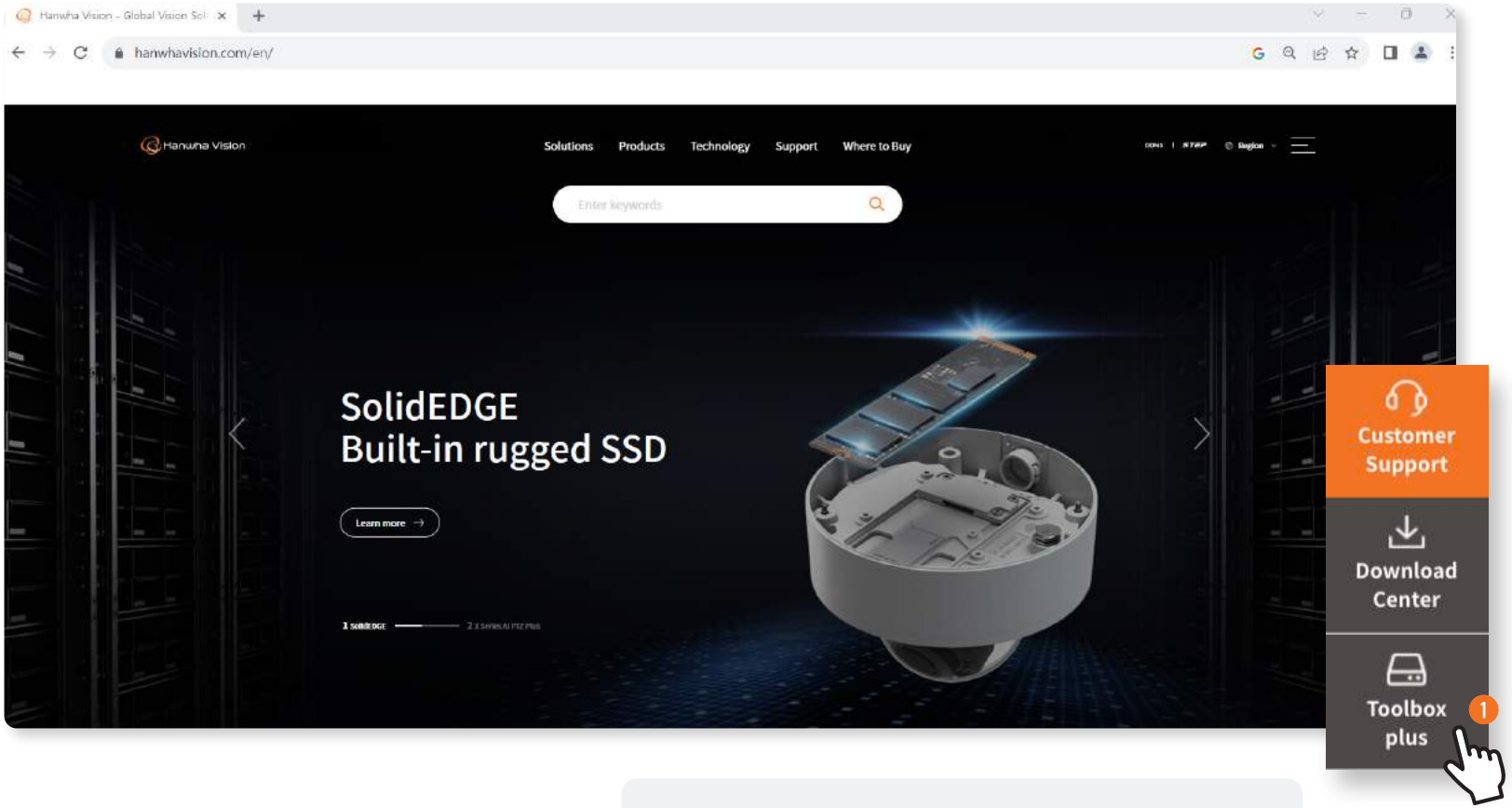
SPC-1010
PTZ Control Keyboard

Features	• 5" TFT Touch LCD • Network Camera / SSM / Analog Camera / DVR Control • User-Friendly Design and Easy-to-Use Keypad • 3 Axis Joystick to Control PTZ Function • Detachable Joystick / Jogshuttle for Universe Use (Right / Left Hand Use) • USB Interface Support (1ea for SSM, 1ea for Image Snapshot / Upgrade) • Fast Camera-Tile Mapping, Config Import / Export	• Control up to 255 PTZ Cameras / DVRs • Built-in 3 Axis Twist Zoom Joystick • Built-in Jog Shuttle • 16 x 2 Character LCD Display • RS-485 and RS-422 Interface	• Control up to 255 PTZ Cameras / DVRs • Built-in 3 Axis Twist Zoom Joystick • Built-in Jog Shuttle • 16 x 2 Character LCD Display • RS-485 and RS-422 Interface	• Control up to 255 PTZ Cameras • Multi Protocols Supports • OSD Menu, 3D Joystick Control • RS-485 and RS-422 Interface

Lens

Model	Image	Mount	Image Format	Resolution	Focal Length	Back Focal Length	Zoom Ratio	F. No	Angle of View	Operation			Dimensions W x H x D (mm / inch)	Weight (g / lb)
										Iris	Focus	Zoom		
SLA-M8550D		CS	1 / 2.8"	3Megapixel	8.5 ~ 50mm (0.33" ~ 1.97")	9.4 ~ 10.7mm (0.37" ~ 0.42")	5.9	F1.6	42.3° ~ 7.5°	DC	Manual	Manual	W 46 xH 60 x D 58.2mm (1.81" x 2.36" x 2.29")	80g (0.17 lb)
SLA-M2890DN					2.8 ~ 9mm (0.11" ~ 0.35")	7.5 ~ 15.9mm (0.3" ~ 0.63")	3.2	1.2	134.2° ~ 42.7°				W 45 x H 51.5 x D 54.3mm (1.77" x 2.03" x 2.14")	84g (0.19 lb)
SLA-M2890PN										P-Iris				82.1g (0.18 lb)

Toolbox Plus

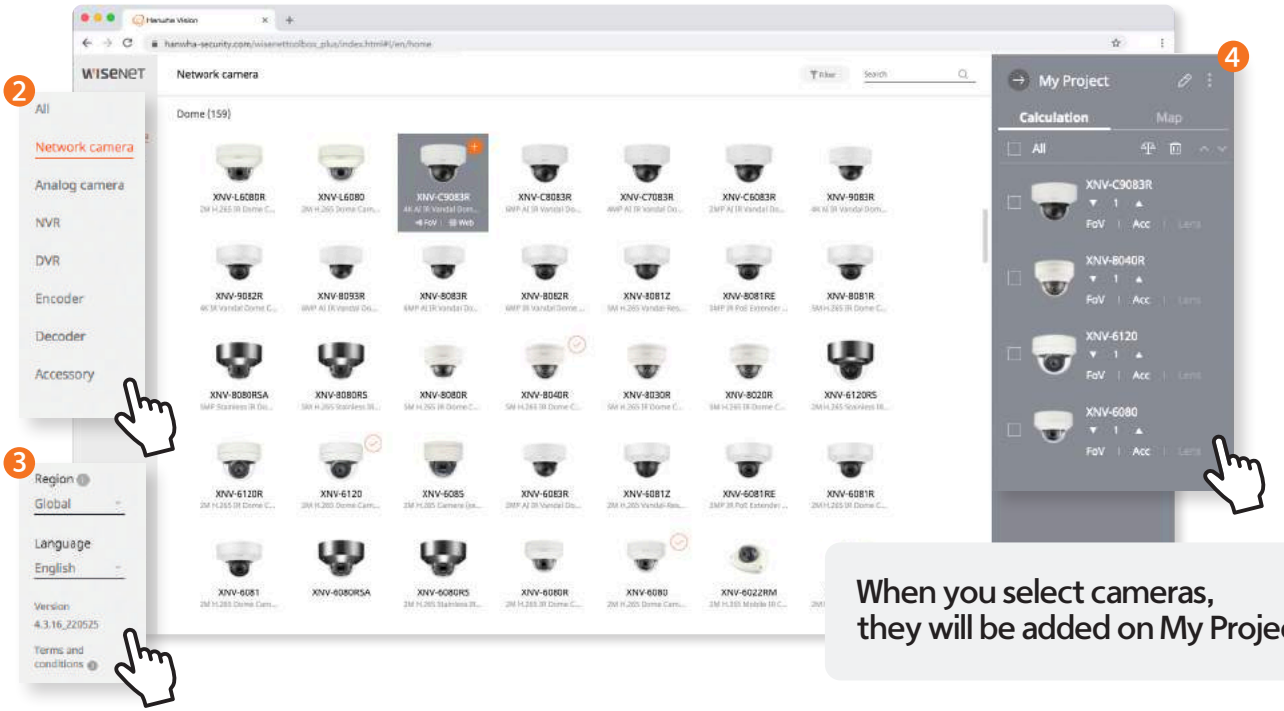


Click the Toolbox Plus on Hanwha Vision.com

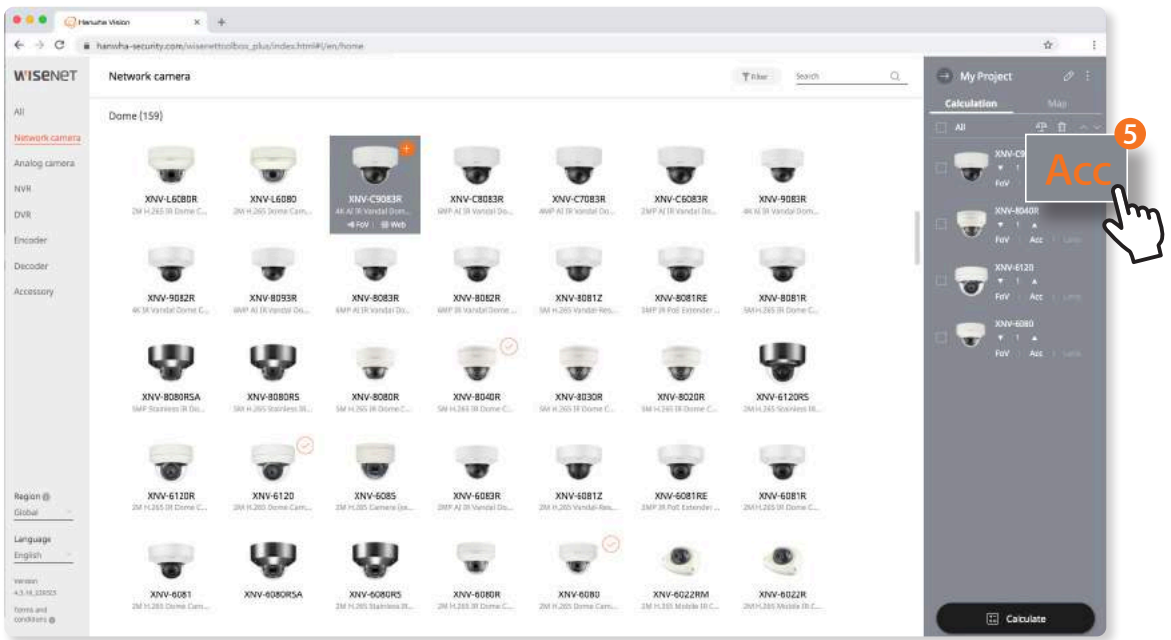
Or you can also connect by using below URL
(https://www.hanwhavision.com/wisenettoolbox_plus)

Choose product you are interested in

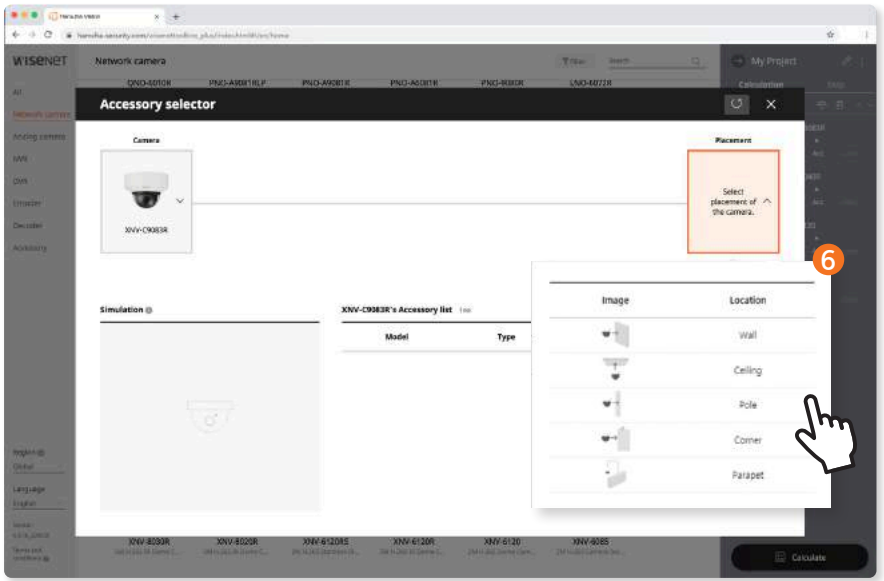
Select region and language



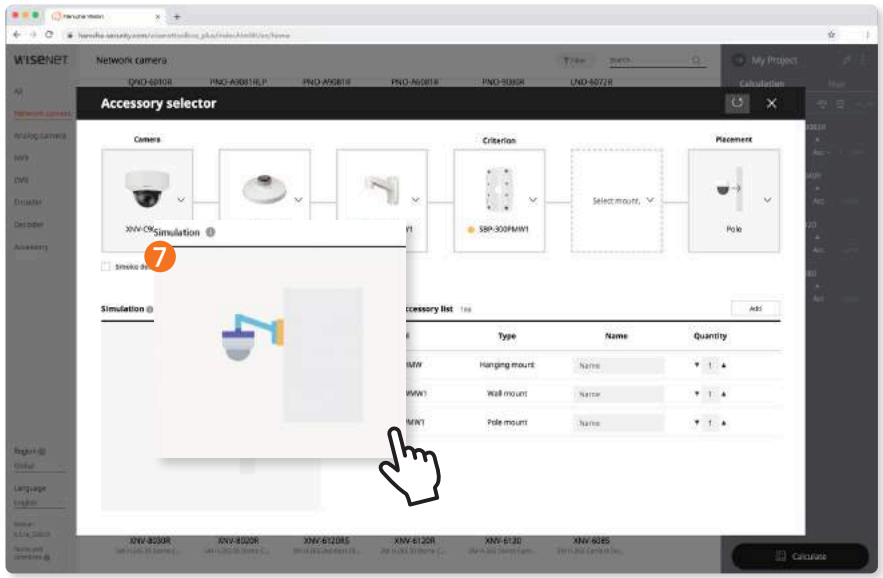
When you select cameras, they will be added on My Project



Click the Acc to find compatible accessories

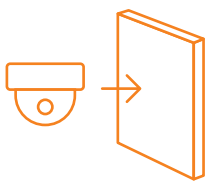


Accessory Selector pops up.
All compatible accessories are shown

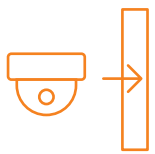


Choose accessories then the simulation intuitively shows all connected accessories

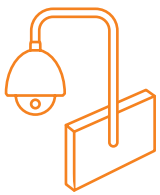
WM Wall mounts



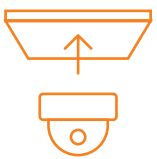
PM Pole mounts



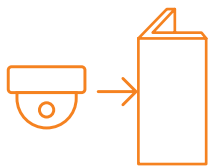
LM Parapet mounts



CM Ceiling mounts

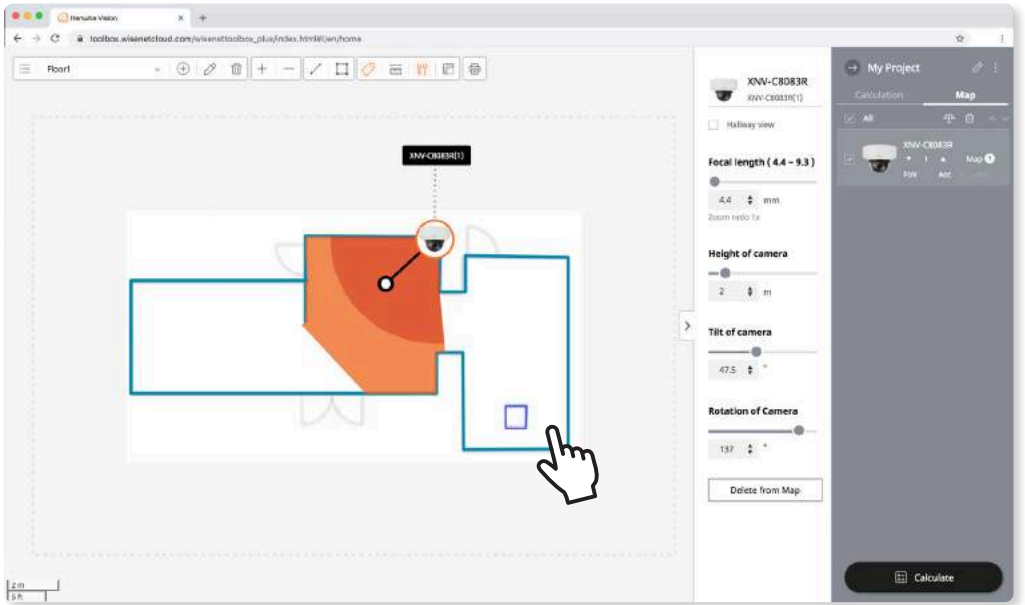


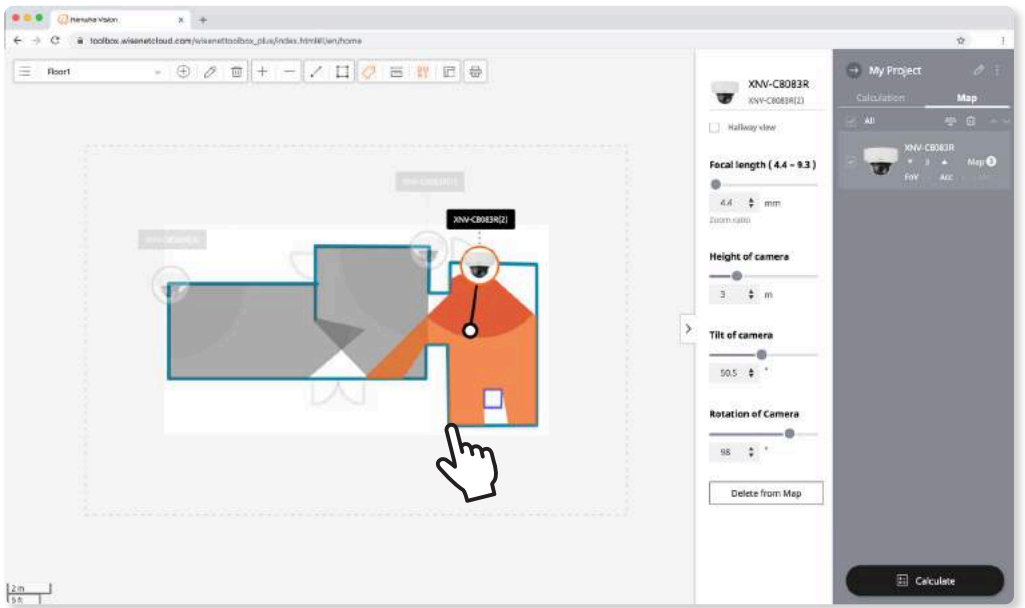
KM Corner mounts



Newly updated in Toolbox Plus: Simulate on the map

Toolbox Plus helps you simulate
the best place for installing cameras.





By uploading your map to Toolbox plus,
you can test how much
cameras can cover in your own space.

It can guide you on how to compose and install
cameras to minimize blind spots in advance.

MEMO

MEMO

MEMO

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FIRST EDITION 07-2024(M.H)