



Network

Bullet

PNO-A9092R

8MP AI Vandal Bullet



Key Features

- Maximum 8MP resolution (1/1.2" sensor)
- 15~50mm (3.33x) motorized varifocal
- Long range WiselR distance up to 120m (393.7ft)
- Colour: 0.015Lux (F1.5, 1/30sec, 30IRE)
- BW: 0.0015Lux (F1.5, 1/30sec, 30IRE)
- Analytics events based on AI engine : Object detection (Person/Face/Vehicle/License plate), IVA (Virtual line/Area, Enter/Exit, Loitering, Direction, Intrusion), Slip&Fall detection, Face mask detection, Social distancing detection
- Business intelligence based on AI engine : People/Vehicle/Crowd counting, Queue management, Heatmap
- Support BestShot and full attributes
- Support Dynamic Privacy Masking
- AI-based Image enhancement
- extremeWDR, WiseNR II (Based on AI engine), WiseStream (Based on AI engine)
- Support Wisepower (Power monitoring)
- Device certificate (Hanwha Vision Root CA), Secure storage (Secure element with FIPS 140-3 level3/CC EAL6+ certified), SBOM
- 2 SD slots edge storage
- IP66/IP67, NEMA4X, IK10, NEMA-TS 2 (2.2.7.2-8, 2.2.8, 2.2.9)

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Specifications

Video

Imaging Device	Size	1/1.2"
	Type	CMOS
Resolution		3840x2160, 3328x1872, 3072x1728, 2688x1512, 2592x1944, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180
Max. Framerate	H.265/H.264	30fps/25fps(60Hz/50Hz)
	MJPEG	30fps(@8MP Max. 5fps)
Min. Illumination (Lux)	Color(1/30sec, 30IRE)	0.015
	BW(1/30sec, 30IRE)	0.0015
Video Out		USB: Micro USB Type C

Lens

Focal Length (mm)		15~50
Zoom Ratio	Optical	3.33x
Max Aperture Ratio (F number)	Wide	1.67
	Tele	3.5
Angular Field of View	Horizontal	42.7°~12.6°
	Vertical	24.1°~7.2°
	Diagonal	49°~14.3°
Min. Object Distance		2.5m(8.2ft)
Focus Control		Simple focus
Lens Type		DC auto iris with hall sensor(IR corrected)

Pan / Tilt / Rotate

Pan / Tilt / Rotate Range	Pan	0°~360°
	Tilt	0°~90°
	Rotate	0°~180°

Operational

Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SSDR

Operational

Wide Dynamic Range (dB)		120
Digital Noise Reduction		WiseNR II (Based on AI engine), SSNR V
Digital Image Stabilization		Support
Defog		Support
Motion Detection	Quantity	8ea
	Shape	8point Polygonal zones
Privacy Masking	Quantity	32ea
	Shape	8point Polygonal zones
	Color / Option	Gray, Green, Red, Blue, Black, White, Mosaic, Purple, Yellow
	Dynamic Privacy Masking: Color / Option	Gray, Green, Red, Blue, Black, White, Mosaic, Purple, Yellow
Gain Control		Off, Max gain, Manual
White Balance		ATW, NarrowATW, AWC, Manual, Indoor, Outdoor
LDC		Support(Fill/stretch mode)
Electronic Shutter	Mode	Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)
	Speed Range	2~1/30,000sec
Video Rotation		Flip, Mirror, Hallway view(90°/270°)
Alarm Interface	In/Out	2 configurable I/O ports
	Others	12VDC output
Alarm Triggers		Analytics, Network disconnect, Alarm input, Time schedule, MQTT subscription, Case tampering, Day/Night, Storage disruption
Alarm Events When Alarm Trigger Occurred		File upload(image): e-mail/FTP/SFTP, File upload(video clip): FTP/SFTP, Notification: e-mail, Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output, Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback, MQTT: publication
Audio In		Selectable(mic in/line in)
Audio Out		Line out
Light Type		IR LED
Light Viewable Length	IR	WiseIR 120m(393.7ft)
IR Wavelength		850nm

Analytics

Classified Object Type		Person, Face, Vehicle, License plate
Attributes	Person	Upper/Lower clothes color, Gender, Bag
	Vehicle	Type(car, bus, truck, motorcycle, bicycle), Color
	Face	Age, Gender, Face mask, Glasses
Similarity Search		Support
Thumbnail		BestShot

Analytics

Analytics Events	Based on AI Engine	Object detection, Virtual line(Crossing/Direction), Motion detection, Face mask detection, Social distancing detection, Slip & fall detection, Virtual area(Loitering/Intrusion/Enter/Exit/Appear/Disappear)
	Normal	Defocus detection, Tampering, Audio detection, Shock detection
Business Intelligence	Based on AI Engine	People counting, Queue management, Heatmap, Vehicle counting, Crowd counting

Network

Ethernet		Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression		H.265/H.264: Main/Baseline/High, MJPEG
Audio Compression		G.711(PCM): 8kHz(64kbps), G.726(ADPCM): 8kHz(16/24/32/40kbps), AAC-LC: 16kHz(48kbps), OPUS: 16kHz(64kbps)
Smart Codec		WiseStream(Based on AI engine)
Bitrate Control		H.265/H.264: CBR or VBR, MJPEG: VBR
Streaming	Unicast	Up to 20 users
	Multicast	Support
	Multiple Streaming	Up to 5 profiles, 3 virtual channel support
Protocol		IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SFTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT, Syslog
Application Programming Interface	ONVIF	S, G, T, M
	Others	SUNAPI(HTTP API), Hanwha Vision Open Platform
Direct Cloud Connection		Support

Security

OS / Firmware Protect		Encrypted firmware, Secure boot, Signed firmware
User authentication		Digest authentication, Prevent brute-force attack
Network authentication		IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication		HTTPS, WSS(WebSocket Secure), SRTP
Access Control		IP-based access control, MAC-based access control, Auto logout
Data Protect		Encryption credentials, Encrypt compress for live recording file export
Audit		Access / System / Event Log management
Device ID		Device certificate(Hanwha Vision Root CA)
Secure Storage		SDcard partition encrypt(AES-256), Secure element
Supply Chain Security		SBOM
Security Certificate		Secure element(FIPS 140-3 level3, CC EAL6+), ETSI EN 303 645

General

SoC	Type	Wisenet 9
	Dual NPU	Support

General

Memory	RAM	4GB
	Flash	8GB eMMC
Edge Storage	Micro SD/SDHC/SDXC	Max. 1TB x 2slot(Total 2TB)
Edge Storage(OnCloud)	Micro SD/SDHC/SDXC	Max. 1TB x 2slots (Total 2TB) *Hanwha Vision branded microSD cards have been certified and recommended for OnCloud edge recording.

Environmental & Electrical

Operating Condition	Temperature	-50°C~+55°C(-58°F~+131°F)
	Humidity	0~100% RH(condensing)
	Others	+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
Storage Condition	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~90% RH(non-condensing)
EPA(Effective Projected Area)		0.026m ²
Input Voltage		PoE+(IEEE802.3at, Class4), 12VDC
Power Consumption	PoE	Max. 19.2W, typical 11.0W
	12VDC	Max. 16.5W, typical 9.5W
Wisepower		Power monitoring
Power Redundance Failover		Support

Mechanical

Color	White
Material	Aluminum, Hard-coated window
RAL Code	RAL9003
Product Dimensions	ø93.4x298.4mm(ø3.68x11.75")
Product Weight	2,180g(4.81lb)
Compatible Conduit Hole	19.1mm(3/4")(M25)
Compatible Gang Box	Single, Double, 4" Octagon, Square

Certifications & Standards

EMC	FCC 47 CFR 15 Subpart B Class A, ICES-3(A)/NMB-3(A), CE/UKCA - EN55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3, VCCI CISPR 32 Class A, RCM AS-NZS CISPR 32 Class A, KS C 9832 Class A, KS C 9835
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1, IEC 62471
Environment	IEC/EN 63000, IEC 60529 IP66, IEC 60529 IP67, IEC 62262 IK10, NEMA TS 2-2013 (2.2.7, 2.2.8, 2.2.9), NEMA 250 type 4X, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78

DORI (EN62676-4 standard)

Detect (25PPM/ 8PPF)	Wide	195.0m(639.66ft)
	Tele	730.7m(2,397.32ft)

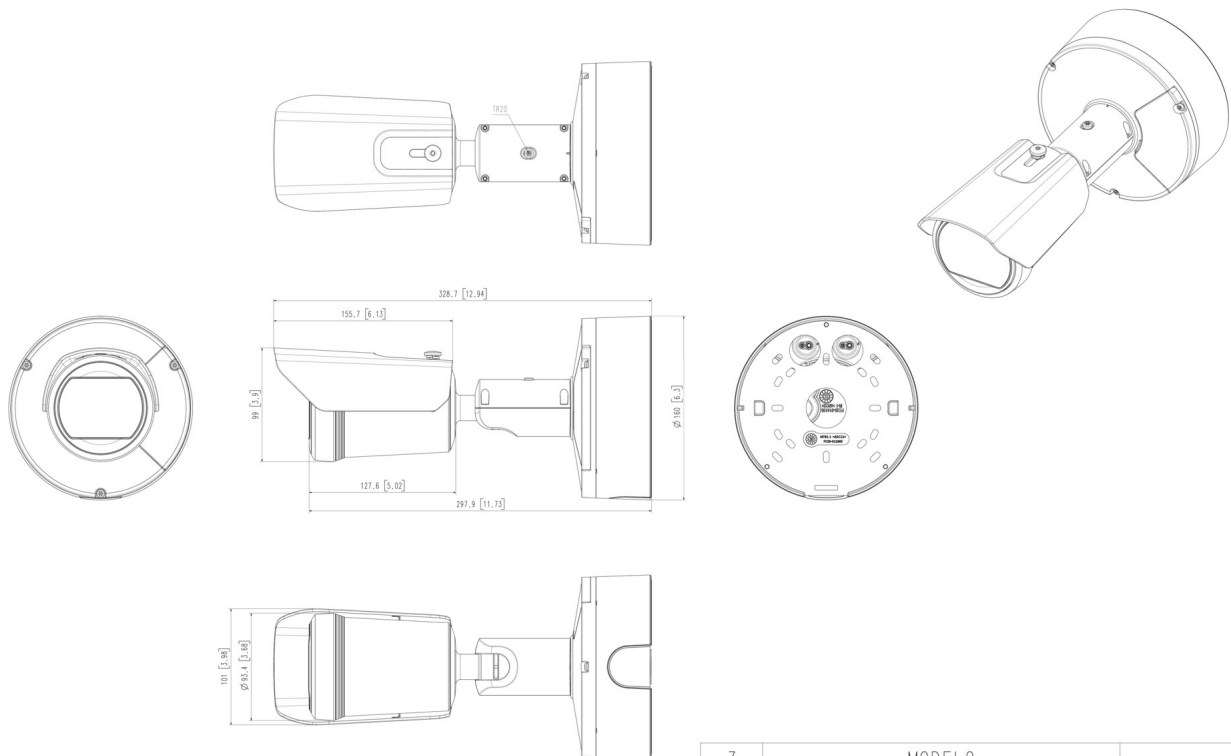
DORI (EN62676-4 standard)

Observe (63PPM/ 19PPF)	Wide	78.0m(255.86ft)
	Tele	292.3m(958.93ft)
Recognize (125PPM/ 38PPF)	Wide	39.0m(127.93ft)
	Tele	146.1m(479.46ft)
Identify (250PPM/ 76PPF)	Wide	19.5m(63.97ft)
	Tele	73.1m(239.73ft)

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Unit: mm [inch]



3	MODEL2	
2	MODEL1	
1	PNO-A9092R	'25.03.06
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	 Hanwha Vision

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