

Network Bullet

PNO-A9081RLP

4K LPR/ANPR/MMCR IR Bullet Camera

Key Features

- Max. 4K resolution
- 0.05Lux@F1.6 (Color), 0Lux (B/W, IR LED on)
- Day & Night(ICR), WDR(120dB)
- IR Viewable Length 30m (98.42ft)
- H.265, H.264, MJPEG codec, WiseStream II
- Wisenet Road AI application (Pre-installed)
  - CNN (Convolutional Neural Network) AI with improved accuracy in challenging conditions
  - License/ Number Plate Recognition
  - Make/Model/Color Recognition
  - Black/White Notification
  - SmartSearch (LP/NP, Country, brand, model, color, date)

※ Specifications require Road AI App version v7.3532 or higher

Design and specifications are subject to change without notice. The latest product information / specification can be found at HanwhaVision.com
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Specifications

Video

Imaging Device	Size	1/1.8"
	Type	CMOS
Resolution		3840x2160, 3072x1728, 2688x1520, 2592x1944, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360
Max. Framerate	H.265/H.264	30fps/25fps(60Hz/50Hz)
	MJPEG	30fps
Min. Illumination (Lux)	Color(1/30sec, 30IRE)	0.05
	BW(1/30sec, 30IRE)	0.005
Video Out		CVBS: 1.0 Vp-p / 75Ω composite for installation, USB: Micro USB Type B. Preview and installation ONLY. Requires WiFi dongle.

Lens

Focal Length (mm)		4.5~10
Zoom Ratio	Optical	2.2x
Max Aperture Ratio (F number)	Wide	1.6
	Tele	2.65
Angular Field of View	Horizontal	101.4°~45.5°
	Vertical	53.6°~25.5°
	Diagonal	120.7°~52.3°
Min. Object Distance		0.5m(1.64ft)
Focus Control		Simple focus
Lens Type		P iris(IR corrected)

Operational

Day & Night	Auto(ICR)
Backlight Compensation	BLC, WDR, SSDR
Wide Dynamic Range (dB)	120
Digital Noise Reduction	SSNR V
Digital Image Stabilization	Support(built-in gyro sensor)

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Operational

Motion Detection	Quantity	8ea
	Shape	8point Polygonal zones
Privacy Masking	Quantity	6ea
	Shape	Rectangular zones
	Color / Option	Gray, Black, White
Gain Control		Low, Middle, High
White Balance		ATW, AWC, Manual, Indoor, Outdoor
LDC		Support
Electronic Shutter	Mode	Minimum, Maximum, Anti flicker
	Speed Range	1/5~1/12,000sec
Video Rotation		Flip, Mirror, Hallway view(90°/270°)
Alarm Interface	In/Out	Input 1ea, Output 1ea
	Others	12VDC output
Alarm Triggers		Analytics, Network disconnect, Alarm input
Alarm Events When Alarm Trigger Occurred		File upload(image): e-mail/FTP, Notification: e-mail,Alarm output, Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback,NAS recording at event triggers
Audio In		Selectable(mic in/line in)
Audio Out		Line out
Light Type		IR LED
Light Viewable Length	IR	WiseIR 30m(98.42ft)
IR Wavelength		850nm

Analytics

Analytics Events	Normal	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection

Network

Ethernet		Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression		H.265: Main, H.264: Main/High,MJPEG
Audio Compression		G.711 u-law /G.726 selectable,G.726(ADPCM) 8kHz,G.711 8kHz, G.726: 16kbps,24kbps,32kbps,40kbps, AAC-LC: 48kbps at 16kHz
Smart Codec		Manual, WiseStream II
Bitrate Control		H.265/H.264: CBR or VBR, MJPEG: VBR
Streaming	Unicast	Up to 10 users
	Multicast	Support
	Multiple Streaming	Up to 5 profiles

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Network

Protocol		IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMPv2, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast)
Application Programming Interface	ONVIF	S, G, T
	Others	SUNAPI(HTTP API)
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
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)

General

Memory	RAM	4GB
	Flash	512MB
Edge Storage	Micro SD/SDHC/SDXC	1slot (32GB card preinstalled) dedicated to strong LPR images from Wisenet Road AI app only (not for video recording)

Environmental & Electrical

Operating Condition	Temperature	-40°C~+55°C(-40°F~+131°F)
	Humidity	0~90% RH(non-condensing)
	Others	Start up should be done at above -30°C
Storage Condition	Temperature	-50°C~+60°C(-58°F~+140°F)
	Humidity	0~90% RH(non-condensing)
Input Voltage		PoE+(IEEE802.3at, Class4), 12VDC
Power Consumption	PoE	Max 20.00W, typical 17.00W
	12VDC	Max 18.00W, typical 16.00W

Mechanical

Color	Dark grey
Material	Aluminum
Product Dimensions	Ø91.0x368.6mm(3.58"x14.51")(Without sunshield)
Product Weight	2.48kg(5.47lb)

Wisenet Road AI LPR/ANPR/MMCR

App Type	CNN (Convolutional Neural Network) AI

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Wisenet Road AI LPR/ANPR/MMCR

LPR Usage Condition	NA	Community Traffic, Parking Application
	EU	Community Traffic, Parking Application
Speed Description by Region	NA	Low to Moderate Speed
	EU	Low to Moderate Speed
Lane Coverage_NA	1 Lane	3.6m/12ft wide (with built in IR)
	2 Lanes	8.1m/26ft wide (with built in IR)
Lane Coverage_EU	1 Lane	3.6m/12ft wide (with built in IR)
	2 Lanes	8.1m/26ft wide (with built in IR)
	3 Lanes	16.2m/53ft wide (with built in IR)
Plate Capture Resolution_NA	1 Lane	4K
	2 Lanes	4K
Plate Capture Resolution_EU	1 Lane	4K
	2 Lanes	4K
	3 Lanes	4K
Speed Limit_NA	1 Lane	Up to 90km/h (56mph)
	2 Lanes	Up to 70km/h (43mph)
Speed Limit_EU	1 Lane	Up to 110km/h (68mph)
	2 Lanes	Up to 100km/h (62mph)
	3 Lanes	Up to 45km/h (28mph)
Min. Forward Distance_NA	1 Lane	6m (19.7ft)
	2 Lanes	8m (26.2ft)
Min. Forward Distance_EU	1 Lane	6m (19.7ft)
	2 Lanes	6m (19.7ft)
	3 Lanes	9m (29.5ft)
Max. Forward Distance_NA	1 Lane	15m (49.2ft)
	2 Lanes	15m (49.2ft)
Max. Forward Distance_EU	1 Lane	20m (65.6ft)
	2 Lanes	20m (65.6ft)
	3 Lanes	20m (65.6ft)
Max. Horizontal Angle by Region	NA	30° for highway, 45° for traffic observation
	EU	30° for highway, 45° for traffic observation
Max. Vertical Angle by Region	NA	30°
	EU	30°
Vehicle Recognition		Make: 100+ makes Model: 4700+ models Color: 11 colors

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Wisenet Road AI LPR/ANPR/MMCR

Available Countries	Albania, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Czechia, Denmark, Estonia, Finland, France, Greece, Germany, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Latvia, Montenegro, North Macedonia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Slovakia, Spain, Switzerland, Turkey, United Kingdom, United States of America, Canada, Russian Federation, Azerbaijan, Uzbekistan, Ukraine, Kyrgyzstan, Kazakhstan, Tajikistan, Georgia, Turkmenistan, Vietnam, Indonesia, Bahrain, Kuwait, Oman, Qatar, KSA, UAE, South Africa, Hongkong/Taiwan (LPR only), Australia/New Zealand (LPR only), Peru/Columbia (LPR only), Liechtenstein, Mexico, Moldova, Monaco, San Marino, Sweden, Croatia, Czech Republic, Gibraltar, Israel, Kosovo, Macedonia, Mongolia
Integration Options	JSON over HTTP, UTMC 1, UTMC 2, NVR, Wisenet WAVE
VMS Support	Wisenet WAVE, Wisenet SSM, Genetec Security Center, Milestone Xprotect, Genetec AutoVu

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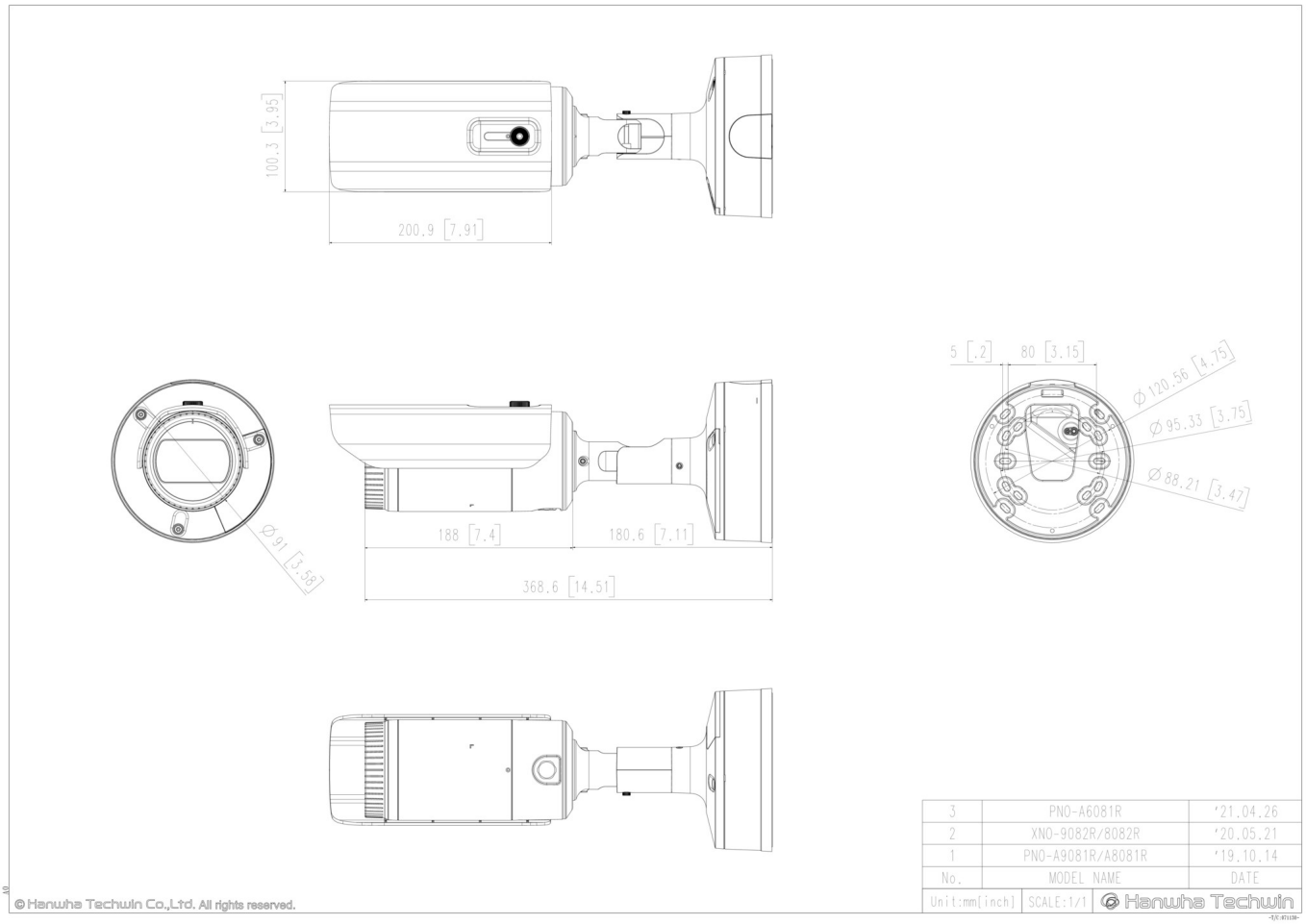
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CAD

Unit: mm [inch]



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