



(Network) Bullet

PNO-A9311RLP

4K 31x Zoom LPR/ANPR/MMCR IR Bullet Camera

Hanwha Vision



Key Features

- Maximum 4K resolution
- 6.91~214.7mm (31x) zoom
- IR viewable length 70m(229.66ft)
- 0.075Lux@F1.36 (Color), 0.0075Lux (B/W, IR LED on)
- Day & Night(ICR), WDR(120dB)
- H.265, H.264, MJPEG codec, WiseStream II
- Reinforced durability (IP66/IP67, IK10, NEMA4X)
- ONVIF Profile S/G/T/M, SUNAPI(HTTP API), Wisenet open platform
- Next level cybersecurity (TPM with FIPS 140-2 level2)
- Wisenet Road AI application (Pre-installed)
- License/Number Plate Recognition
- Make/Model/Color Recognition
- Black/White list notification
- Smart Search (LP/NP, Country, brand, model, color)





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Specifications

Integring Device I/1.8" CMOS Resolution 3840x:2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1260x768, 800 x 600, 800 x 448, 720 x 576, 720x480, 640x480, 640x360 Max. Framerate H.265/H.264. Max. 30fps/25fpsG0Hz/50Hz) Min. Illumination Color: 0.075Lux(F1.36, 1/30sec, 30IRE) Wi/2.00075Lux(F1.36, 1/30sec, 30IRE) Wi/2.00075Lux(F1.36, 1/30sec, 30IRE) Wi/2.00075Lux(F1.36, 1/30sec, 30IRE) Wi/2.00075Lux(F1.36, 1/30sec, 30IRE) Min. Illumination Color: 0.075Lux(F1.36, 1/30sec, 30IRE) Wi/2.00075Lux(F1.36, 1/30sec, 30IRE) Wi/2.000x75Lux(F1.36, 1/30sec, 30IRE) Min. Object Distance Simple focus Angular Field of View V:35.22(Wide)-2.22(Tole) V:35.22(Wide)-2.25(Tole) Min.00/2.25(Tole) Min. Object Distance Simple focus Correrotional Simple focus Correrotional Simple focus Correrotional SURV Digital Noise Reduction Suport built-in gyro sensor) Mide Dynamic Range 1204B Digital Inseg estabilization Suport built-in gyro sensor) Mide Dynamic Range 200dB Digital Inseg estabilization Suport built-in gyro sensor)		
Resolution3840x2160.3072x1728.2592x1944.2688x1520.2560x1440.2048x1536.1920x1080.1600x1200. 1280x1024.1280x960.1280x720.1024x768. 800x 600.800 x 448.0640x480.640x480.640x360Max. FramerateH.265/H.264: Max. 30fps/25fps(60Hz/S0Hz) MJPEG: Max.30fpsMin. IlluminationColor: 0.075Lux(F1.36.1/30sec. 30IRE) BW: 0.0075Lux(F1.36.1/30sec. 30IRE).0Lux(IR LED on)Video OutCSI: 0.0975Lux(F1.36.1/30sec. 30IRE)Focal Length (Zoom Ratio)6.91-214.7mm (31x) motorized varifocalAnsw.Aperture RatioF1.36(Wide)-F4.6(Tele)Angular Field of ViewYis 2.52 (Wide)-1.247(Tele) D569.18*(Wide)-2.52*(Tele)Min. Object Distance3m(9.84ti)Focus ControlSimple focusLens TypeVis 2.52*(Wide)-1.24*(Tele)OperationalControlCamera TitleDisplayed up to 85 charactersDay & NightAuto(ICR)Backlight CompensationBLC, WDR, SSDRWide Dynamic Range120dBDigital Image StabilizationSupport(built-in gyro sensor)Motion DetectionBea, polygonal zones - Color: Gray/Black(WhiteGain ControlLow / Middle / HighWideo RetationFII: p. Mirror. Ha	Video	
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USB: Micro USB Type B, 1280x720 for installation Max Aperture Ratio Angular Field of View N: 55.24 (Wide)-2.24 (Tele) N: 55.24 (Wide)-2.24 (Tele) N: 55.24 (Wide)-2.24 (Tele) D: 55.44 (Wide)-2.24 (Tele) D: 55.44 (Wide)-2.24 (Tele) D: 55.44 (Wide)-2.52 (Tele) D: 55.44 (Wide)-2.54 (Wide	Min. Illumination	
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Angular Field of ViewH: 60,92° (Wide) - 2.2° (Tele) V:35.26° (Wide) - 1.24° (Tele) D:69,18° (Wide) - 2.52° (Tele)Min. Object Distance3m (9.84ft)Focus ControlSimple focusLens TypePirisOperationalOperationalCamera TitleDisplayed up to 85 charactersDay & NightAuto(ICR)Backlight CompensationBLC, WDR, SSDRWide Dynamic Range120dBDigital Noise ReductionSSNR VDigital Noise ReductionSupport(built-in gyro sensor)Motion DetectionBea, polygonal zonesPrivacy MaskingSea, rectangle zones - color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Mution / Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Focal Length (Zoom Ratio)	6.91~214.7mm (31x) motorized varifocal
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Focus ControlSimple focusLens TypeP irisOperationalOperationalCamera TitleDisplayed up to 85 charactersDay & NightAuto(ICR)Backlight CompensationBLC, WDR, SSDRWide Dynamic Range120dBDigital Noise ReductionSSNR VDigital Image StabilizationSupport(built-in gyro sensor)Motion DetectionBea. polygonal zonesPrivacy Masking3ea. rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion / Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Angular Field of View	V:35.26°(Wide)~1.24°(Tele)
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Camera TitleDisplayed up to 85 charactersDay & NightAuto(ICR)Backlight CompensationBLC, WDR, SSDRWide Dynamic Range120dBDigital Noise ReductionSSNR VDigital Image StabilizationSupport(built-in gyro sensor)Motion Detection8ea, polygonal zonesPrivacy Masking3ea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion / Tampering/ Audio/ Shock detection, Sound classification	Lens Type	P iris
Day & NightAuto(ICR)Backlight CompensationBLC, WDR, SSDRWide Dynamic Range120dBDigital Noise ReductionSSNR VDigital Image StabilizationSupport(built-in gyro sensor)Motion Detection8ea, polygonal zonesPrivacy MaskingSea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classification	Operational	
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Digital Noise ReductionSSNR VDigital Image StabilizationSupport(built-in gyro sensor)Motion Detection8ea, polygonal zonesPrivacy Masking3ea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Backlight Compensation	BLC, WDR, SSDR
Digital Image StabilizationSupport(built-in gyro sensor)Motion Detection8ea, polygonal zonesPrivacy Masking3ea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Wide Dynamic Range	120dB
Motion Detection8ea, polygonal zonesPrivacy Masking3ea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Digital Noise Reduction	SSNR V
Privacy Masking3ea, rectangle zones - Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Digital Image Stabilization	Support(built-in gyro sensor)
- Color: Gray/Black/WhiteGain ControlLow / Middle / HighWhite BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Motion Detection	8ea, polygonal zones
White BalanceATW / AWC / Manual / Indoor / OutdoorElectronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Privacy Masking	
Electronic Shutter SpeedMinimum / Maximum / Anti flicker (1/5~1/12,000sec)Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Gain Control	Low / Middle / High
Video RotationFlip, Mirror, Hallway view(90-/270-)AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	White Balance	ATW / AWC / Manual / Indoor / Outdoor
AnalyticsDefocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classificationAlarm I/O2 configurable I/O ports, DC 12V output(Max. 50mA)	Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)
Alarm I/O 2 configurable I/O ports, DC 12V output(Max. 50mA)	Video Rotation	Flip, Mirror, Hallway view(90-/270-)
	Analytics	Defocus/ Motion/ Tampering/ Audio/ Shock detection, Sound classification
Alarm Triggers Analytics, Network disconnect, Alarm input, App event, Time schedule, MQTT subscription	Alarm I/O	2 configurable I/O ports, DC 12V output(Max. 50mA)
	Alarm Triggers	Analytics, Network disconnect, Alarm input, App event, Time schedule, MQTT subscription

Pseries PNO-A9311RLP



Alarm Events	When alarm trigger occurred - File upload(image): e-mail/FTP - Notification: e-mail - Recording: 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 (850nm)
IR Viewable Length	WiseIR 70m(229.66ft)
Network	
Ethernet	Metal shielded RJ-45(10/100/1000 BASE-T)
Video Compression	H.265/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(5ea area), WiseStream II
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(6 users) / Multicast Multiple streaming(Up to 6 profiles)
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast), MQTT
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device Certificate(Hanwha Techwin Root CA) TPM 2.0 with FIPS 140-2 level2 Secure boot, Verify firmware forgery
Application Programming Interface	ONVIF Profile S/G/T/M SUNAPI(HTTP API)
Security	
OS / Firmware Protect	Encrypted Firmware, Secure boot, Signed Firmware
User authentication	Digest Authenticaton, Prevent brute-force attack
Network authentication	IEEE 802.1X (EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication	HTTPS, WSS (WebSocket Secure)
Access Control	IP-based access control
Data Protect	Encryption Credentials, Encrypt compress for live recording file
Audit	Access / System / Event Log management
Device ID	Device certificate (Hanwha Techwin Root CA)
Secure Storage	TPM, SDcard partition encrypt
Security Certificate	TPM with FIPS 140-2 level 2
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Edge Storage	Micro SD/SDHC/SDXC 1slot (32GB Card preinstalled)
Memory	4096MB RAM, 1024MB Flash

Design and specifications are subject to change without notice. The latest product information / specification can be found at HanwhaVision.com. Hanwha Vision is formerly known as Hanwha Techwin.

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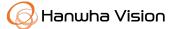


Environmental & Electrical	
Operating Temperature / Humidity	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C
Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
EPA(Effective Projected Area)	0.039 m2
Certification	IP66/IP67, IK10, NEMA4X
Input Voltage	PoE+(IEEE802.3at, Class4), 12VDC
Power Consumption	PoE+: Max 25.5W, typical 14.0W 12VDC: Max 24.0W, typical 12.7.W
Mechanical	
Color / Material	White / Aluminum Hard-coated window
RAL Code	RAL9003
Product Dimensions / Weight	ø136.2x358.7mm(ø5.36x14.12")(Without sunshield), 3200g(7.05lb) * backbox: ø160mm(ø6.30")
Compatible Conduit hole / Gangbox	19.1mm(3/4")(M25) single, double, 4" octagon, 4" square
Certifications & Standards	
EMC	FCC 47 CFR 15 Subpart B Class A ICES-3(A)/NMB-3(A) CE/UKCA - EN 55032 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
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1 IEC/EN 62471
Environment	IEC/EN 63000 IEC/EN 60529 IP66/67, IEC/EN 62262 IK10
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 130.6m(428.4ft) / Tele: 4,000m(13,122ft)
Observe (63PPM/ 19PPF)	Wide: 52.2m(171.4ft) / Tele: 1600m(5,249ft)
Recognize (125PPM/ 38PPF)	Wide: 26.1m(85.7ft) / Tele: 800m(2,625ft)
Identify (250PPM/ 76PPF)	Wide: 13.1m(42.8ft) / Tele: 400m(1,312ft)
Wisenet Road AI LPR/ANPR/MMCR	
Solution	City Traffic
Speed Description	High Speed
Lane Coverage	Up to 2 lanes (5m/18ft Wide)
Speed limit	Up to 100kmh (65mph)
Min. Forward Distance	18m (60ft)
Max. Forward Distance	75m (250ft)
Max. Horizontal Angle	25°
Max. Vertical Angle	25°
Horizontal Offset	Up to 12m (24ft)
Camera Height	Up to 12m (24ft)
Vehicle Recognition	Make : 70+ Makes Model : 600+ models Color : 11 colors



Available Countries

United States of America, Canada, Peru(LPR only), Columbia(LPR only), Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Gibraltar, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kosovo, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Mongolia, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan, Australia (LPR only), Newziland (LPR only) Bahrain, Kuwait, Oman, Qatar, KSA, UAE, South Africa







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CAD

Unit:mm [inch]

