



Network

Bullet

# PNO-A9082R

8MP AI Vandal Bullet



## Key Features

- 8MP Image Resolution
- 5.9~13.3mm Focal Length
- 60m IR Length
- IP66, IP67, IK10 Rated
- Maximum 8MP resolution (1/1.2" sensor)
- 5.9~13.3mm (2.25x) motorized varifocal
- Long range WiselR distance up to 60m (196.85ft)
- 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)

## Compatible Devices



SBP-160HWMW1

SBP-140CMB

SBP-180CMB

SBP-180CMS

SBP-150CMP

SBP-300CMP

SBP-900CMP



SBP-C15H



SBP-C15NP



SBP-C35H



SBP-C15P



SBP-150CMI



SBP-300CMI



SBP-300CMW1



SBP-900CMW



SBP-300CMTW



SBP-300CMTS



SBP-160WMW1



SBP-250WMW



SBP-400WMW



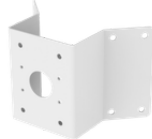
SBP-115PFA



SBP-150PMW



SBD-180PMW



SBP-156KMW



SBP-156LMW1



SBP-150NBW



SBP-060BA



SPP-C7400



SPP-C45W



SBP-300WMW



SBP-300WMW1



SBP-300BW1



SBP-300PMW2



SBP-300KMW1



SBP-300LMW



SBP-300NBW

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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: USB Type C. Preview and installation ONLY. Requires WiFi dongle.                                                                                             |
| Lens                          |                       |                                                                                                                                                                   |
| Focal Length (mm)             |                       | 5.9~13.3                                                                                                                                                          |
| Zoom Ratio                    | Optical               | 2.25x                                                                                                                                                             |
| Max Aperture Ratio (F number) | Wide                  | 1.5                                                                                                                                                               |
|                               | Tele                  | 2.9                                                                                                                                                               |
| Angular Field of View         | Horizontal            | 109°~49°                                                                                                                                                          |
|                               | Vertical              | 59°~27°                                                                                                                                                           |
|                               | Diagonal              | 128°~56°                                                                                                                                                          |
| Min. Object Distance          |                       | 0.8m(2.62ft)                                                                                                                                                      |
| Focus Control                 |                       | Simple focus                                                                                                                                                      |
| Lens Type                     |                       | P iris(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,<br>File upload(video clip): FTP/SFTP,<br>Notification: e-mail,<br>Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output,<br>Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback,<br>MQTT: publication |
| Audio In                                 |                                         | Selectable(mic in/line in)                                                                                                                                                                                                                                                       |
| Audio Out                                |                                         | Line out                                                                                                                                                                                                                                                                         |
| Light Type                               |                                         | IR LED                                                                                                                                                                                                                                                                           |
| Light Viewable Length                    | IR                                      | WiseIR 60m(196.85ft)                                                                                                                                                                                                                                                             |
| 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),<br>G.726(ADPCM): 8kHz(16/24/32/40kbps),<br>AAC-LC: 16kHz(48kbps),<br>OPUS: 16kHz(64kbps)                                                                                                                    |
| Smart Codec                       |                    | WiseStream(Based on AI engine)                                                                                                                                                                                                        |
| Bitrate Control                   |                    | H.265/H.264: CBR or VBR,<br>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, IGMPv2, 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+), Consumer IoT Security Standard (ETSI EN 303 645) |

## General

|                       |                    |                                                                                                                                    |
|-----------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------|
| SoC                   | Type               | Wisenet 9                                                                                                                          |
|                       | Dual NPU           | Support                                                                                                                            |
| 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 <sup>2</sup>                                                                                                  |
| 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          | 2,060g(4.54lb)                     |
| 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 |

## AI Detection Distance

|                      |      |                   |
|----------------------|------|-------------------|
| Person(1.8m/5.9ft)   | Wide | up to 47m(156ft)  |
|                      | Tele | up to 112m(367ft) |
| Vehicle(1.45m/4.8ft) | Wide | up to 64m(210ft)  |
|                      | Tele | up to 151m(495ft) |

## DORI (EN62676-4 standard)

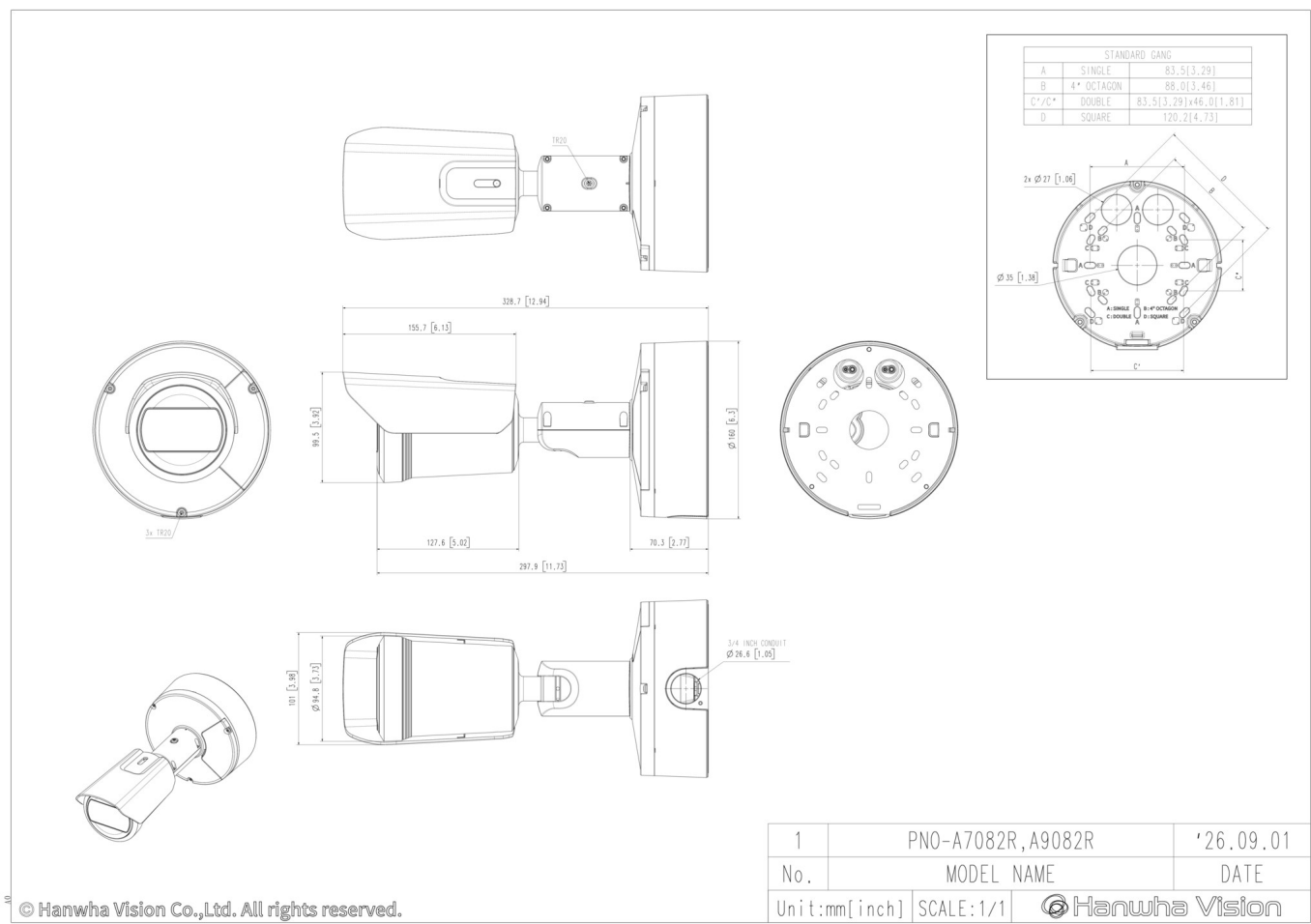
|                           |      |                  |
|---------------------------|------|------------------|
| Detect (25PPM/ 8PPF)      | Wide | 54.8m(179.73ft)  |
|                           | Tele | 168.5m(552.89ft) |
| Observe (63PPM/ 19PPF)    | Wide | 21.9m(71.89ft)   |
|                           | Tele | 67.4m(221.16ft)  |
| Recognize (125PPM/ 38PPF) | Wide | 11.0m(35.95ft)   |
|                           | Tele | 33.7m(110.58ft)  |
| Identify (250PPM/ 76PPF)  | Wide | 5.5m(17.97ft)    |
|                           | Tele | 16.9m(55.29ft)   |

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CAD

Unit: mm [inch]



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