



Network

Bullet

# PNO-A6081R

2MP IR Bullet AI camera



## Key Features

- CloudConnector Compatible – Connects easily with [HealthPro](#), [OnCloud](#), [SightMind](#)
- 2MP resolution @120fps
- WDR (120dB)
- Simple focus
- Triple codec H.265/H.264/MJPEG
- WiseStream III compression technology
- extreme WDR
- USB port for easy installation
- true D/N
- Object detection and Attribute Extraction (Person, Face, Vehicle, License Plate)
- BestShot
- POE+/12VDC
- TPM with FIPS 140-2 level 2

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2MP IR Bullet AI camera



## Specifications

### Video

|                         |                       |                                                                                                                                 |
|-------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Imaging Device          | Size                  | 1/2"                                                                                                                            |
|                         | Type                  | CMOS                                                                                                                            |
| Resolution              |                       | 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360                        |
| Max. Framerate          | H.265/H.264           | 120fps/100fps(60Hz/50Hz)                                                                                                        |
|                         | MJPEG                 | 15fps                                                                                                                           |
|                         | Others                | Max. 60/50fps(60Hz/50Hz) when AI on                                                                                             |
| Min. Illumination (Lux) | Color(1/30sec, 30IRE) | 0.007                                                                                                                           |
|                         | BW(1/30sec, 30IRE)    | 0.0007                                                                                                                          |
| Video Out               |                       | CVBS: 1.0 Vp-p / 75Ω composite for installation,<br>USB: Micro USB Type B. Preview and installation ONLY. Requires WiFi dongle. |

### Lens

|                               |            |                      |
|-------------------------------|------------|----------------------|
| Focal Length (mm)             |            | 4.38~9.33            |
| Zoom Ratio                    | Optical    | 2.13x                |
| Max Aperture Ratio (F number) | Wide       | 1.3                  |
|                               | Tele       | 2.15                 |
| Angular Field of View         | Horizontal | 103.1°~44.5°         |
|                               | Vertical   | 54.2°~24.9°          |
|                               | Diagonal   | 124°~51.1°           |
| 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     |  | WiseNR II (Based on AI engine), SSNR V |
| Digital Image Stabilization |  | Support(built-in gyro sensor)          |

## 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, Prefer shutter control(Based on AI engine)                                                                                                                                                            |
|                                          | Speed Range    | 1/5~1/12,000sec                                                                                                                                                                                                                       |
| 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, App event, Time schedule, MQTT subscription                                                                                                                                               |
| Alarm Events When Alarm Trigger Occurred |                | File upload(image): e-mail/FTP,<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 40m(131.23ft)                                                                                                                                                                                                                  |
| 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                                                                                                                                                |
| Thumbnail              |                    | BestShot                                                                                                                                                                       |
| 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      |
|                        | Normal             | Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear), WiseDetector for adding custom objects |
| 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/High, MJPEG                                                                                                                                                                                            |
| Audio Compression                 |                    | G.711 u-law /G.726 selectable,G.726(ADPCM) 8kHz,G.711 8kHz,<br>G.726: 16kbps,24kbps,32kbps,40kbps,<br>AAC-LC: 48kbps at 16kHz                                                                                            |
| Smart Codec                       |                    | Manual, WiseStreamIII                                                                                                                                                                                                    |
| Bitrate Control                   |                    | H.265/H.264: CBR or VBR,<br>MJPEG: VBR                                                                                                                                                                                   |
| Streaming                         | Unicast            | Up to 10 users                                                                                                                                                                                                           |
|                                   | Multicast          | Support                                                                                                                                                                                                                  |
|                                   | Multiple Streaming | Up to 5 profiles                                                                                                                                                                                                         |
| Protocol                          |                    | IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS,<br>SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMPv2, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS,<br>QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), MQTT |
| Application Programming Interface | ONVIF              | S, G, T, M                                                                                                                                                                                                               |
|                                   | Others             | SUNAPI(HTTP API), Hanwha Vision Open Platform                                                                                                                                                                            |

## 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)                                                          |
| Secure Storage         |  | TPM(Trusted platform module), SDcard partition encrypt(AES-256)                                    |
| Security Certificate   |  | TPM 2.0 with FIPS 140-2 level2, IACS Component Security Requirements Certification (IEC 62443-4-2) |

## General

|              |                    |                               |
|--------------|--------------------|-------------------------------|
| Memory       | RAM                | 4GB                           |
|              | Flash              | 512MB                         |
| Edge Storage | Micro SD/SDHC/SDXC | Max. 512GB x 2slot(Total 1TB) |

## Environmental & Electrical

|                     |             |                                        |
|---------------------|-------------|----------------------------------------|
| Operating Condition | Temperature | -50°C~+55°C(-58°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)               |

## Environmental & Electrical

|                           |       |                                  |
|---------------------------|-------|----------------------------------|
| Input Voltage             |       | PoE+(IEEE802.3at, Class4), 12VDC |
| Power Consumption         | PoE   | Max 19.50W, typical 16.00W       |
|                           | 12VDC | Max 17.00W, typical 13.50W       |
| Power Redundance Failover |       | Support                          |

## Mechanical

|                    |                                              |
|--------------------|----------------------------------------------|
| Color              | Dark grey                                    |
| Material           | Aluminum, Hard-coated dome                   |
| Product Dimensions | ø91.0x368.6mm(3.58x14.51") without sunshield |
| Product Weight     | 2480g(5.47lb)                                |

## 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 250 type 4X                                                                                                                           |

## DORI (EN62676-4 standard)

|                           |      |                 |
|---------------------------|------|-----------------|
| Detect (25PPM/ 8PPF)      | Wide | 30.0m(98.43ft)  |
|                           | Tele | 95.0m(311.82ft) |
| Observe (63PPM/ 19PPF)    | Wide | 12.0m(39.37ft)  |
|                           | Tele | 38.0m(124.73ft) |
| Recognize (125PPM/ 38PPF) | Wide | 6.0m(19.69ft)   |
|                           | Tele | 19.0m(62.36ft)  |
| Identify (250PPM/ 76PPF)  | Wide | 3.0m(9.84ft)    |
|                           | Tele | 9.5m(31.18ft)   |

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CAD

Unit: mm [inch]

