



Network

## PNM-A13022RV

13MP AI IR Panoramic Camera



### Key Features

- Max.13MP panoramic stitching image
- Horizontal 194°, Vertical 93° field of view
- H.265/H.264/MJPEG Max. 30fps
- 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, Motion detection
- Business intelligence based on AI engine:
  - People/Vehicle/Crowd counting, Queue management, Heatmap
- Support BestShot and full attributes
- WiseNR II (Based on AI engine), WiseStream (Based on AI engine)
- WiseIR: IR viewable length 20m(65.6ft)
- IP66, NEMA4X, IK10
- Device certificate(Hanwha Vision Root CA),  
Secure storage (Secure element with FIPS 140-3 level3/CC EAL6+ certified)

### Compatible Devices



SBP-250HWMW



SBP-140CMB



SBP-180CMB



SBP-180CMS



SBP-150CMP



SBP-300CMP



SBP-900CMP



SBP-C15H



SBP-C15P



SBP-C15NP



SBP-C35H



SBP-150CMI



SBP-300CMI



SBP-300CMW1



SBP-900CMW



SBP-300CMTW



SBP-300CMTS



SBP-250WMW



SBP-400WMW



SBP-115PFA



SBP-150PMW



SBP-156KMW



SBP-156LMW1



SBP-150NBW



SBP-060BA



SBP-250C



SPB-MDC21W



SBP-300WMW



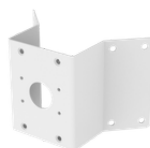
SBP-300WMW1



SBP-300BW1



SBP-300PMW2



SBP-300KMW1



SBP-300LMW



SBP-300NBW

# PNM-A13022RV

13MP AI IR Panoramic Camera



## Specifications

| Video                         |                       |                                                                                                                                              |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Imaging Device                | Size                  | 1/2.8"                                                                                                                                       |
|                               | Type                  | CMOS                                                                                                                                         |
| Resolution                    |                       | 5120x2592, 4112x2080, 3240x1640, 2940x1488, 2560x1296, 2016x1016, 1600x800, 1424x720, 1280x648, 1016x512, 832x480, 832x416, 800x600, 640x480 |
| Max. Framerate                | H.265/H.264           | 30fps/25fps(60Hz/50Hz)                                                                                                                       |
|                               | MJPEG                 | 30fps                                                                                                                                        |
| Min. Illumination (Lux)       | Color(1/30sec, 30IRE) | 0.1                                                                                                                                          |
|                               | BW(1/30sec, 30IRE)    | 0.01                                                                                                                                         |
| Video Out                     |                       | USB: USB Type C. Preview and installation ONLY. Requires WiFi dongle.                                                                        |
| Lens                          |                       |                                                                                                                                              |
| Focal Length (mm)             |                       | 3.06                                                                                                                                         |
| Max Aperture Ratio (F number) | Wide                  | 1.6                                                                                                                                          |
| Angular Field of View         | Horizontal            | 194°                                                                                                                                         |
|                               | Vertical              | 93°                                                                                                                                          |
| Min. Object Distance          |                       | 5m(16.4ft)                                                                                                                                   |
| Focus Control                 |                       | Fixed                                                                                                                                        |
| Pan / Tilt / Rotate           |                       |                                                                                                                                              |
| Pan / Tilt / Rotate Range     | Pan                   | 0°~360°                                                                                                                                      |
|                               | Tilt                  | 0°~50°                                                                                                                                       |
| Operational                   |                       |                                                                                                                                              |
| Day & Night                   |                       | Auto(ICR)                                                                                                                                    |
| Backlight Compensation        |                       | BLC, HLC, WDR, SSDR                                                                                                                          |
| Wide Dynamic Range (dB)       |                       | 120                                                                                                                                          |
| Digital Noise Reduction       |                       | WiseNR II (Based on AI engine), SSNR V                                                                                                       |
| Motion Detection              | Quantity              | 8ea                                                                                                                                          |
|                               | Shape                 | 8point Polygonal zones                                                                                                                       |

## Operational

|                                          |                |                                                                                                                                                                                                                                                         |
|------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Privacy Masking                          | Quantity       | 4ea                                                                                                                                                                                                                                                     |
|                                          | Shape          | Polygonal zones                                                                                                                                                                                                                                         |
|                                          | Color / Option | Gray, Green, Red, Blue, Black, White                                                                                                                                                                                                                    |
| Gain Control                             |                | Low, Middle, High                                                                                                                                                                                                                                       |
| White Balance                            |                | ATW, AWC, Manual, Indoor, Outdoor                                                                                                                                                                                                                       |
| Electronic Shutter                       | Mode           | Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)                                                                                                                                                                              |
|                                          | Speed Range    | 2~1/12,000sec                                                                                                                                                                                                                                           |
| Video Rotation                           |                | Flip, Mirror                                                                                                                                                                                                                                            |
| Alarm Interface                          | In/Out         | 2 configurable I/O ports                                                                                                                                                                                                                                |
|                                          | Others         | Support extra alarm I/O via optional I/O box                                                                                                                                                                                                            |
| Alarm Triggers                           |                | Analytics, Network disconnect, Alarm input, Time schedule, MQTT subscription                                                                                                                                                                            |
| Alarm Events When Alarm Trigger Occurred |                | File upload(image): e-mail/FTP/SFTP,<br>File upload(video clip): FTP/SFTP,<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             | 20m(65.62ft) 4 individual zones with Automatic/Manual level adjustment                                                                                                                                                                                  |
| 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), Motion detection, Face mask detection, Social distancing detection, Slip & fall detection |
|                        | Normal             | Defocus detection, Tampering, Audio detection, Virtual area(Appear/Disappear)                                                                                                               |
| 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 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,<br>OPUS: 48kHz(64kbps) |

## Network

|                                   |                    |                                                                                                                                                                                                                        |
|-----------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smart Codec                       |                    | Manual, 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 4 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, SRTP(TCP, UDP Unicast), MQTT |
| 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, 802.1AE(MACsec)                                           |
| 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                                             |
| Security Certificate   |  | Secure element(FIPS 140-3 level3, CC EAL6+), Consumer IoT Security Standard (ETSI EN 303 645) |

## General

|              |                    |                             |
|--------------|--------------------|-----------------------------|
| SoC          | Type               | NT98692                     |
| Memory       | RAM                | 8GB                         |
|              | Flash              | 8GB eMMC                    |
| Edge Storage | Micro SD/SDHC/SDXC | Max. 1TB x 2slot(Total 2TB) |

## Environmental & Electrical

|                               |             |                                  |
|-------------------------------|-------------|----------------------------------|
| Operating Condition           | Temperature | -40°C~+55°C(-40°F~+131°F)        |
|                               | Humidity    | 0~100% RH(condensing)            |
| Storage Condition             | Temperature | -50°C~+60°C(-58°F~+140°F)        |
|                               | Humidity    | 0~90% RH(non-condensing)         |
| EPA(Effective Projected Area) |             | 0.0286 m <sup>2</sup>            |
| Input Voltage                 |             | PoE+(IEEE802.3at, Class4), 12VDC |

## Environmental & Electrical

|                           |       |                          |
|---------------------------|-------|--------------------------|
| Power Consumption         | PoE   | Max 22.3W, typical 11.5W |
|                           | 12VDC | Max 20.0W, typical 10.0W |
| Power Redundance Failover |       | Support                  |

## Mechanical

|                         |                                    |
|-------------------------|------------------------------------|
| Color                   | White                              |
| Material                | Aluminum, Hard-coated dome         |
| RAL Code                | RAL9003                            |
| Product Dimensions      | ø253x170mm(9.96x6.69")             |
| Product Weight          | 2,800g(6.17lb)                     |
| 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 62262 IK10, 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 | 43.8m(143.85ft) |
| Observe (63PPM/ 19PPF)    | Wide | 17.5m(57.54ft)  |
| Recognize (125PPM/ 38PPF) | Wide | 8.8m(28.77ft)   |
| Identify (250PPM/ 76PPF)  | Wide | 4.4m(14.39ft)   |

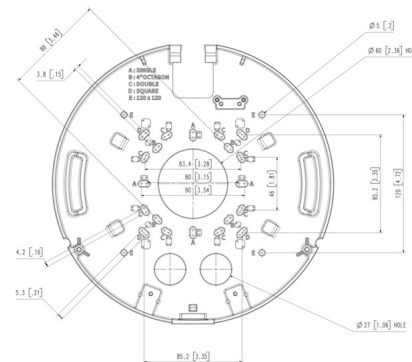
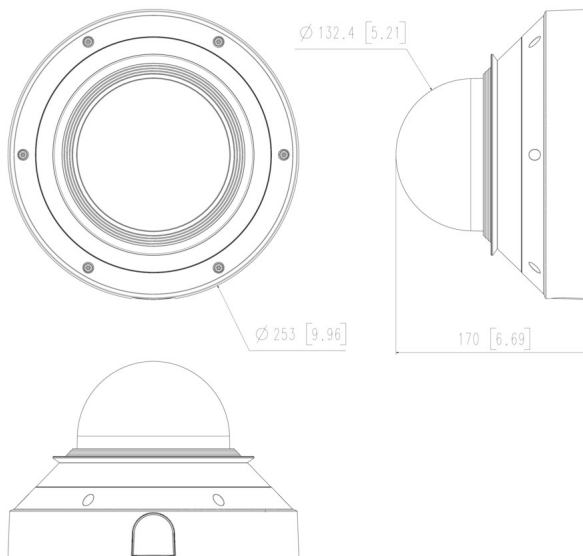
**PNM-A13022RV**

## 13MP AI IR Panoramic Camera



CAD

Unit: mm [inch]



|               |              |                                                                                                     |
|---------------|--------------|-----------------------------------------------------------------------------------------------------|
| 3             |              |                                                                                                     |
| 2             |              |                                                                                                     |
| 1             | PNM-A13022RV | 25.09.23                                                                                            |
| No.           | MODEL NAME   | DATE                                                                                                |
| Unit:mm[inch] | SCALE:1/1    |  Hanwha Vision |

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