

Hanwha Vision is a global leading supplier of solutions for IP and analog video surveillance. Building on the company's history of innovation, Hanwha Vision is dedicated to providing systems solutions with the highest levels of performance, reliability and cost-effectiveness. Hanwha Vision is committed to the continued development of innovative systems products for professional security applications.

For additional information, https://www.hanwhavision.com/en/, https://hanwhavisionamerica.com

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer: Hanwha Vision (https://www.hanwhavision.com/en/, https://hanwhavisionamerica.com)
      2. Model: XNO-A9084R
      3. Alternates: None
   2. **GENERAL DESCRIPTION**
      1. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
         1. H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
            1. H.265/H.264: Max. 60/50fps(60Hz/50Hz)
            2. MJPEG: Max. 30fps(@8MP Max. 5fps)
         2. The camera shall be able to configure various resolution selections.
            1. 3840x2160, 3328x1872, 3072x1728, 2592x1944, 2688x1512, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180
         3. The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings
         4. The camera shall support unicast video streaming up to 20 users.
         5. The camera shall support multiple streaming up to 5 profiles and 3 virtual channels.
         6. The camera shall support multicast video streaming.
         7. The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
         8. The camera shall provide WiseStream based on AI engine to efficiently manage bit rate of the video stream and reduce storage.
         9. The camera shall provide WiseNRⅡ that working based on AI engine for reduce noise and blur on image.
      2. Camera – The camera device shall have the following physical and performance properties.
         1. True day/night operation with removable IR cut filter. The IR function shall provide manual power adjustment, automatic mode based on objects in the center of the screen, and automatic mode based on objects anywhere in the scene.
         2. The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 120dB. The WDR function shall include the following modes and options: On / Off, Automatic mode, Automatic mode based on low light, Automatic mode based on Black/White mode. The WDR function shall provide 3 level adjustments.
         3. The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
         4. The camera shall be able to configure privacy masking areas with polygonal zones.
         5. The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
         6. The camera shall have a dual NPU capable of running all AI & analytics functions fully on one NPU while the other is available for ISP functions, including AI-based noise reduction, WDR, & low light image enhancements.
      3. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
         1. Classified object type: Person / Face / Vehicle / License plate
         2. Attributes: Person (Gender, Clothing top/bottom color, Bag), Face (Age, Gender, Mask, Glasses), Vehicle (Type: car / bus / truck / motorcycle / bicycle, Color)
         3. Support BestShot
         4. Analytics events based on AI engine: Motion detection, Object detection, Virtual line(Crossing / Direction), Virtual area(Loitering / Intrusion / Enter / Exit / Appear / Disappear), Slip & Fall detection, Face mask detection, Social distancing detection
         5. Analytics events: Defocus detection, Tampering, Shock detection, Audio detection
         6. Business Intelligence: People / Vehicle / Crowd counting, Queue management, Heatmap based on AI engine
         7. The camera shall feature a configurable Dynamic Privacy Masking feature with selectable mosaic or color masking. Mosaic masking shall provide multiple pixilation options while color masking shall provide 8 color options. Masking shall be available for any AI-based object type. Masking shall be available at full resolution/frame rate on a selected channel, allowing a VMS to record both the original and masked video.
      4. Interoperability
         1. The camera shall be ONVIF Profile S, G, T and M compliant.
         2. The camera shall be compatible with the Hanwha Vision Cloud Portal, including OnCloud VMS, HealthPro, & SightMind, utilizing the provided CloudConnector Open Platform application.
         3. The camera shall be compatible with Hanwha Vision AI packs, utilizing Open Platform, to add additional AI functions.
      5. The camera shall possess the following further characteristics:
         1. Micro SD/SDHC/SDXC memory slot with configurable pre-alarm and post-alarm recording intervals
         2. NAS recording option with configurable pre-alarm and post-alarm recording intervals
         3. Alarm triggers and notifications
         4. Impact protection (IK10), Water & Dust protection (IP66 / IP67), NEMA4X, NEMA-TS 2 (2.2.7.2-8, 2.2.8, 2.2.9)
         5. Support WisePower (Power monitoring & ECO mode)
         6. Use recycled plastic
         7. Device certificate (Hanwha Vision Root CA), Secure storage (Secure element with FIPS 140-3 level 3/CC EAL6+ certified), SBOM
         8. The camera shall feature an admin user logout to prevent a webpage user from leaving access to the camera for longer than a specified period.
   3. **DETAILED SPECIFICATIONS**
      1. Video
         1. Imaging device: 1/1.8" CMOS
         2. Resolution: 3840x2160, 3328x1872, 3072x1728, 2592x1944, 2688x1512, 2560x1440, 1920x1080, 1600x1200, 1280x960, 1280x720, 1024x768, 800x600, 640x480, 640x360, 320x240, 320x180
         3. Maximum Framerate
            1. H.265/H.264: Max. 60/50fps(60Hz/50Hz)
            2. MJPEG: Max. 30fps(@8MP Max. 5fps)
         4. Minimum Illumination
            1. Color: 0.04Lux (F1.3, 1/30sec, 30IRE)
            2. B/W: 0.004Lux (F1.3, 1/30sec, 30IRE), 0Lux (IR LED on)
         5. Video Out (for Installation): Micro USB Type C
      2. Lens
         1. Focal length: 4.4 ~ 9.3mm (2.1x) motorized varifocal
         2. Max. Aperture Ratio: F1.3(Wide) ~ F2.15(Tele)
         3. Field of View
            1. H:113°(Wide) ~ 47°(Tele)
            2. V:58°(Wide) ~ 26°(Tele)
            3. D:138°(Wide) ~ 54°(Tele)
         4. Min. Object Distance: 0.5m (1.64ft)
         5. Focus Control: Simple focus
         6. Lens Type: P-Iris(IR corrected)
      3. Pan & Tilt & Rotate
         1. Range: 0°~360° / 0°~90°/ 0°~355°
      4. Operational Functions
         1. Camera Title: Displayed up to 85 characters
         2. Day/Night: Auto (ICR)
         3. Backlight Compensation: BLC / HLC / WDR / SSDR
         4. WDR: 120dB
         5. Digital Noise Reduction: SSNRⅤ, WiseNRⅡ(Based on AI engine)
         6. Digital Image Stabilization: Support
         7. Defog: Support
         8. Motion Detection: 8ea, 8 points polygonal zones
         9. Privacy Masking
            1. 32ea, 8 points poygonal zones

Color: gray/green/red/blue/black/white/purple/yellow

Mosaic

* + - * 1. Dynamic Privacy Mask(Based on AI engine)

Color: gray/green/red/blue/black/white/purple/yellow

Mosaic

* + - 1. Gain Control: Off / Max Gain / Manual
      2. White Balance: ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor
      3. Lens Distortion Correction: Support (Fill / Stretch mode)
      4. Electronic Shutter Speed
         1. Min / Max / Anti-flicker (2 ~ 1/30,000sec)
         2. Prefer shutter control (based on AI engine)
      5. Video Rotation: Flip, Mirror, Hallway view (90° / 270°)
      6. Analytics
         1. Classified object type: Person / Face / Vehicle / License plate
         2. Attributes: Person (Gender, Clothing top/bottom color, Bag), Face (Age, Gender, Mask, Glasses), Vehicle (Type: car / bus / truck / motorcycle / bicycle, Color)
         3. Support BestShot
         4. Analytics events based on AI engine: Motion detection, Object detection, Virtual line(Crossing / Direction), Virtual area(Loitering / Intrusion / Enter / Exit / Appear / Disappear), Slip & Fall detection, Face mask detection, Social distancing detection
         5. Analytics events: Defocus detection, Tampering, Shock detection, Audio detection
      7. Business Intelligence: People / Vehicle / Crowd counting, Queue management, Heatmap based on AI engine
      8. Alarm I/O: 2 configurable I/O ports \* Support extra alarm I/O via optional I/O box
      9. Alarm Triggers: Analytics, Network disconnection, Alarm input, Time schedule, MQTT subscription, Day/Night Storage disruption
      10. Alarm Events (When alarm trigger occurred)
          1. File upload(image): e-mail/FTP/SFTP
          2. File upload(video clip): FTP/SFTP
          3. Notification: e-mail
          4. Recording: SD/SDHC/SDXC or NAS recording at event triggers
          5. Alarm output
          6. Handover: PTZ preset, Send message by HTTP / HTTPS / TCP
          7. Audio clip playback
          8. MQTT: publication
      11. Audio in: Selectable (mic in / line in)
      12. Audio out: Line out
      13. Light Type: IR LED (850nm)
      14. IR Viewable Length: WiseIR 40m(131.23ft), ECO mode off
      15. Edge Storage: Micro SD/SDHC/SDXC 1TB(1 slot), NAS support
      16. Memory: 4GB RAM, 8GB Emmc
      17. Webpage Lanugage: English, Korean, Simplified Chinese, Traditional Chinese, French, Italian, Spanish, German, Japanese, Russian, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
    1. Network
       1. Ethernet: Metal shielded RJ-45 (10/100/1000 BASE-T)
       2. Video compression
          1. H.265/H.264: Main / Baseline / High
          2. MJPEG
       3. Audio Compression
          1. G.711(PCM): 8kHz(64Kbps)
          2. G.726(ADPCM): 8kHz(16/24/32/40Kbps)
          3. AAC-LC: 16kHz(48Kbps)
          4. OPUS: 48kHz(64Kbps)
       4. Smart Codec: WiseStream (Based on AI engine)
       5. Bitrate Control
          1. H.265 / H.264: CBR or VBR
          2. MJPEG: VBR
       6. Streaming
          1. Unicast(20 users) / Multicast
          2. Multiple streaming (Up to 5 profiles, 3 virtual channel support)
       7. Profile set: Max. 10ea
       8. Application Programming Interface
          1. ONVIF Profile S / G / T/ M
          2. SUNAPI (HTTP API)
          3. Hanwha Vision Open Platform
       9. Protocol: IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP/SFTP, SMTP(StartTLS), ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), CDP, MQTT, Syslog
       10. DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
       11. QoS – Layer 3 DSCP
       12. Security Feature
           1. OS / Firmware Protect: Encrypted Firmware, Secure boot, Signed Firmware
           2. User authentication: Digest Authentication, Prevent brute-force attack
           3. Network authentication: IEEE 802.1X (EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
           4. Secure Communication: HTTPS, SRTP, WSS (WebSocket Secure)
           5. Access Control: IP-based access control, MAC-based access control, Auto logout
           6. Data Protect: Encryption Credentials, Encrypt compress for live recording file export
           7. Audit: Access / System / Event Log management
           8. Device ID: Device certificate (Hanwha Vision Root CA)
           9. Secure Storage: Secure element, SD card partition encrypt
           10. Security Certificate: ETSI EN 303 645, Secure element (FIPS 140-3 level 3, CC EAL6+)
           11. The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
           12. A minimal level of password complexity shall be required by the camera.
           13. The camera shall not have a manufacture back-door password.
           14. The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
           15. Network filtering – The camera shall allow a list of allowed or blocked IP addresses/subnet mask and/or MAC addressed to be entered to restrict access to the device.
       13. Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
       14. Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
       15. Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
       16. Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
       17. Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.
    2. Environmental & Electrical
       1. Operating Temperature / Humidity: -40°C ~ +50°C (-140F ~ +122°F), +74°C(+165°F)(MAX) based on NEMA-TS 2(2.2.7) / 0~100% RH(Condensing) \*Humidity control with AIR vent
       2. Storage Temperature / Humidity: -50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
       3. EPA(Effective Projected Area): 0.02㎡
       4. Certification: IP66/IP67, NEMA4X, IK10, NEMA-TS 2(2.2.7.2-8, 2.2.8, 2.2.9)
       5. Input Voltage: PoE(IEEE802.3af, class3)
       6. Power Consumption
          1. PoE: Max. 11.2W, typical 8.4W
          2. Support Wisepower

Power monitoring(Max./Current/Avg.)

ECO mode

* + 1. Mechanical
       1. Color/Material: White / Aluminum, Hard-coated window
       2. RAL Code: RAL9003
       3. Dimensions (W x H): ø93 x 276.6mm (ø3.68 x 10.89")
       4. Weight: 1.630Kg(3.59lb)
       5. Compatible Conduit hole / Gangbox: Single, double, 4” octagon, 4” square
    2. Certifications & Standards
       1. EMC
          1. FCC 47 CFR Part 15 Subpart B Class A
          2. ICES-3(A)/NMB-3(A)
          3. CE/UKCA: EN 55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3
          4. VCCI CISPR 32 Class A
          5. RCM AS/NZS CISPR 32 Class A
          6. KS C 9832 Class A, KS C9835
       2. Safety
          1. UL 62368-1, CAN/CSA C22.2 NO.62638-1
          2. IEC/EN 62471
       3. Environment
          1. IEC/EN 63000
          2. IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10
          3. NEMA 250 Type 4X, NEMA-TS 2(2.2.7.2-8, 2.2.8, 2.2.9)
          4. IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78
    3. Compatible Models
       1. Hanging Adaptor: SBP-160HMW1
       2. Back Box: included
       3. Ceiling Mount(Assy): SBP-150CMI, SBP-300CMI, SBP-300CMW1, SBP-900CMW, SBP-300CMTW, SBP-300CMTS
       4. Ceiling Mount(Single Unit): SBP-180CMB, SBP-140CMB, SBP-180CMS, SBP-900CMP, SBP-300CMP, SBP-150CMP, SBP-C15P, SBPC15H
       5. Wall Mount: SBP-160WMW1, SBP-400WMW, SBP-250WMW, SBP-300WMW, SBP-300WMW1
       6. Pole Mount: SBD-180PMW, SBP-300PMW2
       7. Corner Mount: SBP-156KMW, SBP-300KMW1
       8. Parapet Mount: SBP-156LMW1, SBP-300LMW
       9. Cabinet: SBP-150NBW, SBP-300NBW
       10. Conduit Adaptor: SBP-060BA
       11. Interface Box: SPM-4210
       12. Other Compatible Models: SPP-C7400, SBP-115PFA
    4. DORI Distance
       1. Detect (25PPM / 8PPF): Wide 50.8m(166.77ft) / Tele 176.6m(579.49ft)
       2. Observe (63PPM / 19PPF): Wide 20.3m(66.71ft) / Tele 70.7m(231.80ft)
       3. Recognize (125PPM / 38PPF): Wide 10.2m(33.35ft) / Tele 35.3m(115.90ft)
       4. Identify (250PPM / 76PPF): Wide 5.1m(16.68ft) / Tele 17.7m(57.95ft)

END OF SECTION