

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: QNO-6020R
      3. Alternates: None
   2. **GENERAL DESCRIPTION**
      1. Video Compression and Transmission – The 2 MP 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 and H.264 – frame rates to 30 fps
            2. MJPEG – frame rates to 15 fps
         2. The 2 MP camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
         3. Resolution selections
            1. 1280 x 1024, 1280 x 960, 1024 x 768, 800 x 600, 720 x 576, 720 x 480, 640 x 480, 320 x 240
         4. Simultaneous unicast access by up to 6 users
         5. Multicast or unicast capable
         6. Dynamic DNS (DDNS) support.
         7. WiseStream and Dynamic GOV to efficiently manage bitrate of the video stream.
      2. Camera – The 2 MP camera device shall have the following physical and performance properties:
         1. Dustproof, waterproof, and IP66 rated.
         2. IK10 rated for protection against impacts.
         3. True day/night operation with removable IR cut filter
            1. Low light level operation to 0.15 lux (color) and 0 lux (black and white)
         4. 2D and 3D digital noise reduction
         5. Integral IR illumination, providing effective visibility of 25m at 0 Lux when activated in Black & White mode.
         6. 6 privacy masking regions utilizing a 4 point polygon
      3. Intelligence and Analytics – The 2 MP camera shall have a suite of integral intelligent operations and analytic functions to include:
         1. Motion detection with four definable detection areas, minimum / maximum object size definition and a learning algorithm that ignores false alarms such as trees and waves on water.
         2. Detection of logical events of specified conditions from the camera’s video input
            1. camera tamper (scene change)
            2. defocus detection
            3. motion detection with metadata
      4. Interoperability – The 2 MP camera shall be ONVIF Profile S and G compliant.
      5. The 2 MP camera shall possess the following further characteristics.
         1. Built-in web server, accessed via standard browsers including Internet Explorer, Firefox, Chrome & Safari
         2. Micro SD/SDHC/SDXC memory card and NAS recording options, with configurable pre-alarm and post-alarm recording intervals
         3. Uni-directional audio
         4. Alarms and notifications
            1. alarm notification triggers

motion detection

tampering detection

SD card error

NAS error

alarm input

defocus detection

* + - * 1. available notification means upon trigger

file upload via FTP and e-mail

notification via e-mail

record to local storage (SD card)

external output

* + - 1. Pixel Counter available in the plug-in viewer
      2. POE capable
  1. **DETAILED SPECIFICATIONS**
     1. Video
        1. Imager
           1. Sensor: 1/2.9" 2.19 MP CMOS

pixels per sensor: 2000 (H) x 1121(V) total, 1984 (H) x 1105 (V) effective

scanning: progressive

* + - * 1. Minimum illumination

Color mode: 0.15Lux

Black & white mode: 0Lux (IR LED on)

* + - * 1. The following features with control settings shall be available:

Camera Title: Off / On (Displayed up to 20 characters per line)

Day/night setting: True Day & Night

Backlight compensation (BLC): Off / On

WDR: 120dB

Digital Noise Reduction (DNR): On/Off

Motion Detection: Off / On (4ea polygonal zones)

Privacy Masking: Off / On (6ea rectangular zones)

Gain Control: Off / Low / Middle / High

White Balance: ATW / AWC / Manual / Indoor / Outdoor

LDC: Off / On (5 levels with min / max)

Electronic shutter speed: min, max, anti-flicker

Image flip: Off / On

Image mirror: Off / On

Hallway view: Off / On

Alarm I/O: Input 1 / Output 1

Alarm Triggers: Motion detection, Tampering detection, SD card error, NAS error, Alarm input, Defocus detection

Alarm Events: File upload via FTP and E-mail, Local storage recording at event, Notification via E-mail, External output

Pixel Counter: Available in the plug-in viewer.

* + - * 1. Lens: 3.6 mm, fixed

Max. Aperture Ratio: F1.8

Angle of view: H 86.48° / V 46.22° / D 102.44°

Lens Type: Fixed

Mount Type: Board Type

* + - 1. IR Viewable Length: 25 m (82.02ft)
      2. Video Streams
         1. The 2 MP camera shall be able to produce 10 video profiles, each of which may have the following properties:

Encoding type: H.265, H.264, MJPEG

Resolution: 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 720 x 576, 720 x 480, 640 x 480, 320 x 240

Maximum frame rate:

H.265 and H.264: 30 fps at all resolutions

MJPEG: 15 fps at all resolutions

Smart Codec: WiseStream, Dynamic GOV

Bit rate control method:

H.265 and H.264: target bitrate level control, constant bit rate (CBR) or variable bit rate (VBR)

MJPEG: quality level control, variable bit rate (VBR)

* + - 1. Number of multi-streaming profiles: 3 maximum
      2. Simultaneous users (total): 6 maximum (unicast)
      3. Storage and Recording
         1. The 2 MP camera shall have onboard SD card storage.

Card type: Micro SD/SDHC/SDXC

Capacity: Up to 128 GB per card

Image content on the card shall have the ability to be downloaded to a selected destination.

* + - * 1. NAS
      1. Interoperability - Video streams shall be capable of supporting ONVIF protocol, profiles S and G.
      2. Single Images - The 2 MP camera shall support jpg file image screenshot and export.
    1. Network
       1. Connectivity: 10/100 Base-T Ethernet via RJ-45 connector
       2. Protocols supported
          1. Transmission Control Protocol (TCP), Internet Protocol (IP) v4 and v6, User Datagram Protocol (UDP)
          2. Configuration: Dynamic Host Configuration Protocol (DHCP)
          3. Web services: Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS)
          4. Network services: Address Resolution Protocol (ARP), Bonjour, Domain Name System (DNS), Internet Control Message Protocol (ICMP), Network Time Protocol (NTP), Protocol Independent Multicast-Sparse Mode (PIM-SM), Simple Network Management Protocol (SNMP v1/2c/3 – MIB-2), Universal Plug and Play (UPnP)
          5. Media: Real-Time Transport Protocol (RTP), Real-Time Control Protocol, Real-Time Streaming Protocol (RTSP)
          6. Multicast: Internet Group Management Protocol (IGMP)
          7. Notifications: File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP)
          8. Remote Access: Point-to-Point Protocol over Ethernet) (PPPoE)
       3. DDNS – The 2 MP camera shall support DDNS services offered by the Manufacturer and other publicly available service offerings.
       4. Quality of Service (QoS) – Layer 3 DSCP
       5. Security features
          1. user password protection
          2. IP address filtering - list of allowed or blocked IP addresses
          3. HTTPS(SSL) login authentication
          4. HTTPS(SSL) secured communications
          5. Digest login authentication
          6. User access log
          7. 802.1x authentication
       6. Discovery - Manufacturer shall offer a discovery program to identify all devices of his manufacture on the network.
    2. Audio
       1. Direction: uni-directional
       2. I/O: Line-in
       3. Compression: G.711 u-law/G.726 selectable
          1. G.726 (ADPCM) 8KHz, G.711 8KHz
          2. G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps
    3. Electrical
       1. Power Input Voltage / Current: PoE (IEEE802.3af, Class3), 12V DC
       2. Power Consumption: <7 W (PoE), <6 W (12V DC)
    4. Mechanical And Environmental
       1. Material: Housing(metal)
       2. Dimensions (W x H): 70.0 x 246.0 mm (2.76 x 9.69 in.) without sunshield
       3. Weight: 730g (1.691 lb.)
       4. Temperature
          1. Operating: -30° C to 55° C (-22° F to 131° F)
          2. Storage: -30° C to 60° C (-22° F to 140° F)
       5. Humidity: 0 - 90%, non-condensing
       6. Environmental Rating: IP66, IK10

END OF SECTION