

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

For additional information, visit <http://security.hanwhatechwin.com/>

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer : Hanwha Techwin (http://security.hanwhatechwin.com/)
      2. Model : PNM-12082VD
      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 and H.264 : Max. frame rates to 15fps
            2. MJPEG : Max. frame rates to 15fps
         2. The camera shall be able to configure up to 10 independent video stream per channel with differing encoding, quality, frame rate, resolution, and bit rate settings.
         3. Resolution selections : 3328 x 1872, 3072 x 1728, 2592 x 1944, 2688 x 1520, 1920x1080, 1600 x 1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
         4. Simultaneous unicast access by up to 20 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 camera device shall have the following physical and performance properties:
         1. IP66, IK10, NEMA4X rated for protection against impacts
         2. Auto day/night operation with removable IR cut filter
         3. 2D and 3D digital noise reduction
         4. Integral IR illumination, providing effective visibility of 25m(65.62ft) based on scene at 0 Lux when activated in Black & White mode
         5. 32 privacy masking regions utilizing quadrangle
      3. Intelligence and Analytics – The camera shall have a suite of integral intelligent operations and analytic functions to include
         1. Motion detection with eight definable detection areas, minimum / maximum object size definition.
         2. Detection of logical events of specified conditions from the camera’s video input
            1. Analytics events: Defocus detection, Motion detection, Tampering, Fog detection, Shock detection, Virtual area (Appear / Disappear) \*Support Audio detection, Sound classification via optional SPM-4210 I/O box
      4. Interoperability – The camera shall be ONVIF Profile S / T compliant.
      5. The camera shall possess the following further characteristics:
         1. Built-in web server, accessed via standard browsers including MS Edge, Firefox, Chrome and Safari
         2. Micro SD/SDHC/SDXC memory card and NAS recording options, with configurable pre-alarm and post-alarm recording intervals
         3. Alarms and notifications
            1. Alarm notification triggers:

Alarm input via optional SPM-4210 I/O box

Video analytics

Network disconnect

* + - * 1. Available notification means upon trigger:

File upload via FTP and e-mail

Notification via e-mail

Record to local storage (SD/SDHC/SDXC card)

Handover(PTZ Preset, Send message by HTTP/HTTPS/TCP)

Alarm output via optional SPM-4210 I/O box

* + - 1. Pixel Counter available in the plug-in web viewer.
      2. POE+ capable
      3. NDAA Compliant
  1. **DETAILED SPECIFICATIONS**
     1. Video
        1. Image
           1. Sensor : 1/2.8" 6M CMOS x 2CH

Pixels per sensor : 3328 (H) x 1872 (V)

Scanning : progressive

* + - * 1. Minimum illumination

Color mode : 0.16Lux(F1.67, 1/30sec, 30IRE)

Black & white mode (IR LED off) : 0.016Lux(F1.67, 1/30sec, 30IRE)

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

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

Camera Title

Off / On (Displayed up to 85 characters)

English / Numeric / Special characters

Multi-line (Max. 5lines), Color (Grey / Green / Red / Blue / Black / White), Transparency, Size (Small, Medium, Large)

Day/night : Auto (ICR)

Backlight compensation : BLC, WiseDR, HLC

WDR : extremeWDR(120dB)

Digital Noise Reduction (DNR) : WiseNR, SSNRⅤ

Defog : Support

Motion Detection : Off / On (8ea, 8 point polygonal zones)

Privacy Masking : Off / On (32ea, quadrangle zones)

Color : Gray / Black / White

Gain Control : Support

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

Electronic shutter speed : Minimum / Maximum / Anti flicker (1/5 ~ 1/12,000sec)

Image flip : Off / On

Image mirror : Off / On

Hallway view : Off / On (90° / 270°), Each channel separately

Analytics

Analytics events\*: Defocus detection, Motion detection, Tampering, Virtual area (Appear / Disappear) \*Support Audio detection, Sound classification via optional SPM-4210 I/O box

Alarm I/O : Support Alarm via optional SPM-4210 I/O box

Alarm Triggers : Analytics, Network disconnect, Alarm input via optional SPM-4210 I/O box

Alarm Events

File upload via FTP and e-mail

Notification via e-mail

SD/SDHC/SDXC or NAS recording at Event Triggers

Handover(PTZ Preset, Send message by HTTP/HTTPS/TCP)

Alarm output via optional SPM-4210 I/O box

Video Out for installation

USB: micro USB Type B, 1280x720

* + - * 1. Lens : 3.54 ~ 6.69mm (Optical 1.9x) motorized varifocal

Max. Aperture Ratio : F1.67(Wide) ~ F2.64(Tele)

FoV

H : 95.08˚(Wide) ~ 47.64˚(Tele)

V : 50.78˚(Wide) ~ 26.7˚(Tele)

D : 112.6˚(Wide) ~ 57.74˚(Tele)

Min. Object Distance : 1.5m (4.92ft)

Lens Type : Fixed iris

Focus Control : Simple focus

* + - * 1. Pan /Tilt / Rotate

0 ~ 355 ˚ / 0 ~ 78 ˚ / 0 ~ 180 ˚

* + - * 1. DORI (EN62676-4 standard)

Detect : Wide: 60.9m(199.82ft) / Tele: 150.8m(494.65ft)

Observe : Wide: 24.4m(79.93ft) / Tele: 60.3m(197.86ft)

Recognize : Wide: 12.2m(39.96ft) / Tele: 30.2m(98.93ft)

Identify : Wide: 6.1m(19.98ft) / Tele: 15.1m(49.46ft)

* + - 1. IR Viewable Length : 25m(65.62ft) based on scene
      2. Video Streams
         1. The camera shall be able to produce 5 video profiles per channel, each of which may have the following properties:

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

Resolution : 3328 x 1872, 3072 x 1728, 2592 x 1944, 2688 x 1520, 1920x1080, 1600 x 1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240

Frame rate

H.265 and H.264 : Max.15fps

MJPEG : Max. 15fps

Smart Codec : Manual(5ea area), WiseStream Ⅱ

Bit rate control

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 : 10 profiles per channel
      2. Simultaneous users (total) : 20 maximum (unicast)
      3. Storage and Recording
         1. The camera shall have onboard SD card storage.

Card type : Micro SD/SDHC/SDXC

Capacity : Up to 512GB (1 slot)

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 / T.
      2. Single Images - The camera shall support jpg file image screenshot and export.
      3. Memory : 4GB RAM, 512MB Flash
    1. Network
       1. Connectivity : Metal shielded RJ-45(10/100/1000BASE-T)
       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. Security: Secure Sockets Layer(SSL)/Transport Layer Security(TLS)
          5. Network services: Address Resolution Protocol (ARP), Bonjour, Domain Name System (DNS), Internet Control Message Protocol (ICMP), Link Layer Discovery Protocol(LLDP), 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)
          6. Media: Real-Time Transport Protocol (RTP), Real-Time Control Protocol, Real-Time Streaming Protocol (RTSP), Secure Real-Time Transport Protocol(SRTP)
          7. Multicast: Internet Group Management Protocol (IGMP)
          8. Notifications: File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP)
       3. DDNS
          1. The camera shall support DDNS services offered by the Manufacturer and other publicly available service offerings.
       4. Quality of Service (QoS)
          1. Layer 3 DSCP
       5. Security features
          1. TPM 2.0 (FIPS 140-2 level 2)
          2. HTTPS(SSL) Login Authentication
          3. Digest Login Authentication
          4. IP Address Filtering
          5. User access log
          6. 802.1X Authentication(EAP-TLS, EAP-LEAP, EAP-PEAP MSCHAPv2)
          7. Device Certificate(Hanwha Techwin Root CA, pre-installed)
          8. Secure by default certificate
          9. Secure OS/Boot/Storage, Verify firmware forgery
       6. Application Programming Interface
          1. ONVIF Profile S / T, SUNAPI(HTTP API), Wisenet open platform
       7. Discovery
          1. Manufacturer shall offer a discovery program to identify all devices of his manufacture on the network.
    2. Audio
       1. Audio In via optional SPM-4210 I/O box
       2. Audio Out via optional SPM-4210 I/O box
    3. Electrical
       1. Input Voltage : PoE+ (IEEE802.3at, Class4)
       2. Power consumption
          1. PoE+ : Max 21W, Typical 16.5W
    4. Mechanical And Environmental
       1. Material : Aluminum, Hard-coated dome bubble
       2. Dimensions (W x D x H) : 215 x 135 x 93.2mm (8.46 x 5.31 x 3.67”)
       3. Weight : 1330g (2.86lb)
       4. Temperature And Humidity
          1. Operating : -40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH (Non-condensing)
          2. Storage : -50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH (Non-condensing)
       5. Environmental Rating
          1. IP66
          2. IK10
          3. NEMA4X
       6. RAL Code
          1. RAL9003
       7. Compatible Conduit hole / Gangbox
          1. 3/4" (M25)
          2. single, double, 4" octagon, 4" square
    5. EMC & Safety
       1. FCC 47 CFR Part 15 Subpart B
          1. ANSI C63.4-2014 Class A
       2. IC Regulation ICES-003 Issue 7
          1. ANSI C63.4a-2017 Class A
       3. CE EMC-Directive 2014/30/EU
          1. EN 55032:2015/A11:2020
          2. EN 50130-4:2011
       4. UK EMC-Regulations 2016/1091
          1. BS EN 55032:2015/A11:2020 Class A
          2. BS EN 50130-4:2011/a1:2014
       5. NEMA 250-2014
       6. VCCI-CISPR 32:2016 Class A
       7. AS/NZS CISPR32:2015 Class A
       8. UL listed
       9. CE EN 50581:2012 (RoHS)
       10. BS EN 50581:2012 (RoHS)

END OF SECTION