

# DH-SD8A840VI-HNI

4K 40x Starlight IR PTZ Network Camera



## System Overview

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day, and True WDR for applications with direct sunlight or glare.

#### **Functions**

## Starlight Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.002lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

#### Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

#### Auto-tracking

This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

#### Smart Wiper

With Dahua smart wiper technology, the wiper can be started/stopped automatically when the build-in rain senor discerns whether it rains. The technology could offer better surveillance performance against wet weather and reduce dependence on manual operation.

- · 1/1.8" 8Megapixel STARVIS™ CMOS
- · Powerful 40x optical zoom
- · Starlight technology
- · Max. 25/30fps@4K
- · Support Hi-PoE
- · Smart wiper
- · IR distance up to 450m
- · IP67



#### Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

#### **PFA Technology**

PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

#### Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from -40 °C to +70 °C (-40 °F to +158 °F) with 95% humidity. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

#### Protection

The camera allows for  $\pm 25\%$  input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 8KV lightning rating provides effective protection for both the camera and its structure against lightning.

#### Interoperability

The camera conforms to the ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of manufacturer.



# Ultra Series | DH-SD8A840VI-HNI

# **Technical Specification**

#### Camera

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Image Sensor	1/1.8" STARVIS™ CMOS
Effective Pixels	3840(H) x 2160(V), 8 Megapixels
Scanning System	Progressive
Electronic Shutter Speed	1/1s~1/30,000s
Minimum Illumination	Color: 0.002Lux@F1.4; B/W: 0.0002Lux@F1.4; 0Lux@F1.4 (IR on)
S/N Ratio	More than 56dB
IR Distance	Distance up to 450m (1476ft)
IR On/Off Control	Auto/Manual
IR LEDs	10
Smart Wiper	Support
Lens	
Focal Length	5.6mm~223mm
Max. Aperture	F1.4~ F4.8
Angle of View	H: 63.9° ~ 2.0°
Optical Zoom	40x
Focus Control	Auto/Manual
Close Focus Distance	100mm~ 1000mm

#### DORI Distance

\*Note: The DORI distance is a "general proximity" of distance which makes it easy to pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specification and lab test result according to EN 62676-4 which defines the criteria for Detect, Observe, Recognize and Identify respectively.

Detect	Observe		Recognize	Identify
4400m(14435ft)	1740m(5708ft)		880m(2887ft)	440m(1443ft)
PTZ				
Pan/Tilt Range		Pan: 0	° ~ 360° endless; Tilt: -3	0° ~ 90°,auto flip 180°
Manual Control Spee	ed	Pan: 0.	1° ~240° /s; Tilt: 0.1° ~:	100° /s
Preset Speed		Pan: 24	40° /s; Tilt: 120° /s	
Presets		300		
PTZ Mode		5 Patte	ern, 8 Tour, Auto Pan ,A	uto Scan
Speed Setup		Humar	n-oriented focal Length	/ speed adaptation
Power up Action			estore to previous PTZ ; failure	and lens status after
Idle Motion			e Preset/ Scan/ Tour/ F and in the specified per	
Protocol		DH-SD	, Pelco-P/D (Auto recog	nition)
Intelligence				
Event Trigger		changi	n detection, Video tamı ng, Network disconnec t, Illegal Access, Storag	tion, IP address

IVSTipwire, Intrusion, Abandoned/MissingIdvanced Intelligent FunctionsFace Detection, Heat MapVideoCompression4.265/H.265/H.264/H.264Streaming Capability5 StreamsResolutionSiteamsManagement ScienceSiteamsFarme RateSitestream: IDJ/CIF(1 ~ 25/300/ps), 1080P/1.3MP/200PFarme RateCBR/VBRBit Rate ControlCBR/VBRBit RateAuto(ICR) / Color / B/WBit RateAuto(ICR) / Color, JAM/200CBit RateSitestream: IDJ/CIF(1 ~ 25/300/ps)Bit RateMatoget Sitestream: IDJ/CIF(1 ~ 25/300/ps)Bit RateCBR/VBRBit RateAuto(ICR) / Color / B/WBit RateMatoget Sitestream: IDJ/CIF(1 ~ 25/300/ps)Bit RateSi	Auto Tracking	Support
VideoCompressionH.265/H.265/H.264/H.264Streaming Capability3 StreamsResolutionSite amsResolutionSite amsParame RateMain stream: 4K1-25/30(ps), 1080P/1.3M1/200P ("25/30(ps)")Bit RateCBR/VBRBit RateH.265/H.264 × 132X × 8192XbpsBit RateH.265/H.264 × 132X × 8192XbpsBit RateMain stream: 4K1-25/30(ps), 1080P/1.3MP/720P ("25/30(ps)")Bit RateCBR/VBRBit RateH.265/H.264 × 8192XbpsDay/NightAuto(ICR) / Color / B/WBacklight CompensationBit/ HLC / WDR(120dB)Mine BalanceAuto, ATW, Indoor, Outdoor, ManualGain ControlSupportMotion DetectionSupportRegion of InterestSupportBithateSupportPirivacy MaskingSupportDigital ZoomAfxFramersonSittis-CT-1000Base-TX)PirotacySr11a/G.711mu/PCM/G.726/AAC/G722.1/G.729ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX)ProtocolSittis-CT-100Base-TX) <td>IVS</td> <td>Tripwire, Intrusion, Abandoned/Missing</td>	IVS	Tripwire, Intrusion, Abandoned/Missing
Compression   H.265+/H.265/H.264+/H.264     Streaming Capability   3 Streams     Resolution   3 Streams     Resolution   Streams     Main stream: 44(1-25/30[rsb), 1080P(1).3M(1280x)     Frame Rate   Sub stream1: D1/CIF(1 ~ 25/30[rsb), 1080P/1.3M(720P     Frame Rate   CBR/VBR     Bit Rate Control   CBR/VBR     Day/Night   Auto(ICR) / Color / B/W     Bit Rate   H.265/H.264: 512K ~ 8192Kbps     Day/Night   Auto(ICR) / Color / B/W     Backlight Compensation   BLC / HLC / WDR(120dB)     Motion Detection   Support     Region of Interest   Support     Sign   Support     Filp   16x     Privacy Masking   Up to 24 areas     Privacy Masking   Syliport     Compression   Sin S113/G.711mu/PCM/G.726/AAC/G722.1/G.722 M/G.722     Privacy Masking   IPv4/IPv6, HTTP, HTTP, SSL, TCP/IP, UDP, UPn7, ICM/P, IMAP, SMP, NTP, DHCP, DMCP, DMC	Advanced Intelligent Functions	Face Detection, Heat Map
Streaming Capability     3 Streams       Resolution     4K(3840/2160/1080P(1920×1080)(1.3M(1280), 960/720P(1280×720)/01/704×576/704×480)/ CIF(353×288/352×240)       Main stream: 4K(1*25/30fps), 1080P/1.3MP/720P (1*25/30fps)     50000       Frame Rate     Kain stream: 4K(1*25/30fps), 1080P/1.3MP/720P (1*25/30fps)       Bit Rate     CBR/VBR       Bit Rate     H265/H.264: 512K * 8192Kbps       Day/Night     Auto(ICR) / Color / B/W       Backlight Compensation     BLC / HLC / WDR(120dB)       White Balance     Auto / Amual       Noise Reduction     Support       Gain Control     Auto / Manual       Noise Reduction     Support       Electronic Image Stabilization (Efs)     Support       Optical Defog     Support       Filp     180°       Privacy Masking     Up to 24 areas       Protocol     Support_       Electronic Image Stabilization (Efs)     Singer / Support       Filp     180°       Privacy Masking     Up to 24 areas       Protocol     Support_       Cumpression     Support_       Filternent     R-45 (10Base-T/100Base-TX)	Video	
Resolution   4K(3840x2160)/1080P(1920x1080)/1.3M(71280x 960)/720P(1280x720)/D1(704x576/704x480)/ C[(352x283/352x240)     Frame Rate   Nain stream: 4K(1*25/30fps), 1080P/1.3MP/720P (1*25/30fps)     Bit Rate Control   Sub stream1: D1/CIF(1 * 25/30fps)     Bit Rate Control   CBR/VBR     Bit Rate   H.265/H.264: 512K * 8192Kbps     Day/Night   Auto(ICR) / Color / B/W     Backlight Compensation   BLC / HLC / WDR(120dB)     White Balance   Auto, ATW, Indoor, Outdoor, Manual     Gain Control   Auto, ATW, Indoor, Outdoor, Manual     Noise Reduction   Ultra DNR (2D/3D)     Motion Detection   Support     Electronic Image Stabilization   Support     Igital Zoom   16x     Flip   180°     Privacy Masking   Up to 24 areas     Privacy Masking   Up to 24 areas     Protocol   Support, Disport, Disport, Disport     Etertronic Image Stabilization   Support     Privacy Masking   Up to 24 areas     Privacy Masking   Up to 24 areas     Protocol   Support     Disport   Support     Etertronic Image Stabilization   Support     Support </td <td>Compression</td> <td>H.265+/H.265/H.264+/H.264</td>	Compression	H.265+/H.265/H.264+/H.264
Resolution   960/720P(120er220/201/704×576/704×480)/ CI[535×288/352×240)     Frame Rate   Main stream: 4K(1°25/30fps), 1080P/1.3MP/720P     Frame Rate   Sub stream1: D1/CIF(1 ~ 25/30fps)     Bit Rate Control   CBR/VBR     Bit Rate   H.265/H.264: 512K ~ 8192Kbps     Day/Night   Auto(ICR) / Color / B/W     Backlight Compensation   BLC / HLC / WDR(120dB)     White Balance   Auto, ATW, Indoor, Outdoor, Manual     Gain Control   Auto, ATW, Indoor, Outdoor, Manual     Noise Reduction   Ultra DNR (2D/30)     Motion Detection   Support     Region of Interest   Support     Igital Zoom   16x     Flip   180°     Privacy Masking   Up to 24 areas     Autoi   Compression     Resolution   Ipid/Ind/G.711mu/PCM/G.726/AAC/G722.1/G.729/MIC     Protocol   IPi/A/IPix6, HTTP, HTTPS, SSL, TCP/IP, UDP, UBR, UBR, IDM, IDM, IDM, IDM, IDM, IDM, IDM, IDM	Streaming Capability	3 Streams
Interception     [1~25/30fps]       Frame Rate     Sub stream1: D1/CIF(1~25/30fps)       Bit Rate Control     CBR/VBR       Bit Rate     Dawnown (CR) / Color / B/W       Backlight Compensation     BLC / HLC / WDR(120dB)       Pay/Night     Auto(ICR) / Color / B/W       Backlight Compensation     BLC / HLC / WDR(120dB)       White Balance     Auto, ATW, Indoor, Outdoor, Manual       Gain Control     Auto / Manual       Motion Detection     Support       Region of Interest     Support       Digital Zoom     Ifax       Privacy Masking     Up to 24 areas       Privacy Masking     Ifa/S (11mu/PCM/G.726/AAC/G722.1/G.729/ MPEG2-Layer2       Protocol     G7.11a/G.711mu/PCM/G.726/AAC/G722.1/G.729/ MPEG2-Layer2       Protocol     IPv4/IVv6, HTTP, HTTPS, SSL, TCP/IP, IDDP, UPR, PMER, SMP, RTSP, SMTP, NTP, DHCP, DMS, PMER, SMP, RTSP, SMTP, NTP, DHCP, DMS, PMER, SMMP, RTSP, RTP, SMTP, NTP, DHCP, DMS, PMER, SMMP, RTSP, RTSP, SMTP, NTP, DHCP, DMS, PMER, SMMP, RTSP, RTP, SMTP, NTP, DHCP, DMS, PMER, SMMP, RTSP, RTP, SMTP, NTP, DHCP, DMS, PMER, SMMP, RTSP, RTP, SMTP, NTP, DHCP, DMS, PMER, SMTP, RTSP, RTP, SMTP, NTP, DHCP, DMS, PMER, SMTP, RTSP, RTP, SMTP, NTP, DHCP, SMS, PMER, SMTP, R	Resolution	960)/720P(1280×720)/D1(704×576/704×480)/
Job Stream2: DJCr(T 2)J00p3)       Sub stream2: 1080P/1.3M/720P (1 ~ 25/30fp3)       Bit Rate Control     CBR/VBR       Backlight Compensation     H.265/H.264: 512K ~ 8192Kbps       Day/Night     Auto (ICR) / Color / B/W       Backlight Compensation     BLC / HLC / WDR(120dB)       White Balance     Auto, ATW, Indoor, Outdoor, Manual       Gain Control     Auto / Manual       Noise Reduction     Ultra DNR (2D/3D)       Motion Detection     Support       Region of Interest     Support       Electronic Image Stabilization (EIS)     Support       Digital Zoom     16x       Flip     180°       Privacy Masking     Up to 24 areas       Audio     Support       Compression     G.711a/G.711mu/PCM/G.726/AAC/G722.1/G.729/MPEG2-Layer2       Pretocol     IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPNP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, MTP, OHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QOS, Bonjour, 802.1X       Interoperability     ONVIF Profile S&G, API       Streaming Method     Unicast / Multicast       Max. User Access     20 users       Edge Storage     NAS (Network Attached Storage),Local PC for instant recording, Micro SD card		
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Privacy MaskingUp to 24 areasAudioCompressionG.711a/G.711mu/PCM/G.726/AAC/G722.1/G.729/ MPEG2-Layer2NetworkEthernetRJ-45 (10Base-T/100Base-TX)ProtocolIPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UDP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS,PPPOE,DDNS,FTP, IP Filter,QoS,Bonjour,802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Digital Zoom	16x
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CompressionG.711a/G.711mu/PCM/G.726/AAC/G722.1/G.729/ MPEG2-Layer2NetworkEthernetRJ-45 (10Base-T/100Base-TX)ProtocolIPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UDP, UDP, UDN, IGMP, IGMP, IGMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage), Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Privacy Masking	Up to 24 areas
CompressionMPEG2-Layer2NetworkEthernetRJ-45 (10Base-T/100Base-TX)ProtocolIPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS,PPPOE,DDNS,FTP, IP Filter,QoS,Bonjour,802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Audio	
EthernetRJ-45 (10Base-T/100Base-TX)ProtocolIPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UDP, UDP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage), Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Compression	
ProtocolIPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS,PPPOE, DDNS,FTP, IP Filter, QoS,Bonjour, 802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage), Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Network	
ProtocolICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS,PPPOE,DDNS,FTP, IP Filter,QoS,Bonjour,802.1xInteroperabilityONVIF Profile S&G, APIStreaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Ethernet	RJ-45 (10Base-T/100Base-TX)
Streaming MethodUnicast / MulticastMax. User Access20 usersEdge StorageNAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GBWeb ViewerIE, Chrome, Firefox, SafariManagement SoftwareSmart PSS, DSS, DMSS	Protocol	ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP,
Max. User Access 20 users   Edge Storage NAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GB   Web Viewer IE, Chrome, Firefox, Safari   Management Software Smart PSS, DSS, DMSS	Interoperability	ONVIF Profile S&G, API
Edge Storage   NAS (Network Attached Storage),Local PC for instant recording, Micro SD card 256GB     Web Viewer   IE, Chrome, Firefox, Safari     Management Software   Smart PSS, DSS, DMSS	Streaming Method	Unicast / Multicast
Edge Storage instant recording, Micro SD card 256GB   Web Viewer IE, Chrome, Firefox, Safari   Management Software Smart PSS, DSS, DMSS	Max. User Access	20 users
Management Software Smart PSS, DSS, DMSS	Edge Storage	
	Web Viewer	IE, Chrome, Firefox, Safari
Smart Phone IOS, Android	Management Software	Smart PSS, DSS, DMSS
	Smart Phone	IOS, Android

# Ultra Series | DH-SD8A840VI-HNI

#### Certifications

Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB,ANSI C63.4- 2014 UL: UL60950-1+CAN/CSA C22.2,No.60950-1
Interface	
Video Interface	1 port(BNC, 1.0V[p-p], 75Ω)
RS485	1
Audio I/O	1/1
Alarm I/O	7/2
Electrical	
Power Supply	AC24V/3A(±25%), Hi-PoE
Power Consumption	26W, 38W (IR on, Heater on)
Environmental	
Operating Conditions	-40°C $\sim$ 70°C (-40°F $\sim$ +158°F) / Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	N/A
Construction	
Casing	Metal
Dimensions	Φ262(mm) x 415.6 (mm)
Net Weight	8.5kg(18.74lb)
Gross Weight	14.3kg(31.53lb)

# **Ordering Information**

Туре	Part Number	Description
	DH-SD8A840VI-HNI	4K 40x Starlight IR PTZ Network Camera, WDR, PAL
4K PTZ	DH-SD8A840VIN-HNI	4K 40x Starlight IR PTZ Network Camera, WDR, NTSC
Camera	SD8A840VI-HNI	4K 40x Starlight IR PTZ Network Camera, WDR, PAL
	SD8A840VIN-HNI	4K 40x Starlight IR PTZ Network Camera, WDR, NTSC
	PFB306W	Wall Mount
	AC24V/3A	Power Adapter
A	PFA120	Junction Box
Accessories	PFA140	Power Box
	PFA150	Pole Mount
	PFA151	Corner Mount

#### Accessories

Included:





PFB306W Wall Mount

AC24V/3A Power Adapter

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Optional:







PFA120 Junction Box

PFA140 Power Box

PFA150 Pole Mount



PFA151 Corner Mount

Junction Mount	Power Box Mount
PFB306W + PFA120	PFB306W + PFA140
Corner Mount	Pole Mount
PFB306W + PFA151	PFB306W + PFA150

# **Dimensions (mm)**



