

DH-SD8A840XA-HNP-WP

8MP 40x Starlight WizMind Hydrological Monitoring Network Camera



- 1/1.8" 8Megapixel STARVIS™ CMOS
- Powerful 40x optical zoom
- IR distance up to 250 m
- Max. 25/30 fps@4K
- Water level marker detection and calibration
- Water level marker joining
- Boat detection
- IP67



System Overview

The 8MP 40x Starlight WizMind Hydrological Monitoring Network Camera has a built-in neural network processor, and adopts advanced WizMind deep learning technology. Recognizes standard and virtual water level markers. Triggers an alarm when the water level exceeds any of the limits, the device is suitable for various river scenes. With PTZ control, the cost of device deployment and scene adjustment can be greatly reduced. Multiple presets can be set at the same time to effectively increase coverage, and intelligent multi-scenario tour can be used to improve capture efficiency.

Functions

Hydrological Monitoring

Recognizes standard and virtual water level markers. Triggers an alarm when the water level exceeds any of the limits. It also detects floating debris, and sends push notifications with data on the water level.

Starlight Technology

For challenging low-light conditions, Dahua's Starlight Ultra-low Light Technology offers the best in light sensitivity, capturing color in vivid detail, even in lighting as low as 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, producing clear images in dark environments.

PFA Technology

PFA technology has introduced new methods of judgment that ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms that ensure image clarity when zooming and that shorten focus time. This makes the camera highly advanced in its functions, substantially improving the quality of your experience.

Environment

Developed to operate in extreme conditions, camera can function in temperatures ranging from -40°C to $+70^{\circ}\text{C}$ (-40°F to $+158^{\circ}\text{F}$) at 95% humidity. It was subjected to rigorous dust and water immersion tests, gaining its IP67 Ingress Protection certification, making it suitable for demanding outdoor applications.

Wide Dynamic Range

The camera produces vivid images, even in high-contrast lighting conditions, by using industry-leading wide dynamic range (WDR) technology. For scenes that quickly alternate between bright and low lighting, WDR (120 dB) adjusts to fully capture both the bright and dark areas of a scene, producing superior quality videos.

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, a flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality videos without straining the network. Smart H.265+ technology outranks standard H.265 video compression, reducing bit rate and storage requirements by up to 70%.

Scene

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 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Pixel	8 MP
Max. Resolution	3840 (H) × 2160 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1/1 s–1/300,000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005 lux@F1.4 B/W: 0.0005 lux@F1.4 0 lux (IR on)
Illumination Distance	250 m (820.21 ft) (IR)
Illuminator On/Off Control	Zoom Prio; Manual; Off
Illuminator Number	10 (IR)
Wiper	Smart Wiper

Lens

Focal Length	5.5 mm–220 mm			
Max. Aperture	F1.4–F4.5			
Field of View	H: 63.9°–2.0°; V: 37.3°–1.1°; D: 71.2°–2.3°			
Optical Zoom	40x			
Focus Control	Auto; semi-auto; manual			
Close Focus Distance	1.5 m–8 m (4.92 ft–26.25 ft)			
Iris Control	Auto			
DORI Distance	Detect	Observe	Recognize	Identify
	4,166 m (13,667.98 ft)	1,666.4 m (5,467.19 ft)	833.2 m (2,733.60 ft)	416.6 m (1,366.80 ft)

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –30° to +90°
Manual Control Speed	Pan: 0.1°/s–240°/s Tilt: 0.1°/s–100°/s
Preset Speed	Pan: 240°/s; Tilt: 120°/s
Preset	300
Tour	8 (up to 32 preset per tour)
Pattern	5
Scan	5
Speed Adjustment	Yes
Power-off Memory	Yes
Idle Motion	Preset; Tour; Pattern; Scanning
PTZ Protocol	DH-SD Pelco-P/D (auto recognition)

Intelligence

Hydrological Monitoring	Recognizes standard and virtual water level markers. Triggers an alarm when the water level exceeds any of the limits. It also detects floating debris and boats, and sends push notifications with data on the water level.
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Video

Video Compression	H.265; Smart H.265+; Smart H.264+; H.264; MJPEG (Sub Stream 1)
Streaming Capability	3 Streams
Video Frame Rate	Main stream: 4K/4M/3M/1080p/1.3M/720p (1–25/30 fps) Sub stream 1: D1/CIF (1–25/30 fps) Sub stream 2: 1080p/1.3M/720p/CIF (1–25/30 fps)
Bit Rate Control	CBR; VBR
Day/Night	Auto (ICR); Color; B/W
BLC	Yes
WDR	Yes
HLC	Yes
White Balance	Auto; indoor; outdoor; tracking; manual; sodium lamp; natural light; street lamp
Gain Control	Auto; Manual
Noise Reduction	2D NR; 3D NR
Motion Detection	Yes
Region of Interest (RoI)	Yes
Image Stabilization	Electronic (EIS)
Defog	Optical
Digital Zoom	16x
Image Rotation	180°
Privacy Masking	Up to 24 areas can be set, with up to 8 areas in the same view
S/N Ratio	≥ 55 dB

Audio

Audio Compression	G.711a; G.711Mu; G.726; MPEG2-Layer2; G.722.1; G.729; G.723; PCM
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Network

Network Port	RJ-45 (10/100 Base-T)
Network Protocol	HTTP; HTTPS; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; IPv6; 802.1x; QoS; FTP; UPnP; ICMP; SNMP; SNMP v1/v2c/v3 (MIB-2); IGMP; ARP; RTCP; RTP; PPPoE; TCP
Interoperability	ONVIF Profile S&G&T; GB/T28181; CGI
Streaming Method	Unicast; Multicast
User/Host	20 (total bandwidth: 64 M)
Storage	FTP; Micro SD card (256 GB)

Port

Analog Output	1 channel (CVBS output, BNC)
RS-485	1 (baud rate: 1200 bps–9600 bps)

Audio Input	1 channel (LINE IN, bare wire)
Audio Output	1 channel (LINE OUT, bare wire)
Alarm I/O	7/2
Two-way Audio	Yes
Alarm Linkage	Capture; preset; tour; pattern; recordings on SD card; alarm digital input; send email; client E-map
Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection; illegal access
Power	
Power Supply	36 VDC, 2.23 A (± 25%) Hi-PoE
Power Consumption	Basic: 18 W Max.: 22 W (illuminator + PTZ working)
Environment	
Operating Temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Operating Humidity	≤ 95% RH
Protection	IP67; TVS 8000 V lightning proof; surge protection; voltage transient protection
Structure	
Casing	ADC12, PC + 20% GF
Product Dimensions	415.9 mm × Φ262.0 mm (16.37" × Φ10.31")
Net Weight	8.5 kg (18.74 lb)
Gross Weight	13.57 kg (29.92 lb)

Ordering Information		
Type	Model	Description
8MP Camera	DH-SD8A840XA-HNP-WP	8MP 40x Starlight WizMind Hydrological Monitoring Network Camera
	SD8A840XA-HNP-WP	8MP 40x Starlight WizMind Hydrological Monitoring Network Camera
Accessories	DC36V/2.23A	Power Adapter
	PFB306W	Bracket
	PFA118	Mount Adapter
	PFB710C	Bracket
	PFB301C	Bracket
	PFA151	Bracket
	PFA150	Bracket

Accessories

Included:



DC36V/2.23A
Power Adapter



PFB306W
Bracket

Optional:



PFA118
Mount Adapter



PFB710C
Bracket



PFB301C
Bracket



PFA151
Bracket



PFA150
Bracket

Wall Mount	Ceiling Mount	Ceiling Mount
PFB306W+PFA120	PFA118+PFB710C	PFA118+PFB301C
Pole Mount (Vertical)	Corner Mount	Pole Mount (Horizontal)
PFB306W+PFA150	PFB306W+PFA151	PFA118+PFB301C+PFA150
Plane Mount		
PFA118+PFB301S-E		

Dimensions (mm[inch])

