

# DH-SD8A820WA-HNF

## 4K 20x Full-color IR PTZ AI Network Camera



- 4/3" 8Megapixel STARVIS™ CMOS
- Powerful 20x optical zoom
- Full-color technology
- IR distance up to 500m
- Support face recognition
- Deep-learning-based auto tracking and perimeter protection
- Support metadata
- Support Hi-PoE
- Smart wiper
- IP67



AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and more devices. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

### System Overview

Dahua PTZ AI network camera adopts advanced CNN deep learning algorithms to support face recognition with high accuracy. This camera possess wide monitor range, PFA algorithm that can always present a clear, focused image while zooming, and smart wiper technology that supported by RainSensor.

### Functions

#### 4K Full-color Technology

For challenging low-light applications, Dahua's Full-color Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.0005 lux with 4k video. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

#### Face Recognition

Once facial features are extracted from captured faces, they are stored in a database where they can be easily searched and compared against other images. Once a successful match is found, the system outputs the result. The Dahua Face Recognition camera supports a built-in database that stores up to 10,000 facial images, helping the camera achieve real-time face capture and comparison.

#### Perimeter Protection

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improving alarm accuracy.

#### Metadata

Metadata is feature attribute information extracted from a target object which can be used for data retrieval. There are four kinds of metadata supported by Dahua PTZ AI camera: human face, human body, motor vehicle and non-motor vehicle metadata. Facial information includes gender, age, glasses, masks, beards, etc. Human body information includes hat, top, top color, bottom, bottom color, bag, etc. Motor vehicle information includes plate color, type, vehicle color, sunshield, ornament, calling, seatbelt, smoking, annual inspection sticker, etc. Non-motor vehicle information includes type, color, top type, top color, people number, etc.

#### 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 to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

#### Protection

The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 6KV 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.

**Technical Specification**

**Camera**

Image Sensor	4/3" 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: 0.0005Lux@F1.6; B/W: 0.00005Lux@F1.6; 0Lux@F1.6 (IR on)
IR Distance	Distance up to 500 m (1640 ft)
IR On/Off Control	Zoom Prio/Manual/SmartIR
IR LEDs	10
Smart Wiper	Support

**Lens**

Focal Length	16.0 mm–320 mm			
Max. Aperture	F1.6–F5.0			
Angle of View	H: 58.1°–3.2°; V: 34.6°–1.8°; D: 64.9°–3.7°			
Optical Zoom	20X			
Focus Control	Auto/Semi-Auto/Manual			
Iris Control	Auto/Manual			
Close Focus Distance	1m–5m			
DORI Distance	Detect	Observe	Recognize	Identify
	2329 m (7640 ft)	931 m (3054 ft)	465 m (1525 ft)	232 m (761 ft)

**PTZ**

Pan/Tilt Range	Pan: 0°–360° endless; Tilt: -30°–90°, auto flip 180°
Manual Control Speed	Pan: 0.1°–240°/s; Tilt: 0.1°–100°/s
Preset Speed	Pan: 240°/s; Tilt: 120°/s
Presets	300
PTZ Mode	5 Pattern, 8 Tour (up to 32 preset per tour), Auto Pan, 5 Auto Scan
Speed Setup	Human-oriented focal Length/ speed adaptation
Power up Action	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/ Scan/ Tour/ Pattern if there is no command in the specified period
Protocol	DH-SD, Pelco-P/D (Auto recognition)

**Artificial Intelligence**

Auto Tracking	Support
Face Recognition	Support
Perimeter Protection	Tripwire, Intrusion. Support alarm triggering by target types (human and vehicle) Filtering out false alarms caused by animals, rustling leaves, bright lights, etc
Metadata	Support human body, human face, motor vehicle and non-motor vehicle image capture and attributes extraction

**General Intelligence**

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

**Video**

Compression	H.265+/H.265/H.264+/H.264/MJPEG(Sub Stream)
Streaming Capability	3 Streams
Resolution	4K(3840x2160)/1080P(1920x1080)/1.3M(1280x960)/720P(1280x720)/D1(704x576/704x480)/CIF(352x288/352x240)"
Frame Rate	Main stream:4K(1–25/30fps), 1080P/1.3M/720P(1–25/30fps) Sub stream1: D1/CIF(1–25/30fps) Sub stream2: 1080P/1.3M/720P(1–25/30fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 24Kbps–16384Kbps H.265: 9Kbps–14410Kbps
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)
HLC	Support
Motion Detection	Support
Region of Interest	Support
Electronic Image Stabilization (EIS)	Support
Optical Defog	Support
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas

**Audio**

Compression	G.711a/G.711mu/PCM/G.726/AAC/G722.1/G.729/MPEG2-Layer2
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**Network**

Ethernet	RJ-45 (10Base-T/100Base-TX)
Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, RTCP, RTP, RTP, SMTP, NTP, DHCP, 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 256GB
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	Smart PSS, DSS, DMSS
Smart Phone	IOS, Android

**Certification**

Certification	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB,ANSI C63.4- 2014
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**Interface**

Video Interface	1 port(BNC, 1.0V[p-p], 75Ω)
RS-485	1 (Baud rate range: 1200bps–115200bps)
Audio I/O	1/1
Alarm I/O	7/2

**Electrical**

Power Supply	AC24V/3A(±25%), Hi-PoE
Power Consumption	26W, 42W (Heater on, IR on)

**Environmental**

Operating Conditions	-40°C–70°C (-40°F–+158°F)/Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	N/A

**Construction**

Casing	Metal
Dimensions	Φ262mm×415.6mm (10.31"×16.36")
Net Weight	8.5kg (18.74lb)
Gross Weight	13.5kg (29.76lb)

**Ordering Information**

Type	Model	Description
4K PTZ Camera	DH-SD8A820WA-HNF	4K 20x Full-color IR PTZ AI Network Camera, WDR, PAL
	DH-SD8A820WAN-HNF	4K 20x Full-color IR PTZ AI Network Camer, WDR, NTSC
	SD8A820WA-HNF	4K 20x Full-color IR PTZ AI Network Camera, WDR, PAL
	SD8A820WAN-HNF	4K 20x Full-color IR PTZ AI Network Camera, WDR, NTSC
Accessories	PFB306W	Bracket
	AC24V/3A	Power Adapter

**Accessories**

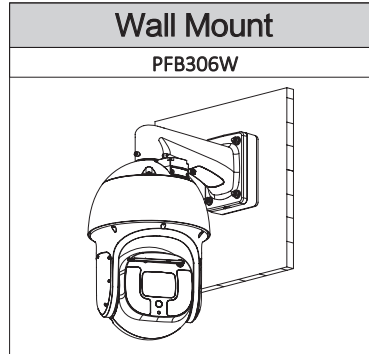
**Included:**



PFB306W  
Bracket



AC24V/3A  
Power Adapter



**Dimensions (mm[inch])**

