**dahua** TECHNOLOGY

# DH-SD8A440-HNF-PA

## 4MP 40x Starlight IR PTZ AI Network Camera

*WizMind*

- 1/1.8" 4Megapixel STARVIS™ CMOS
- Powerful 40x optical zoom
- Starlight+ technology
- Perimeter protection
- Metadata
- Face recognition
- Auto-tracking
- Smart wiper
- IP67

| 4Mp | Starlight+ | Perimeter Protection | Video Metadata | Face Recognition | IP67 |

Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for industry verticals.

## System Overview

Dahua PTZ WizMind 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

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

### Perimeter Protection

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

### Metadata

Metadata is attribute information extracted from a target which can be used for data retrieval. There are four kinds of metadata supported by Dahua PTZ WizMind camera: Human face, human body, motor vehicle and non-motor vehicle. 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.

### 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.

### 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.

### 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.

### 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.

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/1.8" CMOS |
| Pixel | 4MP |
| Max. Resolution | 2560 (H) x 1440 (V) |
| ROM | 8 GB |
| RAM | 2 GB |
| Electronic Shutter Speed | 1/1 s–1/30000 s |
| Scanning System | Progressive |
| Min. Illumination | Color: 0.001 Lux@F1.4<br>B/W: 0.0001 Lux@F1.4<br>0 Lux@F1.4 (illuminator on) |
| Illumination Distance | 500 m (1640.42 ft) |
| Illuminator On/Off Control | Zoom Prio; Manual; SmartIR |
| Illuminator Number | 10 IR lights |
| Wiper | Smart wiper |

### Lens

| | | | | |
|---|---|---|---|---|
| Focal Length | 5.6 mm–223 mm | | | |
| Max. Aperture | F1.4–F4.8 | | | |
| Field of View | H: 63.9°–2.0°; V: 36.0°–1.3°; D: 68.2°–2.6° | | | |
| Optical Zoom | 40x | | | |
| Focus Control | Auto; Semi-Auto; Manual | | | |
| Close Focus Distance | 0.5 m–1 m (1.64 ft–3.28 ft) | | | |
| Iris Control | Auto; Manual | | | |
| DORI Distance | Detect | Observe | Recognize | Identify |
| | 3030 m (9940.94 ft) | 1204 m (3905.13 ft) | 606 m (1988.19 ft) | 303 m (994.09 ft) |

### PTZ

| | |
|---|---|
| Pan/Tilt Range | Pan: 0° to 360°<br>Tilt: -30° to +90°, auto flip 180° |
| Manual Control Speed | Pan: 0.1°/s–240°/s<br>Tilt: 0.1°/s–100°/s |
| Preset Speed | Pan: 240°/s; Tilt: 120°/s |
| Preset | 300 |
| Tour | 8 (up to 32 presets per tour) |
| Pattern | 5 |
| Scan | 5 |
| Speed Adjustment | Yes |
| Power-off Memory | Yes |
| Idle Motion | Preset; Tour; Pattern; Scanning |
| Protocol | DH-SD<br>Pelco-P/D (auto recognition) |

### General Intelligence

| | |
|---|---|
| Event Trigger | Motion detection, video tampering, scene changing, network disconnection, IP address conflict, illegal access, and storage anomaly. |
| IVS | Object Abandoned; Object Missing |

### Artificial Intelligence

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

### Video

| | |
|---|---|
| Compression | Smart H.265+; H.265; Smart H.264+; H.264; MJPEG (Sub Stream 1) |
| Streaming Capability | 3 streams |
| Resolution | 4M (2560 × 1440); 1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576); CIF (352 × 288) |
| Frame Rate | Main stream: 4M/1080P/1.3M/720P (1–25/30 fps)<br>Sub stream 1: D1/CIF (1–25/30 fps)<br>Sub stream 2: 1080P/1.3M/720P (1–25/30 fps) |
| Bit Rate Control | Variable; Constant |
| Bit Rate | H.265/H.264: 512 Kbps–8192 Kbps |
| Day/Night | Auto (ICR); Color; B/W |
| BLC | Yes |
| WDR | 140 dB |
| HLC | Yes |
| White Balance | Auto; Indoor; Outdoor; Tracking; Manual; Sodium Lamp; Natural; Street Lamp |
| Gain Control | Auto; Manual |
| Noise Reduction | 2D; 3D |
| Motion Detection | Yes |
| Region of Interest (RoI) | Yes |
| Image Stabilization | Electronic (EIS) |
| Defog | Optical |
| Digital Zoom | 16x |
| Flip | 0°; 180° |
| Privacy Masking | Up to 24 areas, and up to 8 areas in the same view |
| S/N Ratio | ≥ 55 dB |

### Audio

| | |
|---|---|
| Compression | G.711a; G.711mu; G.726; AAC; G.722.1; G.729; MPEG2-Layer2; G723 |

### Network

| | |
|---|---|
| Ethernet | 1 RJ-45 Port (10/100Base-T) |

| Protocol | IPv4; IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP v1/v2c/v3 (MIB-2); DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; RTCP; RTMP |
|---|---|
| Interoperability | ONVIF Profile S&G&T; CGI |
| Streaming Method | Unicast; Multicast |
| User/Host | 20 (total bandwidth 64 MB) |
| Storage | FTP; Micro SD card (256 GB); P2P |
| Browser | IE7 and later versions<br>Chrome 42 and earlier versions<br>Firefox 52 and earlier versions<br>Safari |
| Management Software | Smart PSS; DSS; DMSS; Easy4ip; IVSS |
| Mobile Phone | iOS; Android |

## Certification

| Certifications | CE: EN55032/EN55024/EN50130-4<br>FCC: Part15 subpartB, ANSI C63.4-2014 |
|---|---|

## Port

| Analog Output | 1 BNC |
|---|---|
| RS-485 | 1 (baud rate range:1200 bps–9600 bps) |
| Audio Input | 1 (LINE IN; bare wire) |
| Audio Output | 1 (LINE OUT; bare wire) |
| Alarm I/O | 7/2 |

## Power

| Power Supply | DC 36V/2.23A±25%<br>Hi-PoE |
|---|---|
| Power Consumption | 30W<br>48W (IR light on) |

## Environment

| Operating Temperature | −40°C to +70°C (−40°F to +158°F) |
|---|---|
| Operating Humidity | ≤ 95%RH |
| Protection | IP67; IK10; TVS 6000V lightning protection; surge protection; voltage transient protection |

## Structure

| Casing | Metal |
|---|---|
| Dimensions | 415.6 mm × Φ262 mm (16.36" × Φ10.31") |
| Net Weight | 8.5 kg (18.74 lb) |
| Gross Weight | 13.5 kg (29.76 lb) |

## Ordering Information

| Type | Model | Description |
|---|---|---|
| 4M WizMind PTZ Camera | DH-SD8A440-HNF-PA | 4MP 40x Startlight WizMind Network PTZ Camera, PAL |
| | DH-SD8A440N-HNF-PA | 4MP 40x Startlight WizMind Network PTZ Camera, NTSC |
| | SD8A440-HNF-PA | 4MP 40x Startlight WizMind Network PTZ Camera, PAL |
| | SD8A440N-HNF-PA | 4MP 40x Startlight WizMind Network PTZ Camera, NTSC |
| Accessories | DC 36V/2.23A | Power Adapter |
| | PFB306W | Wall Mount Bracket |
| | PFA118 | Mount Adapter |
| | PFB710C | Ceiling Mount Bracket |
| | PFA150 | Pole Mount Bracket |
| | PFB301S-E | Plane Mount Bracket |
| | PFA120 | Junction Box |
| | PFB301C | Ceiling Mount Bracket |
| | PFA151 | Corner Mount Bracket |

## Accessories

### Included:



DC 36V/2.23A
Power Adapter

PFB306W
Wall Mount
Bracket

### Optional:



PFA118
Mount Adapter

PFB710C
Ceiling Mount
Bracket

PFA150
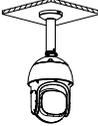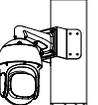Pole Mount
Bracket

PFB301S-E
Plane Mount
Bracket

PFA120
Junction Box

PFB301C
Ceiling Mount
Bracket

PFA151
Corner Mount
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])

$\Phi$47.8 [$\Phi$1.88]

415.9 [16.37]

$\Phi$262.0 [$\Phi$10.31]

$\Phi$200.0 [$\Phi$7.87]