

# DH-SD8A840-HNF-PA

8MP 40x Starlight IR PTZ AI Network Camera



WizMind

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 achieve high accuracy. This camera possesses 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 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 0.001 lux. The camera uses a set of optical features to balance light throughout the scene, producing clear images in dark environments.

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, and more, and uses secondary recognition during target detection to improve alarm accuracy.

### Video Metadata

Metadata is information on the attributes of targets that is extracted during monitoring. It can be used for data retrieval. There are four kinds of metadata supported by Dahua PTZ WizMind cameras: Human face, human body, motor vehicle and non-motor vehicle. Face information includes gender, age, glasses, masks, beards, and more. Human body information includes hat, top, top color, bottom, bottom color, bag, and more. Motor vehicle information includes plate color, type, vehicle color, sun visor, ornament, calling, seatbelt, smoking, annual inspection sticker, and more. Non-motor vehicle information includes type, color, top type, top color, people number, and more.

- 1/1.8" 8Megapixel STARVIS™ CMOS
- Powerful 40x optical zoom
- Starlight technology
- Perimeter protection
- Metadata
- Face Recognition
- Auto-tracking
- Smart wiper
- IP67



### Auto-tracking

This feature controls the pan, tilt and zoom actions of the camera to automatically track an object in motion, to keep it in view of the camera. Tracking 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 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.

### 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%.

## Technical Specification

### Camera

|                            |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| Image Sensor               | 1/1.8" CMOS                                                                  |
| Pixel                      | 8 MP                                                                         |
| Max. Resolution            | 3840 (H) x 2160 (V)                                                          |
| ROM                        | 8 GB                                                                         |
| RAM                        | 2 GB                                                                         |
| Electronic Shutter Speed   | 1/1 s–1/30,000 s                                                             |
| Scanning System            | Progressive                                                                  |
| Min. Illumination          | Color: 0.005 lux@F1.4<br>B/W: 0.0005 lux@F1.4<br>0 lux@F1.4 (illuminator on) |
| Illumination Distance      | 500 m (1640.42 ft)                                                           |
| Illuminator On/Off Control | Zoom Prio; Manual; Smart IR                                                  |
| Illuminator Number         | 10 IR lights                                                                 |
| Wiper                      | Smart wiper                                                                  |

### Lens

|                      |                                                                                                                                                                                                                                                                                                                                                                                 |                          |                        |                        |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------|------------------------|
| Focal Length         | 5.6 mm–223 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 | 0.5 m–2 m (1.64 ft–6.56 ft)                                                                                                                                                                                                                                                                                                                                                     |                          |                        |                        |
| Iris Control         | Auto; manual                                                                                                                                                                                                                                                                                                                                                                    |                          |                        |                        |
| DORI Distance        | Detect                                                                                                                                                                                                                                                                                                                                                                          | Observe                  | Recognize              | Identify               |
|                      | 4,400 m<br>(14,435.70 ft)                                                                                                                                                                                                                                                                                                                                                       | 1,740 m<br>(5,708.66 ft) | 880 m<br>(2,887.14 ft) | 440 m<br>(1,443.57 ft) |
|                      | *DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool. |                          |                        |                        |
|                      |                                                                                                                                                                                                                                                                                                                                                                                 |                          |                        |                        |

### 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       |
| PTZ Protocol     | DH-SD<br>Pelco-P/D (auto recognition) |

### Smart Event

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

### Intelligence

|                            |                                                                                                                                                                           |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Metadata             | Support human body, human face, motor vehicle and non-motor vehicle image capture and attributes extraction.                                                              |
| IVS (Perimeter Protection) | Tripwire; intrusion; climbing fences; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification |
| Face Recognition           | Yes                                                                                                                                                                       |
| Auto Tracking              | Yes                                                                                                                                                                       |

### Video

|                          |                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Video Compression        | Smart H.265+; H.265; Smart H.264+; H.264; MJPEG (Sub Stream 1)                                                                        |
| Streaming Capability     | 3 streams                                                                                                                             |
| Resolution               | 4K (3840 × 2160); 4M (2560 × 1440); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288)        |
| Video Frame Rate         | Main stream: 4K/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         | CBR; VBR                                                                                                                              |
| Video Bit Rate           | H264: 512 kbps–16384 kbps<br>H265: 256 kbps–10240 kbps                                                                                |
| Day/Night                | Auto (ICR); Color; B/W                                                                                                                |
| BLC                      | Yes                                                                                                                                   |
| WDR                      | DWDR                                                                                                                                  |
| 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                                                                                                                                   |
| Defog                    | Optical                                                                                                                               |
| Digital Zoom             | 16x                                                                                                                                   |
| Image Rotation           | 0°; 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; AAC; G722.1; G.729; MPEG2-Layer2; G723 |
|-------------------|----------------------------------------------------------------|

## Network

|                     |                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Port        | RJ-45 (10/100 Base-T)                                                                                                                                        |
| Network 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 M)                                                                                                                                   |
| Storage             | FTP; Micro SD card (512GB)                                                                                                                                   |
| Browser             | IE 7 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 Client       | 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) |
| Alarm I/O     | 7/2                                    |
| Audio I/O     | 1/1                                    |

## Power

|                   |                                                              |
|-------------------|--------------------------------------------------------------|
| Power Supply      | 36 VDC, 2.23 A (±25%)<br>Hi-PoE                              |
| Power Consumption | Basic: 30 W<br>Max.: 48 W (illuminator + PTZ + Heater + Fan) |

## Environment

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

## Structure

|                    |                                        |
|--------------------|----------------------------------------|
| Casing             | Metal                                  |
| Product Dimensions | 415.6 mm × Φ26.2 mm (16.36" × Φ10.31") |
| Net Weight         | 10 kg (22.05 lb)                       |
| Gross Weight       | 12 kg (26.46 lb)                       |

## Ordering Information

| Type                  | Model              | Description                                         |
|-----------------------|--------------------|-----------------------------------------------------|
| 8M WizMind PTZ Camera | DH-SD8A840-HNF-PA  | 8 MP 40x Starlight WizMind Network PTZ Camera, PAL  |
|                       | DH-SD8A840N-HNF-PA | 8 MP 40x Starlight WizMind Network PTZ Camera, NTSC |
|                       | SD8A840-HNF-PA     | 8 MP 40x Starlight WizMind Network PTZ Camera, PAL  |
|                       | SD8A840N-HNF-PA    | 8 MP 40x Starlight WizMind Network PTZ Camera, NTSC |
| Accessories           | DC36V/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:



DC36V/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])

