

# DH-SD8A440WA-HNF

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



- 1/1.8" CMOS
- Powerful 40x optical zoom
- Starlight 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

#### 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.

#### 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  $\pm 25\%$  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             | 1/1.8" CMOS  |
| Effective Pixels         | 2560(H) x 1440(V), 4 Megapixels                              |
| Scanning System          | Progressive  |
| Electronic Shutter Speed | 1/1s~1/30,000s   |
| Minimum Illumination     | Color: 0.001Lux@F1.4; B/W: 0.0001Lux@F1.4; 0Lux@F1.4 (IR on) |
| IR Distance              | Distance up to 500m (1640ft)                                 |
| 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°; V: 36° ~ 1.3°; D: 68.18° ~ 2.62° |
| Optical Zoom         | 40x   |
| Focus Control        | Auto/Manual                                       |
| Iris 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    |
|---------------|---------------|--------------|-------------|
| 3030m(9941ft) | 1204m(3950ft) | 606m(1988ft) | 303m(994ft) |

### PTZ

|                      |   |
|----------------------|---|
| Pan/Tilt Range       | Pan: 0° ~ 360° endless; Tilt: -30° ~ 90°, auto flip 180°                            |
| Manual Control Speed | Pan: 0.1° ~200° /s; Tilt: 0.1° ~100° /s   |
| Preset Speed         | Pan: 200° /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.<br>Support alarm triggering by target types(human and vehicle)<br>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                           | 4M(2592×1520)/3M(2048×1536)/1080P(1920×1080)/ 1.3M(1280×960)/ 720P(1280×720)/ D1(704×576/ 704×480)/CIF(352×288/352×240)              |
| Frame Rate                           | Main stream:<br>4M/3M/1080P/1.3M/720P(1~25/30fps)<br>Sub stream1: D1/CIF(1 ~ 25/30fps)<br>Sub stream2: 1080P/1.3M/720P(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 / Manual  |
| Noise Reduction                      | Ultra DNR (2D/3D)  |
| 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 |
|-------------|--|

### 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, RTSP, 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  |

**Certifications**

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

**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, 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   | Φ262(mm) x 415.6 (mm) |
| Net Weight   | 8.5kg(18.74lb)        |
| Gross Weight | 13.5kg(29.76lb)       |

**Ordering Information**

| Type           | Part Number       | Description   |
|----------------|-------------------|---|
| 2MP PTZ Camera | DH-SD8A240WA-HNF  | 2MP 40x Starlight IR PTZ AI Network Camera, WDR, PAL  |
|                | DH-SD8A240WAN-HNF | 2MP 40x Starlight IR PTZ AI Network Camera, WDR, NTSC |
|                | SD8A240WA-HNF     | 2MP 40x Starlight IR PTZ AI Network Camera, WDR, PAL  |
|                | SD8A240WAN-HNF    | 2MP 40x Starlight IR PTZ AI Network Camera, WDR, NTSC |
| Accessories    | PFB306W           | Wall Mount  |
|                | AC24V/3A          | Power Adapter   |
|                | PFA118            | Mount Adapter   |
|                | PFB710C           | Ceiling Mount   |
|                | PFA150            | Pole Mount  |
|                | PFB301S-E         | Plane Mount   |

**Accessories**

Included:



PFB306W  
Wall Mount



AC24V/3A  
Power Adapter

Optional:



PFA118  
Mount Adapter



PFB710C  
Ceiling Mount



PFA150  
Pole Mount



PFB301S-E  
Plane Mount

| Wall Mount     | Ceiling Mount  |
|----------------|----------------|
| PFB306W        | PFA118+PFB710C |
|                |                |
| Pole Mount     | Plane Mount    |
| PFB306W+PFA150 | PFB301S-E      |
|                |                |

**Dimensions (mm)**

