

# DH-IPC-HFW3849E-S-IL

8MP Smart Dual Light Fixed-focal Bullet WizSense Network Camera



Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

## Series Overview

With advanced deep learning algorithm, Dahua WizSense 3 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

## Functions

### Xinghan Large-Scale AI Models-Vision

Xinghan Large-Scale AI Models-Vision seamlessly expands the storage and operational capacity of algorithmic models through the powerful integration of edge AI model algorithms and NPU computing power. Engineered with a lightweight transformer architecture and enhanced by model distillation and quantization techniques, it optimizes the computing power consumption of ViT operators. This enables the system to collaborate on multiple tasks simultaneously through joint inference between small and large models optimized for edge devices.

- 8-MP 1/2.7" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 8 MP (3840 × 2160)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in multi-core light, the max. IR distance is 40 m and the max. warm light distance is 40 m.
- ROI, Super AI Coding (H.265/H.264), flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Intelligent monitoring: Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human), stay detection, loitering detection; face detection (full image).
- Abnormality detection: Motion detection, video tampering, scene changing, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Supports max. 512 G Micro SD card; built-in Mic.
- 12 VDC/PoE power supply.
- IP67 protection.
- SMD 4.0.
- Supports AI SSA.
- SMD area can be set in warm light areas that support triggering alarms.



### Perimeter Protection

With deep learning algorithm, Dahua Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion, fast moving, parking detection, loitering detection and gathering detection) are largely reduced.

### Smart Dual Light

Dahua Smart Dual Light technology adopts smart algorithm to detect targets. Usually, the IR illuminator is on at night; when the target appears in the monitoring area, the white light is on, and the camera records the full-color video and information of key events. That is, the camera links snapshot and video with full-color image. When the target is out of the monitoring area, the white light is off and the IR illuminator is on, which reduces light pollution efficiently.

## Super AI Coding

With advanced AI object detection and scene recognition technology, Super AI Coding integrates ROI, BAE, and DFE to achieve higher encoding efficiency than H.265 and H.264 while effectively reducing storage and transmission costs without compromising video quality.

## Protection (IP67, Wide Voltage)

IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can work normally after soaking in 1 m deep water for 30 minutes.

Wide voltage: The camera allows  $\pm 30\%$  (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

## Technical Specification

### Camera

|                            |                                                                                                                                                        |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor               | 1/2.7" CMOS                                                                                                                                            |
| Max. Resolution            | 3840 (H) × 2160 (V)                                                                                                                                    |
| Scanning System            | Progressive                                                                                                                                            |
| Electronic Shutter Speed   | Auto/Manual 1/3 s–1/100,000 s                                                                                                                          |
| Min. Illumination          | 0.007 lux@F1.4 (Color, 30 IRE)<br>0.0007 lux@F1.4 (B/W, 30 IRE)<br>0 lux (Illuminator on)                                                              |
| S/N Ratio                  | >56 dB                                                                                                                                                 |
| Illumination Distance      | 2.8 mm: Up to 30 m (98.43 ft) (IR)<br>Up to 30 m (98.43 ft) (Warm light)<br>3.6 mm: Up to 40 m (131.23 ft) (IR)<br>Up to 40 m (131.23 ft) (Warm light) |
| Illuminator On/Off Control | Auto; Manual                                                                                                                                           |
| Illuminator Number         | 2 (Multi-core (IR + warm) light)                                                                                                                       |
| Angle Adjustment           | Pan: 0°–360°<br>Tilt: 0°–90°<br>Rotation: 0°–360°                                                                                                      |

### Lens

|                      |                                                                                                                                                                                                |                                                                     |                        |                       |                      |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------|-----------------------|----------------------|
| Lens Type            |                                                                                                                                                                                                | Fixed-focal                                                         |                        |                       |                      |
| Lens Mount           |                                                                                                                                                                                                | M12                                                                 |                        |                       |                      |
| Focal Length         |                                                                                                                                                                                                | 2.8 mm; 3.6 mm                                                      |                        |                       |                      |
| Max. Aperture        |                                                                                                                                                                                                | F1.4                                                                |                        |                       |                      |
| Field of View        |                                                                                                                                                                                                | 2.8 mm: H: 110°; V: 58°; D: 132°<br>3.6 mm: H: 86°; V: 49°; D: 100° |                        |                       |                      |
| Iris Control         |                                                                                                                                                                                                | Fixed                                                               |                        |                       |                      |
| Close Focus Distance |                                                                                                                                                                                                | 2.8 mm: 1.4 m (4.59 ft)<br>3.6 mm: 1.9 m (6.23 ft)                  |                        |                       |                      |
| DORI Distance        | Lens                                                                                                                                                                                           | Detect                                                              | Observe                | Recognize             | Identify             |
|                      | 2.8 mm                                                                                                                                                                                         | 84.8 m<br>( 278.22 ft)                                              | 33.9 m<br>( 111.22 ft) | 17.0 m<br>( 55.77 ft) | 8.5 m<br>( 27.89 ft) |
|                      | 3.6 mm                                                                                                                                                                                         | 98.7 m<br>( 323.82 ft)                                              | 39.5 m<br>( 129.59 ft) | 19.7 m<br>( 64.63 ft) | 9.9 m<br>( 32.48 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. |                                                                     |                        |                       |                      |

|               |                                                                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DORI Distance | The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool. |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Intelligence

|                             |                                                                                                                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IVS (Perimeter Protection)  | Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human), stay detection, loitering detection. Offers Perimeter Protection Large-Scale AI Models to extend the target detection range and reduce the rate of false alarm.   |
| SMD                         | SMD 4.0                                                                                                                                                                                                                                                                           |
| AcuPick                     | Uses deep learning algorithms and works with back-end devices to accurately match targets, such as people and motor vehicles, and search through live and recorded videos to quickly locate targets.                                                                              |
| AI SSA                      | Adopt deep learning algorithms to adjust the parameters of the image to suit the conditions.                                                                                                                                                                                      |
| Face Detection (Full Image) | Face detection; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face snapshot set as face or one-inch photo; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting. |
| Smart Search                | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos                                                                                                                                                                   |

## Video

|                             |                                                                                                                                                                                                                                                                             |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Compression           | H.265; H.264; H.264H; H.264B; MJPEG (Only supported by sub stream)                                                                                                                                                                                                          |
| AI Coding                   | Super AI Coding (H.265); Super AI Coding (H.264)<br>*Includes smart codec technology, Smart H.265+ and Smart H.264+                                                                                                                                                         |
| Video Frame Rate            | Main stream: 3840 × 2160@(1–25/30 fps)<br>Sub stream: 1920 × 1080@(1–25/30 fps)<br>Third stream: 1920 × 1080@(1–25/30 fps)<br>*The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity. |
| Streaming Capability        | 3 streams                                                                                                                                                                                                                                                                   |
| Resolution                  | 8M (3840 × 2160); 6M (3200 × 1800); 5M (3072 × 1728); 4M (2688 × 1520/2560 × 1440); 3M (2304 × 1296); 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)                                                          |
| Bit Rate Control            | VBR; CBR; ABR                                                                                                                                                                                                                                                               |
| Video Bit Rate              | H.264: 3 kbps–16384 kbps;<br>H.265: 3 kbps–16384 kbps                                                                                                                                                                                                                       |
| Day/Night                   | Auto(ICR)/Color/B/W                                                                                                                                                                                                                                                         |
| BLC                         | Yes                                                                                                                                                                                                                                                                         |
| HLC                         | Yes                                                                                                                                                                                                                                                                         |
| WDR                         | 120 dB                                                                                                                                                                                                                                                                      |
| Scene Self-adaptation (SSA) | Yes                                                                                                                                                                                                                                                                         |
| White Balance               | Auto; Natural; Street Lamp; Outdoor; Manual; Regional Custom                                                                                                                                                                                                                |
| Gain Control                | Manual; Auto                                                                                                                                                                                                                                                                |

|                          |                                                                           |
|--------------------------|---------------------------------------------------------------------------|
| Noise Reduction          | 3D NR                                                                     |
| Motion Detection         | OFF/ON (4 areas, rectangular)                                             |
| Region of Interest (RoI) | Yes (4 areas)                                                             |
| Smart Illumination       | Yes                                                                       |
| Smart Dual Light         | Yes                                                                       |
| Defog                    | Yes                                                                       |
| Image Rotation           | 0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower) |
| Mirror                   | Yes                                                                       |
| Privacy Masking          | 8 areas                                                                   |
| LDC                      | Yes                                                                       |

## Audio

|                   |                                    |
|-------------------|------------------------------------|
| Built-in MIC      | Yes, built-in Mic                  |
| Audio Compression | PCM; G.711a; G.711Mu; G.726; G.723 |

## Alarm

|             |                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Event | No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; stay detection; loitering detection; face detection (full image); scene changing; audio detection; voltage detection; SMD; security exception |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Network

|                     |                                                                                                                                                                                                                |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Port        | RJ-45 (10/100 Base-T)                                                                                                                                                                                          |
| SDK and API         | Yes                                                                                                                                                                                                            |
| Network Protocol    | IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; SNMP; P2P                                                  |
| Interoperability    | ONVIF (Profile S & Profile G & Profile T & Profile M); CGI                                                                                                                                                     |
| User/Host           | 20 (Total bandwidth: 64 M)                                                                                                                                                                                     |
| Storage             | FTP; SFTP; Micro SD card (support max. 512 GB); NAS                                                                                                                                                            |
| Browser             | IE: IE11;<br>Chrome;<br>Firefox                                                                                                                                                                                |
| Management Software | Smart PSS Lite; DSS; DMSS; DoLynk Care                                                                                                                                                                         |
| Mobile Client       | iOS;Android                                                                                                                                                                                                    |
| Security            | Digest;WSSE;Account logout;Security logs;IP/MAC filtering;Generation and importing of X.509 certification;syslog;HTTPS;802.1x;Trusted boot;Trusted execution;Trusted upgrade;Session security;Security warning |

## Certification

|                |                                                                                  |
|----------------|----------------------------------------------------------------------------------|
| Certifications | CE-LVD: EN62368-1;<br>CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU |
|----------------|----------------------------------------------------------------------------------|

## Power

|              |                              |
|--------------|------------------------------|
| Power Supply | 12 VDC (±30%); PoE (802.3af) |
|--------------|------------------------------|

|                   |                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Dual Power Backup | When the power adapter and PoE provide power at the same time, disconnect one of them. The device will continue to work, but will not restart. |
| Power Consumption | Basic: 3.7 W (12 VDC); 5.4 W (PoE);<br>Max.: 8 W (12 VDC); 10 W (PoE) (H.265 + WDR + warm light + intelligence on)                             |

## Environment

|                       |                                                                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | −40 °C to +60 °C (−40 °F to +140 °F)                                                                                                                         |
| Operating Humidity    | ≤95% (RH), non-condensing                                                                                                                                    |
| Storage Temperature   | −40 °C to +60 °C (−40 °F to +140 °F)                                                                                                                         |
| Storage Humidity      | ≤95% (RH), non-condensing                                                                                                                                    |
| Protection            | IP67                                                                                                                                                         |
| Anti-corrosion Level  | Basic Protection<br>*The products are designed for general use and are applicable even in areas with no specific requirements for anti-corrosion protection. |

## Structure

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Casing Material    | Metal                                                               |
| Product Dimensions | 192.7 mm × 70.5 mm × 66.4 mm (7.59" × 2.78" × 2.61")<br>(L × W × H) |
| Net Weight         | 610 g (1.34 lb)                                                     |
| Gross Weight       | 770 g (1.70 lb)                                                     |

## Ordering Information

| Type                   | Model                | Description                                                     |
|------------------------|----------------------|-----------------------------------------------------------------|
| IP CAMERA              | DH-IPC-HFW3849E-S-IL | 8MP Smart Dual Light Fixed-focal Bullet WizSense Network Camera |
|                        | DH-PFA151            | Corner Mount Bracket                                            |
|                        | DH-PFA130-E          | Water-proof Junction Box                                        |
|                        | G3416GW              | G3/4" Water Joint                                               |
| Accessories (Optional) | DH-PFA157            | Pole Mount Bracket                                              |
|                        | DH-PFM320-010EN      | DC12V 1A Power Adapter                                          |
|                        | DH-PFM325D-1210EN    | DC12V 1A Power Adapter                                          |
|                        | DH-PFM325D-1215EN    | DC12V 1.5A Power Adapter                                        |
|                        | DH-PFM320-020EN      | DC12V 2A Power Adapter                                          |
|                        | DH-PFM320D-EN        | DC12V 2A Power Adapter                                          |
|                        | PFM900-E             | Integrated Mount Tester                                         |
|                        | DHI-TF-P100/512GB    | MicroSD Card                                                    |

## Accessories

## Dimensions (mm[inch])

Optional:



DH-PFA151  
Corner Mount Bracket



DH-PFA130-E  
Water-proof Junction Box



G3416GW  
G3/4" Water Joint



DH-PFA157  
Pole Mount Bracket



DH-PFM320-010EN  
DC12V 1A Power Adapter



DH-PFM325D-1210EN  
DC12V 1A Power Adapter



DH-PFM325D-1215EN  
DC12V 1.5A Power  
Adapter



DH-PFM320-020EN  
DC12V 2A Power Adapter



DH-PFM320D-EN  
DC12V 2A Power Adapter



PFM900-E  
Integrated Mount Tester



DHI-TF-P100/512GB  
MicroSD Card

