# DH-IPC-HDBW3849R-ZS-IL

## 8MP Smart Dual Light Vari-focal Dome 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.

**SMD 4.0**

Dahua Smart Motion Detection technology works with intelligent algorithms to classify targets that trigger motion detection alarms. It filters out objects that are not targets, such as small and large animals, to avoid triggering false alarms. With an AI NVR, Quick Pick technology becomes available, allowing you to easily search for and pick out human and vehicle targets from SMD event videos, prioritizing the highest matches.

**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) are largely reduced.

**Smart H.265+ & Smart H.264+**

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

- 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 50 m and the max. warm light distance is 50 m.
- ROI, SMART H.264+/H.265+, AI H.264/H.265, 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 function 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, IK10 protection.
- SMD 4.0.
- Supports AI SSA.
- SMD area can be set in warm light areas that support triggering alarms.




**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.

**Protection (IP67, IK10, 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.
IK10: The enclosure can stand the punch more than 5 times from a 5 kg hammer falling from a height of 40 cm (Impact energy is 20J).
Wide voltage: The camera allows ±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) |
| ROM | 256 MB |
| RAM | 1 GB |
| 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 | Up to 50 m (164.04 ft) (IR)<br>Up to 50 m (164.04 ft) (Warm light) |
| Illuminator On/Off Control | Auto; Manual |
| Illuminator Number | 4 (Multi-core (IR + warm) light) |
| Angle Adjustment | Pan: 0°–355°; Tilt: 0°–80°; Rotation: 0°–355° |

### Lens

| | |
|---|---|
| Lens Type | Motorized vari-focal |
| Lens Mount | ϕ14 |
| Focal Length | 2.7 mm-13.5 mm |
| Max. Aperture | F1.4 |
| Field of View | H: 114°–32°; V: 58°–17°; D: 138°–36° |
| Iris Control | Fixed |
| Close Focus Distance | 0.1 m (0.33 ft) |

| | Lens | Detect | Observe | Recognize | Identify |
|---|---|---|---|---|---|
| DORI Distance | W | 85.3 m (279.86 ft) | 34.0 m (111.55 ft) | 17.1 m (56.10 ft) | 8.5 m (27.89 ft) |
| | T | 280.0 m (918.64 ft) | 112.0 m (367.45 ft) | 56.0 m (183.73 ft) | 28.0 m (91.86 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. | | | | |

### Intelligence

| | |
|---|---|
| IVS (Perimeter Protection) | Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human), stay detection, loitering detection. |
| 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. |
| 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 |
| 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 the sub stream) |
| AI Coding | AI H.265; AI H.264<br>*includes SmartCodec Technology,Smart H.264+ /H.265+ |
| Video Frame Rate | Main stream: 3840 × 2160@(1 fps–25/30 fps)<br>Sub stream: 1920 × 1080@(1 fps–25/30 fps)<br>Third stream: 1920 × 1080@(1 fps–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. |
| Stream 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 | Auto |
| Noise Reduction | 3D NR |
| Motion Detection | OFF/ON (4 areas, rectangular) |
| Image Stabilization | Electronic Image Stabilization (EIS) |
| Region of Interest (RoI) | Yes (4 areas) |
| Smart Illumination | Yes |
| Smart Dual Light | Yes |
| Defog | Yes |
| AFSA | Yes |
| Image Rotation | 0°/90°/180°/270° (support 90°/270° with 2688 × 1520 resoluton and lower) |
| Mirror | Yes |
| Privacy Masking | 8 areas |

### Audio

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

## Alarm

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|---|---|
| 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; defocus 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 G); NAS |
| Browser | IE: IE11<br>Chrome<br>Firefox |
| Management Software | SmartPSS Lite; DSS; DMSS |
| Mobile Client | IOS; Android |
| Security | Digest; WSSE; Account lockout; 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

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|---|---|
| Power Supply | 12 VDC/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: 3.1 W (12 VDC); 3.9 W (PoE)<br>Max. (H.265 + WDR + warm light + intelligence on): 9.0 W (12 VDC); 11.2 W (PoE) |

## Environment

| | |
|---|---|
| Operating Temperature | –30 °C to +60 °C (–22 °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; IK10 |

## Structure

| | |
|---|---|
| Casing | Metal |
| Product Dimensions | 94.0 mm × Φ122.0 mm (3.70" × Φ4.80") |
| Net Weight | 560 g (1.23 lb) |
| Gross Weight | 740 g (1.63 lb) |

## Ordering Information

| Type | Model | Description |
|---|---|---|
| 8MP Camera | DH-IPC-HDBW3849R-ZS-IL | 8MP Smart Dual Light Vari-focal Dome WizSense Network Camera |
| Accessories (Optional) | DH-PFA137 | Junction Box Bracket |
| | DH-PFA109 | Mount Adapter |
| | DH-PFB220C | Ceiling Mount Bracket |
| | DH-PFB5203C | In Ceiling Mount Bracket |
| | DH-PFB2203W | Wall Mount Bracket |
| | DH-PFB305W | Wall Mount Bracket |
| | DH-PFA156 | Pole Mount Bracket |
| | DH-PFA150 | Pole Mount Bracket |
| | DH-PFA151 | Corner Mount Bracket |
| | DH-PFM321-EN | DC12V 1A power adapter |
| | DH-PFM321D-EN | DC12V 1A power adapter |
| | DH-PFM320D-EN | DC12V 2A power adapter |
| | PFM900-E | Integrated Mount Tester |
| | DHI-TF-P100/512GB | MicroSD Card |

## Accessories

Optional:



DH-PFA137
Junction Box Bracket



DH-PFA109
Mount Adapter



DH-PFB220C
Corner Mount Bracket



DH-PFB5203C
In Ceiling
Mount Bracket



DH-PFB2203W
Wall Mount Bracket



DH-PFB305W
Wall Mount Bracket



DH-PFA156
Pole Mount Bracket



DH-PFA150
Pole Mount Bracket



DH-PFA151
Corner Mount Bracket



DH-PFM321-EN
DC12V 1A power adapter



DH-PFM321D-EN
DC12V 1A power adapter



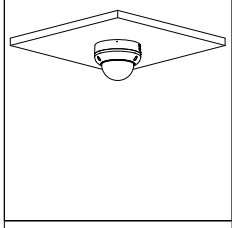
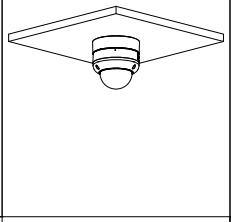
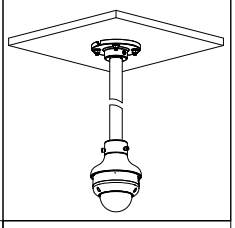
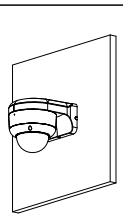
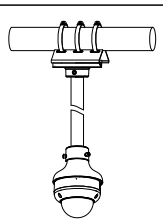
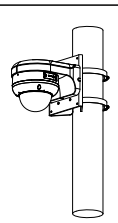
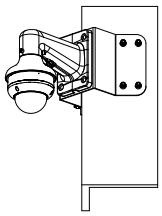
DH-PFM320D-EN
DC12V 2A power adapter



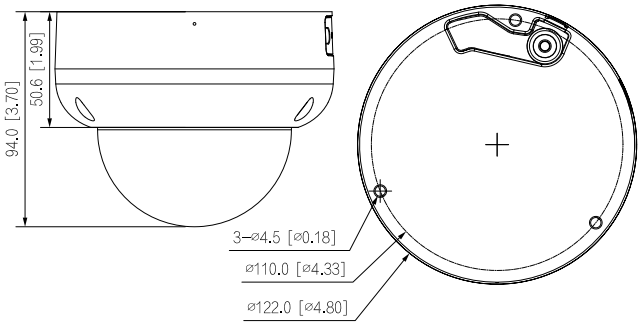
PFM900-E
Integrated Mount Tester



DHI-TF-P100/512GB
MicroSD Card

| Ceiling Mount | Junction Mount | Ceiling Mount |
|---|---|---|
|  |  |  |
| **Wall Mount** | **Pole Mount(Horizontal)** | **Pole Mount(Vertical)** |
|  |  |  |
| **Corner Mount** | | |
|  | | |

## Dimensions (mm[inch])




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