

# DH-IPC-HFW21249T-(A)S-IL

12MP Smart Dual Light Fixed-focal Bullet WizSense Network Camera



**WizSense**

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 2 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

### AI-ISP

With AI ISP technology, the camera is able to easily adapt to scenes, producing high quality images that reveal the fine details of targets.

### 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.

### SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

- 12-MP 1/2.5" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 12 MP (4480 × 2512)@15 fps, and supports 5 MP (3072 × 1728)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in multi-core light, the max. IR distance is 30 m and the max. warm light distance is 30 m.
- Rotation mode, DWDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Intelligent monitoring: Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human).
- Abnormality detection: Motion detection, video tampering, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Alarm: 1 in, 1 out(Only - AS supports); audio: 1 in, 1 out(Only - AS supports); supports max. 256 G Micro SD card; built in Mic.
- 12 VDC/PoE power supply, easy for installation.
- IP67, IK10 (optional) protection.
- SMD Plus.



### 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.

### 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 ±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               | 1/2.5" CMOS                                                                               |
| Max. Resolution            | 4480 (H) × 2512 (V)                                                                       |
| ROM                        | 128 MB                                                                                    |
| RAM                        | 512 MB                                                                                    |
| Scanning System            | Progressive                                                                               |
| Electronic Shutter Speed   | Auto/Manual 1/3 s–1/100,000 s                                                             |
| Min. Illumination          | 0.008 lux@F1.6 (Color, 30 IRE)<br>0.0008 lux@F1.6 (B/W, 30 IRE)<br>0 lux (Illuminator on) |
| S/N Ratio                  | >56 dB                                                                                    |
| Illumination Distance      | Up to 30 m (98.43 ft) (Warm light)<br>Up to 30 m (98.43 ft) (IR)                          |
| Illuminator On/Off Control | Auto; Manual                                                                              |
| Illuminator Number         | 4 (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        | F1.6                                                                                                                                                                                                                                                                                                                                                                            |                        |                       |                      |                      |
| Field of View        | 2.8 mm: H: 112°; V: 58°; D: 136°<br>3.6 mm: H: 95°; V: 53°; D: 109°                                                                                                                                                                                                                                                                                                             |                        |                       |                      |                      |
| Iris Control         | Fixed                                                                                                                                                                                                                                                                                                                                                                           |                        |                       |                      |                      |
| Close Focus Distance | 2.8 mm: 3.5 m (11.48 ft)<br>3.6 mm: 4 m (13.12 ft)                                                                                                                                                                                                                                                                                                                              |                        |                       |                      |                      |
| DORI Distance        | Lens                                                                                                                                                                                                                                                                                                                                                                            | Detect                 | Observe               | Recognize            | Identify             |
|                      | 2.8 mm                                                                                                                                                                                                                                                                                                                                                                          | 98.9 m<br>(324.48 ft)  | 39.6 m<br>(129.92 ft) | 19.8 m<br>(64.96 ft) | 9.9 m<br>(32.48 ft)  |
|                      | 3.6 mm                                                                                                                                                                                                                                                                                                                                                                          | 105.4 m<br>(345.80 ft) | 42.2 m<br>(138.45 ft) | 21.1 m<br>(69.23 ft) | 10.5 m<br>(34.45 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)  |
| SMD                        | SMD Plus                                                                                                        |
| 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) |
| Smart Codec       | Smart H.265+; Smart H.264+                                         |

|                          |                                                                                                                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Frame Rate         | Main stream: 4480 × 2512@(1–15 fps)/3072 × 1728@(1–25/30 fps)<br>sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 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     | 2 streams                                                                                                                                                                                                                                                               |
| Resolution               | 12M (4480 × 2512); 8M (3840 × 2160); 6M (3072 × 2048); 5M (3072 × 1728/2880 × 1620); 4M (2688 × 1520); 3M (2048 × 1536/2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)    |
| Bit Rate Control         | VBR; CBR                                                                                                                                                                                                                                                                |
| Video Bit Rate           | H.264: 32 kbps–8192 kbps;<br>H.265: 12 kbps–8192 kbps                                                                                                                                                                                                                   |
| Day/Night                | Auto(ICR)/Color/B/W                                                                                                                                                                                                                                                     |
| BLC                      | Yes                                                                                                                                                                                                                                                                     |
| HLC                      | Yes                                                                                                                                                                                                                                                                     |
| WDR                      | DWDR                                                                                                                                                                                                                                                                    |
| White Balance            | Auto; natural; street lamp; outdoor; manual; regional custom                                                                                                                                                                                                            |
| Gain Control             | Auto/Manual                                                                                                                                                                                                                                                             |
| 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                                                                                                                                                                                                                                                                     |
| Image Rotation           | 0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)                                                                                                                                                                                               |
| Mirror                   | Yes                                                                                                                                                                                                                                                                     |
| Privacy Masking          | 4 areas                                                                                                                                                                                                                                                                 |
| LDC                      | Yes                                                                                                                                                                                                                                                                     |

### Audio

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

### Alarm

|             |                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Event | No SD card; SD card full; SD card error; network disconnecton; IP conflict; illegal access; moton detecton; video tampering; tripwire; intrusion; audio detecton; voltage detecton; SMD; security excepton; external alarm(Only - AS supports) |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 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; PPPoE; P2P; Bonjour; Auto Registration |

|                     |                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interoperability    | ONVIF (Profile S & Profile G & Profile T); CGI                                                                                                                                                                               |
| User/Host           | 20 (Total bandwidth: 48 M)                                                                                                                                                                                                   |
| Storage             | FTP; SFTP; Micro SD card (support max. 256 GB); NAS                                                                                                                                                                          |
| Browser             | IE;<br>Chrome;<br>Firefox                                                                                                                                                                                                    |
| Management Software | Smart PSS Lite; DSS; DMSS                                                                                                                                                                                                    |
| Mobile Client       | Android;iOS                                                                                                                                                                                                                  |
| Security            | Session security; WSSE; Account lockout; Trusted execution; Generation and importing of X.509 certification; 802.1x; Security logs; Digest; Security warning; IP/MAC filtering; HTTPS; Trusted upgrade; syslog; Trusted boot |

## Certification

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

## Port

|              |                                                              |
|--------------|--------------------------------------------------------------|
| Audio Input  | 1 channel (RCA port)(Only- AS supports)                      |
| Audio Output | 1 channel (RCA port)(Only- AS supports)                      |
| Alarm Input  | 1 channel in: wet contact, 5 mA 3–5 VDC(Only- AS supports)   |
| Alarm Output | 1 channel out: wet contact, 300 mA 12 VDC(Only- AS supports) |

## Power

|                   |                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|
| Power Supply      | 12 VDC (±30%); PoE (802.3af)                                                                                                 |
| Power Consumption | Basic: 3.1 W (12 VDC); 3.7 W (PoE);<br>Max.: 10.1 W (12 VDC); 10.9 W (PoE) (H.265 + intelligence on + illuminator intensity) |

## 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; IK10 (optional)                |

## Structure

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Casing Material    | Metal                                                               |
| Product Dimensions | 238.5 mm × 90.7 mm × 90.7 mm (9.39" × 3.57" × 3.57")<br>(L × W × H) |
| Net Weight         | -S: 0.62 kg (1.37 lb)<br>-AS: 0.72 kg (1.59 lb)                     |
| Gross Weight       | -S: 0.87 kg (1.92 lb)<br>-AS: 0.97 kg (2.14 lb)                     |

## Ordering Information

| Type                   | Model                  | Description                                                      |
|------------------------|------------------------|------------------------------------------------------------------|
| 12MP Camera            | DH-IPC-HFW21249T-S-IL  | 12MP Smart Dual Light Fixed-focal Bullet WizSense Network Camera |
|                        | DH-IPC-HFW21249T-AS-IL | 12MP Smart Dual Light Fixed-focal Bullet WizSense Network Camera |
| Accessories (Optional) | PFA151                 | Corner Mount Bracket                                             |
|                        | G3416GW                | G3/4" Water Joint                                                |
|                        | PFA130-E               | Water-proof Junction Box                                         |
|                        | PFA152-E               | Pole Mount Bracket                                               |
|                        | PFA135                 | Junction Box                                                     |
|                        | PFM321-EN              | DC12V 1A power adapter                                           |
|                        | PFM321D-EN             | DC12V 1A power adapter                                           |
|                        | PFM320D-EN             | DC12V 2A power adapter                                           |
|                        | PFM900-E               | Integrated Mount Tester                                          |
|                        | TF-P100/256GB          | MicroSD Card                                                     |
|                        | TF-W100/256GB          | MicroSD Card                                                     |

## Accessories

Optional:



PFA151  
Corner Mount Bracket



G3416GW  
G3/4" Water Joint



PFA130-E  
Water-proof Junction Box



PFA152-E  
Pole Mount Bracket



PFA135  
Junction Box



PFM321-EN  
DC12V1A Power Adapter



PFM321D-EN  
DC12V1A Power Adapter



PFM320D-EN  
12 VDC 2A Power Adapter



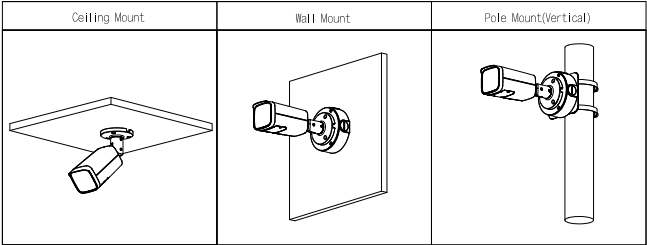
PFM900-E  
Integrated Mount Tester



TF-P100/256GB  
MicroSD Card



TF-W100/256GB  
MicroSD Card



Dimensions (mm[inch])

