

# DH-IPC-HDW21249T-S-IL

12MP Smart Dual Light Fixed-focal Eyeball 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.

- 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.
- Supports max. 256 G Micro SD card; built in Mic
- 12 VDC/PoE power supply, easy for installation.
- IP67 protection.
- SMD Plus



### 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.

### 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                        | 256 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         | 2 (Multi-core (IR + warm) light)                                                          |
| Angle Adjustment           | Pan: 0°–360°<br>Tilt: 0°–78°<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)                  |

|               | Lens                                                                                                                                                                                                                                                                                                                                                                            | Detect                  | Observe                | Recognize             | Identify              |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------|-----------------------|
| DORI Distance | 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 disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; 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; 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       | 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

|                   |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| Power Supply      | 12 VDC (±30%); PoE (802.3af)                                                                                               |
| Power Consumption | Basic: 2.3 W (12 VDC); 3.0 W (PoE);<br>Max.: 6.2 W (12 VDC); 7.2 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                                 |

### Structure

|                    |                                       |
|--------------------|---------------------------------------|
| Casing Material    | Inner core: Metal;<br>Cover: Plastic  |
| Product Dimensions | 109.5 mm × Φ109.9 mm (4.31" × Φ4.33") |
| Net Weight         | 0.38 kg (0.84 lb)                     |
| Gross Weight       | 0.52 kg (1.15 lb)                     |

### Ordering Information

| Type                   | Model                 | Description                                                       |
|------------------------|-----------------------|-------------------------------------------------------------------|
| IP CAMERA              | DH-IPC-HDW21249T-S-IL | 12MP Smart Dual Light Fixed-focal Eyeball WizSense Network Camera |
| Accessories (Optional) | DH-PFA109             | Mount Adapter                                                     |
|                        | DH-PFB220C            | Ceiling Mount Bracket                                             |
|                        | DH-PFB305W            | Wall Mount Bracket                                                |
|                        | DH-PFA151             | Corner Mount Bracket                                              |

| Type | Model             | Description             |
|------|-------------------|-------------------------|
|      | DH-PFA150         | Pole Mount Bracket      |
|      | DH-PFA152-E       | Pole Mount Bracket      |
|      | DH-PFB205W-E      | Wall Mount Bracket      |
|      | DH-PFA13G         | Junction Box            |
|      | DH-PFM321-EN      | DC12V1A power adapter   |
|      | DH-PFM320D-EN     | DC12V2A power adapter   |
|      | PFM900-E          | Integrated Mount Tester |
|      | DHI-TF-W100-256GB | MicroSD Card            |
|      | DHI-TF-P100/256GB | MicroSD Card            |

### Accessories

#### Optional:



DH-PFA109  
Mount Adapter



DH-PFA13G  
Junction Box



DH-PFA150  
Pole Mount Bracket



DH-PFA151  
Corner Mount Bracket



DH-PFA152-E  
Pole Mount Bracket



DH-PFB205W-E  
Wall Mount Bracket



DH-PFB220C  
Ceiling Mount Bracket



DH-PFB305W  
Wall Mount Bracket



DH-PFM320D-EN  
DC12V2A power adapter



DH-PFM321-EN  
DC12V1A power adapter



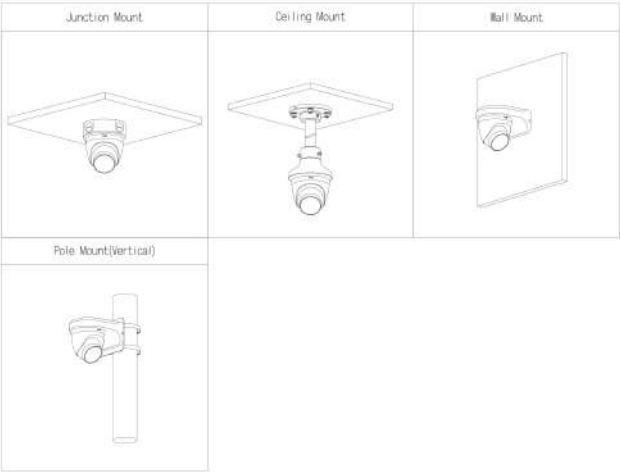
DHI-TF-P100/256GB  
MicroSD Card



DHI-TF-W100-256GB  
MicroSD Card



PFM900-E  
Integrated Mount Tester



Dimensions (mm[inch])

