

# DH-IPC-HFW5559E1-Z5E-IL-ATC-LE

5MP Smart Dual Light Anti-Corrosion Vari-focal Bullet WizMind Network Camera



Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, IVSS, NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for verticals.

## Series Overview

With its deep learning algorithms, the WizMind 5 Series camera offers advanced analytical capabilities for both audio and video. It integrates intelligent features such as video metadata, AcuPick, face detection, perimeter protection, and people counting. Powered by the Xinghan Large-Scale AI Models-Vision, the camera excels in object detection, recognition, and scene adaptation. Equipped with AI-ISP imaging technology, it offers enhanced night vision performance. The series is designed for durability, being dust-proof, waterproof, and vandal-proof, in compliance with IP67 and IK10 standards, though support for these certifications may vary across models.

## Functions

### Enhanced Anti-Corrosion Aluminum Alloy

The camera is engineered with an innovative alloy structure from which impurities have been removed. Its electrochemical corrosion resistance is significantly higher than that of conventional aluminum alloys. And its dual-reinforced surface forms a dense protective barrier. Certified to C5-H and NEMA 4X standards, it is ideal for high-humidity and high-salinity environments such as ports, islands, cross sea bridges, coastal buildings, or areas prone to sulfidation, nitridation, or acid rain.

- Enhanced anti-corrosion aluminum alloy enclosure safeguards camera in corrosive environments, ensuring great reliability and an extended service life.
- 5-MP 1/2.7" CMOS image sensor, low luminance, and high definition image.
- Outputs max 5 MP (2960 × 1668)@25/30 fps.
- Built-in multi-core light, the max IR distance is 120 m and the max warm light distance is 80 m.
- ROI, SVC, SMART H.264+/H.265+, AI H.264/H.265, encoding after filter, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- With deep learning algorithm, it supports: AcuPick, IVS, face detection, and people counting, etc.
- Alarm: 2 in, 1 out; audio: 1 in, 1 out; supports max 1 TB Micro SD card; built-in Mic.
- 12 VDC/PoE power supply; ePoE.
- IP67 and IK10 protection.



### 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.

### 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.

### AcuPick

This industry-leading search technology effectively utilizes both front-end and back-end intelligence to help with searching through massive

video data to quickly and conveniently locate targets with greater precision.

### 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  $\pm 30\%$  (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            | 2960 (H) $\times$ 1668 (V)                                                                 |
| Scanning System            | Progressive                                                                                |
| Electronic Shutter Speed   | Auto/Manual 1/3 s–1/100,000 s                                                              |
| Min. Illumination          | 0.0009 lux@F1.6 (Color, 30 IRE)<br>0.0005 lux@F1.6 (B/W, 30 IRE)<br>0 lux (Illuminator on) |
| S/N Ratio                  | > 56 dB                                                                                    |
| Illumination Distance      | Up to 120 m (393.70 ft) (IR)<br>Up to 80 m (262.47 ft) (Warm light)                        |
| Illuminator On/Off Control | Auto; Manual; Zoomprio                                                                     |
| Illuminator Number         | 4 (Multi-core (IR + warm) light)                                                           |
| Angle Adjustment           | Pan: 0°–360°<br>Tilt: 0°–90°<br>Rotation: 0°–360°                                          |

### Lens

|                      |                                        |
|----------------------|----------------------------------------|
| Lens Type            | Motorized vari-focal                   |
| Lens Mount           | Module                                 |
| Focal Length         | 7 mm–35 mm                             |
| Max. Aperture        | F1.6                                   |
| Field of View        | H: 30°–12°; V: 16°–6°; D: 35°–13°      |
| Iris Control         | Auto                                   |
| Iris Control Type    | P-Iris                                 |
| Close Focus Distance | W: 1.5 m (4.92 ft)<br>T: 3 m (9.84 ft) |

|               | Lens                                                                                                                                                                                                                                                         | Detect                   | Observe                 | Recognize               | Identify               |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|-------------------------|------------------------|
| DORI Distance | W                                                                                                                                                                                                                                                            | 224.0 m<br>( 734.91 ft)  | 89.6 m<br>( 293.96 ft)  | 44.8 m<br>( 146.98 ft)  | 22.4 m<br>( 73.49 ft)  |
|               | T                                                                                                                                                                                                                                                            | 564.0 m<br>( 1850.39 ft) | 225.6 m<br>( 740.16 ft) | 112.8 m<br>( 370.08 ft) | 56.4 m<br>( 185.04 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 |                          |                         |                         |                        |

|               |                                                                                                                    |
|---------------|--------------------------------------------------------------------------------------------------------------------|
| DORI Distance | distances. For intelligent function distances, refer to installation and commissioning manual/project design tool. |
|---------------|--------------------------------------------------------------------------------------------------------------------|

### Intelligence

|                            |                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IVS (Perimeter Protection) | Intrusion, tripwire, fast moving (the three functions support the classification and accurate detection of human, vehicle, animal and other); loitering detection, people gathering, parking detection, stay 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, animal and motor vehicles, and search through live and recorded videos to quickly locate targets.                                                                                                                                                                  |
| Face Detection             | Face detection; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes and 8 expressions; face snapshot set as face, one-inch photo or custom; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting. |
| People Counting            | Tripwire people counting, generating and exporting report (day/week/month/year); people counting in area and queue management, generating and exporting report (day/week/month); 4 rules can be set for tripwire, people counting in area and queue management.                                                                                                               |
| Heat Map                   | Yes                                                                                                                                                                                                                                                                                                                                                                           |
| 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 smart codec technology, Smart H.265+ and Smart H.264+                                                                                                                                                                                                                                                                                                         |
| Video Frame Rate     | Main stream: 2960 $\times$ 1668@(1 fps–25/30 fps)<br>Sub stream: 704 $\times$ 576@(1 fps–25 fps)/704 $\times$ 480@(1 fps–30 fps)<br>Third stream: 1920 $\times$ 1080@(1 fps–25/30 fps)<br>Fourth stream: 1280 $\times$ 720@(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. |
| Streaming Capability | 4 streams                                                                                                                                                                                                                                                                                                                                                                                     |
| Resolution           | 5M (2960 $\times$ 1668/2880 $\times$ 1620); 4M (2688 $\times$ 1520/2560 $\times$ 1440); 3M (2048 $\times$ 1536/2304 $\times$ 1296); 1080p (1920 $\times$ 1080); 1.3M (1280 $\times$ 960); 720p (1280 $\times$ 720); D1 (704 $\times$ 576/704 $\times$ 480); VGA (640 $\times$ 480); CIF (352 $\times$ 288/352 $\times$ 240)                                                                   |
| Bit Rate Control     | VBR; CBR                                                                                                                                                                                                                                                                                                                                                                                      |
| 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/Manual                                                                    |
| Noise Reduction             | 3D NR                                                                          |
| Motion Detection            | OFF/ON (4 areas, rectangular)                                                  |
| Region of Interest (RoI)    | Yes (4 areas)                                                                  |
| Image Stabilization         | Electronic Image Stabilization (EIS)                                           |
| Smart Illumination          | Yes                                                                            |
| Smart Dual Light            | Yes                                                                            |
| Defog                       | Yes                                                                            |
| Image Rotation              | 0°/90°/180°/270° (Support 90°/270° with 4M (2688 × 1520) resolution and lower) |
| Mirror                      | Yes                                                                            |
| Privacy Masking             | 4 mosaics or 8 color blocks                                                    |

## Audio

|                   |                                    |
|-------------------|------------------------------------|
| Built-in MIC      | Yes, built-in Mic                  |
| Audio Compression | G.711a; G.711Mu; PCM; 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; fast moving; loitering detection; people gathering; parking detection; scene changing; audio detection; voltage detection; external alarm; face detection; video metadata; SMD; people counting in area; stay detection; people counting; people number error detection; queue people number alarm; queue time alarm; security exception; defocus detection |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Network

|                     |                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Port        | RJ-45 (10/100 Enhancement 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; Auto Registration                                             |
| Interoperability    | ONVIF (Profile S & Profile G & Profile T & Profile M); CGI                                                                                                                                                                   |
| User/Host           | 20 (Total bandwidth: 80 M)                                                                                                                                                                                                   |
| Storage             | FTP; SFTP; Micro SD card (support max. 1 TB); NAS                                                                                                                                                                            |
| Browser             | IE: IE 11 and later<br>Chrome: Chrome 102 and later<br>Firefox: Firefox 88 and later                                                                                                                                         |
| Management Software | DSS; DMSS; DoLink Care                                                                                                                                                                                                       |
| 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 |

## Function

|               |                                                                                                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| Sound Warning | Offers 11 sound alarms and supports importing 10 custom sound alarms.<br>Sound: 0–100.<br>Play times can be set from 1 to 10. |
|---------------|-------------------------------------------------------------------------------------------------------------------------------|

## Certification

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

## Port

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Audio Input  | 1 channel (RCA port)                                                                                    |
| Audio Output | 1 channel (RCA port)                                                                                    |
| Alarm Input  | 2 channels in: supports wet contact connection (max load 5 mA 3–5 VDC); supports dry contact connection |
| Alarm Output | 1 channel out: wet contact, max load 300 mA 12 VDC                                                      |

## Power

|                   |                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply      | 12 VDC (±30%); PoE+(802.3at); ePoE                                                                                                             |
| 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 W (PoE)<br>Max. (IR on + WDR + intelligence on + light active deterrence): 12.9 W (12 VDC); 16.1 W (PoE)              |
| ePoE              | Yes                                                                                                                                            |

## Environment

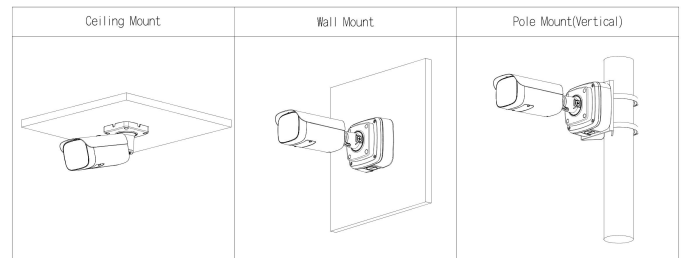
|                           |                                                                                                                                                                                                                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                                                                                                                                                                   |
| Anti-corrosion Level      | Professional Protection<br>*The products are fitted with premium-level anti-corrosion protection, making them ideal for use in sensitive environments such as chemical plants, docks, and coastlines. They perform reliably in areas up to 2 km (1.24 mi) from the coast, as well as in regions prone to acid rain exposure. |
| Anti-Corrosion Protection | C5-H(ISO12944-6:2018)<br>NEMA 4X                                                                                                                                                                                                                                                                                             |

## Structure

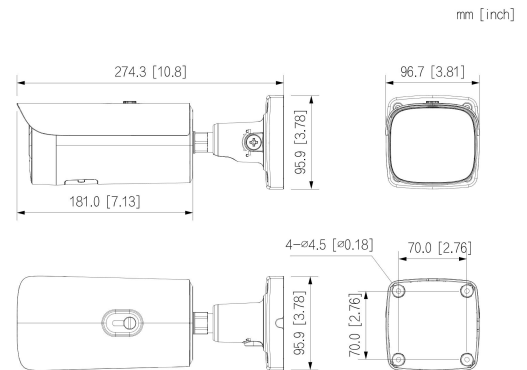
|                    |                                                                            |
|--------------------|----------------------------------------------------------------------------|
| Casing Material    | Casing: Metal (Enhanced Anti-Corrosion Aluminum Alloy); Sun cover: Plastic |
| Product Dimensions | 279.8 mm × 96.7 mm × 94.9 mm (11.02" × 3.81" × 3.74") (L × W × H)          |
| Net Weight         | 1.09 kg (2.40 lb)                                                          |
| Gross Weight       | 1.39 kg (3.06 lb)                                                          |

## Ordering Information

| Type                   | Model                          | Description                                                                  |
|------------------------|--------------------------------|------------------------------------------------------------------------------|
| IP CAMERA              | DH-IPC-HFW5559E1-Z5E-IL-ATC-LE | SMP Smart Dual Light Anti-Corrosion Vari-focal Bullet WizMind Network Camera |
| Accessories (Optional) | DH-PFA121H                     | Anti-corrosion Junction Box                                                  |
|                        | G3416GW                        | G3/4" Water Joint                                                            |
|                        | DH-PFA156H                     | Anti-corrosion Pole Mount Bracket                                            |
|                        | DH-PFM320-020EN                | DC12V 2A Power Adapter                                                       |
|                        | DH-PFM320D-EN                  | DC12V 2A Power Adapter                                                       |
|                        | PFM900-E                       | Integrated Mount Tester                                                      |
|                        | DHI-TF-P100/1TB                | MicroSD Card                                                                 |



## Dimensions (mm[inch])



## Accessories

Optional:



DH-PFA121H  
Anti-corrosion Junction  
Box



G3416GW  
G3/4" Water Joint



DH-PFA156H  
Anti-corrosion Pole  
Mount Bracket



DH-PFM320-020EN  
DC12V 2A Power Adapter



DH-PFM320D-EN  
DC12V 2A Power Adapter



PFM900-E  
Integrated Mount Tester



DHI-TF-P100/1TB  
MicroSD Card