# DH-IPC-HFW5541E-Z5E

## 5MP IR Vari-focal Bullet WizMind Network Camera



ePoE WizMind S

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

Driven by deep learning algorithms, Dahua WizMind S Series network camera offers a variety of intelligent functions that greatly improve the accuracy of audio and video analysis. It supports video metadata, smart sound detection, face detection, perimeter protection, people counting and more. The camera also adopts advanced image processing AI-Powered Image technology and has the Deeplight night vision effect. The camera is dustproof, waterproof and vandal-proof, and is certified as IP67 and IK10 (the type of protection varies depending on the model).

### Functions

**AI-Powered Image**

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

**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.

**Face Detection**

Dahua Face Detection technology can detect the face in the image. With deep learning algorithm, the technology supports detecting, tracking, capturing and selecting the best face image, and then outputs face snapshot.

**Smart Sound Detection**

With deep learning algorithms, Dahua Smart Sound Detection technology can detect and identify the sound of screams, glass breaking, and more.

**** The parameters and datasheets below can only be applied to 5541-Z-S3 series.***

- 5-MP 1/2.7" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 5MP (2960×1668) @25/30 fps.
- Built-in IR LED, and the max. illumination distance is 120 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: video metadata, smart sound detection, IVS, face detection, smart object detection, and people counting, etc.
- Alarm: 2 in, 1 out; audio: 1 in, 1 out; supports max. 512 GB Micro SD card, built-in MIC.
- 12 VDC/PoE power supply; ePoE.
- IP67 and IK10 protection.
- SMD 3.0.




**People Counting**

With deep learning algorithm, Dahua People Counting technology can track and process moving human body targets to realize the accurate statistics of enter No., leave No., and In Area No. Working with management platform, it outputs reports to meet your requirements.

**Video Metadata**

With deep learning algorithm, Dahua Video Metadata technology can detect, track, capture vehicle, non-motor vehicle and people, and select the best images, and extract attributes.

**Cyber Security**

Dahua network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

**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 | 2960 (H) × 1668 (V) |
| ROM | 4 GB |
| RAM | 1 GB |
| 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 | 120 m (393.70 ft) (IR) |
| Illuminator On/Off Control | Auto; Zoomprio; Manual |
| Illuminator Number | 4 (IR LED) |
| 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: 31°–11°; V: 17°–6°; D: 36°–13° |
| Iris Control | Auto |
| Close Focus Distance | 1.5 m (4.92 ft) |

| | Lens | Detect | Observe | Recognize | Identify |
|---|---|---|---|---|---|
| DORI Distance | W | 213.6 m (700.79 ft) | 85.4 m (280.18 ft) | 42.7 m (140.09 ft) | 21.4 m (70.21 ft) |
| | T | 572.8 m (1879.27 ft) | 229.1 m (751.64 ft) | 114.6 m (375.66 ft) | 57.3 m (187.99 ft) |

### Intelligence

| | |
|---|---|
| IVS (Perimeter Protection) | Intrusion, tripwire, fast moving (the three functions support the classification and accurate detection of vehicle and human); loitering detection, people gathering, and parking detection |
| Smart Object Detection | Smart abandoned object; smart missing object |
| SMD 3.0 | Less false alarm, longer detection distance |
| AI SSA | Yes |
| Face Detection | Face detection; track; 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 |
| Video Metadata | Motor vehicle, non-motor vehicle, face, human body detection; track; snapshot; snapshot optimization; optimal face snapshot upload.<br>Motor vehicle attributes: vehicle type, vehicle color, vehicle logo and other attributes : seatbelt, smoking, calling.<br>Non-motor vehicle attributes: type, color, number of people, top type and color, hat.<br>Human body attributes: gender, top/bottom type and color, bag, hat and umbrella. Face attributes: gender, age, expressions, glasses, face mask and beard. |
| Smart Search | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos |
| Smart Sound Detection | Yes |

### Video

| | |
|---|---|
| Video Compression | H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream) |
| Smart Codec | Smart H.265+; Smart H.264+ |
| AI Coding | AI H.265; AI H.264 |
| Video Frame Rate | Main stream: 2960 × 1668@(1–25/30 fps)<br>Sub stream: D1@(1–25/30 fps)<br>Third stream: 1080p@(1–25/30 fps)<br>Fourth stream: 720p@(1–25/30 fps)<br>*The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity. |
| Stream Capability | 4 streams |
| Resolution | 5M (2960 × 1668); 5M (2880 × 1620); 4M (2688 × 1520); 3.6M (2560 × 1440); 3M (2048 × 1536); 3M (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 | CBR/VBR |
| Video Bit Rate | H.264: 32 kbps–16384 kbps; H.265: 12 kbps–11776 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) |
| Region of Interest (RoI) | Yes (4 areas) |
| Image Stabilization | Electronic Image Stabilization (EIS) |

| | |
|---|---|
| Defog | Yes |
| Image Rotation | 0°/90°/180°/270° (Support 90°/270° with 4M (2688 × 1520) resolution and lower) |
| Mirror | Yes |
| Privacy Masking | 8 areas |

## Audio

| | |
|---|---|
| Built-in MIC | Yes |
| 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; abandoned object; missing object; 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 |
| Interoperability | ONVIF (Profile S/Profile G/Profile T); CGI; |
| User/Host | 20 (Total bandwidth: 80 M) |
| Storage | FTP; SFTP; Micro SD card (support max. 512 GB); NAS |
| Browser | IE: IE 9 and later<br>Chrome: Chrome 102 and later<br>Firefox: Firefox 88 and later |
| Management Software | SmartPSS Lite; DSS; DMSS |
| Mobile Client | iOS; Android |
| Cyber Security | Configuration encryption; trusted execution; Digest; security logs; WSSE; account lockout; syslog; video encryption; 802.1x; IP/MAC filtering; HTTPS; trusted upgrade; trusted boot; firmware encryption; generation and importing of X.509 certification |

## Certification

| | |
|---|---|
| Certifications | CE-LVD: EN62368-1;<br>CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU;<br>FCC: 47 CFR FCC Part 15, Subpart B;<br>UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14 |

## Port

| | |
|---|---|
| Audio Input | 1 channel (RCA port) |
| Audio Output | 1 channel (RCA port) |
| Alarm Input | 2 channels in: wet contact, 5mA 3V–5V DC |
| Alarm Output | 1 channel out: wet contact, 300mA 12V DC |

## Power

| | |
|---|---|
| Power Supply | 12 VDC/PoE (802.3af)/ePoE |
| Power Consumption | Basic: 3.6 W (12 VDC); 4.7 W (PoE)<br>Max. (H.265+ WDR+ Intelligence on+IR on): 10.4 W (12 VDC); 13.0 W (PoE) |

## Environment

| | |
|---|---|
| Operating Temperature | –30 °C to +60 °C (–22 °F to +140 °F) |
| Operating Humidity | ≤95% |
| Storage Temperature | –40 °C to +60 °C (–40 °F to +140 °F) |
| Storage Humidity | 10%–95% (RH), non-condensing |
| Protection | IP67; IK10 |

## Structure

| | |
|---|---|
| Casing Material | Metal |
| Product Dimensions | 273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74") (L × W × H) |
| Net Weight | 1.13 kg (2.49 lb) |
| Gross Weight | 1.68 kg (3.70 lb) |

## Ordering Information

| Type | Model | Description |
|---|---|---|
| 5MP Camera | DH-IPC-HFW5541E-Z5E | 5MP IR Vari-focal Bullet WizMind Network Camera |
| | IPC-HFW5541E-Z5E | 5MP IR Vari-focal Bullet WizMind Network Camera |
| Accessories (Optional) | PFA121 | Water-proof Junction Box |
| | PFA156 | Pole Mount Bracket |
| | PFM321D | 12 VDC 1 A Power Adapter |
| | PFM900-E | Integrated Mount Tester |
| | TF-P100 | MicroSD Memory Card |

## Accessories

Optional:



PFA121
Water-proof Junction Box



PFA156
Pole Mount Bracket



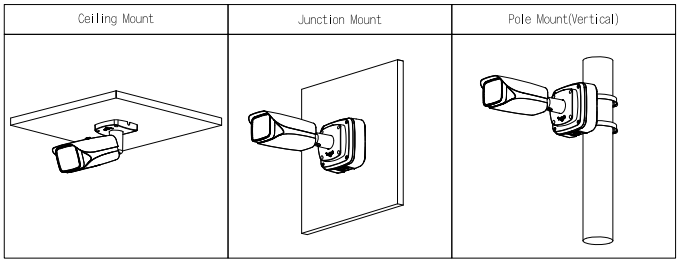
PFM321D
12 VDC 1 A Power Adapter



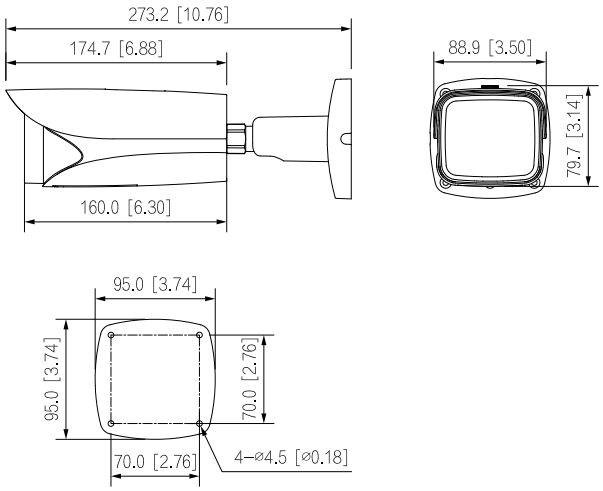
PFM900-E
Integrated Mount Tester



TF-P100
MicroSD Memory Card




## Dimensions (mm[inch])




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