

# DH-IPC-HDBW7442E1-Z-X

4MP IR Dome 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

Driven by deep learning algorithms, Dahua WizMind X Series network camera supports various intelligent functions, meeting the requirements of a wide variety of scenes. The camera can accurately recognize people, motor vehicles and non-motor vehicles. It also supports face recognition, PPE detection, smart sound detection, Privacy protection, ANPR, and parking space management. 2 intelligent functions can be enabled at the same time. The camera adopts advanced image processing AI-Powered Image technology, has a High frame rate and the Deep light night vision effect, and works with ultra-low streams. It is also 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.

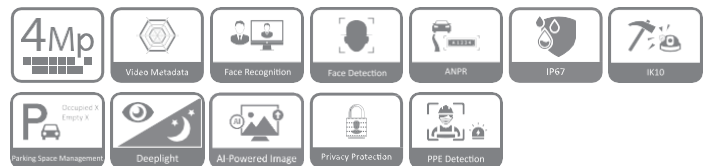
### Time-Division Exposure

Time-Division Exposure technology ensures that when the device is taking multiple snapshots of more than one targets, the quality of the snapshots will not be affected. It can also be used to adjust the brightness, speed and more of targets, to produce high quality snapshots. It is widely used in scenes that have pedestrians and vehicles, and captures clear images of faces and license plates.

### 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. The camera can count targets by directions (A>B, B>A, or A<>B), and export the report.

- 4-MP 1/1.8" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 4 MP (2688 × 1520)@50/60 fps.
- Built-in IR LED, and the max. Illumination distance is 40 m.
- Time-Division Exposure technology ensures that when the device is taking multiple snapshots of more than one targets, the quality of the snapshots will not be affected. It can also be used to adjust the brightness, speed and more of targets, to produce high quality snapshots.
- ROI, flexible coding, applicable to various bandwidth and storage environments.
- Two intelligent functions can be enabled at the same time, such as face recognition+people counting, face detection+people counting and PPE Detection+IVS.
- With deep learning algorithm, it supports: face recognition, face detection, IVS, people counting, video metadata, PPE Detection, parking space management and ANPR, etc.
- Privacy Protection: Mosaics can be automatically placed over the face or body of a person to protect their privacy.
- Built-in Hi-Fi large-diameter speaker covers an auditory range of 20 meters.
- Sound Management: With its built-in dual MICs and Dahua noise reduction algorithms, the camera supports the sound management function, using it to collect vocals, adaptively reduce noise, and filter non-human voices.
- Alarm: 3 in, 2 out; audio: 1 in, 1 out; RS-485; BNC; supports max. 512 G Micro SD card.
- Built-in dual MICs; 1-ch speaker; support two-way talk.
- 12 VDC/24VAC/PoE+ (802.3at)/ePoE power supply, 12 VDC power output, and max. Current 165 mA and peak current is 700 mA, easy for installation.
- IP67 and IK10 protection, Anti-Corrosion coating (optional).



## 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.

### Parking Space Management

With Parking Space Management, the camera can count the number of parked vehicles and parking spaces available in open parking lots and planned parking lots. It can extract and display the status of parking spaces, so as to facilitate the management of parking spaces and improve parking efficiency.

### Privacy Protection

Dahua Privacy Protection technology can mask the detected face and Human body to protect the privacy of some special targets.

### ANPR

With high-performance GPU chip, deep learning algorithm, and lots of sample training learning, Dahua ANPR technology can automatically collect and recognize the vehicle information, including license plate, logo, vehicle type, and vehicle color.

### PPE Detection

With the PPE Detection function, the camera can detect attributes including work wear, hat, face mask, apron, gloves, shoe covers, boots, seatbelt, safety vest, and determine whether PPE requirements are met. Match attributes alarm or mismatch attributes alarm can be triggered according to the alarm settings.

### 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	1/1.8" CMOS
Max. Resolution	2688 (H) × 1520 (V)
ROM	8 GB
RAM	4 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.0005 lux@F1.2 (Color, 30 IRE) 0.0002 lux@F1.2 (B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	>52 dB
Illumination Distance	40 m (131.23 ft) (IR)
Illuminator On/Off Control	Auto (Blue glass module)
Illuminator Number	3 (IR LED)
Angle Adjustment	Pan: 0-355° Tilt: 0-90° Rotation: 0-355°

### Lens

Lens Type	Motorized vari-focal				
Lens Mount	φ16				
Focal Length	2.7 mm–12 mm				
Max. Aperture	F1.2				
Field of View	H: 114.7°–48°; V: 59.5°–27°; D: 144°–56°				
Iris Control	Auto				
Iris Control Type	P-Iris				
Close Focus Distance	1.8 m (5.91 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	60.9 m (198.16 ft)	24.2 m (79.39 ft)	12.1 m (39.70 ft)	6.0 m (19.69 ft)
	T	149.7 m (422.24 ft)	59.5 m (168.96 ft)	29.7 m (84.32 ft)	14.9 m (42.32 ft)

### Smart Event

IVS	Abandoned object; missing object
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### Intelligence

IVS (Perimeter Protection)	Intrusion, tripwire, fast moving, region entrance, region exiting (the three functions support the classification and accurate detection of vehicle and human); loitering detection, people gathering, and parking detection, privacy protection
Face Detection	Face detection up to 60 Face; 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 or one-inch photo; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting; privacy protection
Face Recognition	There are two modes: General mode and counting Mode. General mode: 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 or one inch photo; snapshot strategies (recognition priority and optimization snapshot); face angle filter; optimization time setting; Privacy protection. Supports adding 5 group face databases; registering person one by one or in batches; setting face similarity; and supports face comparison with the face database containing up to 200,000 face pictures. Counting mode: Offers advanced customer counter, filters out specified faces from the face database, and exports reports both before and after removing duplicate faces.
PPE Detection	Triggers alarms when the detected object matches or does not match all of the configured attributes (work wear, hat, face mask, apron, gloves, shoe covers, boots, seatbelt, safety vest); privacy protection
People Counting	Tripwire people counting and people counting in area, generating and exporting report (day/month/year); queue management, generating and exporting report (day/month); 4 rules can be set for tripwire, people counting in area and queue management; privacy protection
Heat Map	High accuracy, based on people counting. Supports two-dimensional analysis – number of people and average strand time.

ANPR	ANPR: ANPR, track, priority, snapshot. Vehicle attributes: License plate, vehicle type, vehicle color. Other attributes: Seat belt, smoking, calling. Support up to 10,000 blacklist records and 10,000 allowlist records. The camera can recognize plate numbers of vehicles moving at speeds of up to 60km/h.
Parking Space Management	Parking Space Management: Manage outdoor and planned parking lots; manage parking spaces in multiple areas; display the total number of parking spaces and parking spaces that are available; trigger alarms based on a predefined number of vehicles.
Video Metadata	Motor vehicle, non-motor vehicle, face, and human body detection; snapshot; snapshot optimization; optimal face snapshot upload. Motor vehicle attributes: License plate, vehicle type, vehicle color, vehicle logo, seatbelt, smoking, and calling. Generates flow statistics for people, motor vehicles and non-motor vehicles based on the direction, and exports reports. Non-motor vehicle attributes: Type, vehicle color, Number of people, top type and color, and hat. Human body attributes: Top and bottom type and color, Bag, hat, gender and umbrella. privacy protection
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
Smart Codec	Smart H.265+; Smart H.264+
Video Frame Rate	Main Stream: 2688 × 1520@(1-50/60 fps) Sub stream: 1920×1080@(1-25/30 fps) Third stream: 1920 × 1080@(1-25/30 fps) Fourth stream: 1920 × 1080@(1-25/30 fps) Fifth stream: 704 × 576@(1-25 fps)/704 × 480@(1-30 fps)
Stream Capability	5 streams
Resolution	4M (2688 × 1520); 3M (2048 × 1536); 3M (2304 × 1296) 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1(704 × 576/704 × 480); CIF(352 × 288/352×240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32 kbps-10240 kbps; H.264: 12 kbps-10240 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	140 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)
Smart Illumination	Yes
Defog	Yes

Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Mask	Polygon region, Mosaic mask, Mask color configurable.
Time-Division Exposure	Yes
Image Parameters Switch	Yes
Image Settings	Saturation, Brightness, Contrast, Sharpness.
Picture Overlay	Logo images can be overlaid on videos

### Audio

Audio Compression	PCM; G.711alaw; G.711Mu; G.726; MPEG2-Layer2; G722.1;G729; G723; MP2L2, AAC
Audio Bit rate	32 kbps, 40 kbps, 48 kbps, 56 kbps, 64 kbps, 80 kbps, 96kbps, 112 kbps, 128kbps, 144 kbps, 160 kbps, 192 kbps
Audio Sampling Rate	16 kHz, 32 kHz, 48 kHz, PCM: 8 kHz, 16 kHz, 32 kHz, 48kHz
Noise Filtering	Yes

### Alarm

Alarm Linkage	Upload to FTP/NAS/memory card, Event Synchronized with center Server, send email, trigger alarm output, trigger recording, trigger capture, audible warning, external alarm.
Multi-target-type Detection	Two intelligent functions can be enabled at the same time, such as face recognition + people counting, face detection +people counting and PPE Detection+ IVS. Face attributes extraction including 6 attributes and 8 expressions; Vehicle attributes: License plate, vehicle type, vehicle color.
Alarm Event	No SD card; SD card full; SD card error; network disconnect; IP conflict; abnormal reboot; video quality diagnosis; illegal access; motion detection; video tampering tripwire; intrusion; region entrance and region exiting detection; fast moving; abandoned object; missing object; loitering detection; people gathering; parking detection; parking space management ; scene changing; audio detection; defocus detection; external alarm; face detection; face recognition; video metadata; ANPR; people counting in area; stay alarm; people counting; people number error detection; people stay detection; security exception; PPE detection.

### Network

Network Port	RJ-45 (10/100/1000 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 Register.
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI
Simultaneous Live View	Up to 20 channels
User/Host	32 (Total bandwidth: 340 M)
Storage	FTP; Micro SD card (up to 1 TB); NAS (NFS, SMB/CIFS), ANR with Video Content Analytics.
Browser	IE 10 and later versions; Chrome 57 and later versions; Firefox 52 and later versions; iOS 10 and later versions
Management Software	Smart PSS Lite; DSS; DMSS
Mobile Client	iOS; Android

<b>Cyber Security</b>	Video encryption; firmware encryption; configuration encryption; 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, HTTPS encryption.
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**Certification**

<b>Certifications</b>	CE-LVD: EN62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B; UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14; UL 50E NEMA Type 4X
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**Port**

<b>RS-485</b>	1 (baud rate range:1200 bps–115200 bps)
<b>Audio Input</b>	1 channel (RCA port)
<b>Audio Output</b>	1 channel (RCA port)
<b>Alarm Input</b>	3 channels in: 5mA 3V–5V DC
<b>Alarm Output</b>	2 channels out: 1,000mA 30V DC/500mA 50V AC
<b>Analog Output</b>	1 channel (CVBS output: BNC)

**Power**

<b>Power Supply</b>	12 VDC/24 VAC/PoE+ (802.3at)/ePoE
<b>Power Consumption</b>	Basic: 6.6 W (12 VDC); 9.3 W (24 VAC); 9.8 W (PoE) Max. (ICR switch + IR intensity): 18.7 W (12 VDC); 24.8 W (24 VAC); 25.2 W (PoE) Heating: 3 W (12 VDC); 4.6 W (24 VAC); 5.47 W (PoE)

**Environment**

<b>Operating Temperature</b>	–30 °C to +65 °C (–22 °F to +149 °F)
<b>Operating Humidity</b>	≤95%
<b>Storage Temperature</b>	–40 °C to +65 °C (–40 °F to +149 °F)
<b>Storage Humidity</b>	10–95%
<b>Protection</b>	IP67; IK10; Anti-Corrosion Protection (optional)

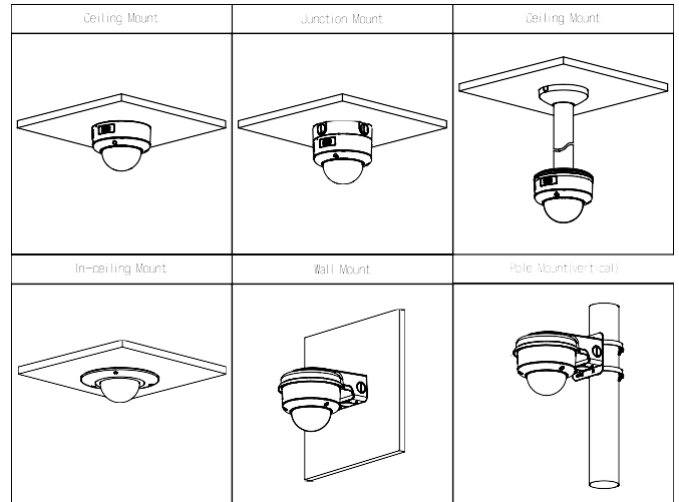
**Structure**

<b>Casing Material</b>	Metal
<b>Product Dimensions</b>	118.0 mm × Φ159.0 mm (4.65" × Φ6.26")
<b>Net Weight</b>	1.16 kg (2.56 lb)
<b>Gross Weight</b>	1.36 kg (3.00 lb)

**Ordering Information**

Type	Model	Description
<b>4MP Camera</b>	DH-IPC-HDBW7442E1-Z-X	4MP IR Dome WizMind Network Camera
	IPC-HDBW7442E1-Z-X	4MP IR Dome WizMind Network Camera
	PFB211W	Wall Mount Bracket
	PFA156	Pole Mount Bracket
	PFA101	Mount Adapter

**Accessories**



**Dimensions (mm[inch])**

