

# DH-IPC-HDEW8441R-Z

## 4MP Explosion Proof IR Dome WizMind Network Camera



**WizMind**

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.

### System Overview

Equipped with starlight solution and large aperture lens, Dahua WizMind Explosion-Proof series network camera provides better image effects. With advanced deep learning algorithm, the camera supports various intelligent functions, such as perimeter protection, face detection and people counting, which improve the accuracy of video analysis. With certification of IECEx and ATEX, it is applicable to some specific energy industries such as coal, petroleum, and chemical industry.

### Functions

#### Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

#### 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.

#### 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.

\* The parameters and datasheets below can only be applied to 8441-S2 series.

- 4-MP 1/3.0" CMOS image sensor, low illuminance, high image definition.
- Outputs max. 4 MP (2688 × 1520) @25/30 fps.
- Built-in IR LED, and the max. illumination distance is 40 m.
- ROI, SMART H.264+/H.265+, AI H.264/H.265, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Supports the AFSA(Anti-flicker Self-adaption) function, which automatically eliminates flicker.
- Face detection: Track, snapshot, snapshot optimization, optimal face snapshot upload, face enhancement, face exposure, and face attributes.
- People counting: People counting in area, queue management, and entered/exited people counting; generating and exporting report (day/month/year).
- Intelligent monitoring: Tripwire, intrusion, fast moving (the three functions support the classification and accurate detection of vehicle and human). abandoned object, missing object, loitering detection, people gathering, parking detection, heat map, and face detection.
- Alarm: 3 in, 2 out; audio: 1 in, 1 out; RS-485; supports max. 256 G Micro SD card.
- 12 VDC/PoE power supply, easy for installation.
- IP68 and IK10 protection.
- Explosion-proof mark II 2 G Ex db IIC T6/T5 Gb; II 2 D Ex tb IIIC T80°C/T100°C Db.
- 316 stainless steel casing, 2 m cable.
- ATEX and IECEx Certification.
- SMD 3.0.



#### 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.

#### 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 (IP68, IK10, Wide Voltage)**

IP68: The camera passes a series of strict test on dust and soak. With the water-proof enclosure, the camera can work normally after soaking in 1.2 m deep water for 30 minutes.

IK10: The enclosure can stand the punch more than 5 times from a 5 kg hammer falling from the 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	1/3" CMOS
Max. Resolution	2688 (H) × 1520 (V)
ROM	128 MB
RAM	1 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.005 lux@F1.5 (Color, 30 IRE) 0.0005 lux@F1.5 (B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	40 m (131.23 ft) (IR LED)
Illuminator On/Off Control	Auto; Manual
Illuminator Number	2 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–355° Tilt: 0°–75° Rotation: 0°–355°

**Lens**

Lens Type	Motorized vari-focal
Lens Mount	φ14
Focal Length	2.7 mm–13.5 mm
Max. Aperture	F1.5
Field of View	H: 104°–29° V: 56°–16° D: 125°–34°
Iris Control	Fixed
Close Focus Distance	0.8 m (2.62 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	64.0 m (209.97 ft)	25.6 m (83.99 ft)	12.8 m (41.99 ft)	6.4 m (21.00 ft)
	T	210.0 m (688.98 ft)	84.0 m (275.59 ft)	42.0 m (137.80 ft)	21.0 m (68.90 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.

**Smart Event**

IVS	Abandoned object; missing object
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**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
SMD 3.0	Less false alarm, longer detection distance
Face Detection	Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes (gender, age, glasses, expressions, mask, and beard) and 8 expressions (angry, sad, disgusted, scared, surprised, calm, happy, confused); 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.
People Counting	Tripwire people counting, generating and exporting report (day/month/year); people counting in area; queue management; 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)
Smart Codec	Smart H.265+; Smart H.264+
AI Coding	AI H.265 AI H.264
Video Frame Rate	Main stream: 2688 × 1520@(1–25/30 fps) sub stream: 704 × 576@ (1–25 fps)/704 × 480 @ (1–30 fps) third stream: 1920 × 1080 @ (1–25/30 fps) 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	3 streams
Resolution	4M (2688 × 1520); 3.6M (2560 × 1440); 3M (2048 × 1536); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1920 × 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: 32 kbps–16384 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
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)
Defog	Yes

Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	4 areas
Scene Self-adaptation (SSA)	Yes
Image Stabilization	Electronic Image Stabilization (EIS)

### Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; G.723
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### 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; defocus detection; external alarm; face detection; SMD; people counting in area; stay detection; people counting; security exception
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### 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; SAMBA; PPPoE; SNMP
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI; P2P; Milestone; Genetec
User/Host	20 (Total bandwidth: 80 M)
Storage	FTP;SFTP; Micro SD card (support max. 256 GB); NAS
Browser	IE Chrome Firefox
Management Software	Smart PSS; 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 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B ATEX: EN 60079-0/EN 60079-1/EN 60079-31 IECEX : IEC 60079-0/IEC 60079-1/IEC 60079-31 Certificate: ATEX: TÜV 20 ATEX 8579 X IECEX: IECEX TUR 20.0059X
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### Port

RS-485	1 (baud rate range:1200 bps–115200 bps)
Audio Input	1 channel (terminal)
Audio Output	1 channel (terminal)
Alarm Input	3 channels in: 5mA 3V–5V DC

Alarm Output	2 channels out: 300mA 12V DC
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### Power

Power Supply	12 VDC/PoE (802.3af)
Power Consumption	Basic: 3.1 W (12 VDC); 3.6 W (PoE) Max. (H.265+intelligence on +WDR +IR on + auto focus): 6.2 W (12 VDC); 7.3 W (PoE)

### Environment

Operating Temperature	T5/T100 °C : -40 °C ≤ Tamb ≤ +60 °C (-40 °F to +140 °F) T6/T80 °C : -40 °C ≤ Tamb ≤ +55 °C (-40 °F to +131 °F)
Operating Humidity	≤95%
Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Protection	IP68; IK10
Storage Humidity	≤95%

### Structure

Casing Material	SUS316L (316 stainless steel)
Product Dimensions	219.5 mm × Φ165 mm × 118.2 mm (8.64" × Φ6.50" × 4.65") (L × W × H)
Net Weight	4.5 kg (9.92 lb)
Gross Weight	5.3 kg (11.68 lb)

### Ordering Information

Type	Model	Description
4 MP Camera	DH-IPC-HDEW8441R-Z	4 MP Explosion Proof IR Dome WizMind Network Camera, PAL
	IPC-HDEW8441R-Z	4 MP Explosion Proof IR Dome WizMind Network Camera, PAL
Accessories (Optional)	PFB714W-316	Wall Mount Bracket
	CZ300	Explosion-proof Junction Box
	ZAEX02	Explosion-proof Stuffing Box
	ZANXG-1.0	Explosion-proof Flexible Tube
	PFM321D	12V DC/1A Power Adapter
	PFM900-E	Integrated Mount Tester
	TF-P100	MicroSD Memory Card

**Accessories**

Optional:



PFB714W-316  
Wall Mount  
Bracket



CZ300  
Explosion-proof  
Junction Box



ZAEX02  
Explosion-proof  
Stuffing Box



ZANXG-1.0  
Explosion-proof  
Flexible Tube



PFM321D  
12V DC 1A  
Power Adapter



PFM900-E  
Integrated  
Mount Tester



TF-P100  
MicroSD  
Memory Card

**Dimensions (mm[inch])**

