

### DH-IPC-HFW5541E-ZHE

5MP IR 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**

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 ISP 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-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.

#### Self-Learning

Empowered by deep learning technology, the device recognizes different types of targets and their statuses through learning and analyzing target features to detect targets and filter out false alarms.

#### 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.

#### AcuPick

This industry-leading search technology effectively utilizes both frontend and back-end intelligence to help with searching through massive video data to quickly and conveniently locate targets with greater precision.

- \* 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 60 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. 1 TB Micro SD card, built-in MIC.
- 12 VDC/PoE power supply; ePoE.
- IP67 and IK10 protection, heater.
- 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  $\pm 30\%$  (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

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Technical Specification							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,	
Camera						Face Detection		
Image Sensor		1/2.7" CMOS						one-inch photo or custom; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting.
Max. Resolution		2960 (H) × 1668 (V)						
ROM		4 GB						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.
RAM		1 GB					People Counting	
Scanning System		Progressive						
Electronic Shutter Speed		Auto/Manual 1/3 s-1/100,000 s					Heat Map	Yes
Min. Illumination		0.0009 lux@F1.5(Color, 30 IRE) 0.0005 lux@F1.5(B/W, 30 IRE) 0 lux (Illuminator on)						Motor vehicle, non-motor vehicle, face, human body detection; track; snapshot; snapshot optimization; optimal face snapshot upload.
S/N Ratio		>56 dB					Video Motodato	Motor vehicle attributes: vehicle type, vehicle color, vehicle logo and other attributes : seatbelt, smoking,
Illumination Distance		Up to 60 m (196.85 ft) (IR)					Video Metadata	calling. Non-motor vehicle attributes: type, color, number of people, top type and color, hat. Human body attributes: gender, top/bottom type and color, bag, hat and umbrella. Face attributes: gender, age, expressions, glasses, face mask and beard.
Illuminator On/Off Control		Auto; Zoomprio; Manual						
Illuminator Number		4 (IR LED)						
Angle Adjustment		Pan: 0°–360° Tilt: 0°–90° Rotation: 0°–360°					Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos
Lens				Smart Sound Detection	Yes			
Lens Type		Motorized vari-focal					Video	
Lens Mount		φ14					Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Focal Length		2.7 mm-13.5 mm					Smart Codec	Smart H.265+; Smart H.264+
Max. Apertu	re	F1.5					AI Coding	AI H.265; AI H.264
Field of View	,	H: 114°–32°; V: 58°–17°; D: 138°–36°					Video Frame Rate	Main stream: 2960 × 1668@(1–25/30 fps) Sub stream: D1@(1–25/30 fps) Third stream: 1080p@(1–25/30 fps) Fourth stream: 720p@(1–25/30 fps)
Iris Control		Auto						
Close Focus Distance		0.8 m (2.62 ft)					video France Nate	*The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected
	Lens	Detect	Observe	Recognize	Identify			to the total encoding capacity.
	W	64.0 m (209.97 ft)	25.6 m (83.99 ft)	12.8 m (41.99 ft)	6.4 m (20.99 ft)		Stream Capability	4 streams
DORI Distance	Т	210.0 m (688.98 ft)	84.0 m (275.89 ft)	42.0 m (137.80 ft)	21.0 m (68.90 ft)		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
	*DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the							(1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
	video to dist	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.					Bit Rate Control	CBR/VBR
	0						Video Bit Rate	H.264: 32 kbps–16384 kbps; H.265: 12 kbps–11776 kbps
Intelligence						Day/Night	Auto(ICR)/Color/B/W	

#### Intelligence

IVS (Perimeter Protection)	Intrusion, tripwire, fast moving (the three functons support the classifcaton and accurate detecton of vehicle, animal and human); loitering detecton, people gathering, parking detecton. Supports long- distance mode. Supports self-learning, it filters out false alarms.
Smart Object Detection	Smart abandoned object; smart missing object
SMD	SMD 3.0
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.
AI SSA	Yes

	* 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

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Motion Detection	OFF/ON (4 areas, rectangular)			
Region of Interest (Rol)	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			
LDC	Yes			
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; Auto Register			
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 9 and later Chrome: Chrome 102 and later 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; 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			
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	
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: 3.6 W (12 VDC); 4.7 W (PoE) Max. (H.265+ WDR+ Intelligence on+IR on): 10.4 W (12 VDC); 13.0 W (PoE) Heating: 3.3 W (12 VDC); 4.2 W (PoE)	
Environment		
Operating Temperature	-40 °C to +60 °C (-40 °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	1.12 kg (2.47 lb)	
Gross Weight	1.66 kg (3.66 lb)	

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

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#### Accessories

#### Optional:



PFA121 Water-proof Junction Box



PFA156

Pole Mount Bracket

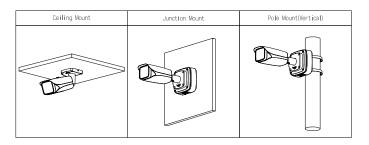


PFM321D 12 VDC 1 A Power Adapter

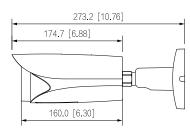


PFM900-E Integrated Mount Tester

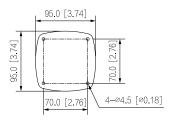
TF-P100 MicroSD Memory Card



#### Dimensions (mm[inch])







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