dahua TECHNOLOGY

DH-IPC-HDBW8841H-Z-LB

8MP WizMind Classroom Network Camera

Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, 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

Dahua WizMind 8 Series Classroom Network Camera is specially designed for use in classrooms and examinations. It can record and play live videos of classes, and track, analyze and detect student and teacher behavior in classrooms and exams. The camera offers a wide variety of features. It can filter out non-human voices, check if teachers are on duty, and detect when students have their heads up. It can also track teachers by focusing and zooming in on them, and can zoom in on students who are standing.

Functions

Classroom Behavior Analysis

With its recording and broadcasting server, the device professionally records and broadcasts teaching content, while detecting the behavior of students and teachers through deep learning algorithms. It offers two modes: Teacher mode and student mode. Teacher mode supports various types of detection, such as walking, writing on the blackboard and back turned to the students. Student mode can recognize when a student's head is up, or if they are standing, and can even provide a close-up of the student.

Exam Behavior Analysis

Adopts deep learning algorithms to accurately recognize the targets, and realizes the tracking and detection in the area. It also supports looking around and passing object detection of the students in the area.

Face Recognition

Dahua Face Recognition technology extracts the features of captured faces and compares them with that in face database to recognize the person identity.

- 8-MP 1/1.8" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 8 MP (3840 × 2160)@25/30 fps.
- Supports Classroom Behavior Analysis, including detection of abnormal number of people (for tracking teachers), standing, writing on the blackboard, back turned to students, head up, and walking.
- Supports Exam Behavior Analysis, including detection of students looking around and passing objects between each other.
- 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 in the classroom, adaptively reduce noise, and filter non-human voices.
- Built-in Hi-Fi large-diameter speaker covers an auditory range of 30 meters when used indoors.
- Supports two-way talk.
- Alarm: 3 in, 2 out; audio: 1 in, 1 out; built-in dual MICs, RS-485, BNC; supports max. 256 G Micro SD card.
- 24 VAC/12 VDC/PoE power supply, 12 VDC power output, and max. current 165 mA, easy for installation.
- 5 streams for 3-channel HD video display.
- IP67 and IK10 protection.

| Face Recognition | Classroom Behavior Analysis | Exam Behavior Analysis |

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.

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 works normal 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	3840 (H) × 2160 (V)
ROM	4GB
RAM	4GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.003 Lux@F1.2(Color,30IRE) 0.0003 Lux@F1.2(B/W,30IRE) 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	40m (IR LED)
Illuminator On/Off Control	Auto
Illuminator Number	3 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–355° Tilt: 0°–80° 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	Horizontal: 112°(W)–48°(T) Vertical: 58°(W)–27°(T) Diagonal: 137°(W)–55°(T)
Close Focus Distance	1.8 m (5.9 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	87.6 m (287.40 ft)	35 m (114.83 ft)	17.5 m (57.41 ft)	8.8 m (28.87 ft)
	T	186.6 m (612.20 ft)	74.6 m (244.75 ft)	37.3 m (122.38 ft)	18.7 m (61.35 ft)

Intelligence

Classroom Behavior Analysis	Supports student mode and teacher mode. Student mode: Head up detection, standing detection, heads up people counting, and close-up of standing students. Teacher mode: Supports up to 5 face databases and 10,000 face images. It offers abnormal number of people detection (for tracking teachers), back turned to students detection, walking detection, writing on blackboard detection, and performs face comparison of teachers.
Exam Behavior Analysis	Suport looking around and passing object detection

Face Recognition	Face recognition, track, priority, snapshot, face enhancement, face exposure Face attribute extract, 6 attributes and 8 expressions: Gender, age, glasses, expressions (anger, sadness, disgust, fear, surprise, calm, happiness and confusion), mask, beard Face matting setting: face, single inch photo Two snapshot strategies: priority snapshot, recognition Face angle filter Priority time setting Management of 5 group face libraries Single person register and person register in batch Face recognition and similarity setting Max supports face contrast in face library with 100,000 faces Support Duration Optimal
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+
Video Frame Rate	Main stream: 3840 × 2160@(1–25/30 fps) sub stream 1: 1920 × 1080@(1–25/30 fps) sub stream 2: 1920 × 1080@(1–25/30 fps) sub stream 3: 1920 × 1080@(1–25/30 fps) sub stream 4: 704 × 576 @(1–25/30 fps)
Stream Capability	5 streams
Resolution	8M (3840 × 2160); 4M (2688 × 1520); 3M (2048 × 1536); 1080p (1920 × 1080); 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.265: 12 kbps–10240 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)
Defog	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	4 areas

Audio

Built-in MIC	Yes
Built-in Speaker	Yes
Audio Compression	G.711a;G.711Mu;G.726;G.723;PCM

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; scene changing; audio exception; voltage detection; defocus detection; external alarm; face recognition; abnormal number of people detection; stand detection; walking detection; back detection; blackboard writing detection; head up detection; Exam Behavior detection

Network

Network Port	RJ-45 (10/100/1000 Base-T)
SDK and API	Yes
Cyber Security	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
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; Milestone;
User/Host	20
Storage	FTP; SFTP; Micro SD card (support max. 256 GB); NAS
Browser	IE: IE 9 and later Chrome: 42 and later Firefox: 48.0.2 and later
Management Software	DH-RBS8204AM-I
Mobile Client	iOS; Android

Certification

Certifications	CE-LVD:EN62368-1; CE-EMC:Electromagnetic Compatibility Directive 2014/30/EU; FCC:47 CFR FCC Part 15, Subpart B; FCC ID:FCC PART 15C

Port

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

Power

Power Supply	12 VDC/24 VAC/PoE
Power Consumption	Basic: 8.86 W (12 VDC); 8.5 W (24 VAC); 8.64 w(PoE) Max. (IR on + ICR + Intelligence): 17.9 W (12 VDC); 15.9 W (24 VAC); 15.8 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)
Protection	IP67; IK10

Structure

Casing	Metal + plastic
Product Dimensions	129.1 mm × Φ157.9 mm (5.08"× Φ6.22")
Net Weight	1.5 kg (3.31 lb)
Gross Weight	1.6 kg (3.53 lb)

Ordering Information

Type	Model	Description
8MP Camera	DH-IPC-HDBW8841H-Z-LB	8MP WizMind Classroom Network Camera
	IPC-HDBW8841H-Z-LB	8MP WizMind Classroom Network Camera
Accessories (Optional)	PFA773	Sun Shade
	PFB211W	Wall Mount
	PFA156	Pole Mount
	PFA101	Mount Adapter
	PFB300C	Ceiling Mount
	PFA138	Junction Box
	PFM320D	12 VDC 2 A Power Adapter
	PFM900-E	Integrated Mount Tester
	TF-P100	MicroSD Memory Card

Accessories

Optional:

PFA773
Sun Shade

PFB211W
Wall Mount

PFA156
Pole Mount

PFA101
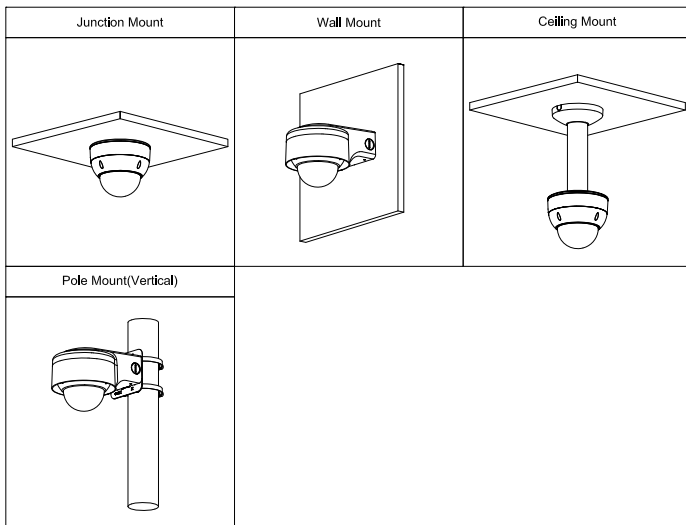Mount Adapter

PFB300C
Ceiling Mount

PFA138
Junction Box

PFM320D
12 VDC 2 A Power Adapter

PFM900-E
Integrated Mount Tester

TF-P100
MicroSD Memory Card

Junction Mount	Wall Mount	Ceiling Mount

Pole Mount(Vertical)		

Dimensions (mm[inch])

74.5 [2.93]

129.1 [5.08]

∅158.0 [∅6.22]

∅4.5 [∅0.18]

∅142.0 [∅5.59]

∅142.0 [∅5.59]
∅140.0 [∅5.51]

4−M4

3−∅4.5 [∅0.18]