

DH-IPC-HDW3849H-AS-PV

8 MP Smart Dual Light Active Deterrence Fixed-focal Eyeball WizSense Network Camera



WizSense

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

Series Overview

With advanced deep learning algorithm, Dahua WizSense 3 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

Functions

Siren and Light Active Deterrence

Dahua siren and light active deterrence network camera supports the light alarm and voice alarm when perimeter event occurs, to realize the deterrence and effective intervention. The camera is built in multiple voices for selection, and supports customized voice importing.

Smart Dual Light

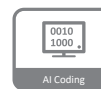
Dahua Smart Dual Light technology adopts smart algorithm to detect targets. Usually, the IR illuminator is on at night; when the target appears in the monitoring area, the warm light is on, and the camera records the full-color video and information of key events. That is, the camera links snapshot and video with full-color image. When the target is out of the monitoring area, the warm light is off and the IR illuminator is on, which reduces light pollution efficiently.

SMD 4.0

Dahua Smart Motion Detection technology works with intelligent algorithms to classify targets that trigger motion detection alarms. It filters out objects that are not targets, such as small and large animals, to avoid triggering false alarms. With an AI NVR, Quick Pick technology becomes available, allowing you to easily search for and pick out human and vehicle targets from SMD event videos, prioritizing the highest matches.

*** The parameters and datasheets below can only be applied to 3849-PV-S4 series.**

- 8-MP 1/2.8" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 8 MP (3840 × 2160)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in warm light and IR LED; the max. IR illumination distance is 30 m and warm light distance is 30 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.
- Intelligent monitoring: Intrusion, tripwire (the two function support the classification and accurate detection of vehicle and human).
- Abnormality detection: Motion detection, privacy masking, scene changing, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Alarm: 1 in, 1 out; audio: 1 in, 1 out; supports max. 256 G Micro SD card; built-in dual Mic; built-in speaker; 1-ch speaker; support two-way talk.
- 12 VDC/PoE power supply.
- IP67 protection.
- Sound and light alarm (red and blue lights).
- SMD 4.0.
- One-tap arming/disarming through alarm input.



One-tap Disarming

Dahua One-tap Disarming function, which is convenient and easy for operation, is the switch for event linkage. Customers can close and recover event linkage through mobile App, which meets multi-scenarios needs.

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, 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.

Wide voltage: The camera allows $\pm 30\%$ input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Technical Specification

Camera

Image Sensor	1/2.8" CMOS
Max. Resolution	3840 (H) $\times$ 2160 (V)
ROM	128 MB
RAM	512 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.004 lux@F1.0 (Color, 30 IRE) 0.0004 lux@F1.0 (B/W, 30 IRE) 0 lux (illuminator on)
S/N Ratio	> 56 dB
Illumination Distance	Up to 30 m (98.43 ft) (IR) Up to 30 m (98.43 ft) (warm light)
Illuminator On/Off Control	Auto; manual
Illuminator Number	1 (IR LED) 1 (warm light)
Angle Adjustment	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

Lens

Lens Type	Fixed-focal				
Mount Type	M12				
Focal Length	2.8 mm; 3.6 mm				
Field of View	2.8 mm: H: 106°; V: 55°; D: 125° 3.6 mm: H: 85°; V: 45°; D: 100°				
Iris Type	Fixed				
Close Focus Distance	2.8 mm: 2.0 m (6.56 ft) 3.6 mm: 2.8 m (6.23 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	91.0 m (298.56 ft)	36.4 m (119.42 ft)	18.2 m (59.71 ft)	9.1 m (29.86 ft)
	3.6 mm	107.6 m (353.02 ft)	43.0 m (141.08 ft)	21.5 m (70.54 ft)	10.8 m (35.43 ft)

Intelligent

IVS (Perimeter Protection)	Tripwire; intrusion (Support the classification and accurate detection of vehicle and human)
SMD 4.0	Less false alarm, longer detection distance
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos.

Quick Pick	With AI NVR, quickly pick up the human/vehicle targets that users are interested in from SMD events
AI SSA	Adopt deep learning algorithms to adjust the parameters of the image to suit the conditions.

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: 3840 $\times$ 2160@(1 fps–30 fps) Sub stream: 704 $\times$ 576@(1 fps–25 fps)/704 $\times$ 480@(1 fps–30 fps) Third stream: 1920 $\times$ 1080@(1 fps–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	8M (3840 $\times$ 2160); 6M (3072 $\times$ 2048); 5M (3072 $\times$ 1728/2592 $\times$ 1944); 4M (2688 $\times$ 1520/2560 $\times$ 1440); 3M (2048 $\times$ 1536/2304 $\times$ 1296); 1080p (1920 $\times$ 1080); 1.3M (1280 $\times$ 960); 720p (1280 $\times$ 720); D1 (704 $\times$ 576/704 $\times$ 480); VGA (640 $\times$ 480); CIF (352 $\times$ 288/352 $\times$ 240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32kbps–8192 kbps H.265:12kbps–8192 kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
Scene Self-adaptation	Yes
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto; manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas)
Region of Interest (RoI)	Yes (4 areas)
Smart Illumination	Yes
Defog	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 $\times$ 1520 resolution and lower)
Mirror	Yes
Privacy Masking	8 areas

Audio

Built-in Mic	Yes, built-in dual Mic
Built-in speaker	Yes, built-in speaker
Audio Compression	PCM; G.711a; G.711Mu; 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; scene changing; audio detection; voltage detection; external alarm; SMD; security exception
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Network

Network	RJ-45 (10/100 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
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: 72 M)
Storage	FTP; SFTP; Micro SD card (Support max. 256 G); NAS
Browser	IE: IE8/9/11 Chrome Firefox
Management Software	Smart PSS; DSS; DMSS
Mobile Phone	iOS; Android

Certification

Certification	CE-LVD: EN 62368-1; 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
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Port

Audio Input	1 channel (RCA port)
Audio Output	1 channel (RCA port)
Alarm Input	1 channel in: 5 mA 3V–5 VDC
Alarm Output	1 channel out: 300 mA 12 VDC

Power

Power Supply	12 VDC/PoE (802.3af)
Power Consumption	Basic: 5.2 W (12 VDC); 5.5 W (PoE) Max. (pulling stream+warning light+speaker+warm light on): 9.2W (DC12 V) 10.2 W (POE)

Environment

Operating Conditions	–40 °C to +60 °C (–40 °F to +140 °F)/Less than 95% RH
Storage Conditions	–40 °C to +60 °C (–40 °F to +140 °F)
Protection Grade	IP67

Structure

Casing	Metal
Dimensions	110.9 mm × Φ122.0 mm (4.37" × Φ4.80")
Net Weight	745 g (1.64 lb)
Gross Weight	915 g (2.02 lb)

Ordering Information

Type	Model	Description
8MP Camera	DH-IPC-HDW3849H-AS-PV	8 MP Smart Dual Light Active Deterrence Fixed-focal Eyeball WizSense Network Camera
	IPC-HDW3849H-AS-PV	8 MP Smart Dual Light Active Deterrence Fixed-focal Eyeball WizSense Network Camera
Accessories (Optional)	PFA137	Junction Box
	PFB205W-E	Wall Mount Bracket
	PFA109	Mount Adapter
	PFB220C	Ceiling Mount Bracket
	PFA152-E	Pole Mount Bracket
	PFM321D	12 VDC 1A Power Adapter
	PFM900-E	Integrated Mount Tester
	TF-P100	MicroSD Memory Card

Accessories

Optional:



PFA137
Junction Box



PFB205W-E
Wall Mount Bracket



PFA109
Mount Adapter



PFB220C
Ceiling
Mount Bracket



PFA152-E
Pole Mount Bracket



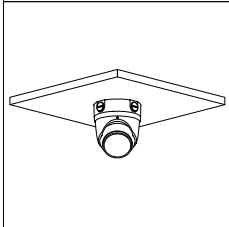
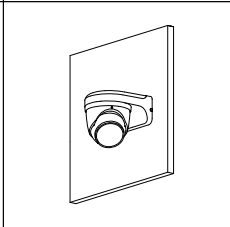
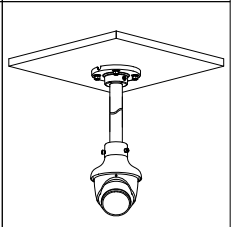
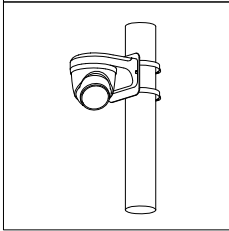
PFM321D
12 VDC 1A
Power Adapter



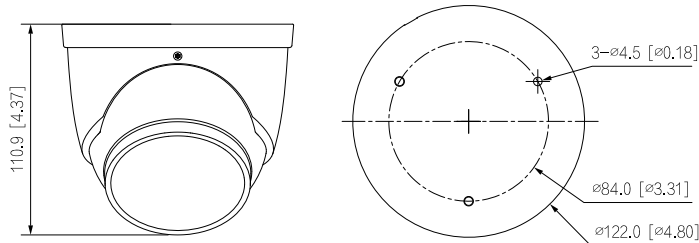
PFM900-E
Integrated
Mount Tester



TF-P100
MicroSD
Memory Card

Junction Mount	Wall Mount	Ceiling Mount
		
Pole Mount(Vertical)		
		

Dimensions (mm[inch])



DHI-NVR4104HS-P-EI

4CH Compact 1U 4PoE 1HDD WizSense Network Video Recorder



WizSense

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

Series Overview

NVR4000-EI series is a new generation of network recorders that offers powerful decoding capabilities, and strong bandwidth. It features high-precision face recognition, perimeter protection, and SMD (Smart Motion Detection), which can distinguish target vehicles and humans from other types in real time. When connected with select IPC cameras, Quick Pick technology becomes available, allowing human and vehicle targets to be easily searched for and picked out. This network recorder is not only cost-effective, but also compatible with a wide variety of third-party devices, making it a great choice for small and medium-sized businesses.

Functions

Face Recognition

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

Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improves alarm accuracy.

- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG decoding format
- Access, storage or forwarding at 80 Mbps
- Max. decoding capability: 16 × 1080p@30 fps. Supports adaptive decoding
- AI by NVR: 1-channel face detection and recognition; 2-channel perimeter protection; up to 10 face databases and 20,000 face images; 4-channel SMD Plus
- AI by Camera: Face detection and recognition, perimeter protection; SMD Plus; people counting; stereo analysis; heat map
- Connected to the third-party network cameras
- Security baseline 2.3



SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

AI Search

With AI search, operators can search for videos by the attributes of targets and event types, which helps them to quickly and efficiently investigate where and when targets appeared and events took place.

Heat Map by Camera

Dahua heat map technology is used to display the crowd density and people appearance probability. Export and display the crowd status by different colors. Generally, the crowd status is the statistics of people quantity in space and time dimensions.

ANPR by Camera

With deep learning algorithm, Dahua ANPR technology can recognize the number plate information of vehicles in the image with ANPR cameras. Support blacklist/allowlist mode, searching target vehicles from recorded video.

Quick Pick

Dahua Quick Pick technology can enable users to quickly pick up the human/vehicle targets that they are interested in, which facilitates retrieval from SMD events.

Technical Specification

System

Main Processor	Industrial-grade processor
Operating System	Embedded Linux
Operating Interface	Web, Local GUI

AI

AI by Recorder	Face detection, face recognition, perimeter protection, and SMD Plus;
AI by Camera	Face detection; face recognition; perimeter protection; SMD Plus; ANPR; people counting; stereo analysis; heat map

Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	2 channels, 10 IVS rules for each channel
Perimeter Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Detection

Face Attributes	Gender; age group; glasses; expressions; face mask; beard
Face Detection Performance of AI by Recorder (Number of Channels)	1 channel (up to 12 face images/s each channel)
Face Detection Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Recognition

Face Database Capacity	Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.
Face Recognition Performance of AI by Recorder (Number of Channels)	4-channel FD (by camera) + FR (by recorder), image stream: 12 face images/s 1-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s
Face Recognition Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

SMD Plus

SMD Plus by Recorder	4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD Plus by Camera	All channels (16 targets/s)

Audio and Video

Access Channel	4 channels
Network Bandwidth	80 Mbps incoming, 80 Mbps recording and 80 Mbps outgoing

Resolution	16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF
Decoding Capability	AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps AI enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 3-channel 6 MP@30 fps; 4-channel 5 MP@30 fps
Video Output	1 HDMI, 1 VGA HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 *Simultaneous/heterogeneous video sources output for VGA and HDMI is configurable.
Multi-screen Display	1st Screen: 1/4 2nd Screen: 1/4
Third-party Camera Access	Panasonic, Sony, Samsung, Axis, Pelco, Arecont, ONVIF, Canon

Compression Standard

Video Compression	Smart H.265+; H.265; Smart H.264+; H.264; MJPEG
Audio Compression	G.711a; G.711u; PCM; G726

Network

Network Protocol	HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome; IE9 and later; Firefox

Recording Playback

Multi-channel Playback	Up to 4 channels
Record Mode	General, motion detection; intelligent; alarm
Backup Method	USB device and network
Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback

Alarm

General Alarm	Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm
Anomaly Alarm	Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity exception
Intelligent Alarm	Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map
Alarm Linkage	Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email

Port

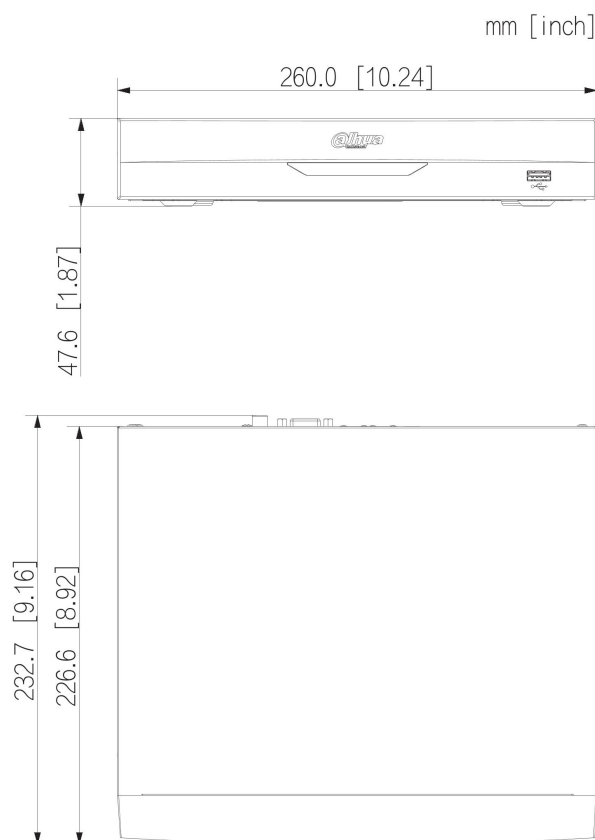
Audio Input	1-channel RCA
Audio Output	1-channel RCA
Disk Interface	1 SATA port, up to 16 TB.The maximum HDD capacity varies with environment temperature.
USB	2 (1 front USB 2.0 port, 1 rear USB 2.0 port)
HDMI	1

VGA	1
Network Port	1 (10/100 Mbps Ethernet port, RJ-45)
PoE Port	4 ports, 10/100 Mbps, IEEE 802.3 af/at

General

Power Supply	53 VDC, 1.226 A
Power Consumption	Total output of NVR is <10 W(without HDD) Total output power of PoE is 36W,the maximum output power of asingle port is 25.5W
Net Weight	0.86 kg (1.90 lb)
Gross Weight	1.88 kg (4.14 lb)
Product Dimensions	260 mm × 232.7 mm × 47.6 mm (10.24" × 9.16" × 1.87") (W × L × H)
Packaging Dimensions	333 mm × 89 mm × 315 mm (13.11" × 3.50" × 12.40") (W × L × H)
Operating Temperature	−10 °C to +55 °C (14 °F to +131 °F)
Storage Temperature	−20 °C to +60 °C (−4 °F to +140 °F)
Operating Humidity	10%–93% (RH), non-condensing
Installation	Rack or desktop
Certifications	FCC: 47 CFR FCC Part15, SubpartB, Class A CE-EMC: EN 55032:2015+A1:2020; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014 CE-LVD: EN 62368-1:2014

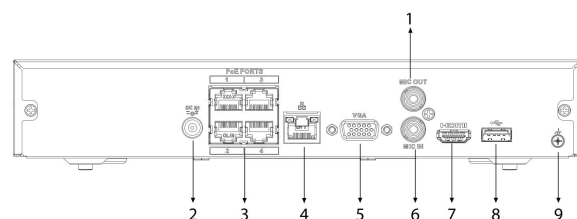
Dimensions (mm[inch])



Ordering Information

Type	Model	Description
NETWORK VIDEO RECORDER	DHI-NVR4104HS-P-EI	4CH Compact 1U 4PoE 1HDD WizSense Network Video Recorder

Panels



- | | |
|----------------------------|---------------------------|
| 1 AUDIO OUT, RCA Connector | 2 Power Input |
| 3 PoE Ports | 4 Network Port |
| 5 VGA Port | 6 AUDIO IN, RCA Connector |
| 7 HDMI Port | 8 USB Port |
| 9 Ground | |