dahua TECHNOLOGY HDW3649H Wiz Sense 3 Network Camera Owner's Manual

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Introduction

Launched by Dahua Technology, Wiz Sense 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, Wiz Sense provides intelligent, simple and inclusive products and solutions.

Series Overview

Dahua WizSense 3 Series Network Camera greatly saves on bandwidth and storage space through its AI Coding technology. Driven by its advanced deep learning algorithms, the camera supports intelligent functions such as perimeter protection, smart motion detection (SMD), Acupick, and AI SSA (AI Scene Self-adaptation), making it easy and convenient to use. Starlight technology and its large aperture lens also allow the camera to produce clear, vivid images even in poor lighting conditions.

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.

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.

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 white 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 white light is off and the IR illuminator is on, which reduces light pollution efficiently.

- 6-MP 1/1.8″ CMOS image sensor, low luminance, and high definition image.
- Outputs max. 6 MP (3288 × 1850)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in multi-core light, the max. IR distance is 30 m and the max. 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. 512 G Micro SD card; built-in dual Mic; 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.
- Supports AI SSA and one-tap arming and disarming.
- SMD area can be set in warm light areas that support triggering alarms.

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 ±30% (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to out door environment with instable voltage.

Technical Specification

Camera

Image Sensor	1/1.8″ CMOS
Max. Resolution	3288 (H) × 1850 (V)
ROM	256 MB
RAM	2 G
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	**0.0005 Lux@F1.0** (Color, 30IRE) **0.0004 Lux@F1.0** (B/W, 30IRE) 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	2 (Multi-core (IR + warm) light)
Angle Adjustment	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

Lens

Lens Type	Fixed-focal
Lens Mount	M16
Focal Length	2.8 mm; 3.6 mm
Max. Aperture	F1.0
Field of View	2.8 mm: H: 109°; V: 59°; D: 131° 3.6 mm: H: 93; V: 50°; D: 111
Iris Control	Fixed
Close Focus Distance	2.8 mm: 2 m (6.56 ft) 3.6 mm: 4 m (13.12 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	70.2 m (230.31 ft)	28.1 m (92.19 ft)	14.0 m (45.93 ft)	7.0 m (22.97 ft)
	3.6 mm	85.6 m (280.84 ft)	34.3 m (112.53 ft)	17.1 m (56.10 ft)	8.6 m (28.22 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.				

Intelligence

IVS (Perimeter Protection)	Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human)
SMD	SMD 4.0
AcuPick	Uses deep learning algorithms and works with back-end devices to accurately match targets, such as people and motor vehicles, and search through live and recorded videos to quickly locate targets.
AI SSA	Adopt deep learning algorithms to adjust the parameters of the image to suit the conditions.

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 (Compression rate ≥25%) AI H.264 (Compression rate ≥25%)
Video Frame Rate	Main stream: 3288 × 1850@(1 fps–25/30 fps) Sub stream: 1920 × 1080 @(1–25/30 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	6M (3288 × 1850/3200 × 1800); 4M (2688 × 1520/2560×1440); 3M (2304 × 1296); 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	CBR/VBR/ABR
Video BitRate	H.264: 3 kbps–16384 kbps; H.265: 3 kbps–16384 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)
Smart Illumination	Yes

Smart Dual Light	Yes
Defog	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	8 areas
LDC	Yes

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; intensity change; voltage detection; external alarm; SMD; security exception

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; I GMP; NFS; PPPoE; SNMP; P2P
Interoperability	ONVIF (Profile S; Profile G;Profile T); CGI
User/Host	20 (Total bandwidth: 64 M)
Storage	FTP;SFTP; Micro SD card (support max. 512 GB); NAS
Browser	IE: IE11 Chrome Firefox
Management Software	Smart PSS Lite; DSS; DMSS; DoLynk Care
Mobile Client	iOS;Android
Cyber Security	Video encryption;Firmware encryption;Configuration encryption;Digest; WSSE;Account lockout;Security logs;IP/MAC filtering;Generation and i mporting of X.509 certification;syslog; HTTPS;802.1x;Trusted boot;Trus ted execution;Trusted upgrade

Certification

Certifications	CE-LVD: EN 62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU

Port

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

Power

Power Supply	12 VDC; PoE
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: 4.1 W (12 VDC); 6 W (PoE) Max. (H.265+WDR+ warm light+siren and light active deterrence + intelligence on): 8.2 W (12 VDC); 10 W (PoE)

Environment

Operating Temperature	−40 °C to +60 °C (−40 °F to +140 °F)
Operating Humidity	≤95%
Protection	IP67

Structure

Casing Material	Metal
Product Dimensions	Φ122.0 mm × 116.1 mm (4.80″ × Φ4.57″)

Net Weight	0.8 kg (1.76 lb)
Gross Weight	1.0 kg (2.20 lb)

Ordering Information		
Type	Model	Description
6MP Camera	DH-IPC-HDW3649H-AS- PV-PRO	6MP Smart Dual Light Active Deterrence Fixed-focal Eyeball Wiz Sense Network Camera
Accessories (Optional)	PFA137	Junction Box
	PFB205W-E	Wall Mount Bracket
	PFA109	Mount Adapter
	PFB220C	Ceiling Mount Bracket
	PFA152-E	Pole Mount Bracket
	PFM321-EN	DC12V1A Power Adapter
	PFM321D-EN	DC12V1A Power Adapter
	PFM320D-EN	DC12V2A Power Adapter
	PFM900-E	Integrated Mount Teste
	TF-P100	MicroSD Memory Card

Accessories

Optional:

- PFA137 Junction Box

- PFB205W-E Wall Mount Bracket

- PFA 109 Mount Adapter

- PFB220C Ceiling Mount Bracket

- PFA152-E Pole Mount Bracket

- PFM321-EN DC12V1A Power Adapter

- PFM321D-EN DC12V1A Power Adapter

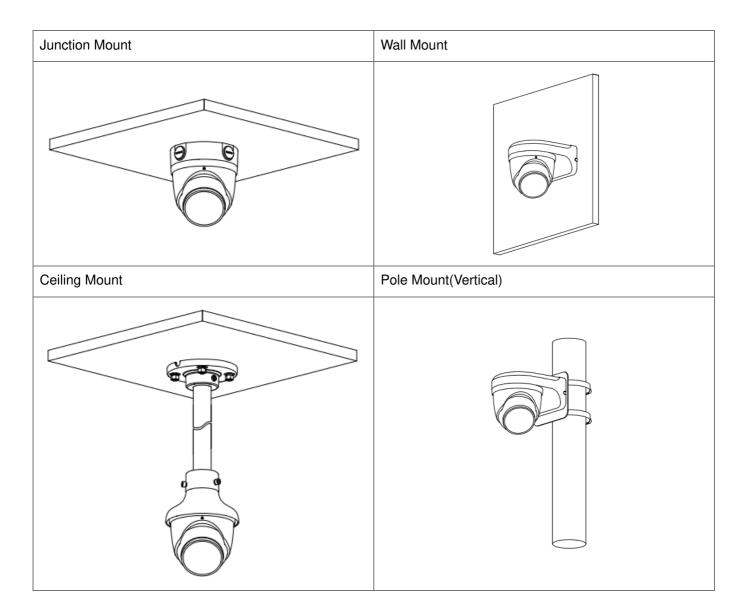- PFM320D-EN 12VDC 2A Power Adapter
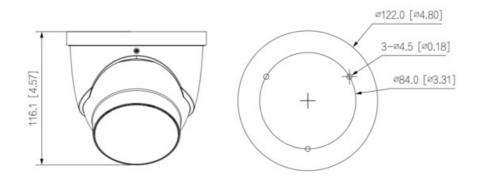

- PFM900-E Integrated Mount Tester

- TF-P100 Integrated Mount Tester

Junction Mount	Wall Mount
Ceiling Mount	Pole Mount(Vertical)

Dimensions (mm[inch])

Customer Support

www.dahuasecurity.com

Documents / Resources

	dahua TECHNOLOGY HDW3649H Wiz Sense 3 Network Camera [pdf] Owner's Manual DH-IPC-HDW3649H-AS-PV-PRO, DH-IPC-HDW3649HP-AS-PV-0280B-PRO, HDW3649H Wiz Sense 3 Network Camera, HDW3649H, Wiz Sense 3 Network Camera, Sense 3 Network Camera, Network Camera, Camera

References

- **Dahua Technology - World Leading Video-Centric AIoT Solution & Service Provider**
- **User Manual**

Manuals+, **Privacy Policy**