DH-SD5A425GA-HNR

4MP 25x Starlight IR WizSense Network PTZ Camera

Wiz Sense

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.

System Overview

Unique and elegant, the black semicircular sphere discreetly monitors from a distance without drawing undue attention to itself. It has a powerful optical zoom, and accurate pan, tilt and zoom capabilities, providing an all-in-one solution for long distance video surveillance of outdoor scenes. Together with infrared illumination and Starlight Technology, the camera is a great solution for dark, low light conditions. The series combines a day and night mechanical IR cut filter to produce high quality images in variable lighting conditions during the day, and True WDR for locations with direct sunlight and glare.

Functions

Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, and more, and uses secondary recognition during target detection to improve alarm accuracy.

Starlight+ Technology

For challenging low-light conditions, Dahua's Starlight Ultra-low Light Technology offers the best in light sensitivity, capturing color in vivid detail, even in lighting as low as 0.001 lux. The camera uses a set of optical features to balance light throughout the scene, producing clear images in dark environments.

PFA Technology

PFA technology has introduced new methods of judgment that ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms that ensure image clarity when zooming and that shorten focus time. This makes the camera highly advanced in its functions, substantially improving the quality of your experience.

- 1/1.8" 4Megapixel CMOS.
- Powerful 25x optical zoom.
- Starlight+ Technology.
- Max. 25/30fps@4MP.
- IR distance up to 150 m.
- Deep-learning-based perimeter protection.
- Auto Tracking 3.0.
- SMD 4.0.
- PoE+.
- IP67, IK10.

4Mp | Perimeter Protection | Auto Tracking | IK10

Interoperability

The camera conforms to ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of the manufacturer.

Wide Dynamic Range

The camera produces vivid images, even in high-contrast lighting conditions, by using industry-leading wide dynamic range (WDR) technology. For scenes that quickly alternate between bright and low lighting, WDR adjusts to fully capture both the bright and dark areas of a scene, producing superior quality videos.

Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, a flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality videos without straining the network. Smart H.265+ technology outranks standard H.265 video compression, reducing bit rate and storage requirements by up to 70%.

Auto Tracking

This feature controls the pan, tilt and zoom actions of the camera to automatically track an object in motion, to keep it in view of the camera. Tracking can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

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.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Pixel	4 MP
Max. Resolution	2560(H) × 1440(V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1 s–1/30,000 s
Scanning System	Progressive
Min. Illumination	Color: 0.001 lux@F1.6 B/W: 0.0001 lux@F1.6 0 lux (IR light on)
Illumination Distance	150 m (492.13 ft) (IR)
Illuminator On/Off Control	Zoom Prio; Manual; Auto; Off
Illuminator Number	4 (IR)

Lens

Focal Length	5.4 mm–135 mm			
Max. Aperture	F1.6–F4.0			
Field of View	H: 61.6°–3.6°; V: 35.7°–2°; D: 66.6°–4°			
Optical Zoom	25×			
Focus Control	Auto; semi-auto; manual			
Close Focus Distance	0.1 m–2 m			
Iris Control	Auto; manual; fixed			
DORI Distance	Detect	Observe	Recognize	Identify
	1724 m (5656.16 ft)	689 m (2260.05 ft)	344 m (1128.61 ft)	172 m (564.30 ft)

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: −15° to +90°, auto flip 180°
Manual Control Speed	Pan: 0.1°/s–300°/s Tilt: 0.1°/s–140°/s
Preset Speed	Pan: 400°/s; Tilt: 300°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Pattern; Preset; Scan; Tour
PTZ Protocol	DH-SD Pelco-P/D (Auto recognition)

Intelligence

IVS (Perimeter Protection)	Tripwire; intrusion; climbing fences; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification; linkage tracking
Face Detection	Supports face detection, face bounding box, capturing snapshots, uploading face snapshots, enhancing face images, and selecting a preferred image among a group of snapshots. Attribute Extraction is also supported, where 6 attributes and 8 expressions can be detected. The attributes are gender, age, glasses, mask, mustache and expressions. The expressions are angry, sad, hate, scared, surprised, calm, happy and confused. Face cutout is also offered, where you can cutout one face at a time and customize the size to be a one-inch photo. The supported methods for capturing snapshots are real-time capturing, quality first, and selecting a preferred image among a group of snapshots.
Video Metadata	Detects motor and non-motor vehicles, faces and human bodies. It also performs tracking, takes snapshots, uploads high-quality face images and optimizes images. It extracts attributes from motor vehicles, detecting up to 10 attributes for them.
People Counting	Uses advanced image processing technology to extract depth information from images. The extracted information is then processed by advanced, deep learning algorithms to analyze and detect human bodies, and track targets in real time. The camera provides statistics for separate individuals' entrance and exit with up to 95% counting accuracy.
Auto Tracking	Yes
SMD	SMD 4.0
Auto Patrol	It triggers the IVS rule when a target is detected and makes the camera link with the PTZ to rotate to the position of the target and patrol based on its presets.
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.

Video

Video Compression	H.265; H.264B; H.264; H.264H; MJPEG(Sub Stream 1); smart H.265+; smart H.264+
Streaming Capability	3 streams
Resolution	4M (2560 × 1440); 3M (2048 × 1536); 1080p (1920 × 1080); 960p (1920 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240); VGA (640 × 480)
Video Frame Rate	Main stream: 4M/3M/1080p/1.3M/720p (1–25/30 fps) Sub stream 1: D1/CIF/VGA(1–25/30 fps) Sub stream 2: 1080p/1.3M/720p (1–25/30 fps)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 96 kbps–14848 kbps H.265: 38 kbps–8960 kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Yes
WDR	120 dB
HLC	Yes
White Balance	Auto; indoor; outdoor; tracking; manual; sodium lamp; natural light; street lamp
Gain Control	Auto; manual
Noise Reduction	2D NR; 3D NR
Motion Detection	Yes
Region of Interest (RoI)	Yes

Image Stabilization	Electronic(EIS)
Defog	Electronic
Digital Zoom	16×
Image Rotation	180°
Privacy Masking	Up to 24 areas can be set, with up to 8 areas in the same view; multiple colors available
S/N Ratio	≥ 55 dB

Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; MPEG2-Layer2; G722.1; G729; G723

Network

Network Port	RJ-45 (10/100 Base-T)
Network Protocol	FTP;RTMP;IPv6;Bonjour;IPv4;DNS;RTCP;PPPoE;NTP;RTP;802.1x;HTTPS;SNMP;TCP/IP;DDNS;UPnP;NFS;ICMP;UDP;IGMP;HTTP;SSL;DHCP;SMTP;Qos;RTSP;ARP
Interoperability	ONVIF (Profile S&G&T); CGI; SDK
Streaming Method	Unicast/Multicast
User/Host	20 (total bandwidth: 64 M)
Storage	Micro SD card (512 GB); FTP/SFTP; NAS
Browser	IE 9 and later versions Chrome 41 and later versions Firefox 50 and later versions Safari 10 and later versions
Management Software	DSS; DMSS; Easy4ip; Smart PSS; IVSS
Mobile Client	iOS; Android

Certification

Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014 UL:UL60950-1+CAN/CSA C22.2,No.60950-1

Port

Audio Input	1 channel (LINE IN, bare wire)
Audio Output	1 channel (LINE OUT, bare wire)
Alarm Linkage	Capture; recordings; send email; preset; tour; pattern; alarm digital input
Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card status detection; memory space detection
Alarm I/O	2/1
Audio I/O	1/1

Power

Power Supply	24 VDC/2.5 A ± 25% PoE+ (802.3at)
Power Consumption	Basic: 12W Max: 21W(IR light+PTZ+Heater+Fan)

Environment

Operating Temperature	−40 °C to +70 °C (−40 °F to +158 °F)
Operating Humidity	≤ 95%

Storage Temperature	−40 °C to +70 °C (−40 °F to +158 °F)
Storage Humidity	≤ 95%
Protection	IP67, IK10, TVS 6000 V lightning proof; surge protection; voltage transient protection

Structure

Product Dimensions	Φ190 mm × 332 mm (Φ7.48" × 13.07")
Net Weight	4.7 kg (10.36 lb)
Gross Weight	8.0 kg (17.64 lb)

Ordering Information

Type	Model	Description
4MP WizSense PTZ Camera	DH-SD5A425GA-HNR	4MP 25x Starlight IR WizSense Network PTZ Camera
	SD5A425GA-HNR	4MP 25x Starlight IR WizSense Network PTZ Camera
Accessories	PFB305W	Wall Mount Bracket
	DC 24 V/2.5 A	Power Adapter
	PFA111	Mount Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount Bracket
	PFA120	Junction Box
	PFA150	Pole Mount Bracket
	PFA151	Corner Mount Bracket
	PFB303S	Parapet Mount Bracket

Accessories

Dimensions (mm[inch])

Included:

PFB305W
Wall Mount Bracket

DC 24 V/2.5 A
Power Adapter

Optional:

PFA111
Mount Adapter

PFA140
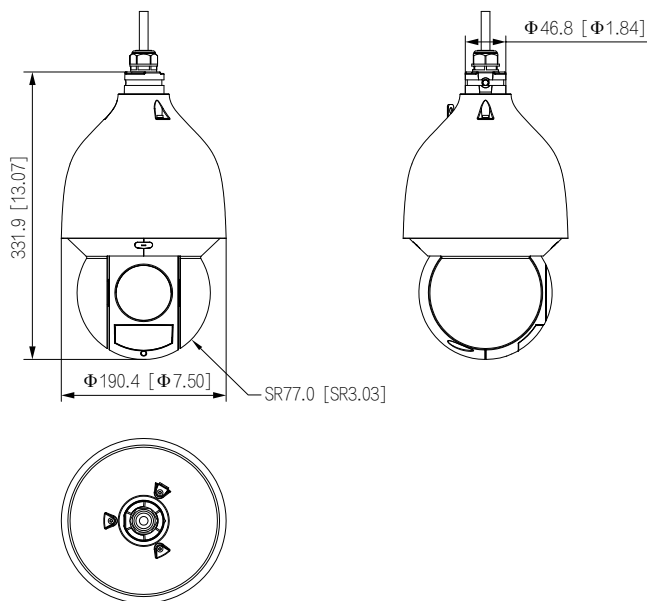Power Box

PFB300C
Ceiling Mount Bracket

PFA120
Junction Box

PFA150
Pole Mount Bracket

PFA151
Corner Mount Bracket

PFB303S
Pole Mount Bracket

Φ46.8 [Φ1.84]

331.9 [13.07]

Φ190.4 [Φ7.50]

SR77.0 [SR3.03]

Wall Mount	Ceiling Mount	Ceiling Mount
PFB305W+PFA120	PFA111+PFB300C	PFA111+PFB301C
Pole Mount(Vertical)	Corner Mount	Pole Mount(Horizontal)
PFB305W+PFA150	PFB305W+PFA151	PFA111+PFB300C+PFA150