

# DH-SD5A225GB-HNR

2MP 25x Starlight IR WizSense Network PTZ Camera



Wiz Sense

- 1/2.8" 2Megapixel STARVIS™ CMOS.
- Powerful 25x optical zoom.
- Max.50/60fps@2M.
- IR distance up to 150 m.
- Auto Tracking 3.0.
- Face Detection.
- SMD 4.0.
- PoE+.
- IP67, IK10.



Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopts 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

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day.

## 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.

### 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.

### Face Detection

Supports 6 attributes and 8 expressions: Gender, age, glasses, mask, beard and expressions (anger, sadness, disgust, fear, surprise, calm, happiness, and confusion). It also supports face cutout settings: Face, and single inch photo. Three snapshot methods are also featured: Real-time snapshot, priority snapshot, and quality priority.

### 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.

### 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 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, producing clear images in dark environments.

### 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.

**Technical Specification**

**Camera**

|                            |  |
|----------------------------|--|
| Image Sensor               | 1/2.8" CMOS  |
| Pixel                      | 2 MP   |
| Max. Resolution            | 1920 (H) × 1080 (V)  |
| ROM                        | 4 GB   |
| RAM                        | 1 GB   |
| Electronic Shutter Speed   | 1/1 s–1/30,000 s   |
| Scanning System            | Progressive  |
| Min. Illumination          | Color: 0.005 lux@F1.6<br>B/W: 0.0005 lux@F1.6<br>0 lux (IR light on) |
| Illumination Distance      | 150 m (492.13 ft) (IR)   |
| Illuminator On/Off Control | Zoom Prio; Manual; Smart IR  |
| Illuminator Number         | 4 (IR)   |

**Lens**

|                      |   |
|----------------------|---|
| Focal Length         | 4.8 mm–120 mm                               |
| Max. Aperture        | F1.6–F3.5                                   |
| Field of View        | H: 58.5°–2.8°; V: 33.2°–1.5°; D: 67.5°–3.2° |
| Optical Zoom         | 25x   |
| Focus Control        | Auto; semi-auto; manual                     |
| Close Focus Distance | 0.1 m–1.5 m (0.33 ft–4.92 ft)               |
| Iris Control         | Auto; manual                                |

|               |   |                     |                     |                   |
|---------------|---|---------------------|---------------------|-------------------|
| DORI Distance | Detect  | Observe             | Recognize           | Identify          |
|               | 1,614 m<br>(5,292 ft)   | 646 m<br>(2,119 ft) | 323 m<br>(1,060 ft) | 161 m<br>(528 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. |                     |                     |                   |

**PTZ**

|                      |   |
|----------------------|---|
| Pan/Tilt Range       | Pan: 0° to 360° endless<br>Tilt: –15° to +90°, auto flip 180° |
| Manual Control Speed | Pan: 0.1°/s–300°/s<br>Tilt: 0.1°/s–200°/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          | Preset; Pattern; Tour; Scan                                   |

**Intelligence**

|                            |   |
|----------------------------|---|
| 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.  |
| IVS (Perimeter Protection) | Tripwire; intrusion; climbing fences; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification   |
| 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. |
| People Counting            | Supports tripwire for people counting at entrances and exits, counting the number of people staying in an area and queuing in an area, and displaying and exporting reports based on the day, week and month.   |
| Auto Tracking              | Yes   |
| 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.  |
| 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.  |

**Video**

|                          |   |
|--------------------------|---|
| Video Compression        | Smart H.265+; H.265; Smart H.264+; H.264; H.264B; H.264H; MJPEG (Sub Stream 1)  |
| Streaming Capability     | 3 streams   |
| Resolution               | 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)     |
| Video Frame Rate         | Main stream: 1080p/1.3M/720p@(1-50/60 fps)<br>Sub stream 1: D1/VGA/CIF@(1-25/30 fps)<br>Sub stream 2: 1080p/1.3M/720p@(1-25/30 fps) |
| Bit Rate Control         | CBR; VBR  |
| Video Bit Rate           | H264: 64 Kbps–10946 Kbps<br>H265: 25 Kbps–6400 Kbps   |
| Day/Night                | Auto (ICR); Color; B/W  |
| BLC                      | Yes   |
| WDR                      | 120 dB  |
| White Balance            | Auto; indoor; outdoor; ATW; 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    | 16x   |
| Image Rotation  | 180°  |
| Privacy Masking | Up to 24 areas can be set, with up to 8 areas in the same view. |
| 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    | HTTP; HTTPS; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; IPv6; 802.1x; QoS; FTP; UPnP; ICMP; SNMP; SNMP v1/v2c/v3 (MIB-2); IGMP; ARP; RTCP; RTP; PPPoE; RTMP; TCP; SSL |
| Interoperability    | ONVIF(Profile S&G&T);CGI;SDK  |
| Streaming Method    | Unicast; Multicast  |
| User/Host           | 20 (total bandwidth: 64 M)  |
| Storage             | FTP; Micro SD card (512 GB); NAS  |
| Browser             | IE 7 and later versions<br>Chrome 42 and earlier versions<br>Firefox 52 and earlier versions<br>Safari  |
| Management Software | Smart PSS; DSS; DMSS; Easy4ip; IVSS   |
| Mobile Client       | iOS; Android  |

### Certification

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

### Port

|               |   |
|---------------|---|
| Alarm I/O     | 2/1   |
| Audio I/O     | 1/1   |
| Two-way Audio | Yes   |
| Alarm Linkage | Capture; preset; tour; pattern; recording; triggering on-off value output; audio; sending email   |
| Alarm Event   | Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection; power exception detection |

### Power

|                   |   |
|-------------------|---|
| Power Supply      | 24 VDC, 2.5 A ± 25%<br>PoE +(802.3at)                               |
| Power Consumption | Basic: 13 W<br>Max: 22 W (illuminator + PTZ working + Heater + Fan) |

### Environment

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

### Structure

|                    |                                    |
|--------------------|------------------------------------|
| Product Dimensions | 332 mm × Φ190 mm (13.07" × Φ7.48") |
|--------------------|------------------------------------|

|              |                   |
|--------------|-------------------|
| Net Weight   | 4.7 kg (10.36 lb) |
| Gross Weight | 8 kg (17.64 lb)   |

### Ordering Information

| Type                            | Model                | Description                                      |
|---------------------------------|----------------------|--|
| 2MP WizSense Network PTZ Camera | DH-SD5A225GB-HNR     | 2MP 25x Starlight IR WizSense Network PTZ Camera |
|                                 | SD5A225GB-HNR        | 2MP 25x Starlight IR WizSense Network PTZ Camera |
| Accessories                     | PFB305W              | Wall Mount Bracket                               |
|                                 | DC24V/2.5A           | Power Adapter                                    |
|                                 | PFA111               | Mount Adapter                                    |
|                                 | PFA140               | Power Box  |
|                                 | PFB300C              | Ceiling Mount Bracket                            |
|                                 | PFB301C              | Ceiling Mount Bracket                            |
|                                 | PFA120               | Junction Box                                     |
|                                 | PFA150               | Pole Mount Bracket                               |
| PFA151                          | Corner Mount Bracket |  |

### Accessories

#### Included:



PFB305W  
Wall Mount  
Bracket



DC24V/2.5A  
Power Adapter

#### Optional:



PFA111  
Mount Adapter



PFA140  
Power Box



PFB300C  
Ceiling Mount  
Bracket



PFB301C  
Ceiling Mount  
Bracket



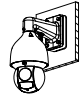
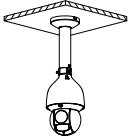
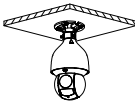
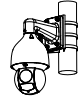
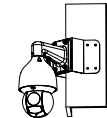
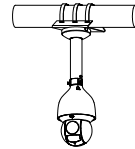
PFA120  
Junction Box



PFA150  
Pole Mount  
Bracket



PFA151  
Corner Mount  
Bracket

| 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   |
|  |  |  |

**Dimensions (mm[inch])**

