

# DH-SD49425GB-HNR

4MP 25x Starlight IR Network PTZ 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.

- 1/2.8" STARVIS™ CMOS.
- 25x optical zoom.
- Starlight technology.
- Max. 25/30fps@4M.
- IR distance up to 30 m.
- Perimeter protection.
- Face detection.
- SMD 4.0.
- IP66.



## 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

### Starlight Technology

With advanced image processing technology and optical technology, Dahua Starlight technology can provide clear colorful video in the environment of low illuminance. It widely applies to various environments of low illuminance.

### Protection (IP66, TVS 6000 V)

IP66, TVS 6000 V lightning proof, surge protection, and voltage transient protection.

### 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.

## Face Detection

Dahua Face Detection technology can detect the face in the image. With deep learning algorithm, the technology supports detecting, tracking, capturing and selecting the best face image, and then outputs face snapshot.

## 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 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, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

## Technical Specification

### Camera

|                            |                                                                           |
|----------------------------|---------------------------------------------------------------------------|
| Image Sensor               | 1/2.8" CMOS                                                               |
| Pixel                      | 4 MP                                                                      |
| Max. Resolution            | 2560 (H) × 1440 (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@F1.6 (IR light on) |
| Illumination Distance      | 30 m (98.43 ft) (IR)                                                      |
| Illuminator On/Off Control | Zoom Prio; Manual; Auto; Off                                              |
| Illuminator Number         | 2 (IR)                                                                    |

### Lens

|                      |                                                                                                                                                                                                                                                                                                                                                                                 |                         |                       |                      |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|----------------------|
| Focal Length         | 5 mm–125 mm                                                                                                                                                                                                                                                                                                                                                                     |                         |                       |                      |
| Max. Aperture        | F1.6–F3.6                                                                                                                                                                                                                                                                                                                                                                       |                         |                       |                      |
| Field of View        | H: 51.9°–3.0°;<br>V: 39.7°–2.2°;<br>D: 63.1°–3.7°                                                                                                                                                                                                                                                                                                                               |                         |                       |                      |
| Optical Zoom         | 25×                                                                                                                                                                                                                                                                                                                                                                             |                         |                       |                      |
| Focus Control        | Auto; semi-auto; manual                                                                                                                                                                                                                                                                                                                                                         |                         |                       |                      |
| Close Focus Distance | 0.1 m–0.5 m (0.33 ft–1.64 ft)                                                                                                                                                                                                                                                                                                                                                   |                         |                       |                      |
| Iris Control         | Auto                                                                                                                                                                                                                                                                                                                                                                            |                         |                       |                      |
| DORI Distance        | Detect                                                                                                                                                                                                                                                                                                                                                                          | Observe                 | Recognize             | Identify             |
|                      | 2500 m<br>(8208.10 ft)                                                                                                                                                                                                                                                                                                                                                          | 987.5 m<br>(3239.83 ft) | 500 m<br>(1640.42 ft) | 250 m<br>(820.21 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°–200°/s<br>Tilt: 0.1°–120°/s                         |
| Preset Speed         | Pan: 240°/s<br>Tilt: 200°/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                                   |

## Intelligence

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IVS (Perimeter Protection) | Tripwire; intrusion; crossing fence detection; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification                                                                                                                                                                                                                                                               |
| Face Detection             | Supports face detection, optimization, tracking, capturing pictures, uploading high-quality face snapshots, and face enhancement; Supports attributes extraction. 6 attributes and 8 expressions: Gender, age, glasses, expressions (angry, sad, hate, scary, surprise, calm, happy and confused), mask, mustache; Supports face cutout: Face, one-inch photo. Capturing strategies include real-time capturing, optimization, and quality first |
| SMD                        | SMD4.0                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 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        | H.264H; H.264B; Smart H.265+; H.264; H.265; MJPEG(Sub Stream); Smart H.264+                                                                       |
| Streaming Capability     | 3 streams                                                                                                                                         |
| Resolution               | 4M (2560 × 1440); 3M (2048 × 1536); 3M (2304 × 1296); 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240) |
| Video Frame Rate         | Main stream: 4M/3M/1080p/1.3M/720p @(1–25/30 fps)<br>Sub stream 1: D1/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: 96–14,848 Kbps<br>H265: 38–8,960 Kbps                                                                                                       |
| Day/Night                | Auto (ICR)/Color/B/W                                                                                                                              |
| BLC                      | Yes                                                                                                                                               |
| WDR                      | Yes                                                                                                                                               |
| HLC                      | Yes                                                                                                                                               |
| 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             | 16×                                                                                                                                               |
| 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        | 1 × 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    | RTMP; CGI; SDK; ONVIF (Profile S&G&T); P2P                                                                                                                       |
| 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<br>Chrome 41 and later versions<br>Firefox 50 and later versions<br>iOS 10 and later versions                                            |
| Management Software | DSS; DMSS                                                                                                                                                        |
| Mobile Client       | iOS; Android                                                                                                                                                     |

## Certification

|                |                                                                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certifications | CE-EMC: EN 55032; EN 61000-3-3; EN 61000-3-2; EN 50130-4; EN 55035<br>CE-LVD: EN 62368-1<br>FCC: 47 CFR FCC Part15, Subpart B, NSI C63.4<br>UL: UL62368-1 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

## Port

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

## Power

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Power Supply      | 12 VDC/3 A ± 10%<br>PoE+ (802.3at)               |
| Power Consumption | Basic: 9 W<br>Max.: 20 W (Illuminator+alarm+PTZ) |

## 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            | IP66, TVS 6000 V lightning proof; surge protection; voltage transient protection |

## Structure

|                    |                                      |
|--------------------|--------------------------------------|
| Product Dimensions | 270.4 mm × Φ160 mm (10.65" × Φ6.30") |
|--------------------|--------------------------------------|

|              |                  |
|--------------|------------------|
| Net Weight   | 2.4 kg (5.29 lb) |
| Gross Weight | 3.9 kg (8.60 lb) |

## Ordering Information

| Type        | Model            | Description                             |
|-------------|------------------|-----------------------------------------|
| 4MP Camera  | DH-SD49425GB-HNR | 4MP 25x Starlight IR Network PTZ Camera |
|             | SD49425GB-HNR    | 4MP 25x Starlight IR Network PTZ Camera |
| Accessories | PFB305W          | Wall Mount Bracket                      |
|             | DC 12 V/3A       | Power Adapter                           |
|             | PFA120           | Junction Box                            |
|             | PFA111           | Mount Adapter                           |
|             | PFB300C          | Ceiling Mount Bracket                   |
|             | PFB301C          | Ceiling Mount Bracket                   |
|             | PFA151           | Corner Mount Bracket                    |
|             | PFB303S          | Parapet Mount Bracket                   |
|             | PFB301S-E        | Plane Mount Bracket                     |
|             | PFA150           | Pole Mount Bracket                      |

## Accessories

### Included:



PFB305W  
Wall Mount Bracket

### Optional:



DC 12 V/3A  
Power Adapter



PFA120  
Junction Box



PFA111  
Mount Adapter



PFB300C  
Ceiling Mount Bracket



PFB301C  
Ceiling Mount Bracket



PFA151  
Corner Mount Bracket



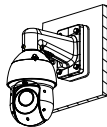
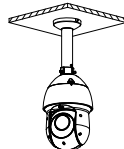
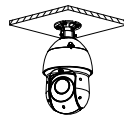
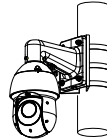
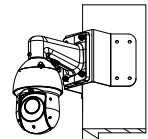
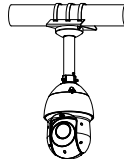
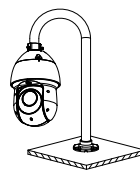
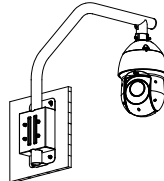
PFB303S  
Parapet Mount Bracket



PFB301S-E  
Plane Mount Bracket



PFA150  
Pole Mount Bracket

|                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Wall Mount<br>PFB305W+PFA120                                                      | Ceiling Mount<br>PFA111+PFB300C                                                   | Ceiling Mount<br>PFA111+PFB301C                                                   |
|  |  |  |
| Pole Mount(Vertical)<br>PFB305W+PFA150                                            | Corner Mount<br>PFB305W+PFA151                                                    | Pole Mount(Horizontal)<br>PFA111+PFB300C+PFA150                                   |
|  |  |  |
| Plane Mount<br>PFB301S-E                                                          | Parapet Mount<br>PFA111+PFB303S                                                   |                                                                                   |
|  |  |                                                                                   |

Dimensions (mm[inch])

