

# DH-SD4E425GB-HNR-A-PV1

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

The Three-in-One Camera (TiOC) solution combines 24/7 monitoring, active deterrence and real-time alarms with artificial intelligence into one smart, innovative solution. TiOC PTZ cameras adopt auto-tracking 3.0 technology, greatly improving the monitoring scope of key targets. For distributors and installers, it not only saves time, but also reduces cost.

## 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.

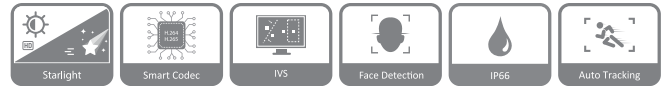
### Smart H.265+ & Smart H.264+

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.

### 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.

- 1/2.8" 4Megapixel STARVIS™ CMOS.
- 25x optical zoom.
- Starlight technology.
- Max. 25/30fps@4M.
- IR distance up to 100 m.
- Auto-tracking 3.0.
- Perimeter protection.
- Face detection.
- SMD 4.0.
- IP66.
- Full-color illuminator; red and blue warning light.



### 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.

### Protection (IP66, TVS 6000 V)

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

### 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               | 1/2.8" 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 (illuminator on) |
| Illumination Distance      | 100 m (328.08 ft) (IR)<br>50 m (164.04 ft) (White light)                     |
| Illuminator On/Off Control | Zoom Prio; Manual; Auto; Off   |
| Illuminator Number         | 2 (IR)<br>2 (Dual light fusion)  |

**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         | 25x   |                         |                       |                      |
| Focus Control        | Auto; semi-auto; manual                           |                         |                       |                      |
| Close Focus Distance | 0.1 m–0.5 m (0.33 ft–1.64 ft)                     |                         |                       |                      |
| Iris Control         | Auto; manual                                      |                         |                       |                      |
| 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) |

**PTZ**

|                      |   |
|----------------------|---|
| Pan/Tilt Range       | Pan: 0° to 360° endless<br>Tilt: –15° to +90°, auto flip 180° |
| Manual Control Speed | Pan: 0.1°/s–200°/s<br>Tilt: 0.1°/s–120°/s                     |
| Preset Speed         | Pan: 240°/s; 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; 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. |
| Auto Tracking  | Yes   |
| SMD            | Yes   |
| Quick Pick     | With AI NVR, quickly pick up the human/vehicle targets that users are interested in from SMD events.  |

**Active Deterrence**

|               |   |
|---------------|---|
| Light Warning | Red and blue warning light. They can be configured to flash for 5 to 30 seconds with a high, medium or low frequency. |
| Sound Warning | Offers 11 types of sound alarms, and supports importing custom sound alarms.  |

**Video**

|                          |   |
|--------------------------|---|
| Video Compression        | H.264H;H.264B;Smart H.265+;H.265;MJPEG(Sub Stream);Smart H.264+;H.264M  |
| Streaming Capability     | 3 streams   |
| Resolution               | 4M (2560 × 1440); 3M (2048 × 1536); 3M (2304 × 1296); 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: 4M/3M/1080p/1.3M/720p@ (1–25/30 fps)<br>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           | H264: 96 Kbps–14848 Kbps<br>H265: 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/3D   |
| 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; 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 | 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>Safari 10 and later versions |
|---------|--|

|                     |                    |
|---------------------|--------------------|
| Management Software | DSS pro; DMSS; NVR |
|---------------------|--------------------|

|               |             |
|---------------|-------------|
| Mobile Client | iOS;Android |
|---------------|-------------|

### Certification

|                |  |
|----------------|--|
| Certifications | CE: EN55032/EN55024/EN50130-4<br>FCC: Part15 subpartB, ANSI C63.4-2014 |
|----------------|--|

### Port

|             |           |
|-------------|-----------|
| Audio Input | 1 channel |
|-------------|-----------|

|              |           |
|--------------|-----------|
| Audio Output | 1 channel |
|--------------|-----------|

|               |  |
|---------------|--|
| Alarm Linkage | Capture; recording; send email; preset; pattern; tour; alarm digital input; audio; warning light |
|---------------|--|

|             |  |
|-------------|--|
| 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: 7.0 W<br>Max.: 13 W (illuminator+heater+PTZ+speaker) |
|-------------------|---|

### Environment

|                       |                                      |
|-----------------------|--------------------------------------|
| Operating Temperature | -40 °C to +65 °C (-40 °F to +149 °F) |
|-----------------------|--------------------------------------|

|                    |      |
|--------------------|------|
| Operating Humidity | ≤95% |
|--------------------|------|

|            |  |
|------------|--|
| Protection | IP66; TVS 6000 V lightning proof; surge protection; voltage transient protection |
|------------|--|

### Structure

|                    |  |
|--------------------|--|
| Product Dimensions | 269.9 mm × Φ160.0 mm (10.59" × Φ6.30") |
|--------------------|--|

|            |                  |
|------------|------------------|
| Net Weight | 2.6 kg (5.73 lb) |
|------------|------------------|

|              |                |
|--------------|----------------|
| Gross Weight | 4 kg (8.82 lb) |
|--------------|----------------|

### Ordering Information

| Type                          | Model                  | Description                                      |
|-------------------------------|------------------------|--|
| 4MP<br>WizSense<br>PTZ Camera | DH-SD4E425GB-HNR-A-PV1 | 4MP 25x Starlight IR WizSense Network PTZ Camera |
|                               | SD4E425GB-HNR-A-PV1    | 4MP 25x Starlight IR WizSense Network PTZ Camera |
| Accessories                   | PFB305W                | Wall Mount Bracket                               |
|                               | DC 12 V/3A             | Power Adapter                                    |
|                               | PFA126                 | 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



PFA126  
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

**Installation**

| Wall Mount<br>PFB305W+PFA126            | Ceiling Mount 1<br>PFA111+PFB300C | Ceiling Mount 2<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])**

