# DH-SD4A216DB-HNY

## 2MP 16x WizSense NETWORK PTZ CAMERA

· 1/2.8" 2Megapixel STARVIS™ CMOS.

· 16x optical zoom.

· Starlight technology.

· Max. 25/30fps@2MP.

· IR distance up to 100 m.

· Auto-tracking 1.0.

· Perimeter protection.

· Face detection.

· SMD 3.0.

· IP66.

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

With its powerful optical zoom, and accurate pan and tilt capabilities, the PTZ camera provides 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.

### 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.

#### 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.

#### 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 1.0

This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action 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.

#### 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.
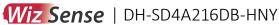
#### SMD

Empowered by deep-learning algorithms, Dahua SMD filters out motion detection alarms triggered by targets that are not a concern. It quickly recognizes humans and vehicles, triggering alarms when an intrusion occurs.

#### Environment (−40 °C to +65 °C, IP66)

Developed to operate in extreme conditions, the camera can function in temperatures ranging from −40 °C to +65 °C (−40 °F to +149 °F) at 95% humidity. It was subjected to rigorous dust and water immersion tests, gaining its IP66 Ingress Protection certification, making it suitable for demanding outdoor applications.

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/2.8" CMOS |
| Pixel | 2MP |
| Max. Resolution | 1920 × 1080 |
| ROM | 128 MB |
| RAM | 512 MB |
| Electronic Shutter Speed | 1/1s~1/30000s |
| Scanning System | Progressive |
| Min. Illumination | Color: 0.005 lux@F1.6<br>B/W: 0.0005 lux@F1.6<br>0 lux (IR on) |
| Illumination Distance | 100 m (328.08 ft) (IR) |
| Illuminator On/Off Control | Zoom Prio; Manual; Auto; Off |
| Illuminator Number | 6 (IR) |

### Lens

| | |
|---|---|
| Focal Length | 5 mm–80 mm |
| Max. Aperture | F1.6–F3.5 |
| Field of View | H: 53.9°–4.6°<br>V: 30.3°–2.6°<br>D: 60°–5.3° |
| Optical Zoom | 16× |
| Focus Control | Auto; semi-auto; manual |
| Close Focus Distance | 0.1 m–0.5 m (0.33 ft–1.64 ft) |

| DORI Distance | Detect | Observe | Recognize | Identify |
|---|---|---|---|---|
| | 1,103.4 m<br>(3,620.08 ft) | 435.9 m<br>(1,430.12 ft) | 220.7 m<br>(724.08 ft) | 110.3 m<br>(361.88 ft) |

### PTZ

| | |
|---|---|
| Pan/Tilt Range | Pan: 0° to 360° endless<br>Tilt: −5° to +90°, auto flip 180° |
| Manual Control Speed | Pan: 0.1°/s–240°/s<br>Tilt: 0.1°/s–160°/s |
| Preset Speed | Pan: 240°/s; Tilt: 160°/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 |

### 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 track box, capturing pictures, face enhancement; Supports face cutout: Face, one-inch photo. Capturing strategies include real-time capturing and quality first |
| Auto Tracking | Yes |
| SMD | SMD 3.0 |
| 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 |

### 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 | 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 @(1–25/30 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–8192 kbps<br>H265:25 kbps–6400 kbps |
| Day/Night | Auto (ICR)/Color/B/W |
| BLC | Yes |
| WDR | 120 dB |
| 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 | G.711a; G.711Mu; G.726; MPEG2-Layer2; G722.1; PCM |

### 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;SMB;HTTP;SSL;DHCP;SMTP;SNMPv1/v2c/v3(MIB-2);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>iOS 10 and later versions |
| Management Software | DSS;DSS Pro |
| Mobile Client | iOS;Android |

## Certification

| | |
|---|---|
| Certifications | CE: EN55032/EN55024/EN50130-4<br>FCC: Part15 subpartB, ANSI C63.4-2014<br>UL: UL62368-1 |

## Port

| | |
|---|---|
| Audio Input | 1 channel (LINE IN, bare wire) |
| Audio Output | 1 channel (LINE OUT,bare wire) |
| Alarm Linkage | Capture; preset; tour; pattern; recordings on SD card; alarm digital input; send email; audio |
| 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/2 A ± 10% (included)<br>PoE+ (802.3at) |
| Power Consumption | Basic: 10 W<br>Max.: 19 W (illuminator on + fan on + PTZ) |

## 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 | 170.4 mm × Φ171.1 mm (6.71" × Φ6.74") |
| Net Weight | 2.5 kg (5.51 lb) |
| Gross Weight | 3.2 kg (7.05 lb) |

## Ordering Information

| Type | Model | Description |
|---|---|---|
| 2MP WizSense PTZ Camera | DH-SD4A216DB-HNY | 2MP 16x Starlight IR WizSense Network PTZ Camera |
| | SD4A216DB-HNY | 2MP 16x Starlight IR WizSense Network PTZ Camera |
| Accessories | DC 12 V/2A | Power Adapter |
| | PFM900-E | Integrated Mount Tester |
| | TF-P100 | MicroSD Memory Card |
| | PFA101 | Mount Adapter |
| | PFB303W | Wall Mount Bracket |
| | PFB300C | Ceiling Mount Bracket |
| | PFA150 | Pole Mount Bracket |
| | PFA151 | Corner Mount Bracket |
| | PFB303S | Parapet Mount Bracket |
| | PFB5310C | In-ceiling Mount |

## Accessories

Included:



DC 12 V/2A
Power Adapter

Optional:
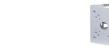


PFM900-E
Integrated
Mount Tester



TF-P100
MicroSD Memory
Card



PFA101
Mount Adapter



PFB303W
Wall Mount
Bracket



PFB300C
Ceiling Mount
Bracket



PFA150
Pole Mount
Bracket



PFA151
Corner Mount
Bracket



PFB303S
Parapet Mount
Bracket



PFB5310C
In-ceiling Mount