# DH-SD49216UB-HN

## 2MP 16x Starlight IR Network PTZ Camera

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

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

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.

### Protection (IP66, TVS 6000 V)

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

### 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%.

- 1/2.8" 2Megapixel STARVIS™ CMOS.
- 16× optical zoom.
- Starlight technology.
- Max. 25/30 fps@1080p.
- IR distance up to 100 m.
- H.265 encoding.
- Perimeter protection.
- Face Detection. Up to 8 faces captured at the same time.

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets to improve alarm accuracy.

### 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.

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/2.8" CMOS |
| Pixel | 2 MP |
| Max. Resolution | 1920 (H) × 1080 (V) |
| ROM | 128 MB |
| RAM | 256 MB |
| 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 | 100 m (328.08 ft) (IR) |
| Illuminator On/Off Control | Zoom Prio; Manual; Smart IR |
| Illuminator Number | 3 (IR) |

### Lens

| | | | | |
|---|---|---|---|---|
| Focal Length | 5.0 mm–80.0 mm | | | |
| Max. Aperture | F1.6 | | | |
| Field of View | H: 53.9°–4.6°; V: 30.3°–2.6°; D: 60°–5.3° | | | |
| Optical Zoom | 16× | | | |
| Focus Control | Auto; semi-auto; manual | | | |
| Close Focus Distance | 0.1 m–2 m (0.33 ft–6.56 ft) | | | |
| Iris Control | Fixed | | | |
| DORI Distance | Detect | Observe | Recognize | Identify |
| | 1,131 m (3,710.63 ft) | 452 m (1,482.94 ft) | 226 m (741.47 ft) | 113 m (370.73 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–80°/s<br>Tilt: 0.1°/s–80°/s |
| Preset Speed | Pan: 80°/s; Tilt: 80°/s |
| Preset | 300 |
| Tour | 8 (up to 32 presets per tour) |
| Pattern | 5 |
| Scan | 5 |
| Power-off Memory | Yes |
| Idle Motion | Pattern; Preset; Tour |
| PTZ Protocol | DH-SD<br>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 |
| Face Detection | Support face detection; capturing pictures; face enhancement |
| SMD | Yes |

### 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 | 1080p (1920 × 1080); 960p (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240) |
| Video Frame Rate | Main stream: 1080p/960p/720p (1–25/30 fps)<br>Sub stream 1: D1/VGA/CIF (1–25/30 fps)<br>Sub stream 2: 1080p/960p/720p (1–25/30 fps) |
| Bit Rate Control | CBR; VBR |
| Video Bit Rate | H.264: 1792 kbps–8192 kbps<br>H.265: 512 kbps–5632 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.722.1; G.726; MPEG2-Layer2; G.729 |

### Network

| | |
|---|---|
| Network Port | RJ-45 (10/100 Base-T) |
| Network Protocol | TCP; FTP; RTMP; IPv6; Bonjour; IPv4; DNS; RTCP; PPPoE; NTP; RTP; 802.1x; HTTPS; SNMP; TCP/IP; DDNS; UPnP; NFS; ICMP; UDP; IGMP; IP Filter; SMB; HTTP; SSL; DHCP; SMTP; SNMP v1/v2c/v3 (MIB-2); QoS; RTSP; ARP |
| Interoperability | CGI; Dahua SDK; API; SDK; ONVIF (Profile S&G&T) |
| 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<br>Firefox<br>Safari |

| | |
|---|---|
| Management Software | DSS Pro |
| Mobile Client | iPhone; iPad; iOS; Android |

## Certification

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

## Port

| | |
|---|---|
| Audio Input | 1 channel (LINE IN, bare wire) |
| Audio Output | 1 channel (LINE OUT, bare wire) |
| Alarm I/O | 2/1 |
| Audio I/O | 1/1 |
| Alarm Linkage | Capture; preset; tour; pattern; recording; alarm digital input; audio; send 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 | 12 VDC, 3 A (± 10%)<br>PoE (802.3at) |
| Power Consumption | Basic: 12 W<br>Max.: 20 W (IR light) |

## Environment

| | |
|---|---|
| Operating Temperature | −40 °C to +60 °C (−40 °F to +140 °F) |
| Operating Humidity | ≤95% |
| Protection | IP66; TVS 6000 V lightning proof; surge protection; voltage transient protection |

## Structure

| | |
|---|---|
| Product Dimensions | 270.4 mm × Φ160.0 mm (10.65" × Φ6.30") |
| Net Weight | 2.4 kg (5.29 lb) |
| Gross Weight | 3.9 kg (8.60 lb) |

## Ordering Information

| Type | Part Number | Description |
|---|---|---|
| 2M Camera | DH-SD49216UB-HN | 2MP 16x Starlight IR Network PTZ Camera |
| | SD49216UB-HN | 2MP 16x Starlight IR Network PTZ Camera |
| Accessories | PFB305W | Wall Mount Bracket |
| | DC12V/3A | Power Adapter |
| | PFA120 | Mount Adapter |
| | 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:

DC12V/3A
Power Adapter

PFA120
Mount Adapter

PFA111
Mount Adapter

PFB300C
Ceiling Mount Bracket

PFB301C
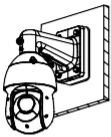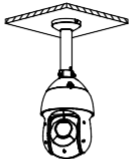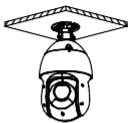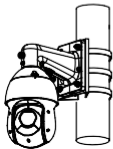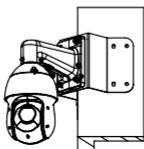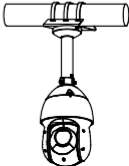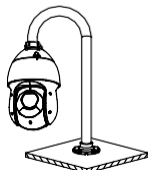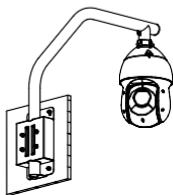Ceiling Mount Bracket

PFA151
Corner mount Bracket

PFB303S
Parapet Mount Bracket

PFB301S-E
Plane Mount Bracket

PFA150
Pole Mount Bracket

| Wall Mount | 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 |

| Plane Mount | Parapet Mount |
|---|---|
| PFB301S-E | PFA111+PFB203S |

## Dimensions (mm[inch])

Ø46.8 [Ø1.84]

270.4 [10.65]

SR67.5 [SR2.66]

Ø160.0 [Ø6.30]