# DH-ESD41A415-HNR

## 4MP 15X Starlight NETWORK PTZ CAMERA



- 1/2.8" 4Megapixel STARVIS™ CMOS.
- 15x optical zoom.
- Starlight+ technology.
- Face detection.
- Video Metadata.
- SMD 4.0.
- IP68.




## System Overview

With its explosion-proof structure, this series ensures that safety and performance are delivered with each camera and its accessories. Its stainless steel design and ATEX and IECEx certfcaton promise durability and protecton for the surrounding area. It is applicable to Class I/II/III, Divisions 1 and 2, Zones 1, 2, 21, 22, and Groups IIC and IIIC, and is ideal for use in a wide variety of scenarios such as chemical plants, coal mines, fuel oil plants, and flour mills.

## Functions

**Perimeter Protection**

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

**Starlight Technology**

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology off ers best-in-class light sensitivity, capturing color details in low light down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

**Auto-tracking**

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.

**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 |
| Max. Resolution | 2560 (H) × 1440 (V) |
| Effective Pixels | 4MP |
| ROM | 1GB |
| RAM | 4GB |
| Electronic Shutter Speed | 1/3s~1/100000s |
| Scanning Mode | Progressive |
| Minimum Illumination | 0.05lux@F1.6 (Color, 30 IRE);<br>0.005lux@F1.6 (B/W, 30 IRE) |

### Lens

| | | | | |
|---|---|---|---|---|
| Focal Length | 4.77mm~71.55 mm | | | |
| Aperture | F1.6~ F2.8 | | | |
| Field of View | H: 60.4°–4.3°; V: 34.5°–2.4°; D: 68.5°–5° | | | |
| Optical Zoom | 15x | | | |
| Focus Control | Auto/Semi-auto/Manual | | | |
| Close Focus Distance | 1m-1.5 m (3.28 ft-4.92 ft) | | | |
| Iris Control | Auto/Manual | | | |
| DORI Distance | Detect | Observe | Recognize | Identify |
| | 1431 m (4694.88 ft) | 565 m (1853.67 ft) | 286 m (938.32 ft) | 143 m (469.16 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 ; Tilt: 0° to +90°, auto flip 180° |
| Manual Control Speed | Panorama: 0.1°/s–130°/s; Tilt: 0.1°/s–57°/s |
| Manual Control Speed | Panorama: 0.1°/s–130°/s; Tilt: 0.1°/s–57°/s |
| Preset Speed | Pan: 280°/s; Tilt: 216°/s |
| Presets | 300 |
| Tour | 8(up to 32 preset per tour) |
| Pattern Number | 5 |
| Scanning Number | 5 |
| Speed Adjustment | Support |
| Power-off Memory | Support |
| Idle Motion | Preset/Tour/Pattern/Scanning |
| Protocol | DH-SD<br>Pelco-P/D(Auto recognition) |

### Artifical Intelligence

| | |
|---|---|
| Perimeter Protection | Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc. |
| Auto Tracking | Support |

### General Intelligence

| | |
|---|---|
| Event Trigger | Motion detection, video tampering, scene changing, Network disconnection, IP address conflict, illegal access, and storage anomaly. |
| General IVS | Object Abandoned/Missing |

### Video

| | |
|---|---|
| Compression | H.265/H.265+/H.264+/H.264/MJPEG(Sub Stream) |
| 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) |
| Frame Rate | Main stream: 4M/3M(1–25/30fps), 1080P/1.3M/720P(1–25/30fps)<br>Sub stream 1: D1/CIF(1–25/30fps)<br>Sub stream 2: 1080P/1.3M/720P(1–25/30fps), D1/CIF(1–25/30fps) |
| Bit Rate Control | Variable Bit Rate/Constant Bit Rate |
| Bit Rate | H.264: 96 kbps–14848 kbps<br>H.265: 38 kbps–8960 kbps |
| Day/Night | Support |
| BLC | Support |
| WDR | 120dB |
| HLC | Support |
| White Balance | Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/Natural/Street lamp |
| Gain Control | Auto/Manual |
| Noise Reduction | 2D/3D |
| Motion Detection | Support |
| Region of Interest (RoI) | Support |
| Electronic Image Stabilization (EIS) | Support |
| Optical Defog | Electronic Defog |
| Digital Zoom | 15x |
| Flip | 0°/180° |
| Privacy Masking | Up to 24 areas |

### Certifications

| | |
|---|---|
| Certification | CE; IECEX/ATEX; NEMA 4X |

### Audio

| | |
|---|---|
| Audio Compression | G.711A; G.711Mu; G.726; AAC; G.722.1; G.723; G.729; PCM; MPEG2-Layer2 |

### Port

| | |
|---|---|
| Audio In | 1 (LINE IN; bare wire) |

| | |
|---|---|
| Audio Out | 1 (LINE OUT; bare wire) |
| Alarm Port | 2 alarm input port; 1 alarm output port |
| **Network** | |
| Ethernet Port | 1 RJ-45 Port 10/100Base-T |
| Protocol | IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMPv1/v2c/v3(MIB-2); DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; RTCP |
| Interoperability | ONVIF Profile S&G; CGI |
| Streaming Method | Unicast/Multicast |
| Max. User Access | 20 (Total bandwidth 48M) |
| Edge Storage | FTP; Micro SD card (256G); P2P |
| Browser | IE7 and newer versions<br>Chrome 42 and older versions<br>Firefox 52 and older versions |
| **Safari** | |
| Management Software | Smart Player<br>Smart PSS<br>DSS<br>Easy4ip |
| Smart Phone | IOS/Android/Windows Phone |
| **Electrical** | |
| Power Supply | 100-240 VAC or PoE (AT standard) |
| Power Consumption | Basic: 18 W Max: 21 W (Basic power consumption + PTZ operation ) |
| **Environment** | |
| Operating Conditions | –40 °C to +60 °C (–40 °F to +140 °F) |
| Operating Humidity | ≤95%RH |
| Ingress Protection | IP68, TVS 6000 V lightning proof; surge protection; voltage transient protection |
| **Construction** | |
| Dimensions | ø184*277.4mm |
| Weight | Net Weight: 6.9 kg (15.21 lb);<br>Gross Weight: 9.4 kg (20.72 lb) |
| Casing | SUS304/SUS316L |

## Ordering Information

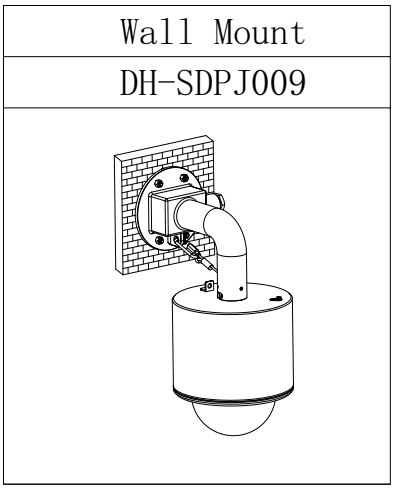
| Type | Model | Description |
|---|---|---|
| SD6AL Series | DH-ESD41A415-HNR | 4MP 15X Starlight NETWORK PTZ CAMERA |
| Accessories (Included) | CE4002-00 | Wall Mount Bracket |

## Accessories

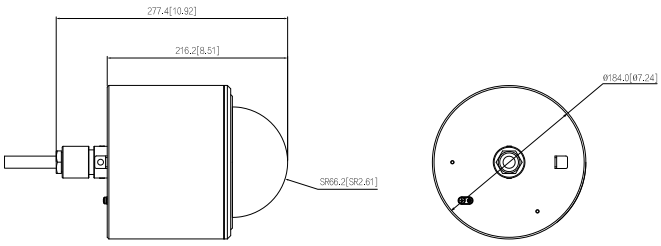
Included:



CE4002-00
Wall Mount
Bracket




## Dimensions (mm[inch])




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