

# DH-IPC-HDW4431EM-ASE

4MP IR Eyeball Network Camera



## System Overview

With upgraded H.265 encoding technology, Eco-savvy series brings high efficient video compression capability. It can save bandwidth and storage. Meanwhile, the series features starlight, smart IR technology and intelligent image analysis techniques. This series supports reminder function, meanwhile fully protected from dust and water, certified to IP67 and vandal resistant to IK10 standard.

## Functions

### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

### Wide Dynamic Range(WDR)

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, true WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

### Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area. In addition to scene analytics, the camera supports face detection to quickly capture a face and upload the image to a server. The camera also offers tamper detection by recognizing a dramatic scene change and generating a

- 1/3" 4Megapixel progressive scan CMOS
- H.265&H.264 triple-stream encoding
- 25/30fps@4M(2688×1520)
- Smart Detection supported
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- 2.8mm fixed lens (3.6mm,6mm optional)
- Built-in Mic
- Max. IR LEDs Length 50m
- Micro SD memory, IP67, PoE



warning message to inspect the camera.

### Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from -30° C to +60° C (-22° F to +140° F) with 95% humidity, allowing the camera to operate in the harshest environments.

### Protection(IP67, wide voltage)

The camera allows for ±30% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 6KV lightning rating provides effective protection for both the camera and its structure against lightning. Subjected and certified to rigorous dust and immersion tests (IP67), the camera is the choice for installation in even the most unforgiving environments.

### 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             | 1/3" 4Megapixel progressive scan CMOS                                                  |
| Effective Pixels         | 2688(H)x1520(V)                                                                        |
| RAM/ROM                  | 512MB/32MB                                                                             |
| Scanning System          | Progressive                                                                            |
| Electronic Shutter Speed | Auto/Manual, 1/3(4)~1/100000s                                                          |
| Minimum Illumination     | 0.06Lux/F1.6( Color,1/3s,30IRE)<br>0.4Lux/F1.6( Color,1/30s,30IRE)<br>0Lux/F1.6(IR on) |
| S/N Ratio                | More than 50dB                                                                         |
| IR Distance              | Distance up to 50m (164ft)                                                             |
| IR On/Off Control        | Auto/ Manual                                                                           |
| IR LEDs                  | 1                                                                                      |

| Lens                 |        |                                     |            |           |           |
|----------------------|--------|-------------------------------------|------------|-----------|-----------|
| Lens Type            |        | Fixed                               |            |           |           |
| Mount Type           |        | Board-in                            |            |           |           |
| Focal Length         |        | 2.8mm (3.6mm, 6mm optional)         |            |           |           |
| Max. Aperture        |        | F1.6 (F1.6, F1.6)                   |            |           |           |
| Angle of View        |        | H:104° (83°, 55°), V:58° (45°, 31°) |            |           |           |
| Optical Zoom         |        | N/A                                 |            |           |           |
| Focus Control        |        | Fixed                               |            |           |           |
| Close Focus Distance |        | 1.1m (1.5m, 3.1m)                   |            |           |           |
| DORI Distance        | Lens   | Detect                              | Observe    | Recognize | Identify  |
|                      | 2.8 mm | 56m(184ft)                          | 22m(72ft)  | 11m(36ft) | 6m(20ft)  |
|                      | 3.6 mm | 80m(262ft)                          | 32m(105ft) | 16m(52ft) | 8m(26ft)  |
|                      | 6.0 mm | 120m(394ft)                         | 48m(157ft) | 24m(79ft) | 12m(39ft) |

|                         |                                            |
|-------------------------|--------------------------------------------|
| Pan/Tilt/Rotation       |                                            |
| Pan/Tilt/Rotation Range | Pan:0°~360°; Tilt:0°~78°; Rotation:0°~360° |

|                                |                                               |
|--------------------------------|-----------------------------------------------|
| Intelligence                   |                                               |
| IVS                            | Tripwire, Intrusion, Object Abandoned/Missing |
| Advanced Intelligent Functions | Face Detection                                |

|                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Video                |                                                                                                                                              |
| Compression          | H.265+/H.265/H.264+/H.264                                                                                                                    |
| Streaming Capability | 3 Streams                                                                                                                                    |
| Resolution           | 4M(2688×1520)/3M(2304×1296)/<br>1080P(1920×1080)/1.3M(1280×960)/<br>720P(1280×720)/D1(704×576/704×480)/<br>VGA(640×480)/CIF(352×288/352×240) |
| Frame Rate           | Main Stream: 4M(1~25/30fps)                                                                                                                  |
|                      | Sub Stream: D1(1~25/30fps)                                                                                                                   |
|                      | Third Stream: 720P(1~25/10fps)                                                                                                               |
| Bit Rate Control     | CBR/VBR                                                                                                                                      |
| Bit Rate             | H.264: 24K ~ 10240Kbps<br>H.265: 14K ~ 9984Kbps                                                                                              |
| Day/Night            | Auto(ICR) / Color / B/W                                                                                                                      |
| BLC Mode             | BLC / HLC / WDR(120dB)                                                                                                                       |

|                                      |                                         |
|--------------------------------------|-----------------------------------------|
| White Balance                        | Auto/Natural/Street Lamp/Outdoor/Manual |
| Gain Control                         | Auto/Manual                             |
| Noise Reduction                      | 3D DNR                                  |
| Motion Detetion                      | Off / On (4 Zone, Rectangle)            |
| Region of Interest                   | Off / On (4 Zone)                       |
| Electronic Image Stabilization (EIS) | N/A                                     |
| Smart IR                             | Support                                 |
| Defog                                | N/A                                     |
| Digital Zoom                         | 16x                                     |
| Flip                                 | 0°/90°/180°/270°                        |
| Mirror                               | Off / On                                |
| Privacy Masking                      | Off / On (4 Area, Rectangle)            |

|             |                             |
|-------------|-----------------------------|
| Audio       |                             |
| Compression | G.711a/ G.711Mu/ AAC/ G.726 |

|                     |                                                                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network             |                                                                                                                                                         |
| Ethernet            | RJ-45 (10/100Base-T)                                                                                                                                    |
| Protocol            | HTTP; HTTPS; TCP; ARP; RTSP; RTP; UDP; SMTP;<br>FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; QoS;<br>UPnP;NTP; Bonjour; 802.1x; Multicast; ICMP;<br>IGMP; SNMP |
| Interoperability    | ONVIF, PSIA, CGI                                                                                                                                        |
| Streaming Method    | Unicast / Multicast                                                                                                                                     |
| Max. User Access    | 10 Users / 20 Users                                                                                                                                     |
| Edge Storage        | NAS<br>Local PC for instant recording<br>Mirco SD card 128GB                                                                                            |
| Web Viewer          | IE, Chrome, Firefox, Safari                                                                                                                             |
| Management Software | Smart PSS, DSS, Easy4ip                                                                                                                                 |
| Smart Phone         | IOS, Android                                                                                                                                            |

|                |                                                                  |
|----------------|------------------------------------------------------------------|
| Certifications | CE (EN 60950:2000)<br>UL:UL60950-1<br>FCC: FCC Part 15 Subpart B |
|----------------|------------------------------------------------------------------|

|                 |              |
|-----------------|--------------|
| Interface       |              |
| Video Interface | N/A          |
| Audio Interface | Built-in Mic |
| RS485           | N/A          |
| Alarm           | N/A          |

|                   |                               |
|-------------------|-------------------------------|
| Electrical        |                               |
| Power Supply      | DC12V, PoE (802.3af)(Class 0) |
| Power Consumption | <5.5W                         |

Environmental

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Operating Conditions | -30° C ~ +60° C (-22° F ~ +140° F) / Less than 95% RH |
| Storage Conditions   | -30° C ~ +60° C (-22° F ~ +140° F) / Less than 95% RH |
| Ingress Protection   | IP67                                                  |
| Vandal Resistance    | N/A                                                   |

Construction

|              |                             |
|--------------|-----------------------------|
| Casing       | Metal                       |
| Dimensions   | Φ106mm×93.7mm (4.17"×3.69") |
| Net Weight   | 0.47Kg (1.04lb)             |
| Gross Weight | 0.65Kg (1.43lb)             |

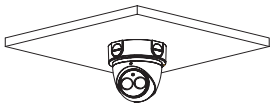
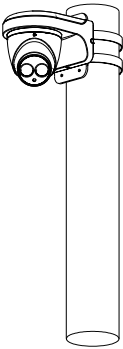
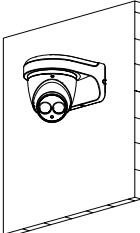
Ordering Information

| Type                   | Part Number                 | Description                         |
|------------------------|-----------------------------|-------------------------------------|
| 4MP camera             | DH-IPC-HDW4431EMP-ASE-0360B | 4MP IR Eyeball Network Camera, PAL  |
|                        | DH-IPC-HDW4431EMN-ASE-0360B | 4MP IR Eyeball Network Camera, NTSC |
|                        | IPC-HDW4431EMP-ASE-0360B    | 4MP IR Eyeball Network Camera, PAL  |
|                        | IPC-HDW4431EMN-ASE-0360B    | 4MP IR Eyeball Network Camera, NTSC |
|                        | DH-IPC-HDW4431EMP-ASE-0280B | 4MP IR Eyeball Network Camera, PAL  |
|                        | DH-IPC-HDW4431EMN-ASE-0280B | 4MP IR Eyeball Network Camera, NTSC |
|                        | IPC-HDW4431EMP-ASE-0280B    | 4MP IR Eyeball Network Camera, PAL  |
|                        | IPC-HDW4431EMN-ASE-0280B    | 4MP IR Eyeball Network Camera, NTSC |
|                        | DH-IPC-HDW4431EMP-ASE-0600B | 4MP IR Eyeball Network Camera, PAL  |
|                        | DH-IPC-HDW4431EMN-ASE-0600B | 4MP IR Eyeball Network Camera, NTSC |
|                        | IPC-HDW4431EMP-ASE-0600B    | 4MP IR Eyeball Network Camera, PAL  |
|                        | IPC-HDW4431EMN-ASE-0600B    | 4MP IR Eyeball Network Camera, NTSC |
| Accessories (optional) | PFB204W                     | Wall mount                          |
|                        | PFA130-E                    | Junction box                        |
|                        | PFA152-E                    | Pole Mount                          |
|                        | LR1002                      | ePoE Over Coax Converter            |

Accessories

Optional:



| Junction Mount                                                                      | Pole Mount                                                                           |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| PFA130-E                                                                            | PFB204W + PFA152-E                                                                   |
|   |  |
| Wall Mount                                                                          |                                                                                      |
| PFB204W                                                                             |                                                                                      |
|  |                                                                                      |

Dimensions (mm/inch)

