

# DH-IPC-HF5442E-E

4MP Starlight Bullet AI Network Camera



## System Overview

Pro AI series contains Face Detection, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, significantly improved accuracy.

## Functions

### Face Detection

Face Detection is a software application that automatically captures faces from within a digital image or a video frame from a video source. Dahua cameras use advanced deep learning algorithms and are trained by a large number of face data sources, enabling the camera to locate faces quickly and accurately from the video source and capture facial images.

### Face Attributes

Through the use of deep learning algorithms to analyze facial images, Dahua cameras can extract six facial attributes from each frame, including Age, Gender, Expression (Jolly/Surprise/Normal/Rage/Sad/Disgusted/Confused/Frightened), Glasses, Mouth Mask, Moustache & Beard. Customers can acquire data of interest via face attributes statistics.

### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile client reduces system requirements and resources resulting in greater surveillance system efficiency.

### People Counting

People Counting function uses advanced image processing technology

- 1/1.8" 4Megapixel progressive scan CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@2688 × 1520, 50/60 fps@1080P (1920 × 1080)
- WDR (140 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2/1 Alarm in/out, 1/1 audio in/out (Built-in MIC)
- Auto back focus (ABF)
- Micro SD memory



to capture depth information from within images. The camera pairs this information with deep learning algorithms to analyze and detect human bodies and track target objects in real time. The camera provides statistics for separate individuals' entrance and exit with up to 95% counting accuracy.

### Metadata

Metadata is feature attribute information extracted from a target object which can be used for data retrieval. Dahua face detection camera can extract six facial attributes and output the metadata for analysis.

### 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.

| Technical Specification  |                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Camera                   |                                                                                                                                                                                      |
| Image Sensor             | 1/1.8" 4Megapixel progressive scan CMOS                                                                                                                                              |
| Effective Pixels         | 2688 (H) × 1520 (V)                                                                                                                                                                  |
| RAM/ROM                  | 1 GB/128 MB                                                                                                                                                                          |
| Scanning System          | Progressive                                                                                                                                                                          |
| Electronic Shutter Speed | Auto/Manual, 1/3 s–1/100000 s                                                                                                                                                        |
| Minimum Illumination     | 0.002 Lux@F1.5                                                                                                                                                                       |
| LED Distance             | N/A                                                                                                                                                                                  |
| LED On/Off Control       | N/A                                                                                                                                                                                  |
| LEDs                     | N/A                                                                                                                                                                                  |
| Lens                     |                                                                                                                                                                                      |
| Lens Type                | N/A                                                                                                                                                                                  |
| Mount Type               | C/CS                                                                                                                                                                                 |
| Focal Length             | N/A                                                                                                                                                                                  |
| Max. Aperture            | N/A                                                                                                                                                                                  |
| Angle of View            | N/A                                                                                                                                                                                  |
| Aperture Type            | N/A                                                                                                                                                                                  |
| Close Focus Distance     | N/A                                                                                                                                                                                  |
| Pan/Tilt/Rotation        |                                                                                                                                                                                      |
| Pan/Tilt/Rotation Range  | N/A                                                                                                                                                                                  |
| Artificial Intelligence  |                                                                                                                                                                                      |
| Face Detection           | Support face image capture                                                                                                                                                           |
| Face Attributes          | Support 6 kinds of face attributes extraction: Age, Gender, Expression (Jolly, Surprise, Normal, Rage, Sad, Disgusted, Confused, Frightened), Glasses, Mouth Mask, Moustache & Beard |
| Perimeter Protection     | Tripwire, intrusion (Recognition of vehicle and people), fast moving, loitering detection, parking detection and people gathering                                                    |
| People Counting          | Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection                                                       |
| General Intelligence     |                                                                                                                                                                                      |
| Event Trigger            | Motion detection, Video tampering , Scene changing, Network disconnection , IP address conflict, Illegal Access, Storage anomaly                                                     |
| General Intelligence     | Object Abandoned/Missing                                                                                                                                                             |
| Heat Map                 | Yes                                                                                                                                                                                  |
| Video                    |                                                                                                                                                                                      |
| Compression              | H.265,H.264,H.264B,H.264H, MJPEG (sub stream)                                                                                                                                        |
| Smart Codec              | Yes                                                                                                                                                                                  |
| Streaming Capability     | 3 Streams                                                                                                                                                                            |

|                                      |                                                                                                                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution                           | 2688 × 1520/2560 × 1440/2304 × 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: 2688 × 1520 (1 fps–25/30 fps)<br>2560 × 1440 (1 fps–25/30 fps)<br>1920 × 1080 (1 fps–50/60 fps)                                                           |
|                                      | Sub Stream: D1 (1 fps–25/30 fps)<br>D1 (1 fps–50/60 fps)                                                                                                               |
|                                      | Third Stream: 1080P (1 fps–16 fps)                                                                                                                                     |
| Bit Rate Control                     | CBR/VBR                                                                                                                                                                |
| Bit Rate                             | H.264: 32 Kbps–8192 Kbps<br>H.265: 19 Kbps–8192 Kbps                                                                                                                   |
| Day/Night                            | Auto(ICR)/Color/B/W                                                                                                                                                    |
| BLC Mode                             | BLC/HLC/WDR (140 dB)                                                                                                                                                   |
| White Balance                        | Auto/Natural/Street Lamp/Outdoor/Manual                                                                                                                                |
| Gain Control                         | Auto/Manual                                                                                                                                                            |
| Noise Reduction                      | 3D DNR                                                                                                                                                                 |
| Motion Detection                     | Off/On (4 Zone, Rectangle)                                                                                                                                             |
| Region of Interest                   | Off/On (4 Zone)                                                                                                                                                        |
| Electronic Image Stabilization (EIS) | Yes                                                                                                                                                                    |
| Smart IR                             | N/A                                                                                                                                                                    |
| Defog                                | Yes                                                                                                                                                                    |
| Flip                                 | 0°/90°/180°/270°                                                                                                                                                       |
| Mirror                               | Off/On                                                                                                                                                                 |
| Privacy Masking                      | Off/On (4 Area, Rectangle)                                                                                                                                             |
| Audio                                |                                                                                                                                                                        |
| Compression                          | G.711a, G.711Mu, G.726, AAC, G.723                                                                                                                                     |
| Network                              |                                                                                                                                                                        |
| Ethernet                             | RJ-45 (10/100 Base-T)                                                                                                                                                  |
| Protocol                             | IPv4;IPv6;HTTP;HTTPS;TCP;UDP;ARP;RTP;RTSP;RTCP ;RTMP;SMTP;FTP;SFTP;DHCP;DNS;DDNS;QoS;UPnP; NTP;Multicast;ICMP;IGMP;NFS;PPPoE;802.1x;SNMP                               |
| Interoperability                     | ONVIF (Profile S/Profile G/Profile T), CGI, Milstone, Genetec, P2P                                                                                                     |
| Streaming Method                     | Unicast/Multicast                                                                                                                                                      |
| Max. User Access                     | 20 Users                                                                                                                                                               |
| Edge Storage                         | NAS;FTP;SFTP<br>Micro SD card 256 GB                                                                                                                                   |
| Web Viewer                           | IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)                                                                                  |
| Management Software                  | Smart PSS, DSS, DMSS                                                                                                                                                   |
| Smart Phone                          | iOS, Android                                                                                                                                                           |
| Certifications                       |                                                                                                                                                                        |
| Certifications                       | CE-LVD: EN60950-1<br>CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU<br>FCC: 47 CFR FCC Part 15, Subpart B<br>UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07 |

**Interface**

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Audio Interface | 1/1 channel In/Out, Built-in MIC                               |
| RS485           | 1 port                                                         |
| Alarm           | 2 channel In: 5mA 5V DC<br>1 channel Out: 1A 30VDC/0.5A 50V AC |
| Power Out       | 165mA 12V DC                                                   |

**Electrical**

|                   |                                                                       |
|-------------------|-----------------------------------------------------------------------|
| Power Supply      | DC 12V ( $\pm 25\%$ ), AC 24V ( $\pm 25\%$ ), PoE (802.3af) (Class 0) |
| Power Consumption | <9.2W                                                                 |

**Environmental**

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

**Construction**

|              |                                                                                  |
|--------------|----------------------------------------------------------------------------------|
| Casing       | Metal                                                                            |
| Dimensions   | 135.4 mm $\times$ 74.4 mm $\times$ 65.5 mm (5.33" $\times$ 2.93" $\times$ 2.58") |
| Net Weight   | 0.53 kg (1.17 lb)                                                                |
| Gross Weight | 0.62 kg (1.37 lb)                                                                |

**Ordering Information**

| Type                   | Part Number       | Description                                  |
|------------------------|-------------------|----------------------------------------------|
| 4MP camera             | DH-IPC-HF5442EP-E | 4MP Starlight Bullet AI Network Camera, PAL  |
|                        | DH-IPC-HF5442EN-E | 4MP Starlight Bullet AI Network Camera, NTSC |
|                        | IPC-HF5442EP-E    | 4MP Starlight Bullet AI Network Camera, PAL  |
|                        | IPC-HF5442EN-E    | 4MP Starlight Bullet AI Network Camera, NTSC |
| Accessories (optional) | PFB110W           | Ceiling Mount                                |
|                        | PFB121W           | Wall Mount                                   |

**Accessories****Optional:**PFB110W  
Wall MountPFB121W  
Wall MountLR1002  
ePoE Over Coax Converter

| Wall Mount | Wall/Ceiling/Plane Mount |
|------------|--------------------------|
| PFB121W    | PFB110W                  |
|            |                          |

**Dimensions (mm[inch])**