

# DH-IPC-HFW2231T-ZS/VFS

2MP WDR IR Bullet Network Camera



- 1/2.8" 2Megapixel progressive Starvis™ CMOS
- H.265 & H.264 dual-stream encoding
- 25/30fps@1080P(1920×1080)
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- Micro SD card slot, up to 128GB
- 2.7~13.5mm varifocal lens
- Max IR LEDs Length 60m
- IP67, IK10(optional), PoE+



## System Overview

The IR Megapixel Vari-focal camera delivers 2MP resolution with a 2.7mm ~ 13.5mm varifocal lens. The camera's elegant blend of aesthetics combined with a range of easy mounting solutions provides an excellent choice for a variety of small to mid-size applications at an affordable price.

## Functions

### Smart Codec (H.265+ & H.264+)

Smart Codec is the optimized implementation of standard video compression (H.265 & H.264) 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 Codec technology reduces bit rate and storage requirements by up to 70% when compared to the standard video compression.

### Starlight Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.006lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

### Intelligent Video analysis (IVS)

Dahua camera is equipped with a built-in intelligent analytic algorithm based on video, which can realize intelligent functions like Tripwire and Intrusion, to quickly and accurately respond to monitoring events in specific area. It can enhance monitoring efficiency. In addition, the camera supports intelligent tamper detection, which is to generate warning message via detecting dramatic scene change and to guarantee effective video surveillance.

### 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.

### Smart IR Technology

With IR illumination, detailed images can be captured in low light or total darkness. The camera's Smart IR technology adjusts the intensity of camera's infrared LEDs to compensate the distance of an object. Smart IR technology prevents IR LEDs from whitening out images as they come closer to the camera. The camera's integrated infrared illumination provides high performance in extreme low-light environments up to 60m (197ft).

### Protection (IP67, wide voltage)

The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 2KV 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.

### 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.

### Interoperability

The camera conforms to the ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of manufacturer.

Technical Specification

|                          |  |  |  |  |  |
|--------------------------|--|--|--|--|--|
| Camera                   |  |  |  |  |  |
| Image Sensor             | 1/2.8" 2Megapixel progressive CMOS   |  |  |  |  |
| Effective Pixels         | 1920(H) x1080(V)   |  |  |  |  |
| RAM/ROM                  | 256MB/32MB   |  |  |  |  |
| Scanning System          | Progressive  |  |  |  |  |
| Electronic Shutter Speed | Auto/Manual, 1/3~1/100000s   |  |  |  |  |
| Minimum Illumination     | 0.006Lux/F1.4( Color,1/3s,30IRE)<br>0.05Lux/F1.4( Color,1/30s,30IRE)<br>0Lux/F1.4(IR on) |  |  |  |  |
| S/N Ratio                | More than50dB  |  |  |  |  |
| IR Distance              | Distance up to 60m(197ft)  |  |  |  |  |
| IR On/Off Control        | Auto/ Manual   |  |  |  |  |
| IR LEDs                  | 4  |  |  |  |  |

|                      |                                |             |            |            |           |
|----------------------|--------------------------------|-------------|------------|------------|-----------|
| Lens                 |                                |             |            |            |           |
| Lens Type            | Motorized (-ZS), Manual (-VFS) |             |            |            |           |
| Mount Type           | Board-in                       |             |            |            |           |
| Focal Length         | 2.7mm~13.5mm                   |             |            |            |           |
| Max. Aperture        | F1.4                           |             |            |            |           |
| Angle of View        | H:106°~29°, V:57°~17°          |             |            |            |           |
| Focus Control        | Fixed                          |             |            |            |           |
| Close Focus Distance | 0.3m                           |             |            |            |           |
| DORI Distance        | Lens                           | Detect      | Observe    | Recognize  | Identify  |
|                      | W                              | 46m(150ft)  | 18m(59ft)  | 9m(30ft)   | 5m(16ft)  |
|                      | T                              | 153m(502ft) | 61m(200ft) | 31m(102ft) | 15m(49ft) |

|                |   |  |  |  |  |
|----------------|---|--|--|--|--|
| PTZ            |   |  |  |  |  |
| Pan/Tilt Range | Pan:0° ~360° ;Tilt:0° ~90° ;Rotation:0° ~360° |  |  |  |  |

|               |  |  |  |  |  |
|---------------|--|--|--|--|--|
| Intelligence  |  |  |  |  |  |
| Event Trigger | Motion detection, Video tampering , Scene changing , Network disconnection , IP address conflict, Illegal Access,Storage anomaly |  |  |  |  |
| IVS           | Tripwire, Intrusion  |  |  |  |  |

|                      |  |  |  |  |  |
|----------------------|--|--|--|--|--|
| Video                |  |  |  |  |  |
| Compression          | H.265/H.264H/MJPEG(Sub Stream)   |  |  |  |  |
| Smart Codec          | Support H.265+/H.264+  |  |  |  |  |
| Streaming Capability | 2 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) |  |  |  |  |
| Frame Rate           | Main Stream: 1080P (1 ~ 25/30fps)  |  |  |  |  |
|                      | Sub Stream: D1(1 ~ 25/30fps)   |  |  |  |  |
| Bit Rate Control     | CBR/VBR  |  |  |  |  |

|                                     |   |
|-------------------------------------|---|
| Bit Rate                            | H.265: 12K ~ 6400Kbps<br>H.264: 32K ~ 10240Kbps |
| 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 Detection                    | Off / On (4 Zone, Rectangle)                    |
| Region of Interest                  | Off / On (4 Zone)                               |
| Electronic Image Stabilization(EIS) | N/A   |
| Smart IR                            | Support   |
| Digital Zoom                        | 16x   |
| Flip                                | 0°/90°/180°/270°                                |
| Mirror                              | Off / On  |
| Privacy Masking                     | Off / On (4 Area, Rectangle)                    |

|             |     |
|-------------|-----|
| Audio       |     |
| Compression | N/A |

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

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

|                 |     |
|-----------------|-----|
| Interface       |     |
| Video Interface | N/A |
| Audio Interface | N/A |
| RS485           | N/A |
| Alarm           | N/A |

|                   |                                    |
|-------------------|------------------------------------|
| Electrical        |                                    |
| Power Supply      | DC12V,PoE+ (IEEE 802.3at)(Class 4) |
| Power Consumption | <14W(-ZS), <12W(-VFS)              |

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    | IK10(Optional)  |

Construction

|              |   |
|--------------|---|
| Casing       | Metal                                   |
| Dimensions   | 244.1mm×79mm×75.9mm (9.61"×3.11"×2.99") |
| Net Weight   | 0.815kg (1.80lb)                        |
| Gross Weight | 1.08kg (2.38lb)                         |

Ordering Information

| Type                   | Part Number          | Description                            |
|------------------------|----------------------|--|
| 2MP camera             | DH-IPC-HFW2231TP-ZS  | 2MP WDR IR Bullet Network Camera, PAL  |
|                        | DH-IPC-HFW2231TN-ZS  | 2MP WDR IR Bullet Network Camera, NTSC |
|                        | IPC-HFW2231TP-ZS     | 2MP WDR IR Bullet Network Camera, PAL  |
|                        | IPC-HFW2231TN-ZS     | 2MP WDR IR Bullet Network Camera, NTSC |
|                        | DH-IPC-HFW2231TP-VFS | 2MP WDR IR Bullet Network Camera, PAL  |
|                        | DH-IPC-HFW2231TN-VFS | 2MP WDR IR Bullet Network Camera, NTSC |
|                        | IPC-HFW2231TP-VFS    | 2MP WDR IR Bullet Network Camera, PAL  |
|                        | IPC-HFW2231TN-VFS    | 2MP WDR IR Bullet Network Camera, NTSC |
| Accessories (optional) | PFA130-E             | Junction box                           |
|                        | PFA152-E             | Pole mount                             |

Accessories

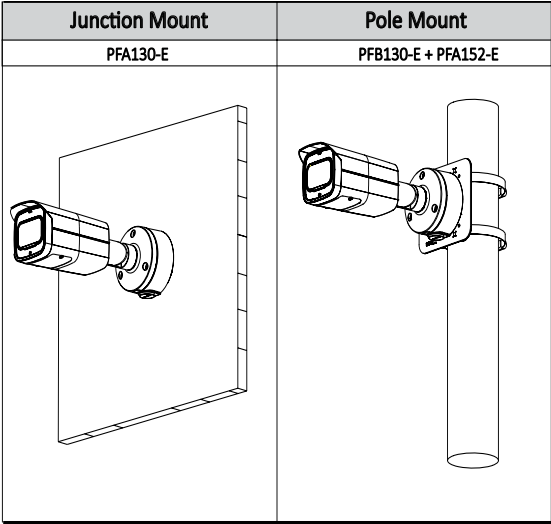
Optional:



PFA130-E  
Junction Box



PFA152-E  
Pole Mount



Dimensions (mm/inch)

