

# DH-SD65F233XA-HNR

2MP 33x Starlight + PTZ AI Network Camera



AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and more devices. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

## 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 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, and True WDR for applications with direct sunlight or glare.

## Functions

### 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 0.001 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

### Wide Dynamic Range

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.

- 1/1.8" 2Megapixel CMOS
- Powerful 33x optical zoom
- Starlight technology
- Max. 50/60fps@1080P
- Deep-learning-based auto tracking and perimeter protection
- Support POE+
- IP67, IK10



### 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.

### Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from -40 °C to +70 °C (-40 °F to +158 °F) with 95% humidity. The camera complies with the IK10 Vandal Resistance impact rating. Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

### Protection

The camera allows for  $\pm 25\%$  input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 8KV lightning rating provides effective protection for both the camera and its structure against lightning.

### 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             | 1/1.8" CMOS                                 |
| Max. Resolution          | 1920 (H) x 1080 (V)                         |
| Effective Pixels         | 2MP   |
| ROM                      | 4GB   |
| RAM                      | 1GB   |
| Electronic Shutter Speed | 1–1/30000 s                                 |
| Scanning System          | Progressive                                 |
| Min. Illumination        | Color: 0.001Lux@F1.5<br>B/W: 0.0001Lux@F1.5 |
| IR Distance              | NA  |
| IR On/Off Control        | NA  |
| IR LEDs Number           | NA  |

#### Lens

|                      |   |                       |                       |                      |
|----------------------|---|-----------------------|-----------------------|----------------------|
| Focal Length         | 5.8 mm–191.4 mm                             |                       |                       |                      |
| Max. Aperture        | F1.5–F4.8                                   |                       |                       |                      |
| Field of View        | H: 60.1°–3.2°; V: 35.3°–1.8°; D: 67.9°–3.7° |                       |                       |                      |
| Optical Zoom         | 33x   |                       |                       |                      |
| Focus Control        | Auto/Semi-Auto/Manual                       |                       |                       |                      |
| Close Focus Distance | 0.1 m–1 m (0.33 ft–3.28 ft)                 |                       |                       |                      |
| Iris Control         | Auto/Manual                                 |                       |                       |                      |
| DORI Distance        | Detect                                      | Observe               | Recognize             | Identify             |
|                      | 1655 m<br>(5429.80 ft)                      | 622 m<br>(2040.68 ft) | 331 m<br>(1085.96 ft) | 165 m<br>(541.34 ft) |

#### PTZ

|                      |   |
|----------------------|---|
| Pan/Tilt Range       | Pan: 0°–360°<br>Tilt: -20°–+90°           |
| Manual Control Speed | Pan: 0.1°/s–300°/s<br>Tilt: 0.1°/s–150°/s |
| Preset Speed         | Pan: 600°/s<br>Tilt: 500°/s               |
| Presets              | 300                                       |
| Tour                 | 8 (up to 32 presets 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)     |

### Artificial Intelligence

|                      |  |
|----------------------|--|
| Video Metadata       | Support human, motor vehicle and non-motor vehicle image capture.  |
| 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                     | 1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576/704×480); CIF (352 × 288/352 × 240)                        |
| Frame Rate                     | Main stream: 1080P/1.3M/720P (1–50/60fps)<br>Sub stream 1: D1/CIF (1–25/30fps)<br>Sub stream 2: 1080P/1.3M/720P/D1/CIF (1–25/30fps) |
| Bit Rate Control               | Variable Bit Rate/Constant Bit Rate   |
| Bit Rate                       | H.265/H.264: 3 kbps–20480 kbps  |
| Day/Night                      | Auto (ICR)/Color/B/W  |
| BLC                            | Support   |
| WDR                            | 120 dB  |
| HLC                            | Support   |
| White Balance                  | Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/<br>Natural light/Street lamp   |
| Gain Control                   | Auto/Manual   |
| Noise Reduction                | 2D/3D   |
| Motion Detection               | Support   |
| Region of Interest             | Support   |
| Electronic Image Stabilization | Support   |
| Defog                          | Support   |
| Digital Zoom                   | 16x   |
| Flip                           | 0°/180°   |
| Privacy Masking                | Up to 24 areas  |

### Audio

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

### Certification

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

**Port**

|            |                         |
|------------|-------------------------|
| Audio In   | 1 (LINE IN; bare wire)  |
| Audio Out  | 1 (LINE OUT; bare wire) |
| Alarm Port | 7/2                     |

**Network**

|                     |  |
|---------------------|--|
| Ethernet            | RJ-45 (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  |
| User/Host           | 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<br>Safari  |
| Management Software | Smart Player; Smart PSS; DSS; Easy4ip  |
| Smart Phone         | IOS/Android  |

**Power**

|                   |                                |
|-------------------|--------------------------------|
| Power Supply      | AC24V/3A±25%<br>PoE+ (802.3at) |
| Power Consumption | 20W<br>34W (heater on)         |

**Environment**

|                       |   |
|-----------------------|---|
| Operating Temperature | -40°C to +70°C (-40°F to +158°F)                        |
| Operating Humidity    | ≤95%RH  |
| Ingress Protection    | IP67; IK10; TVS 8000V lightning proof; surge protection |

**Structure**

|              |                                   |
|--------------|-----------------------------------|
| Casing       | Metal                             |
| Dimensions   | Φ242 mm x 341 mm (9.53" x 13.43") |
| Net Weight   | 4.5 kg (9.92 lb)                  |
| Gross Weight | 9.75 kg (21.50 lb)                |

|             |          |               |
|-------------|----------|---------------|
| Accessories | PFB303W  | Wall Mount    |
|             | PFA111   | Mount Adapter |
|             | AC24V/3A | Power Adapter |
|             | PFA140   | Power Box     |
|             | PFB300C  | Ceiling Mount |
|             | PFA120   | Junction Box  |
|             | PFA150   | Pole Mount    |
|             | PFA151   | Corner Mount  |
|             | PFB303S  | Parapet Mount |

**Accessories**

**Included:**



PFB303W  
Wall Mount



PFA111  
Mount Adapter



AC24V/3A  
Power Adapter

**Optional:**



PFA140  
Power Box



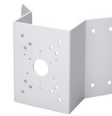
PFB300C  
Ceiling Mount



PFA120  
Junction Box



PFA150  
Pole Mount



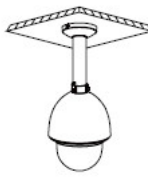

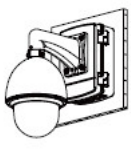


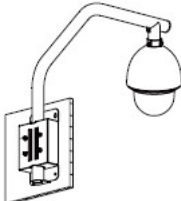
PFA151  
Corner Mount



PFB303S  
Parapet Mount

**Ordering Information**

| Type           | Model              | Description  |
|----------------|--------------------|--|
| 2MP PTZ Camera | DH-SD65F233XA-HNR  | 2MP 33x Starlight PTZ AI Network Camera, WDR, PAL  |
|                | DH-SD65F233XAN-HNR | 2MP 33x Starlight PTZ AI Network Camera, WDR, NTSC |
|                | SD65F233XA-HNR     | 2MP 33x Starlight PTZ AI Network Camera, WDR, PAL  |
|                | SD65F233XAN-HNR    | 2MP 33x Starlight PTZ AI Network Camera, WDR, NTSC |

|  |  |
|--|--|
| <b>Ceiling Mount</b>   | <b>Junction Mount</b>  |
| PFA111 + PFB300C   | PFA111 + PFB303W + PFA120  |
|   |   |
| <b>Power Box Mount</b>   | <b>Pole Mount</b>  |
| PFA111 + PFB303W + PFA140  | PFA111 + PFB303W + PFA150  |
|   |   |
| <b>Corner Mount</b>  | <b>Parapet Mount</b>   |
| PFA111 + PFB303W + PFA151  | PFA111+ PFB303S  |
|  |  |

**Dimensions (mm[inch])**

