

4MP Starlight Vari-focal Network Dome Camera

True Wide Dynamic Network Camera with Smart Motion Detection



Wiz Sense

WizSense Series devices combine Dahua's powerful Analytics+ with an intuitive and easy to use interface. WizSense devices offer Smart Motion Detection and Perimeter Protection functions that focus on human and vehicular images and ignore irrelevant images to capture important video while reducing false alarms. WizSense Series devices provide powerful general surveillance for small to medium size businesses at a sensible price.

System Overview

The Dahua 4 MP Starlight camera offers Smart Motion Detection for improved alarm accuracy from intrusion and tripwire functions. The camera is ideal for a host of diverse applications — Starlight, True Wide Dynamic Range, and IR illumination allow the camera to operate in any lighting condition. The camera is rated to the IP67 Ingress Protection and to the IK10 Vandal Resistance standards, allowing the camera to deliver high-quality and reliable video in the harshest environments.

Functions

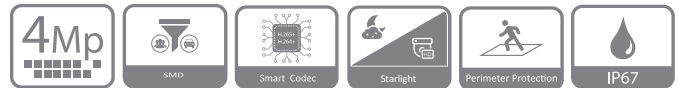
Perimeter Protection

Dahua Analytics+ includes Tripwire and Intrusion functions that offer custom tripwires based on object type for automation in limited access areas. Perimeter Protection requires less pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

Smart Motion Detection (SMD)

Smart Motion Detection, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected. SMD also saves time when searching recorded video by filtering false alarms and allowing quick retrieval of an alarm due to a person or vehicle.

- 1/3 in. 4 MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- 4 MP (2688 x 1520) at 30 fps
- 2.7 mm to 13.5 mm Motorized Vari-focal Lens
- Starlight Technology for Low-light Applications
- Analytics+ Function – Perimeter Protection and Smart Motion Detection
- True Wide Dynamic Range (120 dB) and Day/Night IR Cut Filter
- Maximum IR LED Distance 40 m (131.23 ft)
- Enhanced Power and Data Transmission Distances (ePoE)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty*



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

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.

Environmental

The camera complies with the IK10 Vandal Resistance impact rating making it capable of withstanding the equivalent of 5 kg (11.02 lbs) of force dropped from a height of 40 cm (15.75 in.). Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications. The camera offers a wide voltage range, with a 30% input voltage tolerance, suitable for external applications with unstable power sources.

Technical Specification

Camera

| | |
|--------------------------|---|
| Image Sensor | 1/3-in. 4 MP CMOS |
| Effective Pixels | 2688(H) x 1520(V) |
| RAM/ROM | 512 MB/128 MB |
| Scanning System | Progressive |
| Electronic Shutter Speed | Auto, Manual, 1/3 s to 1/100,000 s |
| Minimum Illumination | Color: 0.005 lux at F1.5 0 lux at F1.5 (IR on) |
| S/N Ratio | > 56 dB |
| IR Distance | Up to 40.0 m (131.23 ft) |
| IR On/Off Control | Auto, Manual |
| IR LEDs | Two (2) |

Lens

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|----------------------------|--|------------------------|------------------------|-----------------------|---------------------|
| Lens Type | Motorized Vari-focal | | | | |
| Iris Type | Fixed Aperture | | | | |
| Mount Type | Ø14 | | | | |
| Focal Length | 2.7 mm to 13.5 mm | | | | |
| Maximum Aperture | F1.5 | | | | |
| Angle of View | Horizontal: 104° to 27° Vertical: 55° to 15° Diagonal: 124° to 31° | | | | |
| Close Focus Distance | 0.80 m (2.62 ft) | | | | |
| DORI Distance ¹ | Focus | Detect | Observe | Recognize | Identify |
| | Wide | 64.0 m (209.97 ft) | 25.60 m (83.99 ft) | 12.80 m (41.99 ft) | 6.40 m (21.0 ft) |
| | Tele | 222.0 m (728.35 ft) | 88.80 m (291.34 ft) | 44.40 m (145.67) | 22.20 m (72.84) |

Installation Angle

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|-------|--|
| Range | Pan: 0° to 355° Tilt: 0° to 75° Rotation: 0° to 355° |
|-------|--|

Video

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|----------------------|---|
| Compression | Smart H.265+, H.265, Smart H.264+, H.264, H.264B, H.264H, MJPEG (Sub Stream only) |
| Streaming Capability | Three (3) Streams |
| Resolution | 4 MP (2688 x 1520), 3 MP (2304 x 1296), 1080p (1920 x 1080), 1.3 MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), VGA (640 x 480), CIF (352 x 240) |
| Frame Rate | Main Stream: 4 MP (2688 x 1520) at 30 fps |
| | Sub Stream 1: D1 (704 x 480) at 30 fps |
| | Sub Stream 2: 720p (1280 x 720) at 30 fps |
| Bit Rate Control | CBR/VBR |
| Bit Rate | H.264: 3 Kbps to 8192 Kbps H.265: 3 Kbps to 8192 Kbps |
| Day/Night | Auto (ICR), Color, B/W |
| BLC Mode | BLC, HLC, True WDR (120 dB), SSA |

| | |
|--------------------|---|
| White Balance | Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom |
| Gain Control | Auto, Gain Priority, Shutter Priority, Manual |
| Noise Reduction | 3D DNR |
| Motion Detection | Off, On (4 Zones, Rectangular) |
| Region of Interest | Off, On (4 Zones) |
| Advanced Features | Smart IR, Smart-scene Adaptive (SSA) |
| Image Rotation | 0°, 90°, 180°, 270° (supports 90°, 270° at 1920 x 1080 resolution) |
| Mirror | Off, On |
| Privacy Masking | Off, On (4 Areas, Rectangular) |

Audio

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|-------------|-----------------------------|
| Compression | G.711a, G.711Mu, AAC, G.726 |
|-------------|-----------------------------|

Network

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|-------------------------|--|
| 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 and G, CGI, Milestone, Genetec, P2P |
| Auto Register | Support |
| Streaming Method | Unicast / Multicast |
| Maximum User Access | 20 Users (total bandwidth: 64 Mbps) |
| Edge Storage | Network Attached Storage (NAS) FTP, SFTP, Micro SD Card Slot, maximum 256 GB |
| Web Viewer | IE (Version 8 and higher), Chrome, Firefox, |
| Management Software | DSS, DMSS |
| Mobile Operating System | IOS, Android |

Certifications

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|-------------------------------------|---|
| Safety | UL 60950-1 & CAN/CSA C22.2 No. 60950-1-07 EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (Second Edition) |
| Electromagnetic Compatibility (EMC) | 47 CFR FCC Part 15, Subpart B, Class B EN 55032:2015, Class B; EN 61000-3-2:2014; EN 61000-3-3:2013; EN 55024:2010+A1:2015; EN 55035:2017; EN 50130-4:2011+A1:2014 |

Interface

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|-------|---|
| Audio | Input: One (1) Channel, RCA Output: One (1) Channel, RCA |
| Alarm | Input: One (1) Channel (5 mA, 3 to 5 VDC) Output: One (1) Channel (300 mA, 12 VDC) |

Electrical

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|-------------------|--|
| Power Supply | 12 VDC, ePoE, or PoE (IEEE 802.3af, Class 0) |
| Power Consumption | < 8.5 W |

1. The DORI distance is a measure of the general proximity for a specific classification to help pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4, the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.

Environmental

| | |
|----------------------|---|
| Operating Conditions | -30° C to +60° C (-22° F to +140° F), Less than 95% RH |
| Storage Conditions | -40° C to +60° C (-40° F to +140° F) |
| Ingress Protection | IP67 |
| Vandal Resistance | IK10 |

Construction

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|--------------|---|
| Casing | Metal |
| Dimensions | Ø122.0 mm x 88.90 mm (4.80 in. x 3.50 in.) |
| Net Weight | 0.492 kg (1.09 lb) |
| Gross Weight | 0.663 kg (1.46 lb) |

Analytics+ Functions

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|-------------------------|--|
| Perimeter Protection | <ul style="list-style-type: none"> Detects human or vehicle violations using the following methods: <ul style="list-style-type: none"> Tripwire: a target crosses a defined line. Intrusion: a target enters or exits a defined perimeter. Monitors a combination of nine (9) detection methods. Search and retrieve video based on target type. |
| Smart Motion Detection? | <ul style="list-style-type: none"> Differentiates between and classifies human and vehicle objects. Filters false alarms due to leaves, lights, animals, and other inconsequential objects. Extracts human or vehicle objects from recorded video for quick target search and retrieval. |

Intelligent Video System Functions

IVS triggers an alarm and takes a defined action for the following events:

| | |
|-------------------|--|
| Standard Features | <ul style="list-style-type: none"> Tampering with the camera. Error writing to an onboard Micro SD card. Error sending or receiving data over the network. Unauthorized access to the camera. IP Address Conflict |
| Premium Features | |
| Motion | An object moves through any part of the scene. |
| Scene Change | A person or object moves the camera to change the scene or covers the camera to obscure the scene. |

2. Pair a Smart Motion Detection camera with a Dahua recording device that also offers SMD functionality to take advantage of SMD alarm filtering and object classification when searching and playing back recorded video.

ePoE Transmission Distances

Via CAT5E/CAT6 Ethernet Cable

ePoE supply voltage 48 V
Maximum DC resistance < 10 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|----------------------|-----------------|----------------------|-------------------------|--------------|
| 100 (328) | 100 | 25.5 | 53 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 33 | E100 |
| 300 (984) | 100 | 19 | 19 | E100 |
| 400 (1312) | 10 | 17 | 17 | E10 |
| 500 (1640) | 10 | 13 | 13 | E10 |
| 800 (2625) | 10 | 7 | 7 | E10 |

Via CAT5E/CAT6 Ethernet Cable

ePoE supply voltage 53 V
Maximum DC resistance < 10 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|----------------------|-----------------|----------------------|-------------------------|--------------|
| 100 (328) | 100 | 25.5 | 53 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 47 | E100 |
| 300 (984) | 100 | 25.5 | 32 | E100 |
| 400 (1312) | 10 | 23 | 26 | E10 |
| 500 (1640) | 10 | 20 | 20 | E10 |
| 800 (2625) | 10 | 13 | 13 | E10 |

Via RG-59 Coaxial Cable

ePoE supply voltage 48 V
Maximum DC resistance < 5 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|----------------------|-----------------|----------------------|-------------------------|--------------|
| 100 (328) | 100 | 25.5 | 50 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 30 | E100 |
| 300 (984) | 100 | 18 | 18 | E100 |
| 400 (1312) | 100 | 15 | 15 | E100 |
| 500 (1640) | 10 | 12 | 12 | E10 |
| 800 (2625) | 10 | 6 | 6 | E10 |
| 1000 (3281) | 10 | 5 | 5 | E10 |

Via RG-59 Coaxial Cable

ePoE supply voltage 53 V
Maximum DC resistance < 5 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|----------------------|-----------------|----------------------|-------------------------|--------------|
| 100 (328) | 100 | 25.5 | 52 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 48 | E100 |
| 300 (984) | 100 | 25.5 | 30 | E100 |
| 400 (1312) | 100 | 20 | 23 | E100 |
| 500 (1640) | 10 | 16 | 16 | E10 |
| 800 (2625) | 10 | 10 | 10 | E10 |
| 1000 (3281) | 10 | 8 | 8 | E10 |

Ordering Information

| Type | Part Number | Description |
|-----------------------|---------------|---|
| 4 MP Camera | N43AM5Z | 4 MP Starlight Vari-focal Dome Camera with Smart Motion Detection |
| Accessories, optional | PFA106 | Mount Adapter |
| | PFA137 | Junction Box |
| | PFA151 | Corner Mount (Use with PFA106 and PFB305W) |
| | PFA152-E | Pole Mount (Use with PFB203W Wall Mount) |
| | PFA200W | Sun/Rain Shield (Use with PFB203W Wall Mount) |
| | PFA200G | Gang Box Adapter |
| | PFB200C | In-ceiling Mount |
| | PFB203W | Wall Mount (Use alone or with PFA152-E Pole Mount) |
| | PFB220C | Ceiling Mount (Use with PFA106 Mount Adapter) |
| | PFB305W | Wall Mount |
| | DH-PFM321D-US | 12 VDC, 1 A Power Adapter |
| | PC-H49-D90 | Polycarbonate Smoke Tinted Bubble |

Accessories

Optional:



PFA106
Mount Adapter



PFA137
Junction Box



PFA151
Corner Mount



PFA152-E
Pole Mount



PFA200G
Gang Box Adapter



PFA200W
Sun/Rain Shield



PFB203W
Waterproof Wall
Mount



PFB220C
Ceiling Mount



PFB305W
Wall Mount



DH-PFM321D-US
12 VDC, 1 A
Power Adapter



PC-H49-D90
Polycarbonate Smoke
Tinted Bubble

| Junction Mount | Wall Mount | Wall Mount | Pole Mount |
|----------------|------------------|------------|------------------|
| PFA137 | PFA137+PFA200W | PFB203W | PFB203W+PFA152-E |
| | | | |
| Ceiling Mount | In-Ceiling Mount | | |
| PFA106+PFB220C | PFB200C | | |
| | | | |

Dimensions

