

5MP 5-in-1 Network Dome Camera

Active Alarm, Dual Illuminators, Bi-directional Talk, Smart Motion Detection+, Mask Detection



WizMind



WizMind Series devices offer the full complement of Dahua Analytics+ functions for comprehensive, human-oriented analytic solutions. WizMind Series products deliver perimeter protection, vehicle and crowd density statistics, video metadata, and advanced people counting with heat map functionality. WizMind is ideal for complex applications with demanding requirements that need advanced analytic capabilities.

System Overview

The Dahua 5MP 5-in-1 network camera offers multiple features working in tandem to assist with deterrence, low-light detection, active alarm, mask monitoring and two-way talk, the 5MP 5-in-1 camera is a multitasking machine for maximum video security. The camera is ideal for a host of diverse applications — Starlight+, True Wide Dynamic Range, and Smart Dual illuminators allow the camera to operate in any lighting condition and the IP67 and IK10 rating make the camera suitable for the harshest environments.

Functions

Active Alarm

The camera features active alarm functionality to respond automatically to a triggered alarm. The configurable automatic responses include activation of the white-light illuminator to capture color images of the scene and the broadcast of a built-in message or siren.

Face Mask Detection¹

The camera captures faces from video images and analyzes the image for the presence of a face mask, useful for maintaining entrance management policies. The camera is capable of detecting a person without a mask at up to 17 feet and sounds a voice alert notifying the person about the absence of a mask.

People Counting

The camera uses complex real-time people counting algorithms to deliver accurate flow statistics from two distinct people counting functions, Line Crossing and Regional. The line crossing function counts the number of people crossing a defined line, and the regional function counts the number of people in a distinct, user-defined area.

- 1/2.7-in. 5MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- 5MP (2592 x 1944) at 20 fps, 2.8 mm Fixed Lens
- Analytics+ Functions — Mask Detection, Perimeter Protection with Active Alarm, Smart Motion Detection+, People Counting, and Face Detection
- Built-in Microphone and a Built-in Speaker for Bi-directional Talk
- Dual Smart Illumination — IR and White Light
- Enhanced Starlight Technology for Low-light Applications
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera — Operational down to -40°C (-40°F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty*



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 Dual Illuminators

The camera offers both IR and white-light illuminators and intelligently employs each depending on the situation. Typically, the camera enters the IR mode as ambient light decreases. When the camera detects an object entering the monitoring area, it activates the white-light illuminator to capture full-color details. Once the object leaves the area, the camera switches back to IR illumination.

ArcticPro

The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components, a waterproof enclosure, and an integrated heater to ensure flawless operation in temperatures as low as -40°C (-40°F). For applications that demand high-resolution video with advanced features in extremely cold environments, the Dahua ArcticPro Series offers a camera to satisfy the most demanding requirements.

Cybersecurity

Dahua network cameras are equipped with a series of key cybersecurity technologies including: security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage. These technologies improve the camera's ability to prevent malicious access and to protect data.

Environmental

The camera complies with an IK10 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.

Technical Specification

Camera

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|--------------------------|---|
| Image Sensor | 1/2.7-in. 5MP CMOS |
| Effective Pixels | 2592(H) x 1944(V) |
| RAM/ROM | 128 MB / 512 MB |
| Scanning System | Progressive |
| Electronic Shutter Speed | Auto, Manual, 1/3 s to 1/100,000 s |
| Minimum Illumination | Color: 0.005 lux at F1.6 0 lux at F1.6 (with IR on) |
| S/N Ratio | Greater than 56 dB |
| Illumination Distance | IR: 30.0 m (98.43 ft) White Light: 15.0 m (49.21 ft) |
| IR On/Off Control | Auto, Manual |
| Illuminators | IR: Two (2) LEDs White Light: One (1) |

Lens

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|----------------------------|--|--------------------|--------------------|--------------------|-------------------|
| Lens Type | Fixed-focal | | | | |
| Mount Type | M12 | | | | |
| Focal Length | 2.8 mm | | | | |
| Max. Aperture | F1.6 | | | | |
| Angle of View | Horizontal: 98° Vertical: 71° Diagonal: 129° | | | | |
| Iris Type | Auto | | | | |
| Close Focus Distance | 0.90 m (2.95 ft) | | | | |
| DORI Distance ² | Lens | Detect (8 ppf) | Observe (19 ppf) | Recognize (38 ppf) | Identify (76 ppf) |
| | 2.8 mm | 56.0 m (183.72 ft) | 22.40 m (73.49 ft) | 11.20 m (36.75 ft) | 5.60 m (18.37 ft) |

Installation Angle

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|-------|--|
| Range | Pan: 0° to 355° Tilt: 0° to 80° 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 | 5MP (2592 x 1944), 4MP (2688 x 1520), 2560 x 1440, 3MP (2304 x 1296), 1080p (1920 x 1080), 1.3MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), VGA (640 x 480), CIF (352 x 240) |
| Frame Rate | Main Stream: 5MP (2592 x 1944) at 20 fps or 4MP (2688 x 1520) at 30 fps Sub Stream 1: D1 at 20 fps Sub Stream 2: 1080p at 13 fps |
| Bit Rate Control | CBR/VBR |
| Bit Rate | H.264: 32 Kbps to 8192 Kbps H.265: 12 Kbps to 8192 Kbps |
| Day/Night | Auto (ICR), Color, B/W |
| BLC Mode | BLC, HLC, True WDR (120 dB), SSA |

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|--------------------|--|
| White Balance | Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom |
| Gain Control | Auto, Manual, Gain Priority, Shutter Priority |
| Noise Reduction | 3D DNR |
| Motion Detection | Off, On (4 Zones, Rectangular) |
| Region of Interest | Off, On (4 Zones) |
| Advanced Features | Smart IR, Defog |
| Flip | 0°, 90°, 180°, 270° |
| Mirror | Off, On |
| Privacy Masking | Off, On (4 Areas, Rectangular) |

Audio

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|-------------|--|
| Input | Built-in Microphone |
| Compression | PCM, G.711a, G.711Mu, G.726, MPEG2-Layer2, G.722.1, G.729, G.723 |

Network

| | |
|-------------------------|--|
| Ethernet | RJ-45 (10/100 Base-T) |
| Protocol | HTTP, HTTPS, TCP, ARP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, QoS, UPnP, NTP, ICMP, IGMP, 802.1x |
| Interoperability | ONVIF Profile S, G, T; CGI, SDK; API |
| Auto Register | Support |
| Streaming Method | Unicast / Multicast |
| Maximum User Access | 20 Users (Total Bandwidth: 80 Mbps) |
| Edge Storage | Network Attached Storage (NAS) SFTP, FTP Micro SD Slot, maximum 256 GB |
| Web Viewer | IE (Versions 8, 9, and 11) Chrome, Firefox |
| Management Software | DSS Express S, DMSS |
| Mobile Operating System | iOS, Android |
| Cybersecurity | Video Encryption, Firmware Encryption, Configuration Encryption, Digest, WSSE, Account Lockout, Security Logs, IP/MAC Filtering, Generating and Importing X.509 Certification, Syslog, HTTPS, 802.1x, Trusted Boot, Trusted Execution, Trusted Upgrade |

Certifications

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|-------------------------------------|--|
| Safety | UL60950-1 CAN/CSA C22.2 No.60950-1-07 EN62368-1 |
| Electromagnetic Compatibility (EMC) | CFR 47 FCC Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU |

Interface

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|-------|--------|---|
| Audio | Input | One (1) Channel (RCA), plus one (1) built-in microphone |
| | Output | One (1) Channel (RCA) plus one (1) built-in speaker |
| Alarm | Input | One (1) Channel (5 mA, 3 VDC to 5 VDC) |
| | Output | One (1) Channel (300 mA, 12 VDC) |

Electrical

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|-------------------|--|
| Power Supply | 12 VDC, PoE (IEEE 802.3af, Class 0), or ePoE |
| Power Consumption | < 8.6 W, with illumination ON |

Environmental

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

Construction

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|--------------|--|
| Casing | Metal and Plastic |
| Dimensions | ø126.0 mm x 105.0 mm (4.96 in. x 4.13 in.) |
| Net Weight | 0.716 kg (1.56 lb) |
| Gross Weight | 0.929 kg (2.05 lb) |

Analytics+ Functions

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|--|--|-------------------------|
| Perimeter Protection with Active Alarm | <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 detection methods. Search and retrieve video based on target type. Configurable automatic response when an alarm is triggered: <ul style="list-style-type: none"> White-light illuminator activation. Siren activation. Includes 11 built-in siren sounds plus ability to record custom recordings. | |
| People Counting | <ul style="list-style-type: none"> Delivers accurate flow statistics from the following methods: <ul style="list-style-type: none"> Line Crossing: counts a person as they cross a threshold in a defined direction. Region: counts the number of people in a defined area. Counts people simultaneously from four (4) threshold lines and four (4) defined regions³. | |
| Heat Map | Generates a visual representation of data. | |
| Face Detection | Detects faces from the video image. Supports detecting, tracking, capturing and selecting the best face image, and then outputs face snapshot. | |
| Face Mask Detection ¹ | Detects a face then checks for the presence of a face mask. Issues a built-message alerting a person to use a mask. | |
| Smart Motion Detection+ ³ | <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. | |
| Recommended Detection Distance | Human | Up to 10.0 m (32.81 ft) |
| | Vehicle | Up to 15.0 m (49.21 ft) |

Intelligent Video System Functions

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| 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 | |
| Missing Object | An object is missing from a designated area. |
| Abandoned Object | An object is placed in a designated area where no object should be. |
| Scene Change | A person or object moves the camera to change the scene or covers the camera to obscure the scene. |
| Fast Moving | Target exceeds a set speed when exiting a defined area |
| Parking Detection | Vehicle remains in a defined area without motion for a set period of time. |

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|---------------------|---|
| Crowd Gathering | Specified number of people remain inside a defined area for a set time. |
| Loitering Detection | Target is in motion inside a defined area longer than a specified amount of time. |

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

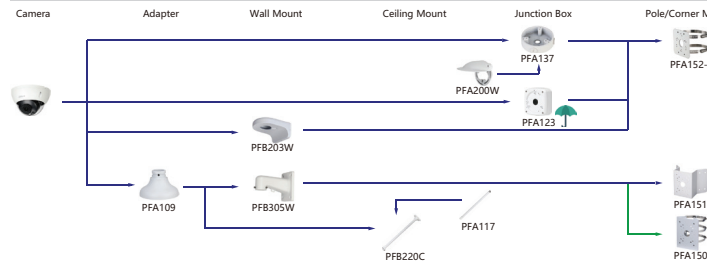
| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|----------------------|-----------------|----------------------|-------------------------|--------------|
| 100 (328) | 100 | 25.5 | 52 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 48 | E100 |
| 300 (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 |

1. The Face Mask Detection function requires firmware: DH_IPC-HX5XXX-Volt_Eng_N_Stream3_V2.800.12JW000.0.R.200717.zip
 2. 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.
 3. The Smart Motion Detection+ features require firmware: DH_IPC-HX5XXX-Volt_MultiLang_NP_Stream3-USA_V2.820.0000000.2.R.210403.zip. This free firmware upgrade offers higher accuracy for detecting objects and a reduced number of false alarms. Cameras with SMD+ are compatible with Dahua NVR 4/5/6 Series recorders. Note that the NVRs do not require a firmware update.

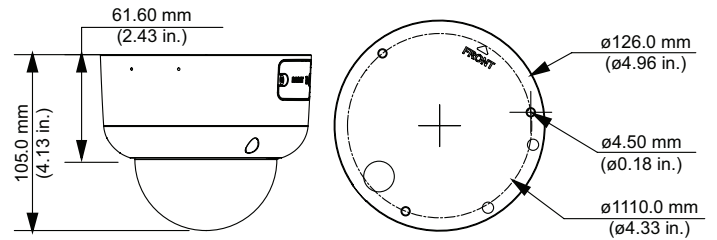
Ordering Information

| Type | Part Number | Description |
|--------------------------------|----------------------------|--|
| Analytics+ Camera | N55DY82 | 5MP Active Alarm ePoE Starlight 2.8 mm Dome Camera |
| Mounting Accessories, optional | PFA109 | Mount Adapter |
| | PFA137 | Junction Box |
| | PFA150 | Pole Mount (use with PFB305W wall mount) |
| | PFA151 | Corner Mount (use with PFB305W wall mount) |
| | PFA152-E | Pole Mount (use with PFB203W wall mount) |
| | PFA200W | Sun/Rain Shield (use alone or with PFA137) |
| | PFB203W | Wall Mount |
| | PFB220C | Ceiling Mount (use with PFA109 mount adapter) |
| | PFB305W | Wall Mount (use with PFA109 mount adapter) |
| | DH-PFB206W | Wall Mount |
| | DH-PFM321D-US | 12 VDC, 1 A Power Adapter |
| | PC-H49.D90 | Polycarbonate Smoke Tinted Bubble |
| | ePoE Accessories, optional | LR1002 |
| LR1002-1EC | | Single-port EoC Receiver |

Mounting Diagram



Dimensions



Accessories (Optional)



DH-PFA109
Mount Adapter



PFA137
Junction Box



PFA150
Pole Mount



PFA151
Corner Mount



PFA152-E
Pole Mount



PFA200W
Rain/Sun Shield



PFB203W
Wall Mount



PFB220C
Ceiling Mount



PFB305W
Wall Mount



DH-PFB206W
Wall Mount



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



PC-H49.D90
Polycarbonate
Smoke Tinted
Bubble



LR1002
EoC Passive
Converter



LR1002-1EC
Single-port EoC
Receiver