# 4MP ePoE Night Color Network Dome Camera

## True Wide Dynamic Range Fixed Lens Network Camera with Analytics+

- 1/1.8-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, 3.6 mm Fixed Lens
- Analytics+ Functions — People Counting, Perimeter Protection, Smart Motion Detection, and Face Detection
- Night Color Technology for Color Images in near-dark 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
- Ultra Wide Dynamic Range (140 dB)
- Intelligent Video System
- Five-year Warranty*

WizMind

ArcticPro

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 4 MP Night Color ePoE camera offers Analytics+ functions at the edge – performing complex real-time perimeter protection surveillance, people counting, and Face Detection. The Dahua Analytics+ algorithms significantly improve accuracy and reliability as compared to standard intelligent features. The camera is ideal for a host of diverse applications —Night Color and Ultra Wide Dynamic Range allow the camera to operate in most lighting conditions and the IP67 and IK10 rating makes the camera suitable for 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.

### 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. People counting is ideal for measuring the number of customers entering or exiting a location and to monitor groups of people in a distinct location.

### Smart Motion Detection

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.

### Night Color Technology

The N45EM63 Night Color camera incorporate a high-performance sensor and a large aperture lens to produce crisp, clear color images in low light environments. This light-sensitive technology allows the camera to capture more available light and reproduce color images with superior detail and contrast. Dahua Night Color Technology cameras are ideal for applications with at least 1 lux of ambient or artificial light, including parking lots, schools, urban streets and museums.

### Enhanced Power over Ethernet (ePoE) Technology

Dahua's innovative ePoE technology offers a plug-and-play solution to transmit power and data over long distances via Ethernet or coaxial cables, reducing installation time and saving money. ePoE technology is a viable, cost-effective solution for extending transmission distances and for converting existing, coax-based analog systems into IP systems. For video security and surveillance installers, ePoE technology saves time and money by reducing overall cabling requirements, allowing for existing coax cable to be used, and minimizing the number of peripheral devices needed. For new installations, ePoE offers the ability to design long-distance applications without the need for additional repeaters.

### ArcticPro

The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as –40° C (–40° F) without the need for an internal heater. The lack of a heater reduces the camera's power consumption and saves operating costs. 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.

### 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.

ONVIF



*Warranty applies to products sold through an authorized Dahua Dealer.

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/1.8-in. 4 MP Progressive-scan 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: 0.00022 lux at F1.2 (1/3 s, 30 IRE)<br>Color: 0.0022 lux at F1.2 (1/30 s, 30 IRE) |
| S/N Ratio | Greater than 56 dB |

### Lens

| | |
|---|---|
| Lens Type | Fixed |
| Mount Type | Board-in |
| Focal Length | 3.6 mm |
| Maximum Aperture | F1.2 |
| Angle of View | Horizontal: 93°<br>Vertical: 50° |
| Focus Control | Fixed |
| Close Focus Distance | 2.0 m (6.56 ft) |

| DORI² Distance | Lens | Detect (8 ppf) | Observe (19 ppf) | Recognize (38 ppf) | Identify (76 ppf) |
|---|---|---|---|---|---|
| | 3.6 mm | 70.30 m (230 ft) | 28.10 m (929 ft) | 14.10 m (46 ft) | 7.0 m (23 ft) |

### Installation Angle

| | |
|---|---|
| Range | Pan: 0˚ to 355˚<br>Tilt: 0˚ to 75˚<br>Rotation: 0˚ to 355˚ |

### Video

| | |
|---|---|
| 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), 2560 x 1440, 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 at 30 fps |
| | Sub Stream 2: 1080p at 11 fps |
| Bit Rate Control | CBR/VBR |
| Bit Rate | H.264: 32 Kbps to 8192 Kbps<br>H.265: 19 Kbps to 8192 Kbps |
| Day/Night | Color, B/W |
| BLC Mode | BLC, HLC, Ultra WDR (140 dB), SSA |
| 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 | Defog |
| Flip | 0°, 90°, 180°, 270° |
| Mirror | Off, On |
| Privacy Masking | Off, On (4 Areas, Rectangular) |

### Audio

| | |
|---|---|
| Compression | G.711a, G.711Mu, AAC, G.726, 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 and G, CGI, Milestone, Genetec, P2P |
| Auto Register | Support |
| Streaming Method | Unicast / Multicast |
| Maximum User Access | 20 Users |
| Edge Storage | Network Attached Storage (NAS)<br>FTP<br>Micro SD Slot, maximum 256 GB |
| Web Viewer | IE (Version 8 and higher), Chrome, Firefox, Safari (Version 12 and higher) |
| Management Software | SmartPSS, DSS, P2P |
| Mobile Operating System | IOS, Android |

### Certifications

| | |
|---|---|
| Safety | UL60950-1<br>CAN/CSA C22.2 No.60950-1-07<br>EN60950-1 |
| Electromagnetic Compatibility (EMC) | FCC CFR 47 Part 15 Subpart B<br>Electromagnetic Compatibility Directive 2014/30/EU |

### Interface

| | |
|---|---|
| Audio | Input: One (1) Channel<br>Output: One (1) Channel |
| Alarm | Input: One (1) Channel (5 mA, 5 VDC)<br>Output: One (1) Channel (300 mA, 12 VDC) |

### Electrical

| | | |
|---|---|---|
| Power Supply | | 12 VDC ±30% or PoE (IEEE 802.3af, Class 0) |
| Power Consumption | 12 VDC | Standard: 2.7 W |
| | PoE | Standard: 3.5 W |

## Environmental

| | |
|---|---|
| Operating Conditions | –40° C to +60° C (–40° F to +140° F),<br>10% to 95% RH |
| Storage Conditions | –40° C to +60° C (–40° F to +140° F),<br>10% to 95% RH<br>(daily temperature difference within 15° C/59° F ) |
| Ingress Protection | IP67 |
| Vandal Resistance | IK10 |

## Construction

| | |
|---|---|
| Casing | Metal |
| Dimensions | ø122.0 mm x 88.90 mm<br>(4.80 in. x 3.50 in.) |
| Net Weight | 0.47 kg (1.04 lb) |
| Gross Weight | 0.63 kg (1.39 lb) |

## Analytics+ Functions[2]

| | |
|---|---|
| Perimeter Protection | • Detects human or vehicle violations using the following methods:<br>**Tripwire**: a target crosses a defined line.<br>**Intrusion:** a target enters or exits a defined perimeter.<br>• Monitors a combination of detection methods.<br>• Search and retrieve video based on target type. |
| People Counting | • Delivers accurate flow statistics from the following methods:<br>**Line Crossing:** counts a person as they cross a threshold in a defined direction.<br>**Region:** counts the number of people in a defined area.<br>• Counts people simultaneously from four (4) threshold lines and four (4) defined regions[3]. |
| Smart Motion Detection[2] | • Differentiates between and classifies human and vehicle objects.<br>• Filters false alarms due to leaves, lights, animals, and other inconsequential objects.<br>• Extracts human or vehicle objects from recorded video for quick target search and retrieval. |
| Face Detection | • Detects and captures a snapshot of a human face within a scene. |

## Intelligent Video System Functions

| | |
|---|---|
| IVS triggers an alarm and takes a defined action for the following events: | |
| Standard Features | • Tampering with the camera.<br>• Error writing to an onboard Micro SD card.<br>• Error sending or receiving data over the network.<br>• Unauthorized access to the camera.<br>• 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. |
| 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

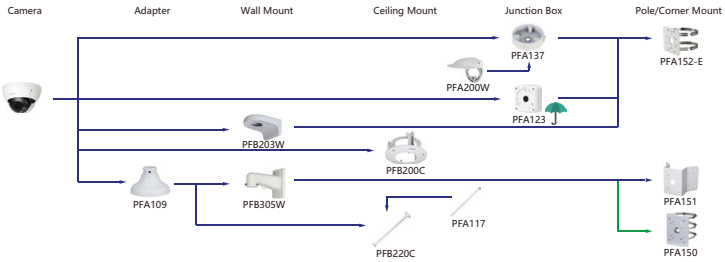
| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|---|---|---|---|---|
| 100 (328) | 100 | 25.5 | 52 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 48 | E100 |
| 300 (984) | 100 | 25.5 | 30 | E100 |
| 400 (1312) | 100 | 20 | 23 | E100 |
| 500 (1640)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

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.

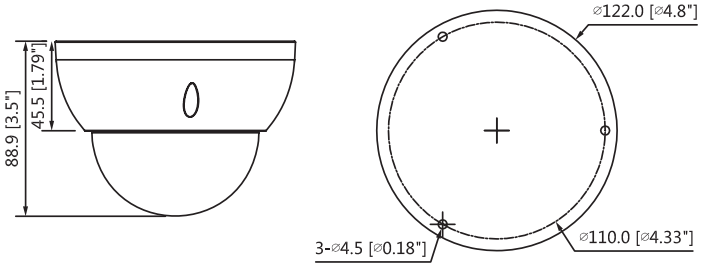
## Ordering Information

| Type | Part Number | Description |
|---|---|---|
| Analytics+ Camera | N45EM63 | 4 MP ePoE Night Color Fixed Lens Dome Camera |
| Accessories, optional | PFA109 | Mount Adapter (for use with PFB305W wall mount) |
| | PFA123 | Waterproof Junction Box |
| | PFA137 | Junction Box |
| | PFA151 | Corner Mount (for use with PFA109 and PFB305W) |
| | PFA152-E | Pole Mount (for use with PFB203W wall mount) |
| | PFA200W | Sun/Rain Shield (for use alone or with PFA137) |
| | DH-PFB200C | In-ceiling Mount |
| | PFB203W | Wall Mount (for use alone or with PFA152-E pole mount) |
| | PFB220C | Ceiling Mount (for use with PFA106 mount adapter) |
| | PFB305W | Wall Mount (for use with PFA109 mount adapter) |
| | DH-PFM321D-US | 12 VDC, 1 A Power Adapter |
| ePoE Accessories, optional | LR1002 | EoC Passive Converter |
| | LR1002-1EC | Single-port EoC Receiver |

## Mounting Diagram




## Dimensions




## Accessories

Optional:

PFA109
Mount Adapter

PFA123
Waterproof Junction Box

PFA137
Junction Box

PFA151
Corner Mount

PFA152-E
Pole Mount

PFA200W
Sun/Rain Shield

DH-PFB200C
In-ceiling Mount

PFB203W
Wall Mount



PFB220C
Ceiling Mount

PFB305W
Wall Mount

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

LR1002
EoC Passive Converter

LR1002-1EC
Single-port EoC Receiver

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