

## 2 × 4MP Enhanced Night Color Network Dual-lens Panoramic Eyeball Camera

### ePoE 180-degree Stitched Panoramic Camera with WizMind Analytics





WizMind Series devices offer Dahua Analytics+ functions for comprehensive, human-oriented analytic solutions. WizMind Series products are ideal for complex applications with demanding requirements that need advanced analytic capabilities.

#### System Overview

The Dahua 8MP Dual-Lens Stitching Night Color camera offers Analytics+ functions at the edge – performing complex real-time perimeter protection, Smart Motion Detection+, and People Counting. 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 Technology and Ultra Wide Dynamic Range allow the camera to operate in any lighting condition and the IP67 rating makes the camera suitable for the harshest environments

#### Functions

##### EPTZ

With advanced target detection and tracking algorithms, Dahua's EPTZ technology can simultaneously zoom in and track multiple humans and vehicles that trigger alarms. It provides rich details and a panoramic view at the same time. The ePTZ feature offers five modes including a wide-angle view that can hold 1, 3, or 5 different sub-images for a more versatile security system.

##### 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 fewer 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.

##### Enhanced Night Color Technology

The Enhanced Night Color camera incorporates white-light LEDs to offer full-color images in total darkness, as well as an effective visual deterrent. This technology provides smart illumination where the camera automatically activates the white-light illuminators when ambient light levels fall and adjusts exposure time and LED intensity to prevent overexposing the image.

- Dual 1/1.8-in. 4MP Progressive Scan CMOS Sensors
- 180° Field of View
- Maximum Resolution 8MP (4096 × 1800) at 25 fps
- Ultra Wide Dynamic Range (140 dB)
- AI Coding, Smart H.265+, and Smart H.264+ Dual Codec
- Enhanced Night Color Technology for Color Images in Total Darkness
- Built-in Warm Light, Maximum Illumination Distance of 40 m (131 ft)
- Built-in Microphone and Speaker, Supports Two-way Talk
- Analytics+ Features: Perimeter Protection, Heat Map, People Counting, Smart Object Detection, Smart Motion Detection+
- EPTZ: Enlarge and Track the Targets of Intelligent Alarms
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera - Operational down to -40° C (-40° F)
- IP67 Ingress Protection
- Five-year Warranty\*



##### 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.

##### 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°F (-40°C) 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.

##### 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.

##### Smart Object Detection

Smart Object Detection, a component of Dahua's Analytics+ technology, analyzes a scene to trigger an alarm when an object remains or is removed from a monitoring area. The advanced algorithm can identify four types of objects—luggage, bags, boxes, and non-motor vehicles—and filter false alarms due to leaves, animals, and other inconsequential objects. Users can set the amount of time before an alarm goes off after an object is flagged as missing or abandoned.

##### 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

Subjected to rigorous dust and water immersion tests the camera is suitable for the most demanding outdoor applications. The camera carries an IP67 rating that ensures protection from total dust ingress and protection from water immersion between 15 centimeters and 1 meter in depth.



### Technical Specification

#### Camera

Image Sensor	Dual 1/1.8-in. 4MP CMOS
Effective Pixels	4096 (H) × 1800 (V)
RAM/ROM	1 GB/128 MB
Electronic Shutter Speed	1/3 s to 1/100,000 s
Minimum Illumination	Color (30 IRE): 0.005 Lux at F1.0 B/W (30 IRE): 0.0005 Lux at F1.0 IR (Illuminator On): 0 lux
Illumination Distance	40 m (131.23 ft)
Illuminators	Four (4) Warm-light LEDs
Illuminator On/Off Control	Auto
Pan/Tilt/Rotation Range	Pan: 0° to 360° Tilt: 4° to 90° Rotation: 0° to 360°
S/N Ratio	> 56 dB

#### Lens

Lens Type	Fixed-focal			
Lens Mount	M16			
Focal Length	3.6 mm			
Maximum Aperture	F1.0			
Angle of View	Horizontal	55.8° to 2.9°		
	Vertical	31.6° to 1.6°		
Iris Type	Fixed			
Close Focus Distance	3.6 m (11.81 ft)			
DORI <sup>1</sup> Distance	Detect	Observe	Recognize	Identify
	70.3 m (230.64 ft)	28.1 m (92.19 ft)	14.1 m (46.26 ft)	7.0 m (22.97 ft)

#### Video

Compression	AI Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (Sub Stream Only)	
Streaming Capability	Three (3) Streams	
Resolution	8MP (4096 × 1800), 6.5MP (3840 × 1680), 4MP (3840 × 1080), 4MP (2880 × 1264), 1.6MP (1920 × 832), 0.7MP (1280 × 560), 0.5MP (1024 × 452)	
Frame Rate <sup>2</sup>	Main Stream	WDR On: 4096 × 1800 at 20 fps WDR Off: 4096 × 1800 at 25 fps
	Sub Stream 1	WDR On: 1024 × 452 at 20 fps WDR Off: 1024 × 452 at 25 fps
	Sub Stream 2	WDR On: 1920 × 832 at 20 fps WDR Off: 1920 × 832 at 25 fps
Bit Rate Control	CBR, VBR	
Video Bit Rate	H.264: 9 kbps to 8192 kbps H.265: 9 kbps to 8192 kbps	
Day/Night	Color, B/W	
Backlight Compensation	BLC, HLC, Ultra WDR (140 dB)	
White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom	
Gain Control	Auto	
Noise Reduction	3DNR	
Motion Detection	Off/On (4 Areas, Rectangular)	
Region of Interest (RoI)	4 Areas	
Privacy Masking	4 Areas	
Advanced Features	Defog, Scene Self-adaption (SSA)	

#### Audio

Input/Output	Input: One (1) Channel (RCA Port) Output: One (1) channel (RCA port)
Built-in Microphone	Yes
Compression	G.711a, G.711Mu, PCM, G.726, G.723, AAC

#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	IPv4, IPv6, HTTP, TCP, UDP, ARP, RTP, RTSP, RTCP, RTMP, SMTP, DHCP, DNS, DDNS, QoS; UPnP, NTP, Multicast, ICMP, IGMP, NFS, SAMBA, PPPoE, SNMP, Bonjour
Interoperability	ONVIF (Profile S/Profile G/Profile T), CGI, SDK, API
Maximum User Access	20 Users (Total Bandwidth: 80 Mbps)
Edge Storage	MicroSD Card (Max. 512 GB)
Web Viewer	Microsoft Edge <sup>3</sup> , Chrome
Management Software	SmartPSS Lite, DSS, DMSS
Mobile Operating System	Android, iOS
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

#### Alarm

Input/Output	Input: One (1) Channel (5 mA 3 V to 5 VDC) Output: One (1) Channel (300 mA 12 VDC)
Event	No SD Card, SD Card Full, SD Card Error, Network Disconnection, IP Conflict, Illegal Access, Motion Detection, Video Tampering, Tripwire, Intrusion, Fast Moving, Abandoned Object, Missing Object, Loitering Detection, People Gathering, Parking Detection, Scene Changing, Audio Detection, Voltage Detection, External Alarm, SMD, People Counting in Area, Stay Detection, People Counting, Security Exception

#### Electrical

Power Supply	12 VDC (±30%), PoE+ (802.3at), ePoE
Power Consumption	Basic: 4.8 W (12 VDC), 5.5 W (PoE) Maximum (WDR + Intelligence + Warm Light + SPK): 10.5W (12 VDC), 11.8 W (PoE)

#### Environmental

Operating Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Humidity	≤ 95%
Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Protection	IP67

#### Structure

Casing	Metal, Plastic
Product Dimensions	Φ122 mm × 131.9 mm (Φ4.80 in. × 5.19 in.)
Net Weight	0.99 kg (2.18 lb)
Gross Weight	1.15 kg (2.54 lb)

#### Analytics+ Functions

Perimeter Protection	<ul style="list-style-type: none"> <li>Detects human or vehicle violations using the following methods:                             <ul style="list-style-type: none"> <li><b>Tripwire:</b> a target crosses a defined line.</li> <li><b>Intrusion:</b> a target enters or exits a defined perimeter.</li> </ul> </li> <li>Monitors a combination of ten (10) detection methods.</li> <li>Search and retrieve video based on target type.</li> </ul>
Smart Object Detection	<ul style="list-style-type: none"> <li>Detects when an object (luggage, bag, box, non-motor vehicle) remains or is removed from a designated area</li> <li>Triggers an alarm after a set amount of time (6 to 300 seconds)</li> </ul>
People Counting	<ul style="list-style-type: none"> <li>Delivers accurate flow statistics from the following methods:                             <ul style="list-style-type: none"> <li><b>Line Crossing:</b> Counts a person as they cross a threshold in a defined direction.</li> <li><b>Region:</b> counts the number of people in a defined area.</li> </ul> </li> </ul>

Analytics+ Functions (Cont.)

People Counting (Cont.)		<ul style="list-style-type: none"> <li>Counts people simultaneously from four (4) threshold lines and four (4) defined regions</li> </ul>
Smart Motion Detection+		<ul style="list-style-type: none"> <li>Differentiates between and classifies human and vehicle objects.</li> <li>Filters false alarms due to leaves, lights, animals, and other inconsequential objects.</li> <li>Extracts human or vehicle objects from recorded video for quick target search and retrieval.</li> </ul>
Recommended Detection Distance	Human	Up to 10.0 m (32.81 ft)
	Vehicle	Up to 15.0 m (49.21 ft)

Intelligent Video System

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

Standard Features		<ul style="list-style-type: none"> <li>Tampering with the camera.</li> <li>Error writing to an onboard Micro SD card.</li> <li>Error sending or receiving data over the network.</li> <li>Unauthorized access to the camera.</li> </ul>
Premium Features		
Fast Moving	Target exceeds a set speed when exiting a defined area	
Loitering Detection	Target is in motion inside a defined area longer than a specified amount of time	
Crowd Gathering	Specified number of people remain inside a defined area for a set time.	
Parking Detection	Vehicle remains in a defined area without motion for a set period of time	
Heat Map	Generates a visual representation of data. Supports two-dimensional analysis, displays a visual representation of data for number of people or average wait time in a defined area over a given 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

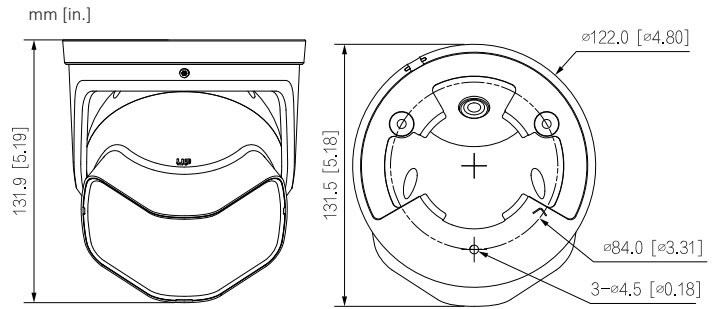
Cable Length, m (ft)	Bandwidth, Mbps	PoE Load Capacity, W	Hi-PoE Load Capacity, W	Working Mode
100 (328)	100	25.5	52	IEEE/E100
200 (656)	100	25.5	48	E100
300 (984)	100	25.5	30	E100
400 (1312)	100	20	23	E100
500 (1640)	10	16	16	E10
800 (2625)	10	10	10	E10
1000 (3281)	10	8	8	E10

- 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.
- The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
- Compatibility mode may be required.

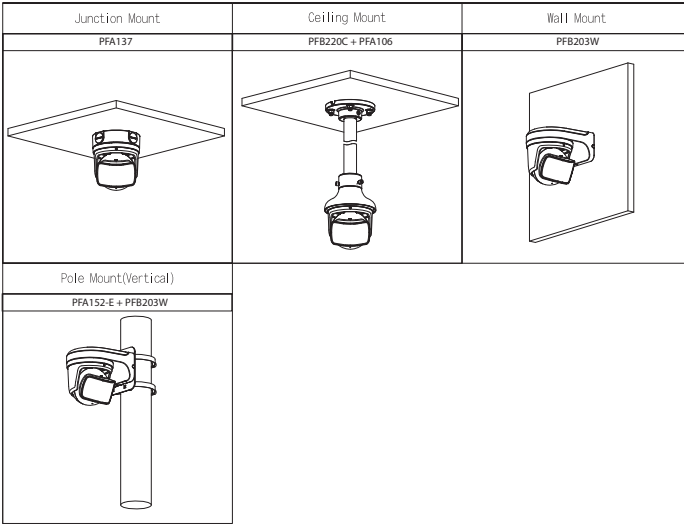
**Ordering Information**

Type	Part Number	Description
8MP Camera	DH-IPC-PDW5849P-A180-E2-ASTE	2x4MP Enhanced Night Color Dual-Lens Stitching WizMind Network Camera
Accessories (Optional)	PFA137	Junction Box
	PFB203W	Wall Mount Bracket
	PFB220C	Ceiling Mount Bracket
	PFA106	Mount Adapter
	PFA152-E	Pole Mount Bracket
	DH-PFM321D-US	12VDC, 1A Power Adapter

**Dimensions**



**Accessories (Optional)**



PFA137  
Junction Box



PFB203W  
Wall Mount Bracket



PFB220C  
Ceiling Mount Bracket



PFA106  
Mount Adapter



PFA152-E  
Pole Mount Bracket



DH-PFM321D-US  
12V DC, 1A  
Power Adapter