Dahua TECHNOLOGY

8MP Enhanced Night Color Network Eyeball Camera
ePoE Fixed Lens Network Camera with Analytics+

- 1/1.2-in. 8MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- AI Coding, Smart H.265+ and Smart H.264+ Video Compression
- 8MP (3840 x 2160) at 30 fps, 2.8 mm Fixed Lens
- Ultra Wide Dynamic Range (140 dB)
- Built-in Microphone
- Analytics+ Functions — People Counting, Perimeter Protection, Smart Motion Detection+, and Face Detection
- Night Color Technology with White-light LEDs for Color Images in Total Darkness
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera - Operational down to –40° C (–40° F)
- IP67 Ingress Protection
- Five-year Warranty*

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 ePoE Enhanced Night Color camera offers Analytics+ functions at the edge – performing complex real-time perimeter protection security, Smart Motion Detection, 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 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

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.

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.

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.

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.

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.

Smart Scheduling
Smart Scheduling, part of Dahua's Analytics+ technology, employs different Analytics+ functions depending on the time of day. For example, a camera with Smart Scheduling can be set to use the people counting function during the day to monitor the number of people entering a specific area and perimeter protection at night for deterrence. With Smart Scheduling, one camera can cover an area day and night.

Environmental
Subjected to rigorous dust and water immersion tests the camera 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	1/1.2-in. 8MP Progressive-scan CMOS
Effective Pixels	3840 (H) x 2160 (V)
RAM/ROM	1 GB / 128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
S/N Ratio	> 56 dB
Minimum Illumination	Color: 0.0005 Lux at F1.0
Illuminator Type	White-light LED
Illumination Distance	40 m (131.23 ft)
IR On/Off Control	Auto, Manual, Off
Illuminators	Two (2)

Lens

Lens Type	Fixed-focal
Mount Type	M22
Focal Length	2.8 mm
Maximum Aperture	F1.0
Angle of View	Horizontal: 102° Vertical: 53° Diagonal: 125°
Iris Type	Fixed
Close Focus Distance	4.2 m (13.8 ft)

DORI[1] Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	95.6m (313.65 ft)	38.2 m (125.33 ft)	19.1 m (62.66 ft)	9.6 m (31.50 ft)

Installation Angle

Range	Pan: 0° to 360° Tilt: 0° to 78° Rotation: 0° to 360°

Video

Compression	AI Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264B, H.264H, MJPEG (sub stream only)
Streaming Capability	Three (3) Streams
Resolution	8MP (3840 x 2160), 3072 x 2048, 3072 x 1728, 2592 x 1944, 4MP (2688 x 1520), 3MP (2048 x 1536), 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	8MP (3840 x 2160) at 30 fps
	Sub Stream 1	D1 (704 x 480) at 30 fps
	Sub Stream 2	1080p (1920 x 1080) 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	Color, B/W
BLC Mode	BLC, HLC, Ultra WDR (140 dB), SSA
White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Custom Area
Gain Control	Auto, Gain Priority, Shutter Priority, Manual
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones)
Region of Interest (RoI)	Off, On (4 Zones)
Advanced Features	Defog

Image Rotation	0°, 90°, 180°, 270°
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

Audio

Built-in Microphone	Yes
Compression	PCM; G.711A; G.711Mu; G.726; G.723, AAC

Network

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/Profile G/Profile T); CGI; P2P
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 (Version 9 or later), Chrome, Firefox
Management Software	DSS, 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

Safety	UL62368-1, CAN/CSA C22.2 No. 62368-1-14 EN62368-1
Electromagnetic Compatibility (EMC)	CFR 47 FCC Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU

Interface

Audio	Input	One (1) Channel, RCA plus a built-in Microphone
	Output	One (1) Channel (RCA port)
Alarm	Input	One (1) Channel, 5mA, 3V to 5 VDC
	Output	One (1) Channel, 300mA, 12 VDC

Electrical

Power Supply		12 VDC (±30%), PoE (802.3af), ePoE
Power Consumption	Basic	12 VDC: 5.8 W PoE: 6.7 W
	Maximum	12 VDC: 9.8 W PoE: 10.5 W

Environmental

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),
Ingress Protection	IP67

Construction

Casing	Metal
Dimensions	Φ122 mm × 119.7 mm (Φ4.80 in. × 4.71 in.)
Net Weight	0.74kg(1.63lb)
Gross Weight	0.96kg(2.12lb)

Analytics+ Functions[2]

Perimeter Protection	• Detects human or vehicle violations using the following methods: **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.
People Counting	• Delivers accurate flow statistics from the following methods: **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 regions
Face Detection	• Detects and captures a snapshot of a human face within a scene.
Smart Motion Detection+	• 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

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

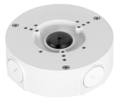| Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera. • IP Address Conflict
Premium Features	
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.
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.
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.

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.
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 < 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	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 < 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	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
Analytics+ Camera	N85EUN2	8MP ePoE Enhanced Night Color Fixed Lens Eyeball Camera with Analytics+
Accessories, optional	PFA130-E	Waterproof Junction Box
	DH-PFB205W-E	Wall Mount
	PFA152-E	Pole Mount
	PFA106	Mount Adapter
	PFB220C	Ceiling Mount
	DH-PFM321D-US	12 VDC, 1 A Power Adapter

Accessories (Optional)

PFA130-E
Waterproof Junction Box
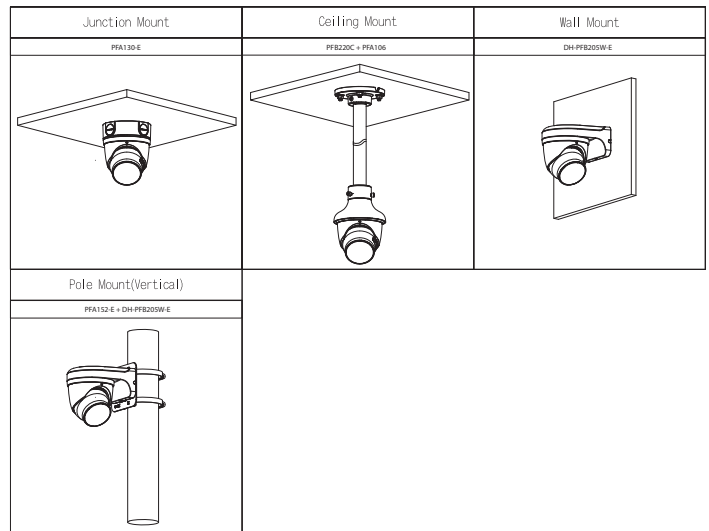
DH-PFB205W-E
Wall Mount Bracket

PFA152-E
Pole Mount

PFA106
Mount Adapter

PFB220C
Ceiling Mount

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

Junction Mount — PFA130-E

Ceiling Mount — PFB220C + PFA106

Wall Mount — DH-PFB205W-E

Pole Mount(Vertical) — PFA152-E + DH-PFB205W-E

Dimensions

mm [in.]

⌀84 [⌀3.31] ⌀122 [⌀4.80] ⌀4.5 [⌀0.18] 119.7 [4.71]