4MP ePoE Network Bullet Camera

Ultra Wide Dynamic Range Vari-focal Network Camera with Analytics+

- 1/1.8-in. 4 MP Progressive-scan CMOS Sensor
- Five-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- 4 MP (2688 x 1520) at 60 fps Maximum Resolution
- 2.7 mm to 12 mm Motorized Vari-focal Lens
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera - Operational down to –40° C (–40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Analytics+ Functions — Face Recognition, People Counting, Perimeter Protection, and Image Attribute Extraction
- Ultra Wide Dynamic Range (140 dB) and Day/Night IR Cut Filter
- Maximum IR LED Distance 50 m (164.04 ft)
- Five-year Warranty*

System Overview

The Dahua 4 MP ePoE camera offers Analytics+ functions at the edge – performing complex real-time face recognition, people counting, and perimeter protection surveillance. 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 — Ultra Wide Dynamic Range and Smart IR technologies allow the camera to operate in any lighting condition and the IP67 and IK10 rating make the camera suitable for the harshest environments.

Functions

Face Recognition

The camera includes human facial feature extraction, real-time facial snapshots, and supports a database of up to 200,000 face images and five (5) libraries. The feature enables a pro-active way to identify persons of interest before an incident occurs. The advanced processor extracts and categorizes various features, including age, gender, expression, and whether the target face wears glasses or sports facial hair. The camera is ideal for applications that require entrance/exit management, where knowing who is coming and going is a valuable asset.

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.

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.

Image Attribute Extraction

Analytics+ allows the camera to classify images in a video stream and then extract and store attributes and features for a specific image. The camera can distinguish between vehicle and human objects, track the object in real-time, and extract attributes, such as vehicle type, color, and make; or gender, clothing color, and facial attributes for people.

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 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, 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.

Environmental

The camera complies with the 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 and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

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

Technical Specification

Camera

Image Sensor	1/1.8-in. 4 MP CMOS
Effective Pixels	2688(H) x 1520(V)
RAM/ROM	2 GB / 16 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.001 lux at F1.2 (1/3 s, 30 IRE) 0 lux at F1.2 (with IR on)
IR Distance	Distance up to 50.0 m (164.04 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Four (4)

Lens

Lens Type	Electric Zoom
Mount Type	Module Interface
Focal Length	2.7 mm to 12 mm
Max. Aperture	F1.2
Angle of View	Horizontal: 111° to 47° Vertical: 59° to 26° Diagonal: 135° to 51°
Optical Zoom	4x
Aperture Control	Auto
Close Focus Distance	Wide: 1.0 m (3.29 ft) Tele: 2.50 m (8.20 ft)

		Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
DORI Distance[1]	Wide	60.10 m (187.18 ft)	24.0 m (78.74 ft)	12.0 m (39.37 ft)	6.0 m (19.69 ft)
	Telephoto	128.60 m (421.92 ft)	51.40 m (168.64 ft)	25.70 m (84.32 ft)	12.80 m (41.99 ft)

Installation Angle

Range	Pan: 0˚ to 360˚; Tilt: 0˚ to 90˚; Rotation: 0˚ to 360˚

Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, H.264B, H.264H, MJPEG (sub stream only)
Streaming Capability	Five (5) 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 60 fps
	Sub Stream 1: 704 x 576 at 30 fps
	Sub Stream 2: 1080p (1920 x 1080) at 30 fps
	Sub Stream 3: 1080p (1920 x 1080) at 30 fps
	Sub Stream 4: 704 x 576 at 30 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps to 10240 Kbps H.265: 12 Kbps to 10240 Kbps
Day/Night	Auto (ICR), 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
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones, Rectangular)
Region of Interest	Off, On (4 Zones)
Advanced Features	Electronic Image Stabilization (EIS), Smart IR, Defog
Flip	0°, 90°, 180°, 270° (supports 90° and 270° with 1080p resolution or lower)
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

Audio

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

Network

Ethernet	RJ-45 (100/1000 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, P2P, RTMP
Auto Register	Support
Maximum User Access	20 Users
Edge Storage	Network Attached Storage (NAS) FTP, SFTP Micro SD Slot, maximum 256 GB
Web Viewer	IE (Version 9 and higher), Chrome (Version 42 and higher), Firefox (Version 48.0.2 or higher)
Management Software	SmartPSS, DSS Pro, IVSS
Mobile Operating System	IOS, Android

Certifications

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

Interface

Audio	Input: One (1) Channel Output: One (1) Channel
Alarm	Input: Three (3) Channels (5 mA, 5 VDC) Output: Two (2) Channels 1000 mA, 30 VDC 500 mA, 50 VAC
RS485	One (1) Port (Bit rate: 1200 bps to 115200 bps)

Electrical

Power Supply		12 VDC, 24 VAC, or PoE (IEEE 802.3af, Class 0)
Power Consumption	12 VDC	Standard: 3.7 W with IR and ICR ON: 12.2 W
	24 VAC	Standard: 5.7 W with IR and ICR ON: 17.3 W
	PoE	Standard: 5.5 W with IR and ICR ON: 17.1 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 Temperature	–40° C to +60° C (–40° F to +140° F), ≤ 95% RH
Storage Temperature	–40° C to +60° C (–40° F to +140° F), ≤ 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10

Construction

Casing		Metal and Plastic
Dimensions	Camera	340.10 mm x 108.50 mm x 92.90 mm (13.39 in. x 4.27 in. x 3.66 in.)
	Package	431.0 mm x 205.0 mm x 187.0 mm (16.97 in. x 8.07 in. x 7.36 in.)
Net Weight		1.60 kg (3.53 lb)
Gross Weight		2.40 kg (5.29 lb)

Analytics+ Functions[2]

Face Recognition	• Supports five group libraries that store up to 200,000 faces on the camera. • Captures faces, compares to stored images, and produces match statistics. • Extracts six attributes and eight expressions from a face capture. • Offers face enhancement, face exposure, and a face angle filter for clear facial images.
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. • Produces daily, monthly, and annual reports for both methods.
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.
Image Attribute Extraction	• Distinguishes between motor vehicle, non-motor vehicle, and human targets. • Optimizes images and takes a snapshot of each target. • Extracts attributes specific to a target: **Vehicles**: make, color, type **Human:** gender, face attributes, clothing colors

Intelligent Video System Functions[2]

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	
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.
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.

2. The Face Capture, Perimeter Protection, and IVS functions cannot be used at the same time, only one Analytics+ or IVS function can be used at a 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

Ordering Information

Type	Part Number	Description
Analytics+ Camera	DH-IPC-HFW7442HN-ZFR	4 MP ePoE Vari-focal Bullet Camera
Mounting Accessories, optional	PFA154	Pole Mount
	DH-PFM320D-US	12 VDC, 2 A Power Adapter
ePoE Accessories, optional	LR1002	EoC Passive Converter
	LR1002-1EC	Single-port EoC Receiver

Accessories

Optional:

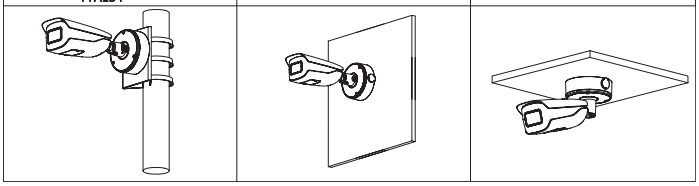
PFA154
Pole Mount

DH-PFM320D-US
Power Adapter

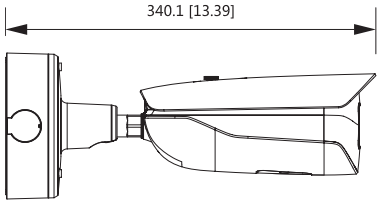
LR1002
EoC Passive
Converter

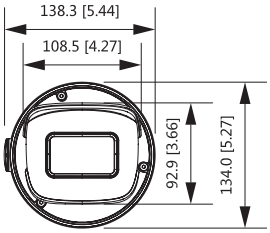
LR1002-1EC
Single-port EoC
Receiver

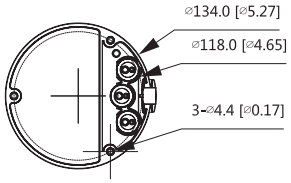
Pole Mount	Wall-Mount	Junction Mount
PFA154		



Dimensions (mm/in.)







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