4MP ePoE Starlight+ Network Bullet Camera

True Wide Dynamic Range Vari-focal 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, 2.7 mm to 12 mm Motorized Lens
- Enhanced Power and Data Transmission Distances (ePoE)
- Starlight+ Technology for Low-light Applications
- Analytics+ Functions — Face Detection, Facial Attribute Extraction, People Counting, Perimeter Protection, and Smart Motion Detection
- ArcticPro Series Camera — Operational down to –40° C (–40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- True Wide Dynamic Range (140 dB) and Day/Night IR Cut Filter
- Maximum IR LED Distance 50 m (164.04 ft)
- Intelligent Video System
- Five-year Warranty*

SMD Smart Motion Detection

ArcticPro

4Mp Face Capture | Perimeter | People Counting | Metadata | Starlight+

System Overview

The Dahua 4 MP Starlight+ ePoE camera offers Analytics+ functions at the edge – performing complex real-time face capture, 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 — Starlight+, 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

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.

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 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.

Starlight Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light conditions. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

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 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.

*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	1 GB / 128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.0024 lux at F1.8 (1/3 s, 30 IRE) Color: 0.029 lux at F1.8 (1/30 s, 30 IRE) 0 lux at F1.8 (with IR on)
S/N Ratio	Greater than 56 dB
IR Distance	Distance up to 50.0 m (164.04 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Three (3)

Lens

Lens Type	Motorized				
Mount Type	Board-in				
Focal Length	2.7 mm to 12 mm				
Max. Aperture	F1.8				
Angle of View	Horizontal: 114° to 47° Vertical: 62° to 26°				
Optical Zoom	4.4x				
Aperture Control	Auto				
Close Focus Distance	1.20 m (3.94 ft)				
DORI Distance[1]	Lens	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
	Wide	58 m (190 ft)	23 m (75 ft)	12 m (39 ft)	6 m (20 ft)
	Telephoto	131 m (430 ft)	52 m (171 ft)	26 m (85 ft)	13 m (43 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	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 H.265: 19 Kbps to 8192 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, Gain Priority, Shutter Priority
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°
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) FTP 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
Smart Phone	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: Two (2) Channels (5 mA, 5 VDC) Output: One (1) Channel (300 mA, 12 VDC)

Electrical

Power Supply		12 VDC or PoE+ (IEEE 802.3at, Class 4)
Power Consumption	12 VDC	Standard: 3 W with IR ON: 12.1 W with heater ON: 10.3 W
	PoE+	Standard: 3.7 W with IR ON: 15.2 W with heater ON: 12.5 W

Environmental

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

Construction

Casing	Metal and Plastic
Dimensions	273.20 mm x 95.0 mm x 95.0 mm (10.76 in. x 3.74 in. x 3.74 in.)
Net Weight	1.11 kg (2.44 lb)
Gross Weight	1.51 kg (3.33 lb)

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[3].
Smart Motion Detection[3]	• 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.
Face Detection with Facial Attribute Extraction	Captures faces from video image and extracts the following facial features: Age Gender Expression (Happy, Calm, Surprise, Sad, Rage) Wearing Glasses Wearing a Mask Facial Hair

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.
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.

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. The Analytics+ functions and the IVS functions cannot be used at the same time, only one Analytics+ or IVS function can be used at a time. In addition, the Smart H.265+ and the Smart H.264+ Codec cannot be used simultaneously with either an Analytics+ or an IVS feature.
3. 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 < 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	N45DB7Z	4 MP ePoE Starlight+ Vari-focal Bullet Camera
Mounting Accessories, optional	PFA121	Junction Box
	PFA151	Corner Mount (for use with PFA121 Junction Box)
	PFA152-E	Pole Mount (for use with PFA121 Junction Box)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
ePoE Accessories, optional	LR1002	EoC Passive Converter
	LR1002-1EC	Single-port EoC Receiver

Accessories

Optional:

PFA121
Junction Box

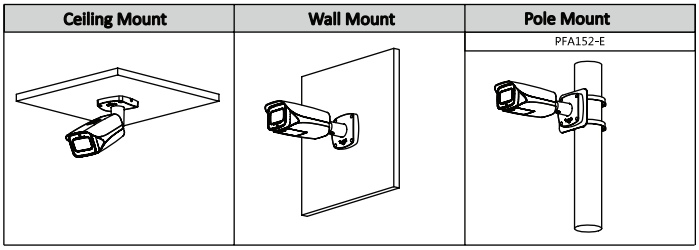
PFA152-E
Pole Mount

PFA151
Corner Mount

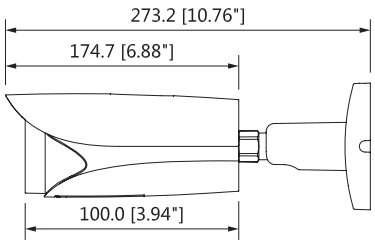
DH-PFM321D-US
Power Adapter

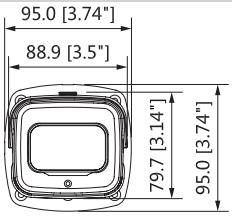
LR1002
EoC Passive Converter

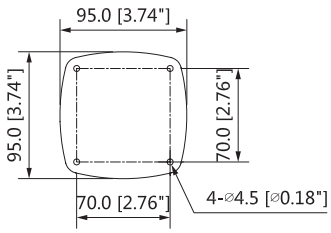
LR1002-1EC
Single-port EoC Receiver



Dimensions







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