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TECHNOLOGY

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 — Perimeter Protection
- Night Color Technology for Color Images in near-dark Applications
- Enhanced Power and Data Transmission Distances (ePoE)
- True Wide Dynamic Range (120 dB)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Intelligent Video System
- Five-year Warranty*

System Overview

The Dahua 4 MP Night Color ePoE camera offers Analytics+ functions at the edge – performing complex real-time perimeter protection surveillance 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 and True Wide Dynamic Range allow the camera to operate in any lighting condition 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.

Night Color Technology

Dahua cameras with Night Color Technology 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.

Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

True Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from −30° C to +60° C (−22° F to +140° F). 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.

ePoE

Onvif

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) 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° Vertical: 50°
Focus Control	Fixed
Close Focus Distance	2.0 m (6.56 ft)

DORI[1] 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˚ Tilt: 0˚ to 75˚ 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), 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 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	Color, B/W
BLC Mode	BLC, HLC, True WDR (120 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
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
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: One (1) Channel (5 mA, 5 VDC) 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

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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 Conditions	−30° C to +60° C (−22° F to +140° F), 10% to 95% RH
Storage Conditions	+5° C to +40° C (41° F to +104° F), 10% to 95% RH (daily temperature difference within 15° C/59° F)
Ingress Protection	IP67
Vandal Resistance	IK10

Construction

Casing	Metal
Dimensions	⌀122.0 mm x 88.90 mm (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:
	  Tripwire: a target crosses a defined line.
	  Intrusion: a target enters or exits a defined perimeter.
	• Monitors a combination of ten (10) 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 one (1) threshold line and one (1) defined region.

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.

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

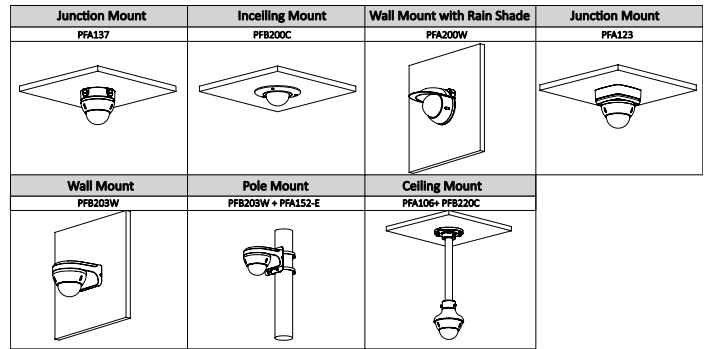| Cable Length, m (ft)	Bandwidth, Mbps	PoE Load Capacity, W	Hi-PoE Load Capacity, W	Working Mode
100 (328)	100	25.5	50	IEEE/E100
200 (656)	100	25.5	30	E100
300 (984)	100	18	18	E100
400 (1312)	100	15	15	E100
500 (1640)	10	12	12	E10
800 (2625)	10	6	6	E10
1000 (3281)	10	5	5	E10

Via RG-59 Coaxial Cable
ePoE supply voltage 53 V
Maximum DC resistance < 5 Ω/100 m

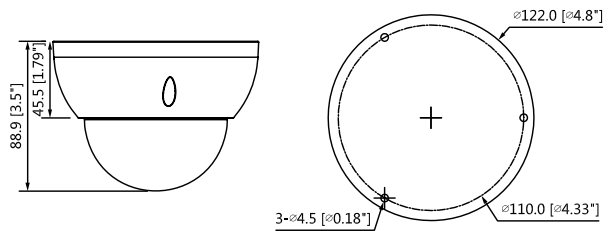| Cable Length, m (ft)	Bandwidth, Mbps	PoE Load Capacity, W	Hi-PoE Load Capacity, W	Working Mode
100 (328)	100	25.5	52	IEEE/E100
200 (656)	100	25.5	48	E100
300 (984)	100	25.5	30	E100
400 (1312)	100	20	23	E100
500 (1640)	10	16	16	E10
800 (2625)	10	10	10	E10
1000 (3281)	10	8	8	E10

2. 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. In addition, the Smart H.265+ and the Smart H.264+ cannot be used simultaneously with either an Analytics+ or an IVS feature.

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Ordering Information

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

Junction Mount	Inceiling Mount	Wall Mount with Rain Shade	Junction Mount
PFA137	PFB200C	PFA200W	PFA123

Wall Mount	Pole Mount	Ceiling Mount
PFB203W	PFB203W + PFA152-E	PFA106+ PFB220C

Dimensions

88.9 [3.5"] 45.5 [1.79"]

⌀122.0 [⌀4.8"]

3-⌀4.5 [⌀0.18"] ⌀110.0 [⌀4.33"]

Accessories

Optional:

PFA106
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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