5MP 5-in-1 Network Dome Camera

Active Alarm, Dual Illuminators, Bi-directional Talk, Smart Motion Detection, Mask Detection

- 1/2.7-in. 5 MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- 5 MP (2592 x 1944) at 20 fps, 2.8 mm Fixed Lens
- Analytics+ Functions — Mask Detection, Perimeter Protection with Active Alarm, Smart Motion Detection, People Counting, and Face Detection
- Built-in Microphone and a Built-in Speaker for Bi-directional Talk
- Dual Smart Illumination — IR and White Light
- Enhanced Starlight Technology for Low-light Applications
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera — Operational down to –40° C (–40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty*

WizMind

ArcticPro

WizMind Series devices offer the full complement of Dahua Analytics+ functions for comprehensive, human-oriented analytic solutions. WizMind Series products deliver perimeter protection, vehicle and crowd density statistics, video metadata, and advanced people counting with heat map functionality. WizMind is ideal for complex applications with demanding requirements that need advanced analytic capabilities.

System Overview

The Dahua 5 MP 5-in-1 network camera offers multiple features working in tandem to assist with deterrence, low-light detection, active alarm, mask monitoring and two-way talk, the 5MP 5-in-1 camera is a multitasking machine for maximum video surveillance. The camera is ideal for a host of diverse applications — Starlight+, True Wide Dynamic Range, and Smart Dual illuminators allow the camera to operate in any lighting condition and the IP67 and IK10 rating make the camera suitable for the harshest environments.

Functions

Active Alarm

The camera features active alarm functionality to respond automatically to a triggered alarm. The configurable automatic responses include activation of the white-light illuminator to capture color images of the scene and the broadcast of a built-in message or siren.

Face Mask Detection[1]

The camera captures faces from video images and analyzes the image for the presence of a face mask, useful for maintaining entrance management policies. The camera is capable of detecting a person without a mask at up to 17 feet and sounds a voice alert notifying the person about the absence of a mask.

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.

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 Dual Illuminators

The camera offers both IR and white-light illuminators and intelligently employs each depending on the situation. Typically, the camera enters the IR mode as ambient light decreases. When the camera detects an object entering the monitoring area, it activates the white-light illuminator to capture full-color details. Once the object leaves the area, the camera switches back to IR illumination.

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.

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

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	1/2.7-in. 5 MP CMOS
Effective Pixels	2592(H) x 1944(V)
RAM/ROM	128 MB / 512 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.005 lux at F1.6 0 lux at F1.6 (with IR on)
S/N Ratio	Greater than 56 dB
Illumination Distance	IR: 30.0 m (98.43 ft) White Light: 15.0 m (49.21 ft)
IR On/Off Control	Auto, Manual
Illuminators	IR: Two (2) LEDs White Light: One (1)

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	2.8 mm
Max. Aperture	F1.6
Angle of View	Horizontal: 98° Vertical: 71° Diagonal: 129°
Iris Type	Auto
Close Focus Distance	0.90 m (2.95 ft)

DORI Distance[2]	Lens	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
	2.8 mm	56.0 m (183.72 ft)	22.40 m (73.49 ft)	11.20 m (36.75 ft)	5.60 m (18.37 ft)

Installation Angle

Range	Pan: 0° to 355° Tilt: 0° to 80° 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	5 MP (2592 x 1944), 4 MP (2688 x 1520), 2560 x 1440, 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: 5 MP (2592 x 1944) at 20 fps or 4 MP (2688 x 1520) at 30 fps
	Sub Stream 1: D1 at 20 fps
	Sub Stream 2: 1080p at 13 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps to 8192 Kbps H.265: 12 Kbps to 8192 Kbps
Day/Night	Auto (ICR), 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	Smart IR, Defog
Flip	0°, 90°, 180°, 270°
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

Audio

Input	Built-in Microphone
Compression	PCM, G.711a, G.711Mu, G.726, MPEG2-Layer2, G.722.1, G.729, 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, G, T; CGI, Milestone; Genetec; SDK; API
Auto Register	Support
Streaming Method	Unicast / Multicast
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 (Versions 8, 9, and 11) Chrome, Firefox
Management Software	DSS Express S, 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	UL60950-1 CAN/CSA C22.2 No.60950-1-07 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 one (1) built-in microphone
	Output	One (1) Channel (RCA) plus one (1) built-in speaker
Alarm	Input	One (1) Channel (5 mA, 3 VDC to 5 VDC)
	Output	One (1) Channel (300 mA, 12 VDC)

Electrical

Power Supply	12 VDC, PoE (IEEE 802.3af, Class 0), or ePoE
Power Consumption	< 8.6 W, with illumination ON

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), Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10

Construction

Casing	Metal and Plastic
Dimensions	ø126.0 mm x 105.0 mm (4.96 in. x 4.13 in.)
Net Weight	0.716 kg (1.56 lb)
Gross Weight	0.929 kg (2.05 lb)

Analytics+ Functions

Perimeter Protection with Active Alarm	• 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. • Configurable automatic response when an alarm is triggered: **White-light** illuminator activation. **Siren** activation. Includes 11 built-in siren sounds plus ability to record custom recordings.
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].
Heat Map	Generates a visual representation of data.
Face Detection	Detects faces from the video image. Supports detecting, tracking, capturing and selecting the best face image, and then outputs face snapshot.
Face Mask Detection[1]	Detects a face then checks for the presence of a face mask. Issues a built-message alerting a person to use a mask.
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.

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	
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.
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.

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

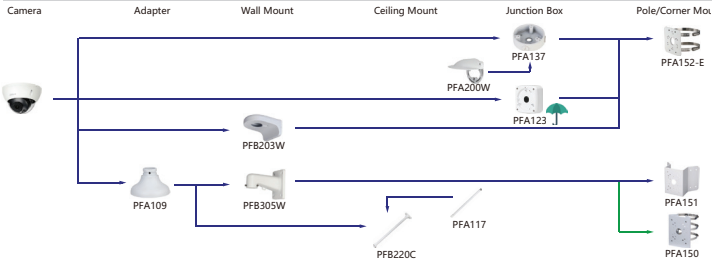
Cable Length, m (ft)	Bandwidth, Mbps	PoE Load Capacity, W	Hi-PoE Load Capacity, W	Working Mode
100 (328)	100	25.5	52	IEEE/E100
200 (656)	100	25.5	48	E100
300 (984)	100	25.5	30	E100
400 (1312)	100	20	23	E100
500 (1640)	10	16	16	E10
800 (2625)	10	10	10	E10
1000 (3281)	10	8	8	E10

1. The Face Mask Detection function requires firmware: DH_IPC-HX5XXX-Volt_Eng_N_Stream3_V2.800.12JW000.0.R.200717.zip
2. 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.

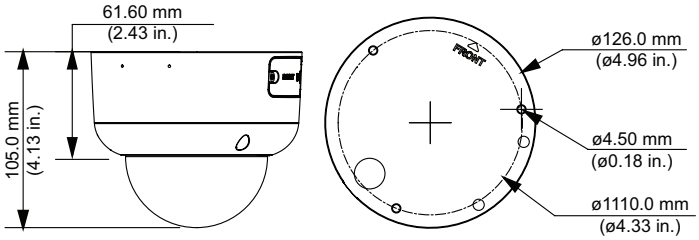
Ordering Information

Type	Part Number	Description
Analytics+ Camera	N55DY82	5 MP Active Alarm ePoE Starlight 2.8 mm Dome Camera
Mounting Accessories, optional	PFA109	Mount Adapter
	PFA137	Junction Box
	PFA150	Pole Mount (use with PFB305W wall mount)
	PFA151	Corner Mount (use with PFB305W wall mount)
	PFA152-E	Pole Mount (use with PFB203W wall mount)
	PFA200W	Sun/Rain Shield (use alone or with PFA137)
	PFB203W	Wall Mount
	PFB220C	Ceiling Mount (use with PFA109 mount adapter)
	PFB305W	Wall Mount (use with PFA109 mount adapter)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
	PC-H49-D90	Polycarbonate Smoke Tinted Bubble
ePoE Accessories, optional	LR1002	EoC Passive Converter
	LR1002-1EC	Single-port EoC Receiver

Mounting Diagram



Dimensions



Accessories

Optional:

PFA109
Mount Adapter

PFA137
Junction Box

PFA151
Corner Mount

PFA152-E
Pole Mount

PFB203W
Wall Mount

PFB220C
Ceiling Mount

PFB305W
Wall Mount

DH-PFM321D-US
Power Adapter

LR1002
EoC Passive
Converter

LR1002-1EC
Single-port EoC
Receiver

PC-H49-D90
Polycarbonate Smoke
Tinted Bubble

PFA200W
Sun/Rain Shield

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