

# 4MP IR Vari-focal ePoE Dome

WDR IR Dome Network Camera



## System Overview

The 4 MP dome camera features an advanced 1/3-in. Progressive-scan imager with a 2.7 mm to 13.5 mm vari-focal lens. The camera offers True Wide Dynamic Range, a True Day/Night IR Cut filter, IP67 Ingress Protection and operation in extreme temperatures to deliver superior images in all lighting and environmental conditions. The camera is a component of Dahua's innovative Enhanced Power over Ethernet (ePoE) system that transmits power and data over long distances without the need for repeaters or multiple switches.

## Functions

### 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.

Enhanced PoE encompasses pure IP systems where a single CAT 5E cable can carry signals up to 800 m (2624 ft), and IP/Analog hybrid systems where the technology leverages existing analog infrastructure to transmit power and data up to 1000 m (3281 ft) over RG59 coaxial cable. Enhanced PoE is compatible with three connection modes operating over the same network simultaneously: traditional IP networks, long-distance ePoE networks and coaxial networks. ePoE technology seamlessly integrates the latest high-definition IP cameras with a coaxial infrastructure using the Ethernet over Coaxial (EoC) protocol to convert between analog and IP power and data transmissions.

- 1/3-in. 4 MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- Smart H. 265+ and H.264 Dual Codec
- 4 MP at 30 fps Maximum Resolution
- 2.7 mm to 13.5 mm Motorized Optical Zoom 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
- True Wide Dynamic Range (120 dB) and True Day/Night (ICR)
- Maximum IR LED Distance 50 m (164 ft)
- Intelligent Video System
- Five-year Warranty\*



### True Wide Dynamic Range (WDR)

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.

### Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area. In addition to scene analytics, the camera offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

### 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.

### ArcticPro

The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as -40°F (-40°C) without the need for an internal heater. The lack of a heater reduces the camera's power consumption and saves operating costs. 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.

Technical Specification					
Camera					
Image Sensor		1/3-in. 4 MP Progressive-scan CMOS			
Effective Pixels		2688(H) x 1520(V)			
RAM/ROM		512 MB/32 MB			
Scanning System		Progressive			
Electronic Shutter Speed		Auto, Manual, 1/3 s to 1/100,000 s			
Minimum Illumination		Color: 0.03 lux at F1.4 (1/3 s, 30 IRE) Color: 0.3 lux at F1.4 (1/30 s, 30 IRE) 0 lux at F1.4 (IR on)			
S/N Ratio		More than 50 dB			
IR Distance		Distance up to 50 m (164.04 ft)			
IR On/Off Control		Auto, Manual			
IR LEDs		Three (3)			
Lens					
Lens Type		Motorized, Auto Iris (DC)			
Mount Type		Board-in			
Focal Length		2.7 mm to 13.5 mm			
Maximum Aperture		F1.4			
Angle of View		Horizontal: 106° to 31° Vertical: 58° to 17°			
Optical Zoom		5x			
Focus Control		Motorized			
Close Focus Distance		0.30 m (0.98 ft)			
	Lens	Detect	Observe	Recognize	Identify
	Wide	64 m (210 ft)	26 m (85 ft)	13 m (42 ft)	6.5 m (21 ft)
	Tele	208 m (682 ft)	83 m (272 ft)	41 m (136 ft)	20 m (68 ft)
Pan/Tilt/Rotation					
Range		Pan: 0° to 355° Tilt: 0° to 65° Rotation: 0° to 355°			
Video					
Compression		Smart H.265+, H.265, Smart H.264+, H.264			
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 at 30 fps			
		Sub Stream 1: D1 at 30 fps			
		Sub Stream 2: 720p at 30 fps			
Bit Rate Control		CBR/VBR			
Bit Rate		H.264: 24 to 10240 Kbps H.265: 14 to 9984 Kbps			
Day/Night		Auto (ICR), Color, B/W			
BLC Mode		BLC, HLC, True WDR (120 dB)			

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.

White Balance	Auto, Natural, Street Lamp, Outdoor, Manual
Gain Control	Auto, Manual
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones, Rectangular)
Region of Interest	Off, On (4 Zones)
Smart IR	Support
Digital Zoom	16x
Flip	0°, 90°, 180°, 270°
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

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

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, Bonjour, 802.1x, Multicast, ICMP, IGMP, SNMP
Interoperability	ONVIF, PSIA, CGI
Streaming Method	Unicast / Multicast
Max. User Access	10 Users /20 Users
Edge Storage	Network Attached Storage (NAS) Local PC for Instant Recording Micro SD Slot, maximum 128 GB
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	SmartPSS, DSS
Smart Phone	IOS, Android

Certifications	
Safety	UL60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 FCC Part 15 Subpart B

Interface	
Video	One (1) Port, for installation adjustment only
Audio	Input: One (1) Channel, RCA Output: One (1) Channel, RCA
Alarm	Input: One (1) Channel (5 mA, 5 VDC) Output: One (1) Channel (300 mA, 12 VDC)

Electrical	
Power Supply	12 VDC, 1.25 A; 24 VAC, 0.8 A; or PoE+ (IEEE 802.3at, Class 4)
Power Consumption	< 15 W

Environmental

Operating Temperature	−40° C to +60° C (−40° F to +140° F) Less than 95% RH
Storage Temperature	−40° C to +60° C (−40° F to +140° F) Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10
Lightning Protection	6 KV

Construction

Casing	Metal
Dimensions	ø159.10 mm x 117.90 mm (ø6.26 in. x 4.64 in.)
Net Weight	0.95 kg (2.09 lb)
Gross Weight	1.20 kg (2.65 lb)

Intelligence

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

Standard Features	<ul style="list-style-type: none"> <li>Tampering with the camera.</li> <li>Error writing to an onboard Micro SD card.</li> <li>Error sending or receiving data over the network.</li> <li>Unauthorized access to the camera.</li> </ul>
Premium Features	
Motion	An object moves through any part of the scene.
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
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

## Ordering Information

Type	Part Number	Description
4 MP Camera	N45CL5Z	4 MP IR ePoE, Vari-focal Dome Network Camera, True WDR, IVS
Mounting Accessories, optional	PFA101	Mount Adapter
	PFA138	Junction Box
	PFA152-E	Pole Mount
	PFB201C	In-ceiling Mount
	PFB300C	Ceiling Mount
	PFB302S	Wall Mount
	DH-PFM320D-015	12 VDC, 2 A Power Adapter
ePoE Accessories, optional	HKKD-11108	24 VAC, 1.5 A Power Adapter
	LR1002	EoC Passive Converter
	LR1002-1EC	Single-port EoC Receiver

## Accessories

Optional:



PFA101  
Mount Adapter



PFA138  
Junction Box



PFB302S  
Wall Mount



PFA152-E  
Pole Mount



PFB201C  
In-ceiling Mount



PFB300C  
Ceiling Mount



DH-PFM320D-015  
Power Adapter



HKKD-11108  
Power Adapter



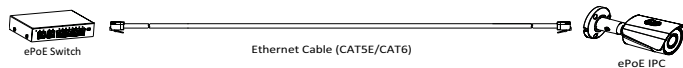
LR1002  
EoC Passive  
Converter



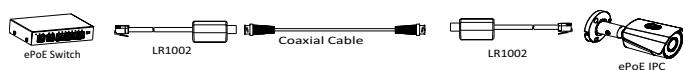
LR1002-1EC  
Single-port EoC  
Receiver

## ePoE Applications

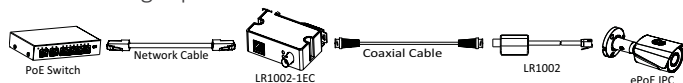
### Pure Ethernet



### Passive EoC



### EoC with Single-port EoC Receiver



In-ceiling Mount PFB201C	Junction Mount PFA138	Pole Mount PFA101 + PFB302S + PFA152-E
Ceiling Mount PFA101 + PFB300C	Wall Mount PFA101 + PFB302S	

## Dimensions (mm/in.)

