

# 4K IR Vari-focal ePoE Network Dome

Starlight+ True Wide Dynamic Range with WizMind Analytics



WizMind Series devices offer Dahua Analytics+ functions for comprehensive, human-oriented analytic solutions. WizMind Series products are ideal for complex applications with demanding requirements that need advanced analytic capabilities.

#### System Overview

The 4K dome camera features an advanced 1/1.8-in. progressive-scan imager with an 8 mm to 32 mm long-range 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 most 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

#### 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.

#### Starlight Technology

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

- 1/1.8-in. 8 MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- AI Coding, Smart H.265+, and Smart H.264+ Video Compression
- 8 MP (3840 x 2160) at 30 fps
- 8 mm to 32 mm Motorized Optical Zoom Lens
- Analytics+ Functions Perimeter Protection, People Counting, Face Detection, Smart Motion Detection+
- Enhanced Power and Data Transmission Distances (ePoE)
- Starlight+ Technology for Low-light Applications
- IP67 Ingress Protection and IK10 Vandal Resistance
- True Wide Dynamic Range (120 dB) and True Day/Night (ICR)
- Maximum IR LED Distance 80 m (262.47 ft)



### AI Coding

The AI Coding function puts recording emphasis on human or vehicular objects in the video scene. This technology, based on constant bit rate (CBR), dynamically allocates increased bit rate to the target object while reducing the bit rate allocated to background objects. AI Coding reduces bit rate and storage requirements by up to 50% when compared to the H.265 video compression standard.

#### 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.

#### 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.

#### 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 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.

# Pro Series | DH-IPC-HDBW5842EN-Z4E-S2

## **Technical Specification**

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DORI <sup>1</sup> Distance         Wide         (700.8 ft)         (280.2 ft)         (140.1 ft)         (70.2 ft)           Tele         572.8 m         229.1 m         114.6 m         70.2 m           Installation Angle         (1879.3 ft)         (751.6 ft)         (376.0 ft)         (188.0 ft)           Installation Angle         Par: 0° to 355°         (751.6 ft)         (376.0 ft)         (188.0 ft)           Range         Par: 0° to 355°           Video         Par: 0° to 355°           Video         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°           Video         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°           Video         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°         Par: 0° to 355°           Streaming Capability         Par: 0° to 355°         Par: 0° to 355°, 5 MP (3072 x 1728), 5 MP (3072 x 2048), 5 MP (2072 x 2048), 5 MP (200 x 1200, 1080), 1.3 MP (1280 x 960), 7 200 (2180 x 720), 201 (1280 x 720), 201 (704 x 480), VGA (640 x 480), CA (640 x		Lens	Detect	Observe	Recognize	Identify
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Pan: 0° to 355° Tilt: 0° to 80° Rotation: 0° to 355°           Video           Compression         Al Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (sub stream only)           Streaming Capability         Three (3) Streams           Resolution         8 MP (3840 × 2160), 6 MP (3072 × 2048), 5 MP (3072 × 1728), 5 MP (2592 × 1944), 4 MP (2688 × 1520), 2048 × 1536, 3 MP (2304 × 1296), 1080p (1920 × 1080), 1.3 MP (1280 × 960), 720p (1280 × 720), D1 (704 × 480), VGA (640 × 480), CIF (352 × 240)           Frame Rate <sup>2</sup> Main Stream: 8 MP at 30 fps           Sub Stream 1: 720p at 30 fps         Sub Stream 2: 1080p at 30 fps           Bit Rate Control         CBR/VBR           Bit Rate         H.264: 3 kbps to 20480 kbps		Tele				
RangeTilt: 0° to 80° Rotation: 0° to 355°VideoCompressionAl Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (sub stream only)Streaming CapabilityThree (3) StreamsResolution8 MP (3840 x 2160), 6 MP (3072 x 2048), 5 MP (3072 x 1728), 5 MP (2592 x 1944), 4 MP (2688 x 1520), 2048 x 1536, 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 Rate²Main Stream: 8 MP at 30 fps Sub Stream 1: 720p at 30 fpsBit Rate ControlCBR/VBRBit RateH.264: 3 kbps to 20480 kbps	Installation	Angle				
Compression         Al Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (sub stream only)           Streaming Capability         Three (3) Streams           Resolution         8 MP (3840 x 2160), 6 MP (3072 x 2048), 5 MP (3072 x 1728), 5 MP (2592 x 1944), 4 MP (2688 x 1520), 2048 x 1536, 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 <sup>2</sup> Main Stream: 8 MP at 30 fps           Sub Stream 1: 720p at 30 fps         Sub Stream 2: 1080p at 30 fps           Bit Rate Control         CBR/VBR           Bit Rate         H.264: 3 kbps to 20480 kbps	Range		Tilt: 0° to 80°	355°		
CompressionH.264H, H.264B, MJPEG (sub stream only)Streaming CapabilityThree (3) StreamsResolution8 MP (3840 x 2160), 6 MP (3072 x 2048), 5 MP (3072 x 1728), 5 MP (2302 x 1944), 4 MP (2688 x 1520), 2048 x 1536, 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 Rate2Main Stream: 8 MP at 30 fpsBit Rate ControlCBR/VBRBit RateH.264: 3 kbps to 20480 kbps	Video					
Resolution       8 MP (3840 x 2160), 6 MP (3072 x 2048), 5 MP (3072 x 1728), 5 MP (2592 x 1944), 4 MP (2688 x 1520), 2048 x 1536, 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 <sup>2</sup> Main Stream: 8 MP at 30 fps         Sub Stream 1: 720p at 30 fps         Sub Stream 2: 1080p at 30 fps         Bit Rate Control       CBR/VBR         H.264: 3 kbps to 20480 kbps	Compression					, H.264,
Resolution         5 MP (3072 x 1728), 5 MP (2592 x 1944), 4 MP (2688 x 1520), 2048 x 1536, 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 <sup>2</sup> Sub Stream : 8 MP at 30 fps           Sub Stream 1: 720p at 30 fps         Sub Stream 2: 1080p at 30 fps           Bit Rate Control         CBR/VBR           Bit Rate         H.264: 3 kbps to 20480 kbps	Streaming Capa	ability	Three (3) Strea	ms		
Frame Rate <sup>2</sup> Sub Stream 1: 720p at 30 fps       Sub Stream 2: 1080p at 30 fps       Bit Rate Control     CBR/VBR       Bit Rate     H.264: 3 kbps to 20480 kbps	Resolution		5 MP (3072 x 1 4 MP (2688 x 1 1080p (1920 x 720p (1280 x 7	728), 5 MP (259) 520), 2048 x 153 1080), 1.3 MP (1 20), D1 (704 x 48	2 x 1944), 36, 3 MP (2304 .280 x 960),	
Sub Stream 2: 1080p at 30 fps       Bit Rate Control     CBR/VBR       H.264: 3 kbps to 20480 kbps			Main Stream: 8	8 MP at 30 fps		
Bit Rate Control CBR/VBR H.264: 3 kbps to 20480 kbps	Frame Rate <sup>2</sup>		Sub Stream 1: 7	720p at 30 fps		
Bit Rate H.264: 3 kbps to 20480 kbps			Sub Stream 2: 2	1080p at 30 fps		
Bit Rate H.264: 3 kbps to 20480 kbps	Bit Rate Contro	I				
H.265: 3 kbps to 20480 kbps				o 20480 kbps		
	ынкане		H.265: 3 kbps t	o 20480 kbps		

Day/Night	Auto (ICR), Color, B/W
BLC Mode	BLC, HLC, WDR (120 dB), SSA
White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Regional
Gain Control	Auto, Manual, Gain Priority, Shutter Priority, Aperture Priority
Noise Reduction	3D NR
Motion Detection	Off, On (4 Zones, Rectangular)
Region of Interest	Off, On (4 Zones)
Advanced Functions	Smart IR, Defog, Electronic Image Stabilization (EIS)
Optical Zoom	4x
Flip	0°, 90°, 180°, 270° (Supports 90°, 270° at 4 MP resolution or lower)
Mirror	Off, On
Privacy Masking	Off, On (8 Areas, Rectangular)
Audio	
Compression	PCM; G.711a; G.711Mu; G.726; G.723
Network	
Ethernet	RJ-45 (10/100 Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; 802.1x; SNMP
Interoperability	ONVIF (Profile S, Profile G, Profile T); CGI; Milestone; P2P
Streaming Method	Unicast / Multicast
Maximum User Access	20 Users (Total Bandwidth 80 Mbps)
Edge Storage	Network Attached Storage (NAS), FTP, SFTP Micro SD Slot, maximum 256 GB
Web Viewer	IE, Chrome, Firefox
Management Software	DSS, 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)	47 CFR FCC Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/ EU
Interface	
Audio	Input: One (1) Channel, terminal Output: One (1) Channel, terminal
Alarm	Input: One (1) Channel Output: One (1) Channel

# Pro Series | DH-IPC-HDBW5842EN-Z4E-S2

#### Electrical

Power Supply		12 VDC (±25%), 24 VAC (±25%), PoE (IEEE802.3af Class 0), or ePoE		
Power	Basic	12 VDC: 5.1 W / 24 VAC: 5.0 W / PoE: 5.7 W		
Consumption	Maximum	12 VDC: 12.8 W / 24 VAC: 12.3 W / PoE: 12.5 W		
Environmen	ital			
Operating Temp	perature	-30° C to +60° C (-22° F to +140° F) Less than 95% RH		
Storage Temperature		–30° C to +60° C (–22° F to +140° F) Less than 95% RH		
Ingress Protection		IP67		
Vandal Resistance		IK10		
Constructio	n			
Casing		Metal, Plastic		
Dimensions		ø159.10 mm x 118.10 mm (ø6.26 in. x 4.65 in.)		
Net Weight		0.95 kg (2.09 lbs)		
Gross Weight		1.20 kg (2.65 lbs)		

Analytics+ Functions<sup>3</sup>

Perimeter Protec	ction	<ul> <li>Detects human or vehicle violations using the formethods:</li> <li>Tripwire: a target crosses a defined line.</li> <li>Intrusion: a target enters or exits a defined per</li> <li>Monitors a combination of detection methods.</li> <li>Search and retrieve video based on target type.</li> </ul>		
People Counting		area.	person as they cross a irection. Iber of people in a defined cously from four (4) threshold	
Queue Managen	nent	wait in line (or queue). Is following triggers: <b>People in Line:</b> the num minimum threshold.	ber of people in line exceeds a on waits in line is greater than	
Face Detection		• Detects and captures a snapshot of a human face within a scene.		
Smart Object De	tection	<ul> <li>Monitors for an abandoned object offering two functions:</li> <li>Object-only: issues an alarm when an object renstationary for a set time.</li> <li>People/Object: issues an alarm when an object is separated from a person.</li> <li>Monitors for a missing object. Issues an alarm if a object is moved from its original position.</li> </ul>		
Smart Schedule		• Configure up to six (6) different Smart Plans for u different time periods.		
Smart Motion De	<ul> <li>Differentiates between and classifies human and vehicle objects.</li> <li>Filters false alarms due to leaves, lights, animals other inconsequential objects.</li> <li>Extracts human or vehicle objects from recorded for quick target search and retrieval.</li> </ul>		o leaves, lights, animals, and ojects. e objects from recorded video	
Decommonded		Human	Vehicle	
Recommended Detection	Wide	Up to 41.0 m (134.51 ft)	Up to 84.0 m (275.60 ft)	
Distance	Telephoto	<b>:0</b> Up to 10.0 m (32.81 ft) Up to 12.0 m (39.37		

#### Intelligence

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.

#### **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  $\Omega$ /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  $\Omega/100$  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 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,

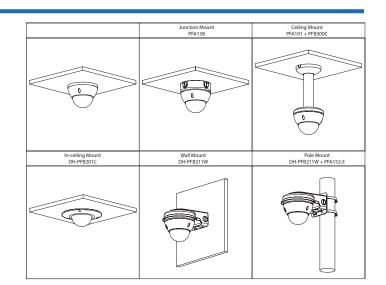
Observe, Recognize and Identify classifications. 2. The video frame rates listed are the maximum rates for each stream. The actual video rates are subjected to the total encoding capacity.

 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.

# Pro Series | DH-IPC-HDBW5842EN-Z4E-S2

### **Ordering Information**

TypePart NumberDescription4K Network CameraDH-IPC-HDBW5842EN- Z4E-S28 MP IR ePoE, Vari-focal Dome Network Camera, WizMind
4K Network Camera
PFA101 Mount Adapter
DH-PFA133-E Angled Junction Box
PFA138 Junction Box
Mounting Accessories, PFA152-E Pole Mount
optional DH-PFB201C In-ceiling Mount
DH-PFB211W Wall Mount
PFB300C Ceiling Mount
DH-PFM321D-US 12 VDC, 1 A Power Adapter
ePoE Accessories, LR1002 EoC Passive Converter
optional LR1002-1EC Single-port EoC Receiver



### Dimensions (mm/in.)

# Accessories









DH-PFB201C In-Ceiling Mount



DH-PFA133-E

Angled Junction

Box

DH-PFB211W



Pole Mount

PFA138

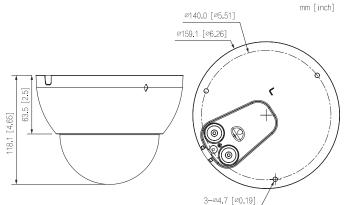
Junction Box

PFB300C

Ceiling Mount



Power Adapter



DH-PFM321D-US







LR1002-1EC Single-port EoC Receiver

### **ePoE** Applications



EoC Passive

Converter









EoC with Single-port EoC Receiver



Ethernet Cable (CAT5E/CAT6)



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