4MP Pinhole Network Camera Kit

One (1) 4MP Pinhole Camera and One (1) Processing Unit

- 1/2.7-in. 4MP Progressive-scan CMOS Sensor
- 4MP (2688 x 1520) at 30 fps, 2.8 mm Fixed Lens
- MicroSD Card Slot (Supports Up to 256 GB Capacity)
- Smart H.265+ and Smart H.264+ Dual Codec
- True Wide Dynamic Range (120 dB)
- Analytics+ Functions - Perimeter Protection and Face Detection
- ArcticPro Series Camera - Operational Down to –40 °C (–40 °F)
- Five-year Warranty*

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 pinhole camera features Perimeter Protection and Face Detection and has a 4 MP progressive-scan CMOS sensor and 2.8 mm fixed lens. The processing unit handles the power, network, and video processing requirements of the camera. The processor has audio and alarm inputs and outputs, a Micro SD card slot for local recording, and advanced features such as True Wide Dynamic Range, Smart H.265+ video compression, and Dahua's Intelligent Video System (IVS).

Functions

Smart H.265+ and Smart H.264+

Delivering high quality video without straining the network, Smart H.264+ is the optimized implementation of H.264. The Smart H.264+ encoding platform includes a scene adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction, providing a savings of up to 70% of bandwidth and storage when compared with standard H.264.

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.

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.

Face Detection

Face Detection technology captures a human face in a digital image and then selects the best image and outputs a snapshot of the face.

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.

Cyber Security

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.

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° C (–40° F) 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.

Technical Specification

Camera

Image Sensor	1/2.7-in. CMOS
Effective Pixels	2688 (H) × 1520(V), 4MP
RAM/ROM	128 MB / 1 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual; 1/3 s to 1/100000 s
Minimum Illumination	Color, 30 IRE: 0.005 Lux at F2.0 B/W, 30 IRE: 0.0005 Lux at F2.0
S/N Ratio	> 56 dB

Lens

Lens Type	Fixed-focal
Iris Type	Fixed
Mount Type	M12
Focal Length	2.8 mm
Maximum Aperture	F2.0
Field of View	Horizontal: 101° Vertical: 57° Diagonal: 115°
Close Focus Distance	0.8 m (2.62 ft)

DORI[1] Distance	Detect	Observe	Recognize	Identify
	61.00 m (200.13 ft)	24.40 m (80.05 ft)	12.20 m (40.03 ft)	6.10 m (20.01 ft)

Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B, MJPEG (Substream Only)
Streaming Capability	Three (3) Streams
Resolution	4MP (2688 × 1520), 3.6MP (2560 × 1440), 2304 × 1296 , 1080p (1920 × 1080), 1.3MP(1280 × 960), 720p (1280 × 720), D1 (704 × 480), VGA (640 × 480), CIF (352 × 240)
Frame Rate	Main Stream: 2688 × 1520 at 30 fps Substream: 704 × 576 at 25 fps, 704 × 480 at 30 fps Third Stream: 1920 × 1080 at 1 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 3 kbps to 20480 kbps H.265: 3 kbps to 20480 kbps
Day/Night	Auto, Color, B/W
Backlight	BLC, HLC, True WDR (120 dB), SSA
White Balance	Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom
Gain Control	Auto, Gain Priority, Shutter Priority, Manual
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones, Rectangle)
Region of Interest	Off, On (4 Zones)
Defog	Support
Image Rotation	0°, 90°, 180°, 270°
Mirror	Off, On
Privacy Masking	Off, On (4 Areas)

Audio

Compression	G.711a, G.711Mu, PCM, G.726, G.723

Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	IPv4, IPv6, HTTP, TCP, UDP, ARP, RTP, RTSP, RTCP, RTMP, SMTP, FTP, SFTP, DHCP, DNS, DDNS, QoS, UPnP, NTP, Multicast, ICMP, IGMP, NFS, SAMBA, PPPoE, SNMP
Interoperability	ONVIF (Profile S, Profile G, Profile T), CGI, P2P, Milestone, Genetec, SDK, API
Max. User Access	20 Users (Total Bandwidth: 64 MB)
Edge Storage	FTP, SFTP, MicroSD Card (Support Max. 256 GB), NAS
Web Viewer	IE (8, 9, and 11), Chrome, Firefox
Management Software	Smart PSS, 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 of X.509 Certification; Syslog; HTTPS; 802.1x; Trusted Boot; Trusted Execution; Trusted Upgrade

Interface

Audio	Input	One (1) Channel (3.5 mm JACK port)
	Output	One (1) Channel (3.5 mm JACK port)
Alarm	Input	Two (2) Channels (5 mA 3V–5V DC)
	Output	Two (2) Channels (1,000 mA 30V DC/500mA 50V DC)

Certifications

Safety	EN 62368-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU

Electrical

Power Supply		12 VDC or PoE (802.3af)
Power Consumption	Basic	2.4 W (12 VDC), 3 W (PoE)
	Maximum (Intelligence + WDR)	3.9 W (12 VDC), 4.8 W (PoE)

Enviromental

Operating Conditions	−40°C to +60°C (−40°F to 140°F) Less than or equal to 95% RH
Storage Conditions	−40°C to +60°C (−40°F to 140°F)

Construction

Casing	Metal
Product Dimensions	Processor: 110.0 mm × 83.0 mm × 24.0 mm (4.33 in. × 3.27 in. × 0.94 in.) Camera: 35.0 mm × 35.0 mm × 26.7 mm (1.38 in. × 1.38 in. × 1.05 in.)
Net Weight	210.0 g (0.46 lb)
Gross Weight	376.0 g (0.83 lb)

Analytics+ Functions[2]

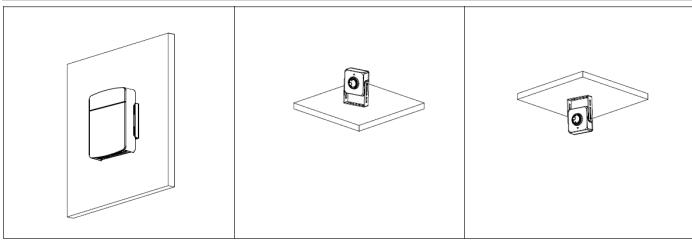|	

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.

Intelligent Search	Works with a Smart NVR to perform and refine intelligent searches, event extraction and merging to event videos
Face Detection	• Detects and captures a snapshot of a human face within a scene.

Intelligent Video System Functions

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

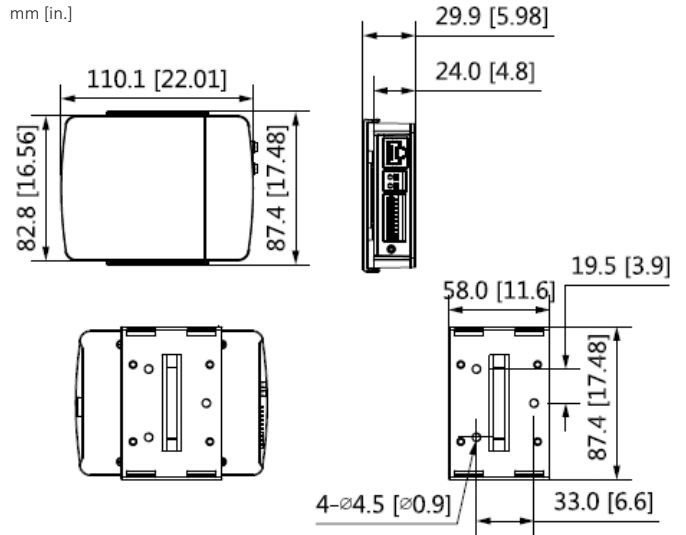|	
Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera. • IP Address Conflict

Ordering Information

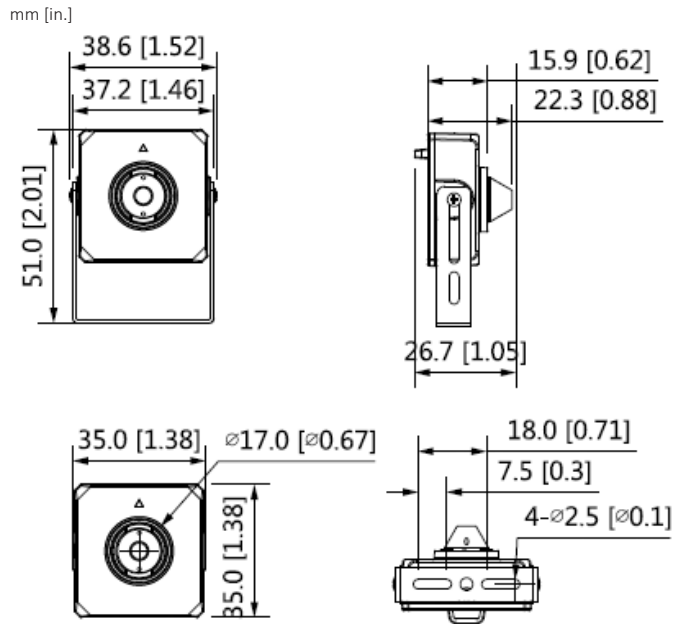| Type	Part Number	Description
4MP Pinhole Network Camera Kit	DH-IPC-HUM8441-E1-L4	• DH-IPC-HUM8441-E1 4MP Pinhole Network Camera-Main Box (x1) • IPC-HUM8441-L4 4MP Pinhole Network Camera-Lens Unit (x1) • 8m (26 ft) Cable

Installation

Dimensions - DH-IPC-HUM8441-E1

mm [in.]

Dimensions - IPC-HUM8441-L4

mm [in.]

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 recorder Analytics+ functions are available only when connected to a Dahua network camera with Analytics+ functionality.