

4MP Night Color 2.0 Fusion Network Eyeball Camera

ePoE Dual Fixed-lens Network Camera with Analytics+



WizMind

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 Dahua 4MP ePoE Night Color 2.0 Fusion camera offers Analytics+ functions at the edge – performing complex real-time perimeter protection surveillance, Smart Motion Detection+, and face detection. The Dahua Analytics+ algorithms significantly improve accuracy and reliability as compared to standard intelligent features. The camera is ideal for a host of diverse dark applications with low ambient lighting — Night Color Fusion Technology allows the camera to operate in any lighting condition and the IP67 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.

Smart Motion Detection+

Smart Motion Detection+, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD+ algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected. SMD+ also saves time when searching recorded video by filtering false alarms and allowing quick retrieval of an alarm due to a person or vehicle.

- Two (2) x 1/1.8-in. 4MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- AI Coding, Smart H.265+ and Smart H.264+ Video Compression
- Two (2) x 4MP (2688 x 1520) at 30 fps, 2.8 mm Fixed Lens
- Built-in Microphone and Speaker
- Analytics+ Functions — People Counting, Perimeter Protection, Smart Motion Detection+, Queue Management and Face Detection
- Night Color Technology with IR and White-light LEDs for Color Images in Total Darkness
- Enhanced Power and Data Transmission Distances (ePoE)
- IP67 Ingress Protection
- Five-year Warranty*

Night Color Fusion Technology

Night Color Fusion Technology is ideal for dark, low-light scenarios where both covert surveillance and full-color images are required. This technology simultaneously captures video using 2 x 4MP sensors. The first sensor extracts the details of the visible spectrum while the second sensor extracts the brightness of the black and white spectrum. The two images are then fused together to display the best of both worlds without the use of a white-light illuminator.

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.

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.

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

Subjected to rigorous dust and water immersion tests the camera suitable for the most demanding outdoor applications. The camera carries an IP67 rating that ensures protection from total dust ingress and protection from water immersion between 15 centimeters and 1 meter

Technical Specification						
Camera						
Image Sensor		Two (2) x 1/1.8-in. 4MP Progressive-scan CMOS				
Effective Pixels		2688(H) x 1520(V)				
RAM/ROM		1 GB / 128 MB				
Scanning System		Progressive				
Electronic Shutter Speed		Auto, Manual, 1/3 s to 1/100,000 s				
S/N Ratio		> 56 dB				
Minimum Illumination		Color: 0.0002 lux at F1.0				
Illuminator Type		Two (2) IR Lights, Two (2) White-light LEDs				
Illumination Distance		50.0 m (164.04 ft)				
Illuminator Control		Automatic, Manual, Off				
Pan/Tilt/Rotation Range		Pan: 0° to 360° Tilt: 0° to 78° Rotation: 0° to 360°				
Lens						
Lens Type		Fixed-focal				
Mount Type		M16				
Focal Length		2.8 mm				
Maximum Aperture		F1.0				
Angle of View		Horizontal: 97° Vertical: 48° Diagonal: 115°				
Iris Type		Fixed				
Close Focus Distance		4 m (13.1 ft)				
DORI¹ Distance	Lens	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)	
	2.8 mm	58.2 m (190.9 ft)	23.3 m (76.4 ft)	11.6 m (38.06 ft)	5.8 m (19.03 ft)	
Smart Event						
Supports		Smart Schedule Smart Object Detection Heat Map				
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		4MP (2688 × 1520), 1080p (1920 × 1080), 1.3MP (1280 × 960), 720p (1280 × 720), D1 (704 × 576/704 × 480), VGA (640 × 480), CIF (352 × 288/352 × 240)				
Frame Rate	Main Stream	4MP (2688 x 1520) at 30 fps				
	Sub Stream 1	D1 (704 x 480) at 30 fps				
	Sub Stream 2	1080p (1920 x 1080) at 30 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, DWDR				
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)				
Region of Interest		Off, On (4 Zones)				
Image Rotation		0°, 90°, 180°, 270°				
Mirror		Off, On				
Privacy Masking		Off, On (8 Areas, Rectangular)				
Audio						
Built-in MIC		Yes				
Compression		G.711a, G.711Mu, G.726, G.723, PCM				
Network						
Ethernet		RJ-45 (10/100 Base-T)				
Protocol		IPv4, IPv6, HTTP, TCP, UDP, ARP, RTP, RTSP, SMTP, FTP, DHCP, DNS, NTP, Multicast, DDNS				
Interoperability		ONVIF (Profile S/Profile G/Profile T); CGI; Milestone; Genetec; P2P				
Streaming Method		Unicast / Multicast				
Maximum User Access		20 (Total Bandwidth: 80 Mbps)				
Edge Storage		Network Attached Storage (NAS) FTP, SFTP Micro SD Card Slot, maximum 256 GB				
Web Viewer		IE (Version 8 and higher), Chrome, Firefox				
Management Software		DSS, DMSS, Smart PSS				
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		UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14				
Electromagnetic Compatibility (EMC)		CFR 47 FCC Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU				
Interface						
Audio	Input	One (1) Channel, RCA plus a built-in Microphone				
	Output	One (1) Channel, RCA plus a built-in Speaker				
Alarm	Input	One (1) Channel, 5mA 3V to 5V DC				
	Output	One (1) Channel, 300mA, 12V DC				
Electrical						
Power Supply		12 VDC ±30%, PoE (IEEE 802.3af, Class 0), or ePoE				
Power Consumption	Basic	12 VDC: 3.9 W PoE: 4.6 W				
	Maximum	H.265+IR and White-light On:12 VDC: 9.3 W PoE: 10.5 W				
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),				
Ingress Protection		IP67				

Construction		
Casing		Metal
Dimensions (L x W x H)		ø122.0 mm x 110.9 mm (ø4.80 in. x 4.37 in.)
Net Weight		0.75 kg (1.65 lb)
Gross Weight		0.94 kg (2.07 lb)
Analytics+ Functions ²		
Smart Plan Schedule		Enable Analytics+ functions depending on a user-defined schedule. Allows the camera to switch analytic functions based on time.
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.
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.
Queue Management		• Monitors four (4) user-defined regions where people wait in line (or queue). Issues an alarm for the following triggers: People in Line: the number of people in line exceeds a minimum threshold. Wait Time: time a person waits in line is greater than the minimum queue time
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.
Smart Object Detection		• Monitors for an abandoned object offering two functions: Object-only: issues an alarm when an object remains stationary for a set time. People/Object: issues an alarm when an object is separated from a person. • Monitors for a missing object. Issues an alarm if an object is moved from its original position.
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.
Recommended Detection Distance	Human	Up to 10.0 m (32.81 ft)
	Vehicle	Up to 15.0 m (49.21 ft)

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 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. 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.