

4MP Enhanced Starlight Network PTZ Camera (4x)

Low-light PTZ Camera with WizSense Analytics



WizSense

WizSense Series devices combine Dahua's powerful Analytics+ with an intuitive and easy to use interface. WizSense devices offer Smart Motion Detection and Perimeter Protection functions that focus on human and vehicular images and ignore irrelevant images to capture important video while reducing false alarms. WizSense Series devices provide powerful general security for small to medium size businesses at a sensible price.

System Overview

The 4MP IR Mini PTZ Dome camera features a 1/2.8-in. STARVIS™ CMOS imager with a 4x optical zoom lens. The camera uses the Smart H.265+ video compression standard to improve encoding efficiency while preserving high-quality video. The PTZ camera uses a true day/night mechanical IR cut filter and True WDR to deliver crystal clear images in challenging lighting conditions.

Functions

Enhanced Starlight Technology

For challenging low-light applications, Dahua's Starlight 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.

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.

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.

Predictive Focus Algorithm (PFA) Technology

The camera uses innovative PFA Technology to improve zoom accuracy and to decrease focus time. A series of advanced algorithms more accurately judge the direction and the distance to a subject, improving picture clarity throughout the zooming process.

- 1/2.8-in. 4MP Progressive-scan CMOS Sensor
- Powerful 4x Optical Zoom Lens
- AI Coding, Smart H.265+ and Smart H.264+ Dual Codecs
- Max Resolution: 4MP (2560 × 1440) at 30 fps
- Analytics+ Functions: Perimeter Protection, Smart Motion Detection+, Face Detection
- Max. IR Distance: 20 m (65.62 ft)
- Enhanced Starlight Technology for Ultra-low Light Sensitivity
- IP66 Ingress Protection, IK08 Vandal Resistance, TVS 6000 V Surge Protection
- Five-year Warranty*

High Efficiency Video Coding (H.265+)

The H.265+ (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265+ offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

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.

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 fewer pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

Environmental

The camera complies with the IK08 Vandal Resistance impact rating making it capable of withstanding the equivalent of 5 kg (11.02 lbs) of force dropped from a height of 10 cm (3.94 in.). Subjected to rigorous dust and water immersion tests and certified to the IP66 Ingress Protection rating makes it suitable for demanding outdoor applications.

Supporting 12 VDC and a ±10% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its TVS 6000 V lightning rating provides protection against the camera and its structure from the effects of lightning.

Technical Specification

Camera

Image Sensor	1/2.8-in. CMOS
Effective Pixels	2560 (H) × 1440 (V)
RAM/ROM	512 MB/256 MB
Electronic Shutter Speed	1/1 s to 1/30,000 s
Scanning System	Progressive
Minimum Illumination	Color: 0.005 lux at F1.6 B/W: 0.0005 lux at F1.6 IR Light: 0 lux
Illumination Distance	20 m (65.62 ft) (IR)
Illuminator On/Off Control	Manual, Smart IR, Off
Illuminator Number	Two (2) IR LEDs

Lens

Focal Length	2.8 mm to 12 mm
Maximum Aperture	F1.8 to F2.7
Field of View	Horizontal: 96.9° to 31.6° Vertical: 51.4° to 17.8° Diagonal: 116.2° to 36.4°
Optical Zoom	4x
Focus Control	Automatic, Semi-automatic, Manual
Close Focus Distance	0.2 m to 0.5 m (0.66 ft to 1.64 ft)
Iris Control	Fixed

DORI Distance ¹	Detect	Observe	Recognize	Identify
	240 m (787.40 ft)	94.8 m (311.02 ft)	48 m (157.48 ft)	24 m (78.74 ft)

Pan/Tilt/Zoom

Pan/Tilt Range	Pan: 0° to 355°; Tilt: 5° to 90°
Manual Control Speed	Pan: 0.1°/s to 70°/s Tilt: 0.1°/s to 30°/s
Preset Speed	Pan: 0.1°/s to 80°/s Tilt: 0.1°/s to 40°/s
Presets	300
PTZ Mode	5 Patterns, 8 Tours (Up to 32 Presets per Tour), 5 Scans
Power-off Memory	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/Scan/Tour/Pattern if there is no command in the specified period

Video

Video Compression	AI Coding, H.264H, H.264B, Smart H.265+, H.264, H.265, MJPEG (Sub Stream), Smart H.264+
Streaming Capability	Three (3) Streams
Resolution	4MP (2560 × 1440), 3MP (2304 × 1296), 1080P (1920 × 1080), 1.3MP (1280 × 960), 720P (1280 × 720), D1 (704 × 480), VGA (640 × 480), CIF(352 × 288)
Video Frame Rate	Main Stream: 4MP/3MP/1080p/1.3MP/720p at 1 to 30 fps Sub Stream 1: D1/VGA/CIF at 1 to 30 fps Sub Stream 2: 720p at 1 to 30 fps
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 96 kbps to 14848 kbps H.265: 38 kbps to 8960 kbps
Day/Night	Auto (ICR), Color, B/W
Backlight Compensation	BLC, HLC, True WDR (120 dB)
White Balance	Auto, Indoor, Outdoor, ATW, Manual, Sodium Lamp, Natural Light, Street Lamp
Gain Control	Auto, Shutter Priority, Gain Priority, Manual

Noise Reduction	2DNR, 3DNR
Motion Detection	Off/On (4 Areas, Rectangular)
Region of Interest (RoI)	Supported (Eight (8) Regions)
Advanced Features	Electronic Image Stabilization (EIS), Electronic Defog
Digital Zoom	16x
Image Rotation	180°
S/N	≥ 55 dB

Audio

Compression	PCM, G.711a, G.711Mu, G.726, MPEG2-Layer2, G.722.1, AAC
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Network

Protocol	FTP, RTMP, IPv6, Bonjour, IPv4, DNS, RTCP, PPPoE, NTP, RTP, 802.1x, HTTPS, SNMP, TCP/IP, DDNS, UPnP, NFS, ICMP, UDP, IGMP, HTTP, SSL, DHCP, SMTP, Qos, RTSP, ARP
Interoperability	CGI, SDK, ONVIF (Profile S/G/T)
Streaming Method	Unicast/Multicast
User/Host	20 (Total Bandwidth: 64 M)
Storage	MicroSD Card Slot (Up to 512 GB), FTP, NAS
Browser	Edge, Chrome 41 or Later, Firefox 52 or Later, Safari 10 or Later
Management Software	DSS Pro, DMSS
Mobile Client	iOS, Android

Interface

Network	One (1) RJ-45 (10/100 Base-T) Port
Audio	Input: One (1) Channel (LINE IN, Bare Wire) Output: One (1) Channel (LINE OUT, Bare Wire)
Alarm Linkage	Capture, Recording, Send Email, Preset, Tour
Alarm Event	Motion/Tampering Detection, Audio Detection, Network Disconnection Detection, IP Conflict Detection, Memory Card State Detection, Memory Space Detection

Electrical

Power Supply	12 VDC, 2 A ± 10%, PoE (802.3af)
Power Consumption	Basic: 4 W Maximum: 13 W (Illuminator On)

Environment

Operating Temperature	-30 °C to +60 °C (-22 °F to +140°F)
Operating Humidity	≤ 95% (RH)
Ingress Protection	IP66
Vandal Resistance	IK08
Surge Protection	TVS 6000 V

Construction

Product Dimensions	65.4 mm × 128.0 mm (2.57 in. × 5.04 in.)
Net Weight	0.5 kg (1.10 lb)
Gross Weight	0.7 kg (1.54 lb)

Certification

CE	CE: EN 55032, EN 61000-3-3, EN 61000-3-2, EN 50130-4, EN 55035, EN 62368-1
FCC	47 CFR FCC Part15, Subpart B, NSI C63.4

Analytics+ Functions

Face Detection	Detects and captures a snapshot of a human face in a defined area within a scene	
People Counting	<ul style="list-style-type: none"> Delivers accurate flow statistics from the following methods: <ul style="list-style-type: none"> 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. 	
Perimeter Protection	Detects human or vehicle violations using the following methods: <ul style="list-style-type: none"> Tripwire: A target crosses a defined line. Intrusion: A target enters or exits a defined perimeter. 	
Smart Motion Detection+	<ul style="list-style-type: none"> 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:

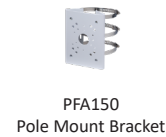
Standard Features	<ul style="list-style-type: none"> Tampering with the camera. Error writing to an onboard Micro SD card. Error sending or receiving data over the network. Unauthorized access to the camera.
Premium Features	
Tripwire	A target crosses a user-defined line
Intrusion	A target enters or exits a defined perimeter
Abandoned/Missing Object	A target leaves an object in a designated area, or a target removes an object from the same designated area.
Advanced Features	
Fast Moving	Target exceeds a set speed when exiting a defined area.
Loitering Detection	Target is in motion inside a defined area longer than a specified amount of time
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

Ordering Information

Type	Part Number	Description
Network Camera	1A404DBNR	4MP 4x Enhanced Starlight IR WizSense Network PTZ Camera
Accessories (Optional)	DC12V/2.0A	Power Adapter
	DH-PFA107	Mount Adapter
	PFB305W	Wall Mount Bracket
	PFA120	Junction Box
	PFA140	Waterproof Junction Box
	PFA151	Corner Mount Bracket
	PFB220C	Ceiling Mount Bracket
	PFA150	Pole Mount Bracket

Accessories

Optional:



For all possible accessory combinations for this camera, please scan or click the QR code below to go to our accessory selector.



Installation

Wall Mount	Ceiling Mount	Ceiling Mount
PFB305W+PFA107+PFA120	PFA107+PFB220C	\
Pole Mount (Vertical)	Corner Mount	Pole Mount (Horizontal)
PFA107+PFB305W+PFA150	PFA107+PFB305W+PFA151	PFA107+PFB220C+PFA150

Dimensions

mm [in.]

