dhua TECHNOLOGY

4MP Starlight Mini Network PTZ

4x IR PTZ Network Camera with Analytics+

Wiz Sense

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 surveillance for small to medium size businesses at a sensible price.

System Overview

The 4 MP 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 day/night mechanical IR cut filter and True WDR to deliver crystal clear images in challenging lighting conditions.

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.

- 1/2.8-in. 4 MP STARVIS™ CMOS Sensor
- 4x Optical Zoom
- Starlight Technology for Low Light Sensitivity
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codecs
- 4 MP at 30 fps Maximum Resolution
- True Wide Dynamic Range (120 dB)
- Analytics+ Function – Perimeter Protection, People Counting, Smart Motion Detection, and Face Detection
- Maximum IR Distance 15 m (49 ft)
- IP66 Ingress Protection and IK08 Vandal Resistance
- Five-year Warranty*

H.265 | WDR | IP66 | PoE | 0.005Lux | Tripwire | Intrusion | COUNTING People Counting

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 down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

True 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.

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.

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

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from −30° C to +60° C (−22 °F to +140°F) with 95% humidity. Subjected to rigorous dust and water immersion tests and certified to the IP66 Ingress Protection rating makes it suitable for demanding outdoor applications.

Technical Specification

Camera

Image Sensor	1/2.8-in. STARVIS™ CMOS
Effective Pixels	2560(H) x 1440(V), 4 MP
RAM/ROM	1 GB/4 GB
Scanning System	Progressive
Electronic Shutter Speed	1/1 s to 1/30,000 s
Minimum Illumination	Color: 0.005 lux at F1.8 B/W: 0.0005 lux at F1.8 0 lux at F1.8 (IR on)
IR Distance	Distance up to 15 m (49.20 ft)
IR On/Off Control	Zoom Priority, Manual, Smart IR
IR LEDs	Three (3)

Lens

Focal Length	2.8 mm to 12 mm
Maximum Aperture	F1.8 to F2.7
Angle 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
IRIS Control	Automatic
Close Focus Distance	0.20 m to 0.50 m (0.66 ft to 1.64 ft)

DORI Distance[1]

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
147.0 m (482.28 ft)	58.80 m (192.91 ft)	29.40 m (96.46 ft)	14.70 m (48.23 ft)

PTZ

Pan/Tilt Range	Pan: 0° to 355° Tilt: 5° to 90°
Manual Control Speed	Pan: 0.1° to 70° /s Tilt: 0.1° to 30° /s
Preset Speed	Pan: 80° /s Tilt: 40° /s
Presets	300
PTZ Mode	8 Tours (up to 32 presets per tour)
Speed Setup	Human-oriented focal Length/speed adaptation
Power up Action	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/Tour if there is no command in the specified period

Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264B, H.264M, H.264H, MJPEG (sub stream only)
Streaming Capability	Three (3) Streams
Resolution	4 MP (2560 x 1440), 3 MP (2048 x 1536), 1080p (1920 x 1080), 1.3 MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)
Frame Rate	Main Stream: 4 MP at 30 fps
	Sub Stream 1: D1 or CIF at 30 fps
	Sub Stream 2: 720p, D1, or CIF at 30 fps
Bit Rate Control	CBR, VBR
Bit Rate	H.265/H.264/MJPEG: 3 Kbps to 20480 Kbps
Day/Night	Auto (ICR), Color, B/W
Backlight Compensation	BLC, HLC, True WDR (120 dB)
White Balance	Auto, Indoor, Outdoor, Track, Manual, Sodium Lamp, Natural Light, Street Light
Gain Control	Auto, Manual
Noise Reduction	2D/3D
Advanced Features	Motion Detection, Region of Interest, Electronic Image Stabilization (EIS), Defog
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas

Audio

Compression	G.711a, G.711Mu, G.726, G.722.1, G.729, G.723, MPEG2-L2

Network

Ethernet	RJ45 (10/100 Base-T)
Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1x
Interoperability	ONVIF, CGI
Streaming Method	Unicast, Multicast
Max. User Access	20 Users
Edge Storage	FTP, P2P, Micro SD Card Slot, maximum 256 GB
Web Viewer	IE, Chrome, Firefox, Safari
Management Software	SmartPSS, DSS
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

Electromagnetic Compatibility (EMC)	EN55032, EN55024, EN50130-4 47 CFR FCC Part 15 Subpart B ANSI C63.4- 2014

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.

Interface

Audio	Input: One (1) Channel Output: One (1) Channel

Electrical

Power Supply	12 VDC, 1.5 A (±15%) or PoE (IEEE 802.3af, Class 0)
Power Consumption	Basic: 3 W Maximum: 8.5 W with IR on

Environmental

Operating Temperature	−30° C to 60° C (−22° F to +140° F), Less than 95% RH
Ingress Protection	IP66
Vandal Resistance	IK08
Surge Protection	TVS 6000V

Construction

Casing	Metal
Dimensions	ø128.0 mm x 65.40 mm (ø5.04 in. x 2.57 in.)
Net Weight	0.49 kg (1.08 lb)
Gross Weight	0.70 kg (1.54 lb)

Analytics+ Functions

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 ten (10) 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.
Smart Motion Detection[2]	• Differentiates between and classify 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.
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

Premium Features

Motion	An object moves through any part of the scene.
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.

Ordering Information

Type	Part Number	Description
4 MP PTZ Camera	1A404XBNR	4 MP 4x Starlight IR Mini PTZ Network Camera, True WDR, Analytics+
Accessories, optional	PFA107	Mount Adapter
	DH-PFA120	Junction Box (use with PFB305W Wall Mount)
	DH-PFA140	Power Box (use with PFB305W Wall Mount)
	PFA150	Pole Mount (use with PFB305W Wall Mount)
	PFA151	Corner Mount (use with PFB305W Wall Mount)
	PFB220C	Ceiling Mount (requires PFA107 Mount Adapter)
	PFB305W	Wall Mount (requires PFA107 Mount Adapter)
	DH-PFM320D-US	12 VDC, 2 A Power Adapter

Accessories

Optional :

PFA107
Mount Adapter

PFA120
Junction Box

PFA140
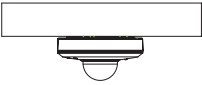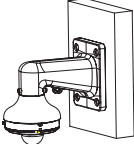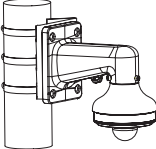Power Box

PFA150
Pole Mount

PFA151
Corner Mount
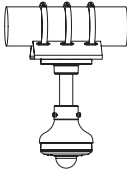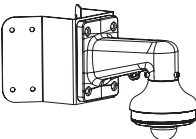
PFB220C
Ceiling Mount

PFB305W
Wall Mount

DH-PFM320D-US
Power Adapter

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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.

Ceiling Mount（1）	Wall Mount	Ceiling Mount（2）
	PFA107+PFB305W	PFA107+PFB220C
Pole Mount（1）	Pole Mount（2）	Corner Mount
PFA107+PFB305W+PFA150	PFA107+PFB220C+PFA150	PFA107+PFB305W+PFA151

Dimensions (mm/in.)

ø52.0 mm
(ø2.05 in.)

65.40 mm
(2.57 in.)

38.40 mm
(1.43 in.)

128.0 mm
(5.04 in.)

3 x ø4.50 mm
(ø0.18 in.)

ø70.0 mm
(ø2.76 in.)