Dahua TECHNOLOGY

4MP Starlight Vari-focal Network Dome Camera
True Wide Dynamic Network Camera with Smart Motion Detection

WizSense

- 1/3 in. 4MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- Smart H.265+ and Smart H.264+ Dual Codec
- 4MP (2688 x 1520) at 30 fps
- 2.7 mm to 13.5 mm Motorized Vari-focal Lens
- Starlight Technology for Low-light Applications
- Analytics+ Function – Perimeter Protection and Smart Motion Detection
- True Wide Dynamic Range (120 dB) and Day/Night IR Cut Filter
- Maximum IR LED Distance 40 m (131.23 ft)
- Enhanced Power and Data Transmission Distances (ePoE)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty*

4Mp	SMD	Smart Codec	Starlight	Perimeter Protection	IP67

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 Dahua 4MP Starlight camera offers Smart Motion Detection for improved alarm accuracy from intrusion and tripwire functions. The camera is ideal for a host of diverse applications — Starlight, True Wide Dynamic Range, and IR illumination allow the camera to operate in any lighting condition. The camera is rated to the IP67 Ingress Protection and to the IK10 Vandal Resistance standards, allowing the camera to deliver high-quality and reliable video in the harshest environments.
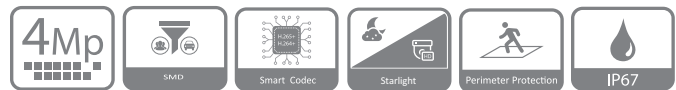
Functions

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.

Smart Motion Detection (SMD)
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.

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

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.

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.

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 Vandal Resistance 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 to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications. The camera offers a wide voltage range, with a 30% input voltage tolerance, suitable for external applications with unstable power sources.

*Warranty applies to products sold through an authorized Dahua Dealer.

Technical Specification

Camera

Image Sensor	1/3-in. 4MP CMOS
Effective Pixels	2688(H) x 1520(V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.005 lux at F1.5 0 lux at F1.5 (IR on)
S/N Ratio	> 56 dB
IR Distance	Up to 40.0 m (131.23 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Two (2)

Lens

Lens Type	Motorized Vari-focal
Iris Type	Fixed Aperture
Mount Type	ø14
Focal Length	2.7 mm to 13.5 mm
Maximum Aperture	F1.5
Angle of View	Horizontal: 104° to 27° Vertical: 55° to 15° Diagonal: 124° to 31°
Close Focus Distance	0.80 m (2.62 ft)

DORI Distance[1]	Focus	Detect	Observe	Recognize	Identify
	Wide	64.0 m (209.97 ft)	25.60 m (83.99 ft)	12.80 m (41.99 ft)	6.40 m (21.0 ft)
	Tele	222.0 m (728.35 ft)	88.80 m (291.34 ft)	44.40 m (145.67)	22.20 m (72.84)

Installation Angle

Range	Pan: 0˚ to 355˚ Tilt: 0˚ to 75˚ Rotation: 0˚ to 355˚

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	4 MP (2688 x 1520), 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	Main Stream: 4MP (2688 x 1520) at 30 fps
	Sub Stream 1: D1 (704 x 480) at 30 fps
	Sub Stream 2: 720p (1280 x 720) at 30 fps
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 3 Kbps to 8192 Kbps H.265: 3 Kbps to 8192 Kbps
Day/Night	Auto (ICR), Color, B/W
BLC Mode	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, Rectangular)
Region of Interest	Off, On (4 Zones)
Advanced Features	Smart IR, Smart-scene Adaptive (SSA)
Image Rotation	0°, 90°, 180°, 270° (supports 90°, 270° at 1920 x 1080 resolution)
Mirror	Off, On
Privacy Masking	Off, On (4 Areas, Rectangular)

Audio

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

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, PPPoE, 802.1x, SNMP
Interoperability	ONVIF Profile S and G, CGI, P2P
Auto Register	Support
Streaming Method	Unicast / Multicast
Maximum User Access	20 Users (total bandwidth: 64 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
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 60950-1 & CAN/CSA C22.2 No. 60950-1-07 EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (Second Edition)
Electromagnetic Compatibility (EMC)	47 CFR FCC Part 15, Subpart B, Class B EN 55032:2015, Class B; EN 61000-3-2:2014; EN 61000-3-3:2013; EN 55024:2010+A1:2015; EN 55035:2017; EN 50130-4:2011+A1:2014

Interface

Audio	Input: One (1) Channel, RCA Output: One (1) Channel, RCA
Alarm	Input: One (1) Channel (5 mA, 3 to 5 VDC) Output: One (1) Channel (300 mA, 12 VDC)

Electrical

Power Supply	12 VDC, ePoE, or PoE (IEEE 802.3af, Class 0)
Power Consumption	< 8.5 W

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.

Environmental

Operating Conditions	−30° C to +60° C (−22° F to +140° F), Less than 95% RH
Storage Conditions	−40° C to +60° C (−40° F to +140° F)
Ingress Protection	IP67
Vandal Resistance	IK10

Construction

Casing	Metal
Dimensions	Ø122.0 mm x 88.90 mm (4.80 in. x 3.50 in.)
Net Weight	0.492 kg (1.09 lb)
Gross Weight	0.663 kg (1.46 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 nine (9) detection methods.
	• Search and retrieve video based on target type.

Smart Motion Detection²	• 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.

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.

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.

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

Ordering Information

Type	Part Number	Description
4MP Camera	N43AM5Z-B	4MP Starlight Vari-focal Dome Camera with Smart Motion Detection, Black
Accessories, optional	PFA106	Mount Adapter
	PFA137	Junction Box
	DH-PFA137-B	Junction Box, Black
	PFA151	Corner Mount (Use with PFA106 and PFB305W)
	DH-PFA151-B	Corner Mount, Black (Use with PFA106 and PFB305W)
	PFA152-E	Pole Mount (Use with PFB203W Wall Mount)
	DH-PFA152-E-B	Pole Mount, Black (Use with PFB203W-B Wall Mount)
	PFA200W	Sun/Rain Shield (Use with PFB203W Wall Mount)
	PFA200G	Gang Box Adapter
	PFB200C	In-ceiling Mount
	PFB203W	Wall Mount (Use alone or with PFA152-E Pole Mount)
	DH-PFB203W-B	Wall Mount (Use alone or with PFA152-E-B Pole Mount)
	PFB220C	Ceiling Mount (Use with PFA106 Mount Adapter)
	PFB305W	Wall Mount
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
	PC-H49-D90	Polycarbonate Smoke Tinted Bubble

Accessories

Optional:

PFA106
Mount Adapter

PFA137
Junction Box

DH-PFA137-B
Junction Box

PFA151
Corner Mount

DH-PFA151-B
Corner Mount

PFA152-E
Pole Mount

DH-PFA152-E
Pole Mount

PFA200G
Gang Box Adapter

PFA200W
Sun/Rain Shield

PFB203W
Wall Mount

DH-PFB203W-B
Wall Mount

PFB220C
Ceiling Mount

PFB305W
Wall Mount

DH-PFM321D-US
12 VDC, 1 A
Power Adapter

PC-H49-D90
Polycarbonate Smoke
Tinted Bubble

Junction Mount	Wall Mount	Wall Mount	Pole Mount
DH-PFA137-B	PFA137+PFA200W	DH-PFB203W-B	DH-PFB203W-B+DH-PFA152-E-B

Ceiling Mount			
PFA106+PFB220C			

Dimensions

122.0 [4.8"]
88.9 [3.5"]

⌀122.0 [⌀4.8"]
3-⌀4.5 [⌀0.18"]
⌀110.0 [⌀4.33"]