DH-ECA7A1425-HNR-XA-F

4MP 25x Starlight IR WizMind Explosion-proof Network Camera

· 1/1.8" 4Megapixel CMOS

· 25x optical zoom (5.4 mm–135 mm)

· Starlight technology

· Max. 25/30fps@4MP

· IR distance up to 100 m

· Perimeter protection

· Face detection

· Smart Capture

· SMD PLUS

· Fiber port

IP68 | ICR D/N | H.265 | Metadata | 0.001 Lux | WDR

Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for verticals.

System Overview

Dahua PTZ WizMind network camera adopts advanced CNN deep learning algorithms to support Smart Capture and perimeter protection with high accuracy. Together with infrared illumination and Starlight technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day, and True WDR for applications with direct sunlight or glare.

Functions

PFA+ Technology

PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

Perimeter Protection

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improving alarm accuracy.

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.

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 down to 0.001 Lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

SMD PLUS

With Deep-Learning Algorithm, Dahua SMD PLUS filters the motion detection alarm triggered by non-concerned target and recognizes human and vehicle effectively, sending alarms when human and vehicle intrude.

Privacy Protection

In public scenes, mosaics can be used to block the detected human faces or body parts in the monitoring screen and can be displayed in real time when the people is moving, so as to protect the privacy of special groups.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Pixel	4MP
Max. Resolution	2560 (H) × 1440 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1/1 s–1/30000 s
Scanning System	Progressive
Min. Illumination	Color: 0.001 Lux@F1.6 B/W: 0.000 1Lux@F1.6 0 Lux (IR on)
Illumination Distance	100 m (328.08 ft)
Illuminator On/Off Control	Zoom Prio/Manual/SmartIR/Off
Illuminator Number	4 IR lights

Lens

Focal Length	5.4 mm–135 mm (0.21"–5.31")
Max. Aperture	F1.6–F4.0
Field of View	H: 59.8°–2.8°; V: 33.7°–1.9°; D: 63.3°–4°
Optical Zoom	25x
Focus Control	Auto/Semi-Auto/Manual
Close Focus Distance	0.1 m–2 m (0.33 ft–6.56 ft)
Iris Control	Auto

DORI Distance	Detect	Observe	Recognize	Identify
	1724 m (5656.17 ft)	689 m (2260.50 ft)	344 m (1128.61 ft)	172 m (564.30 ft)

PTZ

Presets	300
Power-off Memory	Support
Idle Motion	Preset
Protocol	DH-SD Pelco-P/D (auto recognition)

Artificial Intelligence

Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.
Perimeter Protection	Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc.
Face Detection	Support
SMD PLUS	Support

Video

Compression	H.265; H.264BaselineProfile; H.264MainProfile; H.264HighProfile; H.265+; H.264+
Streaming Capability	3 streams

Resolution	4M (2560 × 1440); 3M (2048 × 1536); 1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576); CIF (352 × 288)
Frame Rate	Main stream: 4M/3M (1–25/30 fps), 1080P/1.3M/720P (1–25/30 fps) Sub stream 1: D1/CIF (1–25/30 fps) Sub stream 2: 1080P (1025/30 fps), 1.3M (1– 25/30 fps), 720P (1–25/30 fps)
Bit Rate Control	Variable/Constant
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 32 Kbps–8192 Kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Support
WDR	120dB
HLC	Support
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/Natural light/Street lamp
Gain Control	Auto/Manual
Noise Reduction	2D/3D
Motion Detection	Support
Region of Interest (RoI)	Support
Defog	Digital
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas, and up to 8 areas in the same view

Audio

Compression	G.711a: G.711Mu; G.726; AAC; MPEG2-Layer2; G722.1; G729; G723

Network

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; SNMPv1/v2c/v3 (MIB-2); RTCP; RTMP
Interoperability	ONVIF Profile S&G&T; 35114 A level; CGI
Streaming Method	Unicast/Multicast
User/Host	20 (Total bandwidth: 64M)
Storage	FTP: Micro SD card (256 G); NAS
Browser	IE7 and later versions Chrome 42 and earlier versions Firefox 52 and earlier versions Safari
Management Software	Smart PSS; DSS; DMSS; Easy4ip; IVSS

Certification

Certifications	ATEX: EN 60079-0/EN 60079-1/EN 60079-28/EN 60079-31 IECEx : IEC 60079-0/IEC 60079-1/EN 60079-28/IEC 60079-31 CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014

Explosion-Proof Marking	ATEX: II 2 G Ex db IIC T6 Gb, II 2 D Ex tb IIIC T80°C Db IECEx: Ex db IIC T6 Gb, Ex tb IIIC T80°C Db"

Port

RS-485	1 (Baud rate range: 1200 bps–9600 bps)
Audio Input	1
Audio Output	1
Alarm Input	2 channels Digital input: 0–5V DC
Alarm Output	1
Optical Fiber	100M single fiber FC Transmission specification: 1310nm TX/1550nm RX Distance: 20 km

Power

Power Supply	AC 100V–240V
Power Consumption	Standard

Environment

Operating Temperature	-40°C to +60°C (-40°F to +140°F)
Operating Humidity	≤95%

Structure

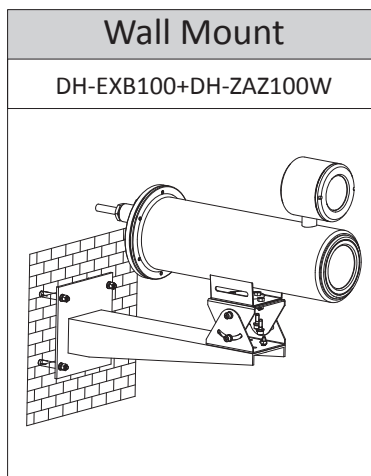| Casing	Stainless steel 304
Dimensions	600 mm × 375 mm × 318 mm (23.62" × 14.76" × 12.51")
Net Weight	11 kg (24.25 lb)
Gross Weight	13.3 kg (29.32 lb)

Ordering Information

Type	Model	Description
4MP WizMind Explosion-proof Camera	DH-ECA7A1425-HNR-XA-F	4MP 25x Starlight IR WizMind Explosion-proof Network Camera, PAL
	DH-ECA7A1425N-HNR-XA-F	4MP 25x Starlight IR WizMind Explosion-proof Network Camera, NTSC
Accessories	DH-EXB100	Wall Mount Bracket
	DH-ZAZ100W	Mount Adapter
	CZ300	Junction Box (ATEX/IECEx)
	ZAEX02	Connector (ATEX/IECEx)
	ZANXG	Flexible Tube (ATEX/IECEx)

Accessories

Optional:

DH-EXB100
Wall Mount Bracket

DH-ZAZ100W
Mount Adapter

CZ300
Junction Box
(ATEX/IECEx)

ZAEX02
Connector
(ATEX/IECEx)

ZANXG
Flexible Tube
(ATEX/IECEx)

Wall Mount
DH-EXB100+DH-ZAZ100W

Dimensions (mm[inch])

4-M6 [M0. 24] ⌀62. 0 [⌀2. 44]

458. 7 [18. 06]

⌀100. 0 [⌀3. 94]

265. 1 [10. 44]

⌀161. 0 [⌀6. 34]