

DH-SD5A445XA-HNR

4MP 45x Starlight IR PTZ AI Network Camera



- 1/2.8" 4Megapixel STARVIS™ CMOS
- Powerful 45x optical zoom
- Starlight technology
- Max. 25/30fps@4MP
- IR distance up to 150m
- SMD Plus
- Deep-learning-based auto tracking and perimeter protection
- Auto-tracking and IVS
- PoE+
- IP67 , IK10



AI PTZ Introduces

AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and more devices. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

System Overview

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera can provide large monitoring range and great detail. The camera has very excellent low light performance due to adopting the latest starlight technology. The camera is equipped with smooth control, high quality image and good protection, which make it can meet most of the requirements of video surveillance applications.

Functions

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.

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

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.

Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from -40 °C to +70 °C (-40 °F to +158 °F) with 95% humidity. Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

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.

Auto-tracking

This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

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.

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.

Technical Specification

Camera

Image Sensor	1/2.8" STARVIS™ CMOS
Max. Resolution	4MP
Effective Pixels	2560 (H)×1440 (V)
ROM	4GB
RAM	1GB
Electronic Shutter Speed	1/3–1/30000s
Scanning Mode	Progressive Scanning
Minimum Illumination	Color: 0.005Lux@F1.6 B/W: 0.0005Lux@F1.6 0Lux (IR light on)
IR Distance	150 m (492.13 ft)
IR On/Off Control	Zoom Prio/Manual/SmartIR
IR LED Number	4

Lens

Focal Length	3.95 mm–177.7 mm			
Aperture	F1.6–F4.95			
Field of View	H: 70.3°–1.8°; V: 37°–1°; D: 69.3°–2°			
Optical Zoom	45x			
Focus Control	Auto/Semi-Auto/Manual			
Close Focus Distance	0.01 m–3 m			
Iris Control	Auto/Manual			
DORI Distance	Detect	Observe	Recognize	Identify
	3176 m (10419.95 ft)	1270 m (4166.67 ft)	635 m (2083.33 ft)	317 m (1040.03 ft)

PTZ

Pan/Tilt Range	Pan: 0°–360°; Tilt: -15°–+90°
Manual Control Speed	Pan: 0.1°/s–300°/s; Tilt: 0.1°/s–200°/s
Preset Speed	Pan: 400°/s; Tilt: 300°/s
Presets	300
Tour	8 (up to 32 preset per tour)
Pattern Number	5
Scanning Number	5
Speed Adjustment	Support
Power-off Memory	Support
Idle Motion	Preset/Tour/Pattern/Scanning
Protocol	DH-SD Pelco-P/D (Auto recognition)

Artificial Intelligence

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.
SMD Plus	Support

Auto Tracking	Support
Face Detection	Support
Video Structuralization	Support human, motor vehicle and non-motor vehicle image capture

General Intelligence

Event Trigger	Motion detection, video tampering, scene changing, Network disconnection, IP address conflict, illegal access, and storage anomaly.
General IVS	Object Abandoned/Missing

Video

Compression	H.265/H.265+/H.264+/H.264/MJPEG(Sub Stream)
Streaming Capability	3 Streams
Resolution	2560 ×1440 (2560×1440); 3M (2048×1536); 1080P (1920×1080); (1.3M)1280×960; 720P (1280×720); D1 (704× 576/704×480); CIF (352×288/352×240)
Frame Rate	Main stream: 4M/3M(1–25/30fps), 1080P/1.3M/720P(1–25/30fps) Sub stream 1: D1/CIF(1–25/30fps) Sub stream 2: 1080P(1-20/11fps), 1.3M/720P(1–25/30fps), D1/ CIF(1–25/30fps)
Bit Rate Control	Variable Bit Rate/Constant Bit Rate
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 32 Kbps–8192 Kbps
Day/Night	Support
BLC	Support
WDR	120dB
HLC	Support
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/Natural/Street lamp
Gain Control	Auto/Manual
Noise Reduction	2D/3D
Motion Detection	Support
Region of Interest (RoI)	Support
Electronic Image Stabilization (EIS)	Support
Optical Defog	Electronic Defog
Digital Zoom	16x
Flip	0°/180°
Privacy Masking	Up to 24 areas

Certifications

Certification	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB,ANSI C63.4- 2014
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Audio

Audio Compression	G.711A; G.711Mu; G.726; AAC; G.722.1; G.723; G.729; PCM; MPEG2-Layer2
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Port

Audio In	1 (LINE IN; bare wire)
Audio Out	1 (LINE OUT; bare wire)
Alarm Port	2 alarm input port; 1 alarm output port

Network

Ethernet Port	1 RJ-45 Port 10/100Base-T
Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMPv1/v2c/v3(MIB-2); DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; RTCP
Interoperability	ONVIF Profile S&G; CGI
Streaming Method	Unicast/Multicast
Max. User Access	20 (Total bandwidth 48M)
Edge Storage	FTP; Micro SD card (256G); P2P
Browser	IE7 and newer versions Chrome 42 and older versions Firefox 52 and older versions Safari
Management Software	Smart Player Smart PSS DSS Easy4ip
Smart Phone	IOS/Android/Windows Phone

Electrical

Power Supply	AC24V/3A±25% PoE+(802.3at)
Power Consumption	11W 20W (IR light on)

Environment

Operating Conditions	-40°C to +70°C (-40°F to +158°F)
Operating Humidity	≤95%RH
Ingress Protection	IP67; IK10; TVS 6000V lightning protection; surge protection

Construction

Dimensions	Φ190 mm×332 mm (7.48"×13.07")
Weight	Net Weight: 4.7 kg (10.36 lb); Gross Weight: 8 kg (17.64 lb)
Casing	Metal

Ordering Information

Type	Model	Description
4M PTZ Camera	DH-SD5A445XA-HNR	4MP 45x Starlight IR PTZ Network Camera, PAL
	DH-SD5A445XAN-HNR	4MP 45x Starlight IR PTZ Network Camera, NTSC
	SD5A445XA-HNR	4MP 45x Starlight IR PTZ Network Camera, PAL
	SD5A445XAN-HNR	4MP 45x Starlight IR PTZ Network Camera, NTSC
Accessories	PFB305W	Wall Mount
	AC24V/3A	Power Adapter
	PFA111	Mount Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount
	PFA120	Junction Box
	PFA150	Pole Mount
	PFA151	Corner Mount
PFB303S	Parapet Mount	

Accessories

Included:



PFB305W
Wall Mount



AC24V/3A
Power Adapter

Optional:



PFA111
Mount Adapter



PFA140
Power Box



PFB300C
Ceiling Mount



PFA120
Junction Box



PFA150
Pole Mount



PFA151
Corner Mount



PFB303S
Parapet Mount

Wall Mount	Hang Mount
PFB305W	PFA111+ PFB300C
Pole Mount	Pole Mount
PFA150+PFB305W	PFA150+ PFA111+ PFB300C

Dimensions (mm[inch])

