

# DH-SD6AL445XA-HNR-IR

## 4MP 45x Starlight IR PTZ AI Network Camera



- 1/2.8" 4Megapixel CMOS
- Powerful 45x optical zoom
- Starlight technology
- Max. 50/60 fps@1080P
- Deep-learning-based auto tracking and perimeter protection
- Support face detection
- Support Hi-PoE
- SMD
- IP67



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 provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. 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

#### 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.

#### Video Metadata

Support human, motor vehicle and non-motor vehicle image capture.

#### 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.

#### Face Detection

6 attributes and 8 expressions: Gender, age, glasses, expressions (anger, sadness, disgust, fear, surprise, calm, happiness and confusion), mask, beard; Face matting setting: face, single inch photo; Three snapshot methods: real-time snapshot, priority snapshot, quality priority.

#### 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.

#### 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.

#### SMD

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

#### Ingress Protection

IP67; TVS 8000V lightning proof; Surge protection.

### Technical Specification

#### Camera

Image Sensor	1/2.8" CMOS
Effective Pixels	4MP
Max. Resolution	2560 (H) × 1440 (V)
ROM	4GB
RAM	1GB
Electronic Shutter Speed	1/1 s –1/30000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005Lux@F1.6 B/W: 0.0005Lux@F1.6 0Lux (IR light on)
IR Distance	300 m (984.25 ft)
IR On/Off Control	Zoom Prio/Manual/SmartIR/Off
IR LEDs Number	7
Wiper	Support

#### Lens

Focal Length	3.95 mm–177.7 mm (0.15"–7.00")			
Max. Aperture	F1.6–F4.9			
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 (0.03 ft–9.84 ft)			
Iris Control	Auto			
DORI Distance	Detect	Observe	Recognize	Identify
	3554 m (11660.10 ft)	1421.6 m (4664.04 ft)	710.8 m (2332.02 ft)	355.4 m (1166.01 ft)

#### PTZ

Pan/Tilt Range	Pan: 0°–360° endless Tilt: –20°–+90°, auto flip 180°
Manual Control Speed	Pan: 0.1°–200°/s Tilt: 0.1° –120°/s
Preset Speed	Pan: 240°/s; Tilt: 200°/s
Presets	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scanning	5
Power-off Memory	Support
Idle Motion	Preset/Tour/Pattern/Scanning
Protocol	DH-SD Pelco-P/D (auto recognition)

### Artificial Intelligence

Video Metadata	Support detection of human bodies, motor vehicles and non-motor vehicles; support optimization; support taking snapshots; support uploading high-quality motor vehicle snapshots.
Perimeter Protection	Tripwire, intrusion, abandoned object and missing object. Support human and vehicle alarm classification, and linkage tracking.
Face Detection	Support face detection; support optimization; support taking snapshots; support uploading high-quality face snapshots; support attributes extraction: 6 attributes and 8 expressions.
SMD	Support

### Video

Compression	H.265; H.264B; H.264M; H.264H; MJPEG; MPEG4; H.265+; H.264+; MJPEG (sub stream)
Streaming Capability	3 streams
Resolution	4M (2560 × 1440); 3M (2048 × 1536); 1080P (1920 × 1080); 720P (1280 × 960); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
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 (1–25/30 fps), 720P (1–25/30 fps)
Bit Rate Control	Variable/Constant
Bit Rate	Main stream with default resolution: H.264: 3 Kbps–20480 Kbps H.265: 3 Kbps–20480 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
Image Stabilization	Electronic
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; G.722.1; G.729; G.723
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### Network

Ethernet	RJ-45 (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/Profile G); CGI
Streaming Method	Unicast/Multicast
User/Host	19
Edge Storage	FTP; Micro SD card (256G); P2P
Browser	IE7 and later versions Chrome 42 and earlier versions Firefox 52 and earlier versions Safari
Management Software	Smart PSS; DSS; DMSS; Easy4ip; IVSS
Mobile Phone	IOS; Android

**Certification**

Certifications	CE: EN62368-1; EN55032; EN61000-3-2; EN61000-3-3; EN55024; EN55035; EN50130-4 FCC: 47 CFR FCC Part15, SubpartB, ClassA; ANSI C63.4: 2014
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**Port**

RS-485	1 (Baud rate range: 1200 bps–115200 bps)
Audio Input	1
Audio Output	1
Alarm I/O	7/2

**Power**

Power Supply	DC36V/2.23A; HI-PoE
Power Consumption	Basic: 20W Max.: 36W (IR light and PTZ on at minimum voltage)

**Environment**

Operating Temperature	-40°C ~ 70°C (-40°F to 158°F)
Operating Humidity	≤95%
Protection	IP67; TVS 8000V lightning proof; Surge protection

**Structure**

Casing	Metal
Dimensions	382 mm × Φ240 mm (15.04" x Φ9.45")
Net Weight	6.5 kg (14.33 lb)
Gross Weight	8.9 kg (19.62 lb)

**Ordering Information**

Type	Model	Description
4MP PTZ Camera	DH-SD6AL445XA-HNR-IR	4MP 45x Starlight IR PTZ AI Network Camera, WDR, PAL
	DH-SD6AL445XAN-HNR-IR	4MP 45x Starlight IR PTZ AI Network Camera, WDR, NTSC
	SD6AL445XA-HNR-IR	4MP 45x Starlight IR PTZ AI Network Camera, WDR, PAL
	SD6AL445XAN-HNR-IR	4MP 45x Starlight IR PTZ AI Network Camera, WDR, NTSC
Accessories	PFB303W	Wall Mount
	PFA111	Mount Adapter
	DC36V/2.23A	Power Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount
	PFA120	Junction Box
	PFA150	Pole Mount
	PFA151	Corner Mount
PFB303S	Parapet Mount	

**Accessories**

**Included:**



PFB303W  
Wall Mount



PFA111  
Mount Adapter



AC24V/3A  
Power Adapter

**Optional:**



PFA140  
Power Box



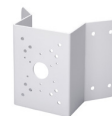
PFB300C  
Ceiling Mount



PFA120  
Junction Box



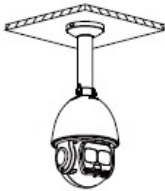

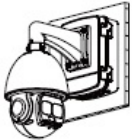


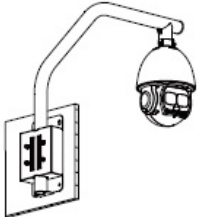
PFA150  
Pole Mount



PFA151  
Corner Mount



PFB303S  
Parapet Mount

<b>Ceiling Mount</b>	<b>Junction Mount</b>
PFA111 + PFB300C	PFA111 + PFB303W + PFA120
	
<b>Power Box Mount</b>	<b>Pole Mount</b>
PFA111 + PFB303W + PFA140	PFA111 + PFB303W + PFA150
	
<b>Corner Mount</b>	<b>Parapet Mount</b>
PFA111 + PFB303W + PFA151	PFA111+ PFB303S
	

**Dimensions (mm[inch])**

