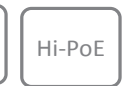**alhua** TECHNOLOGY

DH-SD6AL233XA-HNR-IR

2MP 33x Starlight + IR PTZ AI Network Camera

- 1/1.8" 2Megapixel CMOS
- Powerful 33x optical zoom
- Starlight technology
- Max. 50/60fps@1080P
- Deep-learning-based auto tracking and perimeter protection
- Support Hi-PoE
- IR distance up to 300m
- IP67

| False Alarm Filter | WDR | 0.001Lux | ICR D/N | IP67 | Hi-PoE |

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

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.

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.

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. The camera complies with the IK10 Vandal Resistance impact rating. Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

Protection

The camera allows for ±25% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 8KV lightning rating provides effective protection for both the camera and its structure against lightning.

Interoperability

The camera conforms to the ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of manufacturer.

ONVIF

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Max. Resolution	1920 (H) x 1080 (V)
Effective Pixels	2MP
ROM	4GB
RAM	1GB
Electronic Shutter Speed	1/3–1/30000 s
Scanning System	Progressive
Min. Illumination	Color: 0.001Lux@F1.5 B/W: 0.0001Lux@F1.5 0Lux (IR light on)
IR Distance	300 m (984 ft)
IR On/Off Control	Zoom Prio/Manual/SmartIR
IR LEDs Number	1
Wiper	Support

Lens

Focal Length	5.8 mm–191.4 mm
Max. Aperture	F1.5–F4.8
Field of View	H: 60.1°–3.2°; V: 35.3°–1.8°; D: 67.9°–3.7°
Optical Zoom	33x
Focus Control	Auto/Semi-Auto/Manual
Close Focus Distance	0.1 m–1 m (0.33 ft–3.28 ft)
Iris Control	Auto/Manual

DORI Distance	Detect	Observe	Recognize	Identify
	1655 m (5429.80ft)	622 m (2040.68ft)	331 m (1085.96ft)	165 m (541.34 ft)

PTZ

Pan/Tilt Range	Pan: 0°–360° Tilt: -20°–+90°
Manual Control Speed	Pan: 0.1°/s–200°/s Tilt: 0.1°/s–120°/s
Preset Speed	Pan: 240°/s Tilt: 200°/s
Presets	300
Tour	8 (up to 32 presets 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)

Artifical Intelligence

Video Metadata	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.
Auto Tracking	Support

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	1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
Frame Rate	Main stream: 1080P/1.3M/720P (1–50/60fps) Sub stream 1: D1/CIF (1–25/30fps) Sub stream 2: 1080P/1.3M/720P/D1/CIF (1–25/30fps)
Bit Rate Control	Variable Bit Rate/Constant Bit Rate
Bit Rate	H.265/H.264: 3 kbps–20480 kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Support
WDR	120 dB
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	Support
Electronic Image Stabilization	Support
Defog	Support
Digital Zoom	16x
Flip	0°/180°
Privacy Masking	Up to 24 areas

Audio

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

Certification

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

Port

Audio In	1 (LINE IN; bare wire)

Audio Out	1 (LINE OUT; bare wire)
Alarm Port	7/2

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&G; CGI
Streaming Method	Unicast/Multicast
User/Host	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

Power

Power Supply	AC24V/3A±25% Hi-PoE
Power Consumption	20W 32W (IR on)

Environment

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

Structure

Casing	Metal
Dimensions	Φ240 mm x 382 mm (9.45" × 15.04")
Net Weight	5.8 kg (12.79 lb)
Gross Weight	10.5 kg (23.15 lb)

	PFB303W	Wall Mount
	PFA111	Mount Adapter
	AC24V/3A	Power Adapter
	PFA140	Power Box
Accessories	PFB300C	Ceiling Mount
	PFA120	Junction Box
	PFA150	Pole Mount
	PFA151	Corner Mount
	PFB303S	Parapet Mount
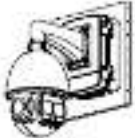
Accessories

Included:

PFB303W	PFA111	AC24V/3A
Wall Mount	Mount Adapter	Power Adapter

Optional:

PFA140	PFB300C	PFA120
Power Box	Ceiling Mount	Junction Box

PFA150	PFA151	PFB303S
Pole Mount	Corner Mount	Parapet Mount

Ordering Information

Type	Model	Description
2MP PTZ Camera	DH-SD6AL233XA-HNR-IR	2MP 33x Starlight IR PTZ AI Network Camera, WDR, PAL
	DH-SD6AL233XAN-HNR-IR	2MP 33x Starlight IR PTZ AI Network Camera, WDR, NTSC
	SD6AL233XA-HNR-IR	2MP 33x Starlight IR PTZ AI Network Camera, WDR, PAL
	SD6AL233XAN-HNR-IR	2MP 33x Starlight IR PTZ AI Network Camera, WDR, NTSC

Ceiling Mount
PFA111 + PFB300C

Junction Mount
PFA111 + PFB303W + PFA120

Power Box Mount
PFA111 + PFB303W + PFA140

Pole Mount
PFA111 + PFB303W + PFA150

Corner Mount
PFA111 + PFB303W + PFA151

Parapet Mount
PFA111 + PFB300S

Dimensions (mm[inch])

50.0[1.97]

174.0[6.85]

382.0[15.04]

213.6[8.41]

Φ239.8[9.44]

dahua TECHNOLOGY