

DH-SD4E225MB-HNR-A-PV1

2MP 25 Starlight TiOC Network PTZ Camera



Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

Series Overview

The Three-in-One Camera (TiOC) solution combines 24/7 monitoring, active deterrence and real-time alarms with artificial intelligence into one smart, innovative solution. TiOC PTZ cameras adopt auto-tracking 3.0 technology, greatly improving the monitoring scope of key targets. For distributors and installers, it not only saves time, but also reduces cost.

Functions

AcuPick

This industry-leading search technology effectively utilizes both front-end and back-end intelligence to help with searching through massive video data to quickly and conveniently locate targets with greater precision.

Auto Tracking

This feature controls the pan, tilt and zoom actions of the camera to automatically track an object in motion, to keep it in view of the camera. Tracking 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.

SMD4.0

Dahua Smart Motion Detection technology works with intelligent algorithms to classify targets that trigger motion detection alarms. It filters out objects that are not targets, such as small and large animals, to avoid triggering false alarms.

- 1/2.8" 2Megapixel CMOS
- 25x optical zoom
- Starlight technology
- Max. 25/30fps@2M
- IR distance up to 100m
- WizTracking
- Built-in dual mics and a speaker for two-way talk
- AI-ISP
- Perimeter protection
- Face detection
- SMD 4.0
- IP67
- Full-color illuminator; red and blue warning light



AI-ISP

With AI ISP technology, the camera is able to easily adapt to scenes, producing high quality images that reveal the fine details of targets.

Xinghan Large-Scale AI Models-Vision

Xinghan Large-Scale AI Models-Vision seamlessly expands the storage and operational capacity of algorithmic models through the powerful integration of edge AI model algorithms and NPU computing power. Engineered with a lightweight transformer architecture and enhanced by model distillation and quantization techniques, it optimizes the computing power consumption of ViT operators. This enables the system to collaborate on multiple tasks simultaneously through joint inference between small and large models optimized for edge devices.

Technical Specification

Camera	
Image Sensor	1/2.8" CMOS
Pixel	2 MP
Max. Resolution	1920 (H) × 1080 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1 s–1/30,000 s
Scanning System	Progressive
Min. Illumination	0.005 lux@F1.6 (Color, 30 IRE); 0.0005 lux@F1.6 (B/W, 30 IRE); 0 lux (illuminator on)
Illumination Distance	100 m (328.08 ft) (IR); 50 m (164.04 ft) (Dual Light Fusion-white light only); 50 m (164.04 ft) (Dual Light Fusion-IR light only);
Illuminator On/Off Control	Zoom Prio; Manual; Auto; Off
Illuminator Number	2 (IR); 2 (Dual light fusion)

Lens	
Focal Length	4.8 mm–120 mm
Max. Aperture	F1.6-F3.5
Field of View	H: 58.5°–2.8°; V: 33.2°–1.5°; D: 67.5°–3.2°
Optical Zoom	25×
Focus Control	Auto; semi-auto; manual
Close Focus Distance	0.1 m–1.5 m (0.33 ft–4.92 ft)
Iris Control	Auto; manual

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	66.2 m (217.21 ft)	26.5m (86.88 ft)	13.2 m (43.44 ft)	6.6 m (21.72 ft)
	T	1655.2 m (5430.29 ft)	662.1 m (2172.12 ft)	331.0 m (1086.06 ft)	165.5 m (543.03 ft)
	*DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool.				

PTZ	
Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –15° to +90°, auto flip 180°
Manual Control Speed	Pan: 0.1°/s–200°/s; Tilt: 0.1°/s–120°/s
Preset Speed	Pan: 0.1°/s–240°/s; Tilt: 0.1°/s–200°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5

Power-off Memory	Yes
Idle Motion	Tour;Preset; Pattern; Scan

Intelligence	
IVS (Perimeter Protection)	Tripwire; intrusion; crossing fence detection; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; linkage tracking
Face Detection	Supports face detection, optimization, capturing pictures, uploading high-quality face snapshots and enhancing face images. Attribute Extraction is also supported, where 6 attributes and 8 expressions can be detected. Face cutout is also offered, where you can cutout one face at a time and customize the size to be a one-inch photo. The supported methods for capturing snapshots are real-time capturing, quality first, and selecting a preferred image among a group of snapshots.
Smart Tracking	WizTracking
SMD	SMD 4.0
AcuPick	Uses deep learning algorithms and works with back-end devices to accurately match targets, such as people and motor vehicles, and search through live and recorded videos to quickly locate targets.
Auto Patrol	After an IVS event occurs, the PTZ camera immediately initiates automated patrol of predefined key points to quickly cover potential risk areas and detect unknown threats in real time.

Active Deterrence	
Light Warning	Red-blue light warning Flash duration: 5 s–30 s Flash frequency: high, medium, low
Sound Warning	Offers 11 types of sound alarms, and supports importing custom sound alarms.

Video	
Video Compression	MJPEG(Sub Stream 1);Smart H.265+; H.264H; Smart H.264+; H.265; H.264B; H.264
Streaming Capability	3 streams
Resolution	1080P(1920×1080);1.3M(1280×960);720P(1280×720);D1(704× 576);VGA(640×480);CIF(352×288)
Video Frame Rate	Main stream: 1080p/1.3M/720p@(1–50/60 fps) Sub stream 1: D1/VGA/CIF@(1–25/30 fps) Sub stream 2: 1080p/1.3M/720p/@(1–25/30 fps)
Bit Rate Control	CBR/VBR
Video Bit Rate	H264:64~10496Kbps H265:25~6400Kpbs
Day/Night	Auto (ICR); Color; B/W
BLC	Yes
WDR	120 dB
HLC	Yes
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/ Natural light/Street lamp
Gain Control	Auto; manual
Noise Reduction	2D NR; 3D NR
Motion Detection	Yes
Region of Interest (RoI)	Yes

Image Stabilization	Electronic Image Stabilization (EIS)
Defog	Electronic
Digital Zoom	16×
Image Rotation	180°
Privacy Masking	Up to 32 areas can be set, with up to 8 areas in the same view; Multiple colors available
S/N Ratio	≥ 55 dB

Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; MPEG2-Layer2; G722.1; G729; G723
Built-in MIC	Yes
Built-in Speaker	Yes

Network

Network Port	RJ-45 (10/100 Base-T)
Network Protocol	SSL; IGMP; DDNS; SMB; Bonjour; UDP; PPPoE; ARP; HTTPS; RTSP; SMTP; IPv4; RTP; IPv6; NTP; TCP/IP; DNS; RTCP; 802.1x; HTTP; RTMP; FTP; DHCP; NFS; UPnP; SNMP; ICMP; QoS
Interoperability	ONVIF (Profile S & Profile G & Profile T); P2P; SDK; CGI
Streaming Method	Unicast/Multicast
User/Host	20 (total bandwidth: 64 M)
Storage	Micro SD card (512 GB); FTP/SFTP; NAS
Browser	IE 9 and later versions; Chrome 41 and later versions; Firefox 50 and later versions; Safari 10 and later versions
Management Software	DSS Pro; DMSS
Mobile Client	Android; iOS

Certification

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

Audio Input	1 channel (LINE IN, bare wire, built-in mic (mutually exclusive))
Audio Output	1 channel (LINE OUT, bare wire, built-in speaker (mutually exclusive))
Alarm Input	2 (on-off value input: 0–5 VDC)
Alarm Output	1 channel
Alarm Linkage	Capture; recording; send email; preset; tour; pattern; alarm digital output; audio
Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection
Alarm I/O	1/1
Audio I/O	1/1

Power

Power Supply	12 VDC; 3 A (±10%); PoE+ (802.3at)
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Power Consumption	12 VDC: Basic: 7 W; Max: 15.5 W (white light+heated glass+PTZ on+alarm+red and blue light flashing)"
Power Adapter	Optional

Environment

Operating Temperature	–40 °C to +65 °C (–40 °F to +149 °F)
Operating Humidity	≤ 95%
Protection	IP67; TVS 6000 V lightning proof; surge protection; voltage transient protection

Structure

Product Dimensions	269.9 mm × Φ160.0 mm (10.63" × Φ6.30")
Net Weight	2.6 kg (5.73 lb)
Gross Weight	4 kg (8.82 lb)

Ordering Information

Type	Model	Description
Network PTZ Camera	DH-SD4E225MB-HNR-A-PV1	2MP 25 Starlight TiOC Network PTZ Camera
Accessories	PFB305W	Wall Mount Bracket
	DH-PFB301S-E	Plane Mount Bracket
	PFA111	Mount Adapter
	DH-PFB300C	Ceiling Mount Bracket
	DH-PFA150	Pole Mount Bracket
	DH-PFA151	Corner Mount Bracket
	DH-PFB303S	Parapet Mount Bracket
	DH-PFA126	Water-proof Junction Box

Accessories

Included:



PFB305W
Wall Mount Bracket

Optional:



DH-PFB301S-E
Plane Mount Bracket



PFA111
Mount Adapter



DH-PFB300C
Ceiling Mount Bracket



DH-PFA150
Pole Mount Bracket



DH-PFA151
Corner Mount Bracket



DH-PFB303S
Parapet Mount Bracket

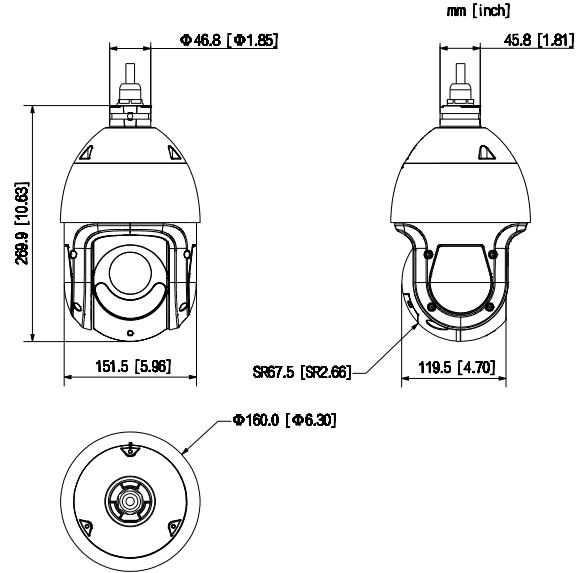


DH-PFA126
Water-proof Junction Box



DC12V/3A
Power Adapter

Dimensions (mm[inch])



Wall Mount	Ceiling Mount 1	Ceiling Mount 2
PFB305W+PFA126	PFA111+PFB300C	PFA111+PFB301C
Pole Mount (Vertical)	Corner Mount	Pole Mount (Horizontal)
PFB305W+PFA150	PFB305W+PFA151	PFA111+PFB300C+PFA150
Plane Mount	Parapet Mount	
PFB301S-E	PFA111+PFB303S	