

DH-PTZ4M231-HNR-XA-GHW

2MP 31x Starlight IR WizMind PTZ Network Camera



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 customers requirements, WizMind provides precise, reliable and comprehensive AI solutions for industry verticals.

System Overview

WizMind PTZ 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 WizMind series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua WizMind includes network (PTZ) cameras, network video recorders, servers, and more devices. Beyond seeing the world, the power of WizMind allows devices to perceive the environment and understand the world in a better way.

Functions

Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, and more, and uses secondary recognition during target detection to improve alarm accuracy.

Starlight Technology

For challenging low-light conditions, Dahua's Starlight Ultra-low Light Technology offers the best in light sensitivity, capturing color in vivid detail, even in lighting as low as 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, producing clear images in dark environments.

PFA Technology

PFA technology has introduced new methods of judgment that ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms that ensure image clarity when zooming and that shorten focus time. This makes the camera highly advanced in its functions, substantially improving the quality of your experience.

- 1/1.8" 2Megapixel STARVIS™ CMOS
- 31× optical zoom
- Starlight+ technology
- Max. 25/30 fps@1080p
- IR distance up to 100 m
- Auto-tracking
- Perimeter protection
- Face detection
- Construction monitoring
- SMD Plus
- GPS positioning, displaying accurate longitude and latitude
- Dual 4G (SIM 1/SIM 2)
- Dual SD card expansion (TF1/TF2)
- Bluetooth, Wi-Fi (2.4G/5G), AP (2.4G/5G)



Environment (−20 °C to +55 °C, IP66)

Developed to operate in extreme conditions, the camera can function in temperatures ranging from −20 °C to +55 °C (−4 °F to +131 °F) at 95% humidity. It was subjected to rigorous dust and water immersion tests, gaining its IP66 Ingress Protection certification, making it suitable for demanding outdoor applications.

Wide Dynamic Range

The camera produces vivid images, even in high-contrast lighting conditions, by using industry-leading wide dynamic range (WDR) technology. For scenes that quickly alternate between bright and low lighting, WDR (120 dB) adjusts to fully capture both the bright and dark areas of a scene, producing superior quality videos.

Video Metadata

Metadata is information on the attributes of targets that is extracted during monitoring. It can be used for data retrieval. There are four kinds of metadata supported by Dahua PTZ WizMind cameras: Human face, human body, motor vehicle and non-motor vehicle. Face information includes gender, age, glasses, masks, beards, and more. Human body information includes hat, top, top color, bottom, bottom color, bag, and more. Motor vehicle information includes plate color, type, vehicle color, sunshield, ornament, calling, seatbelt, smoking, annual inspection sticker, and more. Non-motor vehicle information includes type, color, top type, top color, people number, and more.

Face Detection

Supports 6 attributes and 8 expressions: Gender, age, glasses, mask, beard and expressions (anger, sadness, disgust, fear, surprise, calm, happiness, and confusion). It also supports face cutout settings: Face, and single inch photo. Three snapshot methods are also featured: Real-time snapshot, priority snapshot, and quality priority.

Construction Monitoring

Helmet detection; helmet color recognition; workwear detection; lone working detection; absence detection.

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.

Scene

The product can be widely used in low-light places that need large-scale high-speed monitoring, have high requirements for image quality, and need to see all kinds of details of the target, such as rivers, forests, roads, airports, lookout posts, squares, parks, scenic areas, streets, stations, large venues, and the periphery of residential areas.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Pixel	2 MP
Max. Resolution	1920 (H) × 1080 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1/1 s–1/30,000 s
Scanning System	Progressive
Min. Illumination	Color: 0.001 lux@F1.6 B/W: 0.0001 lux@F1.6 0 lux (IR light on)
Illumination Distance	100 m (328.08 ft) (IR)
Illuminator On/Off Control	Zoom Prio; Manual; Smart IR; Off
Illuminator Number	3 (IR light)

Lens

Focal Length	6 mm–186 mm			
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	31×			
Focus Control	Auto; semi-auto; manual			
Close Focus Distance	0.5 m–7 m (1.64 ft–22.97 ft)			
Iris Control	Auto; manual			
DORI Distance	Detect	Observe	Recognize	Identify
	2,565.5 m (8,416.99 ft)	1,013.4 m (3,324.80 ft)	513.1 m (1,683.40 ft)	256.6 m (841.86 ft)

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –90° to +30°, auto flip 180°
Manual Control Speed	Pan: 0.1°/s–118°/s Tilt: 0.1°/s–68.2°/s

Preset Speed	Pan: 169°/s; Tilt: 160°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Preset; Tour; Pattern; Scanning
PTZ Protocol	DH-SD Pelco-P/D (auto recognition)

Intelligence

Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.
IVS (Perimeter Protection)	Tripwire; intrusion; climbing fences; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; vehicle/human alarm classification
Face Detection	Yes
Construction Monitoring	Helmet detection; helmet color recognition; workwear detection; lone working detection; absence detection
Auto Tracking	Yes

Video

Video Compression	H.265; H.264B; H.264M; H.264H; MJPEG; Smart H.265+; Smart H.264+
Streaming Capability	3 streams
Resolution	1080p (1920 × 1080); 960p (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
Video Frame Rate	Main stream: 1920 × 1080@25 fps/1280 × 960@25 fps/1280 × 720@25 fps Sub stream 1: 704 × 576@25 fps/352 × 288@25 fps Sub stream 2: 1920 × 1080@25 fps/1280 × 960@25 fps/1280 × 720@25 fps
Bit Rate Control	CBR; VBR
Video Bit Rate	Default resolution of the main stream: H.264: 32 kbps–8192 kbps H.265: 32 kbps–8192 kbps
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 (EIS)
Defog	Electronic
Digital Zoom	16x

Image Rotation	180°
Privacy Masking	Up to 24 areas can be set, with up to 8 areas in the same view; color block and mosaic selectable
S/N Ratio	>55 dB
Audio	
Audio Compression	G.711a; G.711Mu; G.726; AAC; MPEG2-Layer2; G722.1; G729; G723
Network	
Network Port	RJ-45 (10/100 Base-T)
Wi-Fi	Yes
Wi-Fi–Wireless Standard	IEEE 802.11 a/b/g/n/ac
4G–Wireless Frequency Range	4G_LTE (FDD): B1/B2/B3/B4/B5/B7/B8/B20 3G_WCDMA/HSDPA/HSUPA/HSPA+: Band 1/ 2/5/8 2G_GSM/GPRS/EDGE: 850/900/1800/1900 MHz
Wi-Fi–Wireless Transmission Rate	433 Mbps
4G	Yes
Network Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; SNMP v1/v2c/v3 (MIB-2); RTCP; RTMP
Interoperability	ONVIF (Profile S&G&T); CGI
Streaming Method	Unicast; Multicast
User/Host	20 (total bandwidth: 64 M)
Storage	FTP; Micro SD card (max. 1 T); NAS
Browser	IE 7 and later versions Chrome 42 and earlier versions Firefox 52 and earlier versions Safari
Management Software	Smart PSS; DSS; DMSS; Easy4ip; IVSS
Mobile Client	iOS; Android
Function	
Others	Dual SIM cards Dual SD cards Access point Bluetooth On-screen status display
Certification	
Certifications	CE; FCC
Port	
RS-485	1 (1200 bps–9600 bps)
Audio Input	1
Audio Output	1
Two-way Audio	Yes
Alarm Input	1 (on-off value input: 0–5 VDC)
Alarm Output	1
Alarm Linkage	Capture; preset; tour; pattern; recording; triggering on-off value output; audio; sending email

Alarm Event	Motion/tampering detection; audio detection; network disconnection detection; IP conflict detection; memory card state detection; memory space detection; power exception detection
Power	
Power Supply	12 VDC, 5 A (± 15%) (included)
Battery Life on a Full Charge	11 h
Power Consumption	Basic: 9 W Max.: 32 W (illuminator on, battery charging, PTZ working)
Environment	
Operating Temperature	–20 °C to +55 °C (–4 °F to +131 °F)
Operating Humidity	≤95%
Protection	IP66; TVS 6000 V lightning proof; surge protection; voltage transient protection
Structure	
Casing	ADC12; AZ91D
Product Dimensions	Φ160 mm × 265 mm (Φ6.30" × 10.43")
Net Weight	3.7 kg (8.15 lb)
Gross Weight	13 kg (28.66 lb)

Ordering Information

Type	Model	Description
2M Camera	DH-PTZ4M231-HNR-XA-GHW	2MP 31x Starlight IR WizMind PTZ Network Camera, PAL
	DH-PTZ4M231N-HNR-XA-GHW	2MP 31x Starlight IR WizMind PTZ Network Camera, NTSC
	PTZ4M231-HNR-XA-GHW	2MP 31x Starlight IR WizMind PTZ Network Camera, PAL
	PTZ4M231N-HNR-XA-GHW	2MP 31x Starlight IR WizMind PTZ Network Camera, NTSC
Accessories		Aluminum Trolley Case
		Mounting Plate
		Power Adapter
		Power Cord
		12-core Aviation Connector Cable
		Steel Wire Rope
		Battery
	18650/2S4P	Backup Battery
	SDPH002	8-core Aviation Connector Cable (audio, alarm, power supply)
	SDPH003	Tripod
SDPH004	Base Charger	

Accessories

Included:



Aluminum Trolley Case



Mounting Plate



Power Adapter



Power Cord



12-core Aviation Connector Cable



Steel Wire Rope



Battery

Optional:



18650/2S4P Backup Battery



SDPH002 8-core Aviation Connector Cable (audio, alarm, power supply)



SDPH003 Tripod



SDPH004 Base Charger

Dimensions (mm[inch])

