

# DH-PTZ4M231-HNR-GA-GHW

## 2MP 31x IR Wizmind Portable Network Positioning System (Without Battery)




Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, IVSS, NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for verticals.

### System Overview

Designed for convenience, PTZ4M Series cameras are portable and can be deployed in a wide variety of scenes. The PTZ can also be rotated and zoomed to focus on targets over a long distance. It displays visuals in 2MP, has an optical zoom up to 31x, and supports various functions such as face detection, video metadata, construction site monitoring, perimeter protection and tracking.

### Functions

#### Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

#### 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 adjusts to fully capture both the bright and dark areas of a scene, producing superior quality videos.

- 1/1.8" 2Megapixel STARVIS™ CMOS.
- 31x optical zoom.
- Starlight+ technology.
- Max. 25/30fps@1080P.
- IR distance up to 100 m.
- Two-way talk.
- Auto tracking 3.0.
- Perimeter protection.
- Face detection.
- Video Metadata.
- SMD 4.0.
- IP66.
- Dual 4G (SIM 1/SIM 2).
- Dual SD card expansion (TF1/TF2).
- Bluetooth.
- Wi-Fi (2.4GHz/5GHz).
- AP (2.4GHz/5GHz).
- 1.3" OLED screen.



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

#### Construction Monitoring

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

#### 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.

**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	1s–1/30,000s
Scanning System	Progressive
Min. Illumination	0.001 lux@F1.6 (Color, 30 IRE); 0.0001 lux@F1.6 (B/W, 30 IRE); 0 lux (illuminator on)
Illumination Distance	100 m (328.08 ft) (IR)
Illuminator On/Off Control	Zoom Prio; Manual; Auto; 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			
Iris Control	Auto; Manual			
DORI Distance	Detect	Observe	Recognize	Identify
	2565.5 m (8416.99 ft)	1013.4 m (3324.80 ft)	513.3 m (1684.06 ft)	256.6 m (841.86 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: -90° to +30°
Manual Control Speed	Pan: 0.1°/s–120°/s; Tilt: 0.1°/s–70°/s
Preset Speed	Pan: 0.1°/s–169°/s Tilt: 0.1°/s–160°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Pattern; Preset; Scan; Tour
PTZ Protocol	DH-SD Pelco-P/D (Auto recognition)

**Intelligence**

Video Metadata	Supports detection of motor vehicles, non-motor vehicles, faces and human bodies, optimization, capturing pictures, and uploading high-quality face snapshots. It extracts attributes from motor vehicles, detecting up to 10 attributes for them.
IVS (Perimeter Protection)	Tripwire; intrusion; crossing fence detection; loitering detection; abandoned/missing object; fast moving; parking detection; people gathering; human alarm classification; 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.
Construction Monitoring	Detects 6 helmet colors: Red, orange, yellow, blue, white, and black. An alarm will be triggered when a person is not wearing a helmet or when the color of the helmet that they are wearing does not match the configured color. It also supports compliance detection for work uniforms. Up to 5 work uniform sample libraries can be uploaded, which together can contain up to 1,000 images (the images must be 1080p and in the JPG format). An alarm will be triggered when the similarity between the detected work uniform and the samples in the library is below the set threshold (that is, below the minimum compliance standard for work uniforms). The system supports detecting the attributes of work uniforms such as the color of the uniform, and whether or not the person is wearing a mask and wearing shoe covers. An alarm will be triggered when the target is detected as not meeting the set requirements. It also detects and triggers alarms when only one person is in the construction site, and when no one is present in the detection area such as when a worker leaves their post or an area is left unmanned.
Auto Tracking	Yes
SMD	SMD4.0
Quick Pick	Yes
Active Deterrence	
Sound Warning	Offers 27 types of sound alarms, and supports importing custom sound alarms. The sound level is high, medium and low, and the alarm duration is 5 s–30 s.
Video	
Video Compression	H.264H; H.264B; Smart H.265+; H.264; H.265; MJPEG (Sub Stream); Smart H.264+
Resolution	1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Video Frame Rate	Main stream: 1080p/1.3M/720p @ (1-25/30 fps) Sub stream 1: D1/CIF @ (1-25/30 fps) Sub stream 2: 1080p/1.3M/720p/CIF @ (1-25/30 fps)
Bit Rate Control	CBR/VBR
Video Bit Rate	H264: 64 Kbps–10,496 Kbps H265: 25 Kbps–6,400 Kbps
Day/Night	Auto (ICR)
BLC	Yes
WDR	140 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	16 ×
Image Rotation	180°
Privacy Masking	Up to 24 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
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### Network

Network Port	RJ-45 (10/100 Base-T)
Wi-Fi	Yes
Wi-Fi Standard	IEEE802.11a; IEEE802.11b; IEEE802.11g; IEEE802.11ac; IEEE802.11n
Wi-Fi Frequency Range	2.4 GHz; 5 GHz
Wi-Fi Transmission Rate	433.3 Mbps
Carrier Network System	LTE-FDD/LTE-TDD/WCDMA/GSM
Wireless Carrier Frequency Band	LTE-TDD: Tri-band Band 38/40/41 LTE-FDD: Hepta-band Band 1/3/5/7/8/20/28 WCDMA: Tri-band Band 1/5/8 GSM: Tri-band 850/900/1800
Max Transmission Power	4G: Power class3: 23 dBm ± 2 dB 3G: Power class3: 24 dBm + 1/-3 dB 2G: Power class0: 30 dBm ± 2 dB (GSM1800) Power class5: 33 dBm ± 2 dB (GSM850/900)
Network Protocol	FTP; RTMP; IPv6; Bonjour; IPv4; DNS; RTCP; PPPoE; NTP; RTP; 802.1x; HTTPS; SNMP; TCP/IP; DDNS; UPnP; NFS; ICMP; UDP; IGMP; HTTP; SSL; DHCP; SMTP; Qos; RTSP; ARP
Interoperability	ONVIF (Profile S & Profile G & Profile T); CGI; SDK; P2P
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 52 and later versions; Safari 10 and later versions
Management Software	DMSS; DSS Pro
Mobile Client	iOS; Android

### Port

RS-485	1 (baud rate: 1200 bps–9600 bps)
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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	1 (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; network disconnection detection; IP conflict detection; audio detection; memory card state detection; memory space detection

### Power

Power Supply	12 VDC, 5 A ± 10% (included)
Power Output	5 V, 1 A
Battery Life on a Full Charge	10 h, The PTZ is set to not move by default, videos can be stored on the SD card, and Bluetooth, Wi-Fi, AP, Mic, speaker and SIM1/2 are disabled by default.
Power Consumption	Basic: 8 W; Max: 38 W (illuminator + PTZ + battery)

### Environment

Operating Temperature	–20 °C to +55 °C (–4 °F to +131 °F)
Operating Humidity	≤95%
Protection	TVS 6000 V lightning proof; IP66; surge protection; voltage transient protection

### Structure

Casing Material	Aluminum alloy ADC12, magnesium alloy AZ91D
Product Dimensions	Φ160 mm × 265 mm (bare machine) 480 mm × 350 mm × 220 mm (L × W × H) (aluminum trolley case)
Net Weight	3.8 kg (8.38 lb)
Gross Weight	12.5 kg (27.56 lb)

### Ordering Information

Type	Model	Description
2MP WizMind PTZ Camera	DH-PTZ4M231-HNR-GA-GHW	2MP 31x IR Wizmind Portable Network Positioning System (Without Battery), PAL
	18650/2S4P (1.0.99.56.10068)	Lithium Battery (14Ah/7.2V)
Accessories (Optional)	SDPH002	8-core Aviation Connector Cable (audio, alarm, power supply)
	DHI-ITSZJ-6101-18	Tripod
	SDPH004	Base Charger

**Accessories**

Included:



Aluminum Trolley Case



Mounting Plate



Power Adapter



Power Cord



12-core Aviation Connector Cable



Steel Wire Rope

Optional:



18650/2S4P  
Lithium Battery  
(14Ah/7.2V)



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

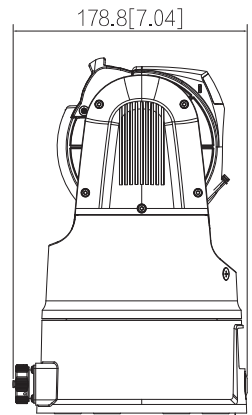
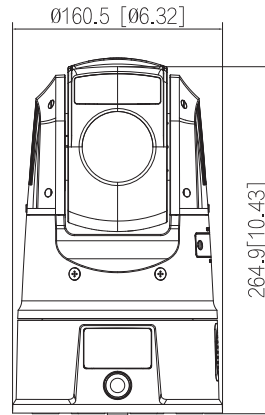


DHI-ITSZJ-6101-18  
Tripod



SDPH004  
Base Charger

**Dimensions (mm[inch])**



Plane Mount	Plane Mount