DH-PSDW81642M-A180-D440-S3

16 MP Multi-Sensor 180° Panoramic PTZ Hubble WizMind Network Camera

Xinghan WizMind

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 customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for verticals.

Series Overview

The Panoramic Network Camera + PTZ Camera can splice up to a 180° horizontal view to give you a wider view. Working with high-speed PTZ, the camera can display the details. With advanced video analysis algorithm, the camera supports linkage between panorama and details, and situation analysis.

Functions

Panoramic Splicing

With advanced splicing algorithm, Dahua Panoramic Splicing technology deletes overlapped area and splices multiple images to be a complete panorama. The field of view of the spliced image can be up to 360°, which largely improves surveillance efficiency and user experience. Generally, after splicing, the field of view of eight-sensor camera can be 360°.

Smart Tracking

With advanced algorithm, Dahua network camera can detect targets, track targets with speed dome, and view details.

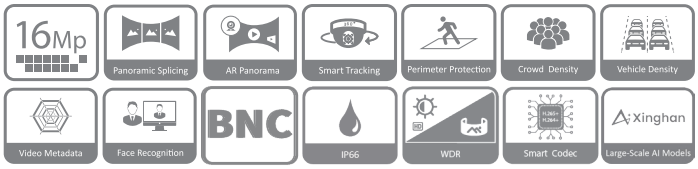
Perimeter Protection

With deep learning algorithm, Dahua Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire and intrusion) are largely reduced.

Crowd Density

Detects the number of people and the level of crowd density within an area. It adopts the Xinghan Large-Scale AI Model-Vision technology, enabling it to identify smaller pixels than standard devices and recog ¬nize people carrying umbrellas even in low-light conditions. This greatly improves the accuracy of crowd statistics at night and in rainy scenes.

- Channel 1 (Panoramic): 4 × 4 MP 1/1.8" CMOS image sensors. Field of View:Horizontal: 1 × 180°: Vertical: 103°.
  Channel 2 (PTZ): 1 × 4 MP 1/1.8" CMOS image sensors.
- Channel 2 (PTZ): 40x optical zoom, 16x digital zoom.
- Channel 2 (PTZ): Illumination distance up to 400 m.
- Channel 1 (Panoramic): Three switchable intelligent resources: Perimeter protection, crowd map (Large-Scale AI Models), vehicle density.
- Channel 2 (PTZ): Three switchable intelligent resources:Perimeter protection, video metadata, face recognition.
- AR panorama technology; various AR tags can be overlaid.
- Smart tracking. GPS/BDS positioning.
- Smart H265+/H264+ encoding.
- WDR, 3D NR, HLC, BLC, applicable to various monitoring scenes.
- Alarm: 7 in, 3 out; audio: 2 in, 2 out; 1 channel BNC, 1 channel RS–485 (baud rate can be set). supports max. 512 G SD card.



Vehicle Density

With deep learning algorithm, Dahua Vehicle Density technology analyses the vehicle situation in the image, such as vehicle number in selected area. You can set threshold, and when the number is larger or smaller than the threshold, it triggers linkage.

Face Recognition

Dahua Face Recognition technology extracts the features of captured faces and compares them with that in face database to recognize the person identity.

Video Metadata

With deep learning algorithm, Dahua Video Metadata technology can detect, track, capture vehicle, non-motor vehicle and people, and select the best images, and extract attributes.

AR Panorama

Dahua AR panorama technology generates wide-field of view through panoramic merging and splicing. The software overlaps the cameras as tags in the image. Click the tag to display the corresponding camera video, which makes monitoring visual and convenient, and improves command efficiency.

Region of Interest (ROI)

Dahua Regions Of Interest (ROI) technology allows you to select the monitoring area of interest to improve image effect in the selected area.

Cyber Security

Dahua network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

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.

Scene

Applicable to various industries such as traffic, culture, education, health, public security and more.

Technical Specification

Camera

Image Sensor	Channel 1 (Panoramic): 1/1.8" 4 Megapixel progressive CMOS Channel 2 (PTZ): 1/1.8" 4 Megapixel progressive CMOS
Pixel	Channel 1 (Panoramic): 16 MP Channel 2 (PTZ): 4 MP
Max. Resolution	Channel 1 (Panoramic): 5520 (H) × 2700 (V) Channel 2 (PTZ): 2560 (H) × 1440 (V)
ROM	Channel 1 (Panoramic): 8 GB Channel 2 (PTZ): 8 GB
RAM	Channel 1 (Panoramic): 4 GB Channel 2 (PTZ): 2 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	Channel 1 (Panoramic): 0.0005 lux@F1.0 (Color,30 IRE) 0.0001 lux@F1.0 (B/W,30 IRE) Channel 2 (PTZ): 0.001 lux@F1.4 (Color,30 IRE) 0.0005 lux @F1.4(B/W,30 IRE) 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	Channel 1 (Panoramic): No Channel 2 (PTZ): Up to 400 m (1312.34 ft)
Illuminator On/Off Control	Auto; Manual; Zoomprio
Illuminator Number	Channel 1 (Panoramic): No Channel 2 (PTZ): 7 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0° to 360° Tilt: –11° to 90°
Built-in Battery	Channel 1 (Panoramic): Horizontal welding/lithium battery/3 V Channel 2 (PTZ): Horizontal welding/lithium battery/3 V

Lens

Lens Type	Channel 1 (Panoramic): Fixed-focal Channel 2 (PTZ): Vari-focal
Lens Mount	Channel 1 (Panoramic): M16 Channel 2 (PTZ): Module
Focal Length	Channel 1 (Panoramic): 2.8 mm Channel 2 (PTZ): 5.5 mm–220 mm
Max. Aperture	Channel 1 (Panoramic): F1.0 Channel 2 (PTZ): F1.4
Field of View	Channel 1 (Panoramic): H: 180° V: 103° Channel 2 (PTZ): H: 2.2°–61.8° V: 1.3°–36.3° D: 2.4°–69.2°
Iris Control	Channel 1 (Panoramic): No Channel 2 (PTZ): P-iris
Close Focus Distance	Channel 1 (Panoramic): 1.4 m (4.59 ft) Channel 2 (PTZ): 0.5 m–2 m (1.64 ft–6.56 ft) (T to W)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	Channel 1 (Panoramic)	57.9 m (189.96 ft)	23.2 m (76.11 ft)	11.6 m (38.06 ft)	5.8 m (19.03 ft)
	Channel 2 (PTZ)	3030 m (9940.94 ft)	1204 m (3950.13 ft)	606 m (1988.19 ft)	303 m (994.10 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.				

Smart Event

IVS	Channel 1 (Panoramic): Yes Channel 2 (PTZ): Yes

Intelligence

Intelligence Description	Channel 1 (Panoramic): Perimeter protection, crowd map (Large-Scale AI Models), vehicle density. Channel 2 (PTZ): Perimeter protection, video metadata, face recognition
IVS (Perimeter Protection)	Channel 1 (Panoramic): Tripwire; intrusion; parking detection Channel 2 (PTZ): Tripwire; intrusion; parking detection; crossing virtual fence, fast moving, abandoned object, missing object, crowd gathering, loitering detection
Face Recognition	Channel 1 (Panoramic): No Channel 2 (PTZ): Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes (gender, age, glasses, expressions, mask, and beard) and 8 expressions (angry, sad, disgusted, scared, surprised, calm, happy, confused); face snapshot set as face or one-inch photo; snapshot strategies (real-time snapshot, quality priority and optimization snapshot) Supports adding 5 group face databases; registering person one by one or in batches; setting face similarity; and supports face comparison with the face database containing up to 10,000 face pictures
Vehicle Density	Channel 1 (Panoramic): Vehicle density; parking upper limit; traffic congestion alarm Channel 2 (PTZ): No
Crowd Distribution Map	Channel 1 (Panoramic): Crowd map (Large-Scale AI Models), global crowd density; crowd density in area; people counting in area Channel 2 (PTZ): No

Video Metadata	Channel 1 (Panoramic): No Channel 2 (PTZ): Motor vehicle, non-motor vehicle, face, and human body detection; snapshot; snapshot optimization; optimal face snapshot upload. Motor vehicle attributes: License plate, plate color, vehicle type, vehicle color, vehicle logo, vehicle model/ year, sun visor, seatbelt., smoking, calling, ornament, and annual inspection sticker. Non-motor vehicle attributes: Type, vehicle color, number of people, top type and color, and hat. Human body attributes: Top and bottom type and color, bag, hat, gender, and umbrella. Face attributes: Gender, age, expressions, glasses, face mask, and bread
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.264+ Smart H.265+
Video Frame Rate	Channel 1 (Panoramic): Main stream:5520 × 2700 @(1–25/30 fps) sub stream:1920 × 940 @ (1–25/30 fps) third stream:4096 × 2064 @ (1–25/30 fps) Channel 2 (PTZ): Main stream: 2560 × 1440@ (1–25/30 fps) sub stream: 704 × 576@ (1–25/30 fps) third stream:1920 × 1080@ (1–25/30 fps)
Stream Capability	3 streams
Resolution	Channel 1 (Panoramic): Main stream: 5520 × 2700; 4600 × 2252; 3840 × 1880; 2880 × 1408 sub stream: 1920 × 940; 1280 × 620; 1024 × 496 third stream: 4096 × 2064; 2560 × 1252; 1366 × 668 Channel 2 (PTZ): Main stream: 2560 × 1440; 1920 × 1080; 1280 × 960; 1280 × 720 sub stream: 704 × 576; 640 × 480; 352 × 288 third stream: 1920 × 1080; 1280 × 960; 1280 × 720
Bit Rate Control	CBR/VBR
Video Bit Rate	Channel 1 (Panoramic): H.264: 96 kb/s–32768 kb/s; H.265: 38 kb/s–29588 kb/s; Channel 2 (PTZ): H.264: 32 kb/s–15872 kb/s H.265: 12 kb/s–9472 kb/s
Day/Night	Channel 1 (Panoramic): No Channel 2 (PTZ): ICR
BLC	Yes
HLC	Yes
WDR	Channel 1 (Panoramic): 120 dB Channel 2 (PTZ): 120 dB
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto; Manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Default Bit Rate with Default Resolution	Channel 1 (Panoramic): 6144 kb/s (5520 × 2700) Channel 2 (PTZ): 6144 kb/s (2560 × 1440)
Region of Interest (RoI)	Channel 1 (Panoramic): Yes (4 areas) Channel 2 (PTZ): Yes (8 areas)
Image Stabilization	Channel 1 (Panoramic): No Channel 2 (PTZ): No
Defog	Channel 1 (Panoramic): No Channel 2 (PTZ): Optical defog
Privacy Masking	Channel 1 (Panoramic): 4 areas Channel 2 (PTZ): 24 areas (8 for each preset)
LDC	Channel 1 (Panoramic): Yes Channel 2 (PTZ): No

Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; G.723, G.711a by default
Audio Sampling	8 kHz; 16 kHz; 32 kHz; 48 kHz; 64 kHz

Alarm

Alarm Event	Channel 1 (Panoramic): External alarm; No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; voltage detection; motion detection; video tampering; scene changing; audio detection; intensity change; tripwire; intrusion; parking detection; crowd density; traffic congestion; parking upper limit Channel 2 (PTZ): Tripwire; intrusion; parking detection;crossing virtual fence, fast moving, abandoned object, missing object, crowd gathering, loitering detection; face recognition; video metadata

Network

Network Port	RJ-45 (10/100/1000 Base-T)
SDK and API	Yes
Cyber Security	Video encryption; firmware encryption; configuration encryption; Digest; WSSE; account lockout; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x; trusted boot; trusted execution; trusted upgrade
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; SNMP; P2P
Interoperability	ONVIF (Profile S/Profile G/ Profile T); CGI
User/Host	20 (Total bandwidth: 400 M)
Storage	FTP; SFTP; Micro SD card (support max. 512 GB); NAS; SMB
Browser	IE: IE11 Chrome Firefox
Management Software	SmartPSS Lite; DSS;

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: –11° to 90°, auto flip 180°
Manual Control Speed	Pan: 240°/s Tilt: 100°/s
Telephoto Speed Limit	Yes
Positioning Accuracy	Pan: 0.1° Tilt: 0.1°
Positioning Accuracy Automatic Calibration	Yes
Remote Lens Reset	Yes
Remote PTZ Reset	Yes
Preset	300

Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Preset; Pattern; Tour; Scan
Time Task	Yes
3D Positioning	Yes
PTZ Limit	Yes
Position Display	Yes
Information Display	Yes
Time Display	Yes
PTZ Restart	Yes

Certification

Certifications	CE-LVD: EN62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B; UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14

Port

RS-485	1 (baud rate range: 1200 bps–115200 bps)
Optical Module Specification	SFP optical module, single mode, single fiber 20 KmTX-1310 nm/RX-1550 nm
Optical Fiber	FC
Optical Fiber Module Type	Gigabit SFP optical module, single mode, single fiber TX-1550 nm/RX-1310 nm
Audio Input	2 channels (terminal)
Audio Output	2 channels (terminal)
Alarm Input	7 channels in: 5mA 3V–5V DC
Alarm Output	3 channels out: 1,000mA 30V DC/500mA 50V AC
Analog Output	1 channel (CVBS output: BNC)

Power

Operating Voltage	36 VDC (±50%)
Power Supply	36 VDC
Power Consumption	Basic: 59 W (36 VDC) Max. (Basic power consumption + WDR + intelligence on + IR on + PTZ operation): 99 W (36 VDC)

Environment

Operating Temperature	–40 °C to +70 °C (–40 °F to +158 °F)
Operating Humidity	≤95%
Storage Temperature	–40 °C to +70 °C (–40°F to +158°F)
Storage Humidity	≤95%
Protection	IP66

Structure

Casing	Metal + plastic
Product Dimensions	Φ383 mm × 462 mm (15.08" × Φ18.19")
Packaging Dimensions	500 mm × 500 mm × 658 mm (19.69" × 19.69" × 25.91") (L × W × H)
Net Weight	14.4 kg (31.75 lb)
Gross Weight	20.3 kg (44.75 lb)
Installation	Wall mount; ceiling mount; pole mount
Power Adapter	Included
Lens	Included
Power Output	12 VDC power output, max. current 165 mA, peak current 700 mA

Others

Calibration	Manual/Auto

Ordering Information

Type	Model	Description
16MP Camera	DH-PSDW81642M-A180-D440-S3	16 MP Multi-Sensor 180° Panoramic PTZ Hubble WizMind Network Camera
	PSDW81642M-A180-D440-S3	16 MP Multi-Sensor 180° Panoramic PTZ Hubble WizMind Network Camera
Accessories	ADS-180EL-36-1 360180E	Power Adapter
	PBW059-00	Mount Adapter
	PFB710C-SG	Ceiling Mount Bracket
	PFB710W-SG	Wall / Pole Mount Bracket
	PFB7320W-SG	Wall / Pole Mount Bracket
	PFA153-SG	Pole Mount Bracket
	TF-P100	MicroSD Memory Card

Accessories

Included:

ADS-180EL-36-1
360180E
Power Adapter

PBW059-00
Mount Adapter

Optional:

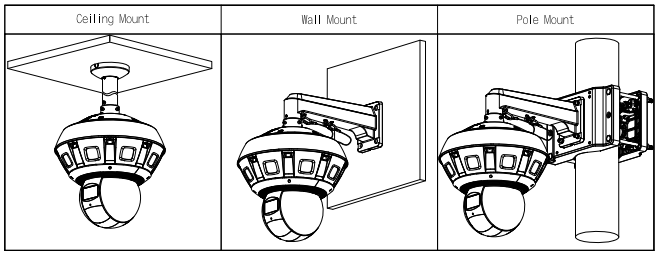
PFB710C-SG
Ceiling Mount
Bracket

PFB710W-SG
Wall/Pole Mount
Bracket

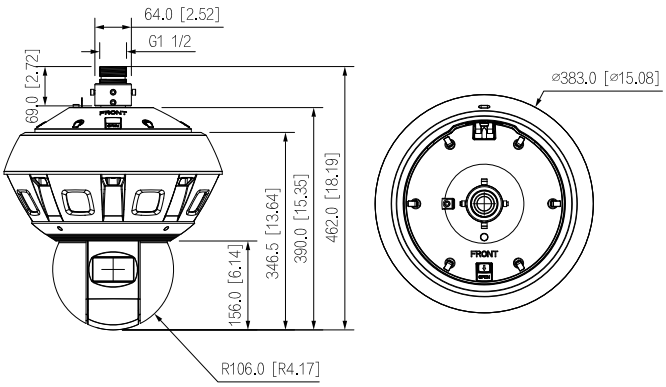
PFB7320W-SG
Wall / Pole Mount
Bracket

PFA153-SG
Pole Mount
Bracket

TF-P100
MicroSD
Memory Card



Dimensions (mm[inch])



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