dahua TECHNOLOGY

DH-IPC-HDBW2231R-ZS-S2

2MP Lite IR Vari-focal Dome Network Camera

- 2MP 1/2.8" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 2MP (1920 × 1080) @25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in IR LED, and the max. illumination distance is 40 m.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Intelligent monitoring: Intrusion, tripwire.
- Abnormality detection: Motion detection, privacy masking, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Max. 256 G micro SD card.
- 12V DC/PoE power supply.
- IP67, IK10 protection.

| 2Mp | Smart Codec | WDR | Starlight | IVS | IP67&IK10 |

IVS
With advanced video algorithm, Dahua IVS technology supports intelligent functions, such as tripwire and intrusion.

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.

Protection (IP67, IK10, Wide Voltage)
IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can works normal after soaking in 1 m deep water for 30 minutes.
IK10: The enclosure can stand the punch more than 5 times from a 5 kg hammer falling from a height of 40 cm (Impact energy is 20J).
Wide voltage: The camera allows ±30% (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Series Overview

With upgraded H.265 encoding technology, Dahua Lite series network camera has efficient video encoding capacity, which saves bandwidth and storage space. This camera adopts the latest starlight technology and displays better color image in the condition of low illumination. It supports SD card storage, dust-proof function, waterproof function and vandal-proof function, complying with the standards of IP67 and IK10 (Supported by some select models).

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.

WDR
With advanced Wide Dynamic Range (WDR) technology, Dahua network camera provides clear details in the environment of strong brightness contrast. The bright and dark area can get clear video even in high brightness environment or with backlight shadow.

Starlight
With advanced image processing technology and optical technology, Dahua Starlight technology can provide clear colorful video in the environment of low illuminance. It widely applies to various environments of low illuminance.

Technical Specification

Camera

Image Sensor	1/2.8" CMOS
Max. Resolution	1920 (H) × 1080 (V)
ROM	128 MB
RAM	128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.002 Lux@F1.6 (Color, 30 IRE) 0.0002 Lux@F1.6 (B/W, 30 IRE) 0 Lux (Illuminator on)
S/N Ratio	> 56 dB
Illumination Distance	40 m (131.23 ft) (IR)
Illuminator On/Off Control	Auto; manual
Illuminator Number	2 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–355° Tilt: 0°–75° Rotation: 0°–355°

Lens

Lens Type	Motorized vari-focal
Lens Mount	φ14
Focal Length	2.7mm–13.5mm
Max. Aperture	F1.5
Field of View	Horizontal: 108°–30° Vertical: 56°–17° Diagonal: 131°–35°'"
Iris Control	Fixed
Close Focus Distance	0.8 m (2.62 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	44.1 m (144.69 ft)	17.7 m (58.07 ft)	8.8 m (28.87 ft)	4.4 m (14.44 ft)
	T	144.8 m (475.07 ft)	57.9 m (189.96 ft)	29.0 m (95.14 ft)	14.5 m (47.57 ft)

Smart Event

IVS	Tripwire; intrusion

Video

Video Compression	H.265; H.264; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.265+; Smart H.264+
Video Frame Rate	Main stream: 1920 × 1080@1–25/30 fps Sub stream: 704 × 576@1–25 fps 704 × 480@1–30 fps *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.

Stream Capability	2 streams
Resolution	1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32 kbps–6144 kbps H.265: 12 kbps–6144 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	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)
Region of Interest (RoI)	Yes (4 areas)
Smart Illumination	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1080p resolution and lower)
Mirror	Yes
Privacy Masking	4 areas

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; defocus detection; tripwire; intrusion; voltage detection; security exception

Network

Network Port	RJ-45 (10/100 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; PPPoE; Bonjour
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI; P2P; Milestone
User/Host	20 (Total bandwidth: 48 M)
Storage	FTP; SFTP; Micro SD card (support max. 256 G); NAS
Browser	IE Chrome Firefox
Management Software	Smart PSS; DSS; DMSS
Mobile Client	IOS; Android

Certification

Certifications	CE-LVD: EN 62368-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07

Power

Power Supply	12 V DC/PoE
Power Consumption	Basic: 2 W (12 V DC); 2.7 W (PoE) Max. (ICR + H.265 + max. resolution + main stream + IR intensity + WDR + IVS + vari-focal); 5.8 W (12 V DC); 6.4 W (PoE)

Environment

Operating Temperature	−30 °C to +60 °C (−22 °F to +140 °F)
Operating Humidity	≤ 95%
Storage Temperature	−40 °C to +60 °C (−40 °F to +140 °F)
Protection	IP67; IK10

Structure

Casing	Metal
Product Dimensions	88.9 mm × Φ122 mm (3.5" × Φ4.8")
Net Weight	0.45 kg (1.0 lb)
Gross Weight	0.63 kg (1.4 lb)

Ordering Information

Type	Model	Description
2MP Camera	DH-IPC-HDBW2231R-ZS-S2	2MP Lite IR Vari-focal Dome Network Camera
Accessories (optional)	PFA137	Junction Box
	PFB203W	Wall Mount Bracket
	PFB200C	In-ceiling Mount Bracket
	PFA106	Mount Adapter
	PFB220C	Ceiling Mount Bracket
	PFA152-E	Pole Mount Bracket
	PFM321D	12V DC 1A Power Adapter
	PFM900-E	Integrated Mount Tester

Accessories

Optional:
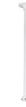
PFA137
Junction Box

PFB203W
Wall Mount Bracket

PFB200C
In-ceiling Mount Bracket

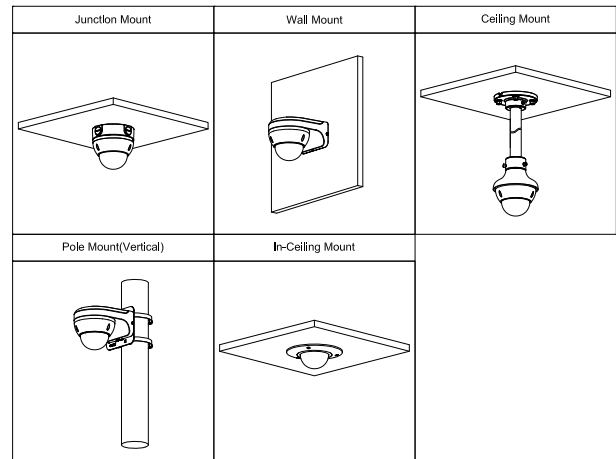PFA106
Mount Adapter

PFB220C
Ceiling Mount Bracket

PFA152-E
Pole Mount Bracket

PFM321D
12V DC 1A Power Adapter

PFM900-E
Integrated Mount Tester

Junction Mount	Wall Mount	Ceiling Mount
Pole Mount(Vertical)	In-Ceiling Mount	

Dimensions (mm[inch])

⌀122.0 [⌀4.8]
88.9 [3.5]
45.5 [1.79]
3-⌀4.5 [⌀0.18]
⌀110.0 [⌀4.33]