

# DH-HAC-HDW1509T-IL-A

## 5MP Smart Dual Light Eyeball Camera



### System Overview

The Lite Series is a great choice for consumers looking for high quality monitoring products at a reasonable price. Its low cost and high performance make it ideal for residential areas and SMB solutions. This series is equipped with a wide range of technologies, such as full-color and starlight, providing various solutions for different scenarios.

### Functions

#### Smart Dual Light

With its smart dual light mechanism, the camera automatically turns on the white light when Perimeter Protection/SMD Plus function of AI XVR detects a target in the rule area to capture clear, vivid images. When the target leaves the rule area, the camera automatically switches over from the white light to the IR light to significantly reduce light pollution.

#### Wide Dynamic Range

With its advanced Wide Dynamic Range technology (WDR), the camera captures highly detailed images and produces high-definition recordings in high-contrast lighting conditions, and in scenes with backlighting or shadows.

#### Broadcast-quality Audio

Audio signal transmission over coaxial cables is supported by the HDCVI camera. It adopts a unique audio processing and transmission technology that restores source audio and eliminates noise, ensuring the quality and reliability of the audio information that is collected. This becomes important for video surveillance applications that use audio information as a type of supplementary evidence.

#### Super Adapt

With its intelligent algorithm, the camera automatically adjusts its parameters to provide optimal performance and vivid images.

\* The parameters and datasheets below can only be applied to 1509-IL series.

\* In order to use the 5MP 16:9 and the Smart Dual Light HDCVI camera, the firmware of XVR must be upgraded to V4.001.0000004.1.R.220323 or later version.

- Max 25 fps@5MP (16:9 video output).
- 120 dB true WDR, 3D NR.
- Smart Dual Light.
- 40 m illumination distance.
- Super Adapt.
- Built-in MIC.
- 3.6 mm fixed lens (2.8 mm optional).
- CVI/CVBS/AHD/TVI switchable.
- IP67, 12 VDC.



### Advanced 3DNR

Dahua's advanced 3DNR technology reduces image noise with little to no impact on image sharpness, especially in poor lighting conditions. It detects the noise, and compares the sequential frames to effectively reduce the noise. It also makes efficient use of bandwidth, saving on storage space.

### Protection (IP67, Wide Voltage)

IP67: The camera passed a series of rigorous dust and immersion tests. Its enclosure is both dust-proof and waterproof, and can function normally while being immersed in 1 m deep water for up to 30 minutes.

Wide voltage: The camera has  $\pm 30\%$  input voltage tolerance (for some power supplies) and a wide voltage range, making it suitable for a variety of outdoor scenarios.

### 4 Signals over 1 Coaxial Cable

HDCVI technology supports 4 signals (video, audio\*, data and power) which are simultaneously transmitted over a coaxial cable. Dual-way data transmission allows the HDCVI camera to interact with the XVR to perform various actions such as sending control signals and triggering alarms. HDCVI technology also supports PoC, which makes the camera easy and quick to install.

\* Audio input is available for select HDCVI camera models.

### Long Distance Transmission

HDCVI technology provides long distance transmission in real time without transmission loss. It supports transmission distances up to 700 m for 2-MP/5-MP/8-MP HD videos through coaxial cables, and up to 300 m through UTP cables. The results were obtained and verified through rigorous testing in Dahua's test laboratory.

Technical Specification	
Camera	
Pixel	5MP
Image Sensor	5MP CMOS
Max. Resolution	2880 (H) × 1620 (V)
Scanning System	Progressive
Electronic Shutter Speed	PAL: 1/3 s–1/100000 s NTSC: 1/4 s–1/100000 s
Min. Illumination	0.001 lux@F1.0 (Color, 30 IRE) 0.0001 lux@F1.0 (B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	>65dB
Illumination Distance	IR: 40 m (131.23 ft) Warm light: 40 m (131.23 ft)
Illuminator On/Off Control	Auto; manual
Illuminator Number	2 (IR light)
	2 (Warm light)
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

Lens

Lens Type		Fixed-focal			
Mount Type		M12			
Focal Length		2.8 mm; 3.6 mm			
Max. Aperture		F1.0			
Field of View		2.8 mm: H: 111°; V: 57°; D: 131° 3.6 mm: H: 89°; V: 47°; D: 104°			
Iris Control		Fixed			
Close Focus Distance		2.8 mm: 1.5 m (4.92 ft) 3.6 mm: 2.2 m (7.22 ft)			
DORI distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	66.0 m (216.54 ft)	26.4 m (86.61 ft)	13.2 m (43.31 ft)	6.6 m (21.65 ft)
	3.6 mm	78.0 m (255.91 ft)	31.2 m (102.36 ft)	15.6 m (51.18 ft)	7.8 m (25.59 ft)

Video

Video Frame Rate	CVI: PAL: 5M@25 fps; 4M@25 fps; 1080p@25 fps NTSC: 5M@25 fps; 4M@30 fps; 1080p@30 fps; AHD: PAL: 4M@25 fps; NTSC: 4M@30 fps; TVI: PAL: 4M@25 fps; NTSC: 4M@30 fps; CVBS: PAL: 960H; NTSC: 960H
Resolution	5M (2880 × 1620); 4M (2560 × 1440); 1080p (1920 × 1080); 960H (960 × 576/960 × 480)
Day/Night	Auto (ICR)/Color/B/W

BLC	BLC; HLC; WDR; HLC-Pro
WDR	120 dB
White Balance	Auto; Area white balance
Gain Control	Auto; manual
Noise Reduction	3D NR
Defog	Electronic defog
Digital Zoom	4×
Mirror	Yes
Privacy Masking	Off/On (8 areas, rectangle)
Illumination Mode	Smart IR&WL; WL Mode; IR Mode

Certifications

Certifications	CE (EN55032:2015, EN61000-3-2:2014, EN61000-3-3:2013, EN55024:2010+A1:2015, EN55035:2017, EN50130-4:2011+A1:2014, EN62368-1:2014+A11:2017) FCC (CFR 47 FCC Part 15 subpartB, ANSI C63.4-2014) UL (UL62368-1+CAN/CSA C22.2 No.62368-1-14)
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Port

Video Output	Video output choices of CVI/TVI/AHD/CVBS by one BNC port
Audio Input	One channel built-in MIC

Power

Power Supply	12 VDC ± 30%
Power Consumption	Max 5.7 W (12 VDC, LED on)

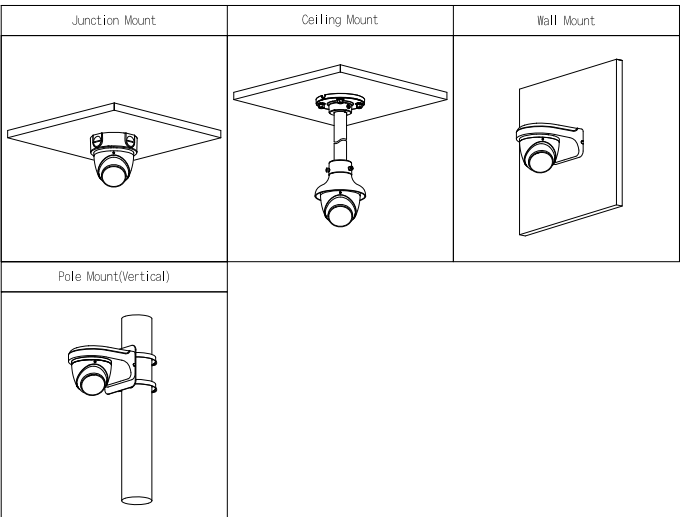
Environment

Operating Temperature	−40 °C to +60 °C (−40 °F to 140 °F)
Operating Humidity	<95% (RH), non-condensing
Storage Temperature	−40 °C to +60 °C (−40 °F to 140 °F)
Protection	IP67

Structure

Casing Material	Metal
Product Dimensions	Φ106.0 mm × 93.6 mm (Φ4.17" × 3.69")
Packaging Dimensions	148 mm × 139 mm × 137 mm (5.83" × 5.47" × 5.39")
Net Weight	0.49 kg (1.08 lb)
Gross Weight	0.66 kg (1.46 lb)
Installation	Wall mount; ceiling mount; vertical pole mount


Ordering Information		
Type	Part Number	Description
SMP Camera	DH-HAC-HDW1509TP-IL-A	5MP Smart Dual Light Eyeball Camera, PAL
	DH-HAC-HDW1509TN-IL-A	5MP Smart Dual Light Eyeball Camera, NTSC
Accessories (Optional)	PFA130-E	Water-proof Junction Box
	PFB204W	Wall Mount Bracket
	PFA106 + PFB220C	Adapter Plate of Mini Dome & Eyeball Camera + Ceiling Mount Bracket of Mini Dome & Eyeball Camera
	PFA152-E + PFB204W	Pole Mount Bracket + Wall Mount Bracket
	PFM800-E	Passive HDCVI Balun
	PFM321D	12V 1A Power Adapter
	PFM904	Integrated Mount Tester




Dimensions (mm[inch])

Accessories


Optional:




PFA130-E  
Water-proof  
Junction Box




PFB204W  
Wall Mount  
Bracket




PFA106 + PFB220C  
Adapter Plate of  
Mini Dome & Eyeball  
Camera + Ceiling  
Mount Bracket of  
Mini Dome & Eyeball  
Camera




PFA152-E + PFB204W  
Passive HDCVI  
Balun



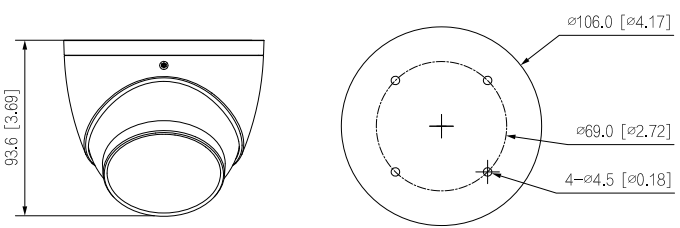
PFM800-E  
Passive HDCVI  
Balun



PFM321D  
12V 1A Power  
Adapter



PFM904  
Integrated Mount  
Tester



# DH-XVR5104HS-4KL-I3

4 Channels Penta-brid 4K-N/5MP Compact 1U 1HDD WizSense Digital Video Recorder



WizSense

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

Dahua Technology, a world-leading video-centric smart IoT solution and service provider, debuted its new XVR series, XVR5000-4KL-I3 Series featuring max.full-channel SMD Plus to benefit customers from AI upgrade (The number of channels differs depending on the model. Please refer to the specifications below for information on the number of channels.). This series has been developed to reduce false-alarm rates and the cost of human surveillance, thus bringing great value to customers in search of products with accurate human/vehicle alarm to raise the security level of various indoor and outdoor facilities.

## Functions

### 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.

\*The Face Recognition is conflicted with SMD Plus and Perimeter Protection.

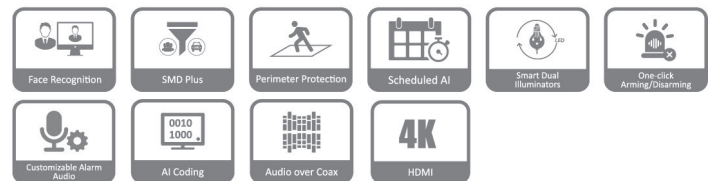
### SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improves alarm accuracy.

- H.265+/H.265 dual-stream video compression
- Supports all-channels AI Coding
- Supports HDCVI/AHD/TVI/CVBS/IP video inputs
- Max 8 channels IP camera inputs, each channel up to 8MP; Max 64 Mbps incoming bandwidth
- Up to 4 channels video stream (analog channel) Perimeter Protection
- Up to 4 channels video stream (analog channel) SMD Plus
- Up to 1 channel video stream (analog channel) human face recognition
- IoT & POS functionalities



### Scheduled AI

This technology allows multiple AI functions to be set for one channel based on time frames, eliminating the need to manually configure the system to switch between functions each time. Scheduled AI greatly increases efficiency and widens the number of scenarios that the device can be used in.

### Smart Dual Illuminators

With Smart Dual Illuminators technology, you can select Smart Illumination Mode for the system to automatically switch between IR mode and white light mode. It allows white light to be turned on when a target is detected by the SMD Plus/Perimeter Protection function of AI-enabled XVR. This significantly reduces light pollution at night. Together with other modes, including IR Mode and White Light Mode, the smart dual illumination technology can meet the requirements of a wide variety of scenes.

### One-click Arming/Disarming

With just one click, you can enable or disable alarm linkages to show messages, send emails, output audio alarms and more, through the mobile app and platform.

### Customizable Alarm Audio

Designed for your convenience, the TiOC alarm can be customized to meet your needs. It is flexible, allowing you to directly upload your customized audio through the mobile app and XVR.

### AI Coding

Compared with H.265/H.264, AI coding can reduce more than 50% bit rate and storage requirements without loss of decoding compatibility, providing clear human and vehicle details.

### Audio over Coax

The integrated design can reduce wiring troubles which makes it much more cost-effective and convenient for installation.

## Technical Specification

### System

Main Processor	Industrial-grade processor
Operating System	Embedded Linux
Operating Interface	Web; Local GUI

### Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	Advanced Model : 2 channels, 10 IVS for each channel General Model : 4 channels, 10 IVS for each channel
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### Face Detection

Face Attributes	Gender; age group; glasses; expressions; face mask; beard
Face Detection Performance of AI by Recorder (Number of Channels)	1 channel (up to 8 face images/s)

### Face Recognition

Face Database Capacity	Up to 10 face databases and 20,000 images.
Face Recognition Performance of AI by Recorder (Number of Channels)	1 channel

### SMD Plus

SMD Plus by Recorder	4 channels: Secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change
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### Audio and Video

Analog Camera Input	4 BNC ports, CVI access by default, supports HDCVI/AHD/TVI/CVBS auto-detect
Camera Input	1. CVI: 4K, 6 MP, 5 MP, 4 MP, 1080p@25/30 fps, 720p@50/60 fps, 720p@25/30 fps. 2. TVI: 4K, 5 MP, 4 MP, 3 MP, 1080p@25/30 fps, 720p@25/30 fps. 3. AHD: 4K, 5 MP, 4 MP, 3 MP, 1080p@25/30 fps, 720p@25/30 fps.
IP Camera Input	Up to 8 channels of IPC access 4 IP channels by default + 4 channels (analog channels are converted to IP channels) incoming bandwidth: 64 Mbps, recording bandwidth: 64 Mbps and outgoing bandwidth: 64 Mbps *After IP channels are added beyond the existing channels, the AI Function (IVS, SMD, FACE) will be disabled.
Encoding Capacity	Main stream: All channel 4K@ (1 fps~7 fps); 6MP@ (1 fps~10 fps); 5MP@ (1 fps~12 fps); 4K-N, 4MP, 3MP@ (1 fps~15 fps); 4M-N, 1080p, 720p, 960H, D1, CIF@ (1 fps~25/30 fps); Sub stream: 960H@ (1 fps~15 fps); D1,CIF@ (1 fps~25/30 fps)
Dual-stream	Yes
Video Bit Rate	32 kbps~6144 kbps
Audio Sampling	8 kHz, 16 bit
Audio Bit Rate	64 kbps
Video Output	1 HDMI, 1 VGA VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720
Multi-screen Display	When IP extension mode not enabled: 1/4 When IP extension mode enabled: 1/4/8/9

Third-party Camera Access	ONVIF; Panasonic; Sony; Axis; Arecont; Pelco; Canon; Samsung
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### Compression Standard

Video Compression	AI Coding; H.265+; H.265; H.264+; H.264
Audio Compression	G.711a; G.711u; PCM

### Network

Network Protocol	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; P2P
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 21.12; CGI Conformant
Browser	Chrome IE9 or later Firefox
Network Mode	Single-address mode

### Recording Playback

Record Mode	General, motion detection; intelligent; alarm; POS
Recording Playback	1/4
Backup Method	USB device and network
Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection)

### Alarm

General Alarm	Motion detection, video loss, tampering
Anomaly Alarm	No disk, disk error, low space, offline, ip conflict, MAC conflict
Intelligent Alarm	Face detection, face recognition, perimeter protection
Alarm Linkage	Record, snapshot (panoramic), IPC external alarm output, access controller, voice prompt, buzzer, log, preset, email

### Ports

Audio Input	1-channel RCA 4-channel BNC (Coaxial Audio)
Audio Output	1-channel RCA
Two-way Talk	Yes (share the same audio input with the first channel)
HDD Interface	1 SATA port, up to 16 TB. The maximum HDD capacity varies with environment temperature.
RS-485	1 port, for PTZ control
USB	2 USB ports (USB 2.0)
HDMI	1
VGA	1
Network Port	1 (10/100 Mbps Ethernet port, RJ-45)

### General

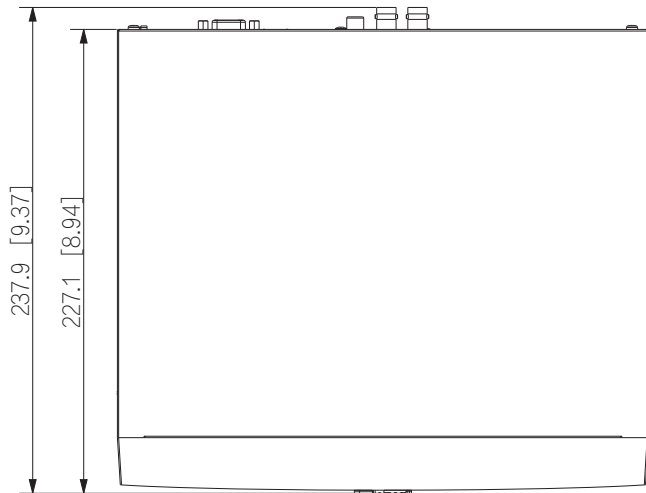
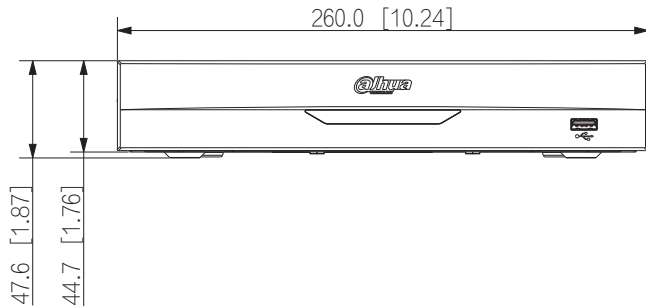
Power Supply	12 VDC, 2 A
Power Consumption	<7 W
Net Weight	0.53 kg (1.17 lb)
Gross Weight	1.07 kg (2.36 lb)
Product Dimensions	260.0 mm × 237.9 mm × 47.6 mm (10.24" × 9.37" × 1.87") (W × D × H)

Packaging Dimensions	333.0 mm × 315.0 mm × 89.0 mm (13.11" × 12.40" × 3.50") (W×D×H)
Operating Temperature	-10 °C to +55 °C (+14 °F to +131 °F)
Operating Humidity	0%–90% (RH)
Installation	Desktop
Certifications	FCC: Part 15 Subpart B CE: CE-LVD: EN 60950-1/IEC 60950-1 CE-EMC: EN 61000-3-2; EN 61000-3-3; EN 55032; EN50130; EN 55024

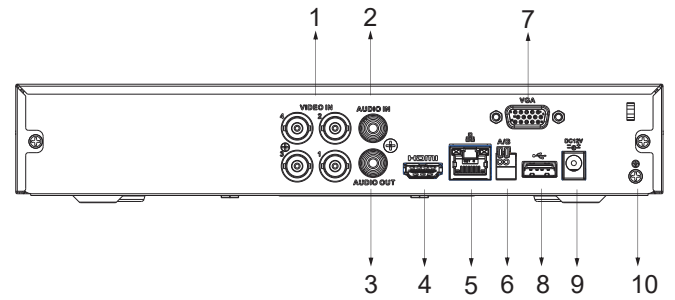
### Ordering Information

Type	Model	Description
4 Channels WizSense XVR	DH-XVR5104HS-4KL-I3	Compact 1U WizSense Digital Video Recorder

### Dimensions (mm[inch])



### Panels



- |                            |                           |
|----------------------------|---------------------------|
| 1 VIDEO IN                 | 2 AUDIO IN, RCA Connector |
| 3 AUDIO OUT, RCA Connector | 4 HDMI Port               |
| 5 Network Port             | 6 RS-485 Port             |
| 7 VGA Port                 | 8 USB Port                |
| 9 Power Input              | 10 Ground                 |