

# DH-HAC-HDW2241TL

## 2MP Starlight HDCVI IR Eyeball Camera



- Starlight, 120dB true WDR, 3DNR
- Max.30fps@1080P
- HD/SD output switchable
- 3.6mm fixed lens (2.8mm optional)
- Max. IR length 30m, Smart IR
- IP67, DC12V±30%



### System Overview

Experience 1080P full HD video and the simplicity of reusing existing coaxial infrastructure with HDCVI. The Starlight HDCVI camera with 120dB true WDR presents a high quality image with rich details even in extreme low-light conditions. It offers various motorized/fixed lens models with a multi-language OSD and HD/SD switchable output. Its superior image performance and starlight feature makes the camera an ideal choice for mid to large-size businesses and projects where both highly reliable surveillance and construction flexibility are needed.

### Functions

#### 4 Signals over 1 Coaxial Cable

HDCVI technology supports 4 signals to be transmitted over 1 coaxial cable simultaneously, i.e. video, audio\*, data and power. Dual-way data transmission allows the HDCVI camera to interact with the HCVR, such as sending control signal or triggering alarm. Moreover, HDCVI technology supports PoC for construction flexibility.

\*Audio input is available for some models of HDCVI cameras.

#### Long Distance Transmission

HDCVI technology guarantees long-distance and real-time transmission without any loss. It supports up to 800m for 1080P Full HD video via coaxial cable, and up to 300m via UTP cable.\*

\*Actual results verified by real-scene testing in Dahua's test laboratory.

#### Simplicity

HDCVI technology inherits the born feature of simplicity from traditional analog surveillance system, making itself a best choice for investment protection. HDCVI system can seamlessly upgrade the traditional analog system without replacing existing coaxial cabling. The plug and play approach enables full HD video surveillance without the hassle of configuring a network.

#### Starlight

With the adoption of high performance sensor, the camera is able to provide incomparable performance even under extreme lowlight environment. The starlight feature allows more details to be captured and accurate color to be recognized at night or in scenes with limited illumination.

#### Multiple-formats

The camera supports multiple video formats including HDCVI, CVBS, and other two common HD analog formats in the market. A DIP switch located on the cable allows you to quickly toggle formats, further simplifying installation and debugging. This feature makes the camera compatible with not only XVRs, but also most existing HD/SD DVRs.

#### Wide Dynamic Range

Embedded with industry leading wide dynamic range (WDR) technology, vivid pictures are achieved even in the most intense contrast lighting conditions. True WDR (120dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

#### Advanced 3DNR

3DNR is noise reduction technology that detects and eliminates random noises by comparing two sequential frames. Dahua's advanced 3DNR technology allows remarkable noise reduction with little impact to sharpness, especially under limited lighting condition. Besides, the advanced 3DNR effectively decreases the band width and saves the storage space.

#### Protection

The camera's outstanding reliability is unsurpassed due to its rugged design. The camera is protected against water and dust with IP67 ranking, making it suitable for indoor or outdoor environments. Supporting ±30% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its 4KV lightning rating provides protection against the camera and its structure from the effects of lightning.

### Technical Specification

#### Camera

Image Sensor	1/2.8 inch CMOS
Effective Pixels	1920 (H)×1080 (V), 2MP
Electronic Shutter Speed	PAL: 1/3s–1/100000s NTSC: 1/4s–1/100000s
Minimum Illumination	0.004Lux/F2.0, 30IRE, 0Lux IR on
Fill Light Kind	IR
Fill Light Working Distance	30 m (98 ft)
IR On/Off Control	Auto; manual
IR LED Number	1
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

#### Lens

Lens Type	Fixed-focal				
Mount Type	M12				
Focal Length	2.8mm; 3.6mm				
Max. Aperture	F2.0				
Angle of View	2.8mm: 121° x 102° x 57° (diagonal x horizontal x vertical) 3.6mm: 103.6° x 86.9° x 46.3° (diagonal x horizontal x vertical)				
Iris Type	Fixed iris				
Close Focus Distance	500 mm/900 mm				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8mm	38.6 m (127 ft)	15.4 m (51 ft)	7.7 m (25 ft)	3.9 m (13 ft)
	3.6mm	55.2 m (181 ft)	22.1 m (73ft)	11.0 m (36ft)	5.5 m (18ft)

#### Video

Frame Rate	CVI: PAL: 1080P@25fps, 720P@25fps, 720P@50fps; NTSC: 1080P@30fps, 720P@30fps, 720P@60fps AHD: PAL: 1080P@25fps, 720P@25fps; NTSC: 1080P@30fps, 720P@30fps TVI: PAL: 1080P@25fps, 720P@25fps, 720P@50fps; NTSC: 1080P@30fps, 720P@30fps, 720P@60fps CVBS PAL: 960 × 576H; NTSC: 960 × 480H
Resolution	1080P (1920×1080); 720P (1280×720); 960H (704×576/704×480)
BLC	BLC/HLC/WDR
WDR	120dB/WDR
White Balance	Auto; manual
Gain Control	Auto; manual
Noise Reduction	2D & 3D NR
Smart IR	Yes

Electronic Defog	Yes
Digital Zoom	4×
Mirror	Off/On
Privacy Masking	Off/On (8 area, rectangle)

#### Certifications

Certifications	CE (EN55032, EN55024, EN50130-4) FCC (CFR 47 FCC Part 15 subpartB, ANSI C63.4-2014) UL (UL60950-1+CAN/CSA C22.2 No.60950-1)
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#### Port

Video Output	Video output choices of CVI/TVI/AHD/CVBS by one BNC port
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#### Power

Power Supply	12V ±30% DC
Power Consumption	Max 4.1W (12V DC, IR on)

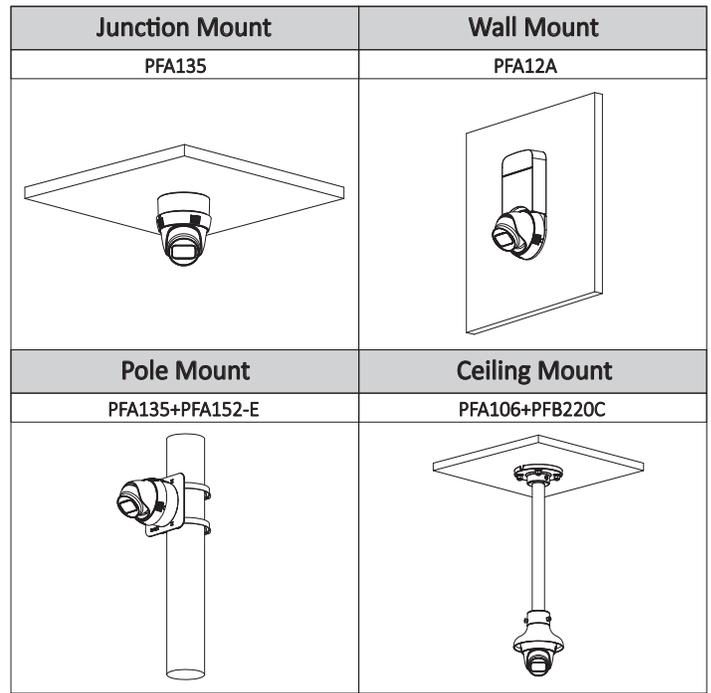
#### Environment

Operating Temperature	-40°C to +60°C (-40°F to +140°F); <95% (non-condensation)
Storage Temperature	-40°C to +60°C (-40°F to +140°F); <95% (non-condensation)
Protection Grade	IP67

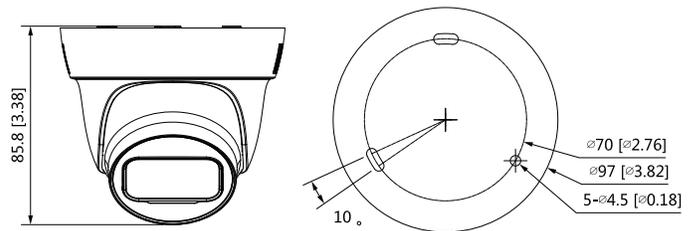
#### Structure

Casing	Cover: plastic; inner core: metal + plastic
Dimensions	Φ97mm×85.8mm (Φ3.82"×3.38")
Net Weight	0.23kg (0.51lb)
Gross Weight	0.29kg (0.64lb)

Ordering Information		
Type	Part Number	Description
2MP Camera	DH-HAC-HDW2241TLP-0280B	2MP Starlight HDCVI IR Eyeball Camera, PAL
	DH-HAC-HDW2241TLP-0360B	
	DH-HAC-HDW2241TLN-0280B	2MP Starlight HDCVI IR Eyeball Camera, NTSC
	DH-HAC-HDW2241TLN-0360B	
Accessories	PFA130-E	Water-proof Junction Box
	PFA12A	Plastic Junction Box
	PFA135	Water-proof Junction Box
	PFA135+PFA152-E	Pole Mount
	PFM820	UTC
	PFM800-4K	1-CH Passive Video Balun
	PFM900-E	Integrated Mount Tester
	PFM321D	DC12V1A Power Adapter
PFM300	DC12V2A Power Adapter	



**Dimensions (mm[inch])**



**Accessories**

**Optional:**

