

DH-HAC-HDW2241TLM-A

2MP Starlight HDCVI IR Eyeball Camera



* The parameters and datasheets below can only be applied to 2241-S2 series.

- Max 30 fps@1080P
- Starlight, 130 dB true WDR, 3D NR
- 3.6 mm fixed lens (2.8 mm optional)
- CVI/CVBS/AHD/TVI switchable
- Super Adapt
- Built-in mic
- Max. IR length 30 m, Smart IR
- IP67, DC12V



System Overview

Pro Series is a perfect choice for SMB solutions and projects where both high reliability and flexibility are required. All cameras are equipped with Starlight feature, 120dB true WDR and 3DNR, and are able to provide clear images and rich details even under tough lighting conditions.

Functions

Starlight

With the adoption of large sized high performance sensor and large aperture lens, 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.

Broadcast-quality Audio

Audio information is used as supplementary evidence in video surveillance applications. The HDCVI camera supports audio signal transmission over coaxial cable. In addition, it adopts unique audio processing and transmission technology that best restores source audio and eliminates noise, guaranteeing the quality and effectiveness of collected audio information.

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

Wide Dynamic Range

With advanced Wide Dynamic Range (WDR) technology, Dahua HDCVI 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.

Super Adapt

Embedded with intelligent algorithm, for changing external environment, camera can automatically adjust parameters to present the optimal image, and it solves the trouble of configuration.

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.

Smart Illumination

The camera is designed with IR illumination for best lowlight performance. Smart IR is a technology to ensure brightness uniformity in B/W image under low illumination. Dahua's unique Smart IR adjusts to the intensity of camera's infrared LEDs to compensate for the distance of an object, and prevents IR LEDs from overexposing images as the object come closer to the camera.

Protection (IP67, 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.

Wide voltage: The camera allows $\pm 30\%$ (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Technical Specification

Camera

Image Sensor	2MP CMOS
Max. Resolution	1920 (H) × 1080 (V)
Pixel	2MP
Scanning System	Progressive
Electronic Shutter Speed	PAL: 1/25 s–1/100000 s NTSC: 1/30 s–1/100000 s
S/N Ratio	> 65 dB
Min. Illumination	0.001 Lux/F1.6, 30 IRE, 0 Lux IR on
Illumination Distance	> 65 dB
Illuminator On/Off Control	30 m (98.4 ft)
Illuminator Number	1 (IR light)
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

Lens

Lens Type	Fixed lens				
Mount Type	M12				
Focal Length	2.8 mm; 3.6 mm;				
Max. Aperture	F1.6				
Field of View	2.8 mm:H:109°; V:58°;D:127° 3.6 mm:H:86°; V:46°;D:101°				
Iris Type	Fixed				
Close Focus Distance	2.8 mm:0.7 m (2.3 ft) 3.6 mm:1.1 m (3.6 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	42.2 m (138.5 ft)	16.9 m (55.4 ft)	8.4 m (27.6 ft)	4.2 m (13.8 ft)
	3.6 mm	53.7 m (176.2 ft)	21.5m (70.5 ft)	10.7 m (35.1 ft)	5.4 m (17.7 ft)

Video

Frame Rate	CVI: PAL:1080P@25fps; NTSC:1080P@30fps; AHD: PAL:1080P@25fps; NTSC:1080P@30fps; TVI: PAL:1080P@25fps; NTSC:1080P@30fps; CVBS: PAL:960×576H; NTSC:960×480H;
Resolution	1080P (1920×1080) 960H (960× 576/960×480)
Day/Night	Auto switch by ICR
BLC	BLC/HLC/WDR
WDR	130dB
White Balance	Auto; Area WB
Gain Control	Auto/Manual

Noise Reduction	3D NR
Smart IR	Yes
Mirror	Off/On
Privacy Masking	Off/On (8 area, rectangle)
Mirror	Off/On
Privacy Masking	Off/On (8area, rectangle)

Certifications

Certifications	CE (EN55032, EN55024, EN50130-4, EN62368-1) 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 (DIP Switch)
Audio Input	One channel built-in mic

Power

Power Supply	12V ±30% DC
Power Consumption	Max 3.1W (12V DC, IR on)

Environment

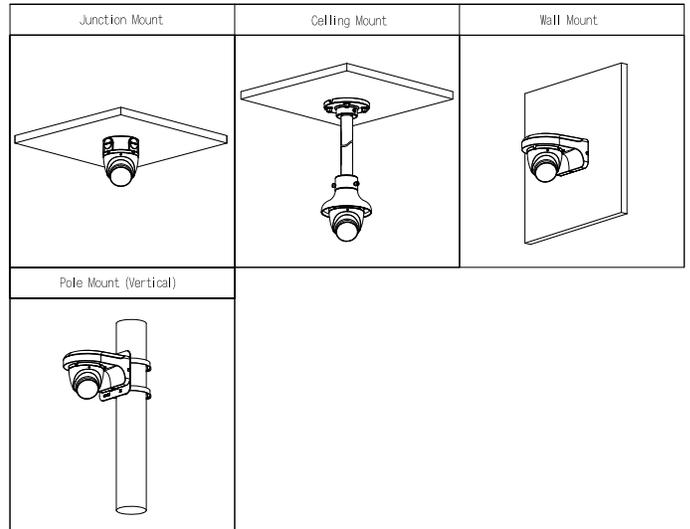
Operating Temperature	–40°C to +60°C (–40°F to 140°F); < 95% (non-condensation)
Storage Temperature	–40°C to +60°C (–40°F to 140°F); < 95% (non-condensation)
Protection Grade	IP67

Structure

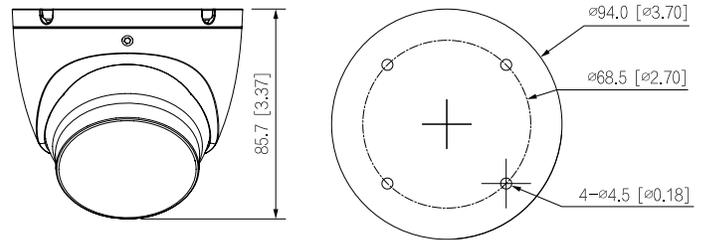
Casing	Metal throughout the whole casing
Camera Dimensions	φ94.0 mm × 85.7 mm (φ3.70" × 3.37")
Net Weight	0.33 kg (0.73 lb)
Gross Weight	0.47 kg (1.04 lb)

Ordering Information

Type	Part Number	Description
2MP Camera	DH-HAC-HDW2241TLM-P-A	2MP Starlight HDCVI IR Eyeball Camera, PAL
	DH-HAC-HDW2241TLMN-A	2MP Starlight HDCVI IR Eyeball Camera, NTSC
Accessories	PFA13A-E	Junction box
	PFB205W	Wall Mount Bracket
	PFA152-E	Pole Mount Bracket
	PFA106	Adapter plate
	PFB220C	Ceiling Mount Bracket
	PFM800-E	Passive HDCVI Balun
	PFM321	12V 1A Power Adapter
	PFM904	Integrated Mount Tester



Dimensions (mm[inch])



Accessories

Optional:



PFA13A-E
Junction box



PFB205W
Wall Mount Bracket



PFA152-E
Pole Mount Bracket



PFA106
Mount Adapter



PFB220C
Ceiling Mount Bracket



PFM800-E
Passive HDCVI Balun



PFM321
12V 1A Power Adapter



PFM904
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