4K HDCVI Fixed Eyeball Camera

8MP IR Eyeball Camera

- 1/2.7-in. 8MP Progressive-scan CMOS Sensor
- 3840 x 2160 at 15 fps Maximum Resolution
- 2.8 mm Fixed Lens
- True Wide Dynamic Range (120 dB) and 2D/3D Noise Reduction
- HDCVI, AHD, TVI, or CVBS Output, Switchable
- Maximum IR Length 30 m (98.43 ft), Smart IR
- IP67 Ingress Protection
- Five-year Warranty*

System Overview

Experience the superior clarity of Dahua's Ultra 4K HDCVI cameras for vast coverage and superior image details. Dahua Ultra 4K HDCVI series leverages existing coax infrastructures to deliver forensic-level images seamlessly and over long distances. The 4K HDCVI camera offers multiple output formats that are easily switchable. The camera is suitable for most applications, offering True Wide Dynamic Range for difficult lighting conditions, input voltage tolerance for inconsistent power supplies, and IP67 certification for operation in harsh outdoor environmental conditions.

Functions

Long Distance Transmission

HDCVI technology guarantees real-time transmission over long distances without loss of video quality. HDCVI cameras provide the same resolution as most IP network camera systems using existing RG-59, RG-6, or CAT 6 UTP cabling.

Simplicity

HDCVI technology seamlessly integrates traditional analog security systems with upgraded, high-quality HD video, making it the best choice to protect security investments. The plug and play approach enables full HD video security without the hassles of configuring a network.

Multiple-format Support

The camera supports multiple video formats including, HDCVI, CVBS, AHD, and TVI. The camera can switch between these four formats via the OSD menu or the switch located on the video output cable, making the camera compatible with not only HDCVI DVRs but also most existing HD/SD DVRs.

True Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) 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 delivers remarkable noise reduction with little impact to sharpness, especially under limited lighting condition. 3DNR, in addition, effectively decreases the bandwidth and saves storage space.

Protection

The camera allows for ±30% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 4KV lightning rating provides effective protection for both the camera and its structure against lightning, and its IP67 ingress protection make it the choice for installation in even the most unforgiving environments.

Technical Specification

Camera

Image Sensor	1/2.7-in. CMOS Sensor
Effective Pixels	3840 (H) x 2160 (V), 8MP
Scanning System	Progressive
Electronic Shutter Speed	1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.03 lux at F2.0, 30 IRE 0 lux with IR on
S/N Ratio	> 65 dB
IR Distance	Up to 30.0 m (98.43 ft)
IR On/Off Control	Auto, Manual
IR LEDs	One (1)

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	2.8 mm
Maximum Aperture	F2.0
Angle of View	Horizontal: 105° Vertical: 56° Diagonal: 125°
Iris Type	Fixed
Close Focus Distance	1000.0 mm (3.28 ft)

Pan / Tilt / Rotation

Pan/Tilt/Rotation	Pan: 0° to 360° Tilt: 0° to 78° Rotation: 0° to 360°

DORI Distances[1]

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
75 m (246 ft)	30 m (98 ft)	15 m (49 ft)	8 m (26 ft)

Video

Resolution Output	8 MP (3840 x 2160), 6MP (2880x1920), 5 MP (2880 x 1620), 4 MP (2560 x 1440),1080P (1920 x 1080), 720P (1280x720), 960 H (960 × 480), D1 (704x480), CIF (352x240)	
Frame Rate	HDCVI	8MP at 15 fps 5MP at 20 fps 4MP at 30 fps
	TVI	8MP at 15 fps 5MP at 20 fps 4MP at 30 fps
	AHD	8MP at 15 fps 5MP at 20 fps 4MP at 30 fps
	CVBS	NTSC
Video Output	One (1) BNC Output, HDCVI, AHD, TVI, CVBS switchable	

Video Transmission[2]	RG-59/U Coax	720p: 800 m (2624.67 ft) 1080p: 500 m (1640.42 ft) 4K: 500 m (1640.42 ft)
	RG-6/U Coax	720p: 1200 m (3937.01 ft) 1080p: 800 m (2624.67 ft) 4K: 700 m (2296.59 ft)
	CAT 6 UTP (balun required)	720p: 450 m (1476.38 ft) 1080p: 300 m (984.25 ft) 4K: 300 m (984.25 ft)
Day/Night		Auto (ICR)
OSD Menu		Multi-language
BLC Mode		BLC, HLC, True WDR
WDR		120 dB
Gain Control		Auto, Manual
Noise Reduction		2D, 3D
White Balance		Auto, Manual
Advanced Features		Smart IR, Electronic Defog

Certifications

CE	EN55032 EN55024 EN50130-4
Safety	UL60950-1 CAN/CSA C22.2 No.60950-1
Electromagnetic Compatibility (EMC)	CFR 47 FCC Part 15 subpart B ANSI C63.4-2014

Electrical

Power Supply	12 VDC ± 30%
Power Consumption	Maximum 5.2 W (12 VDC, IR on)

Environmental

Operating Conditions	−40° C to +60° C (−22° F to +140° F) Less than 95% RH, non-condensing
Storage Conditions	−40° C to +60° C (−22° F to +140° F) Less than 95% RH, non-condensing
Ingress Protection	IP67

Construction

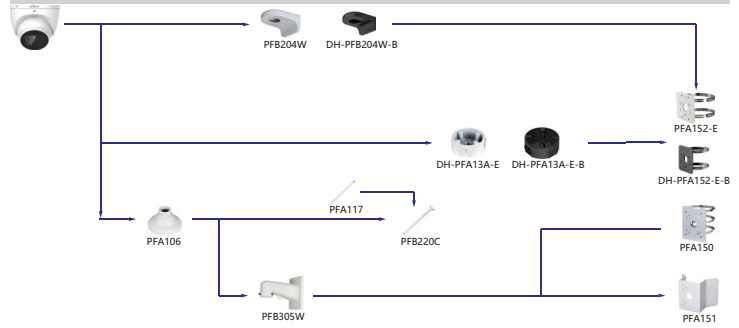|	
Casing	Metal
Dimensions	ø94.0 mm x 85.60 mm (ø3.70 in. x 3.37 in.)
Net Weight	0.31 kg (0.68 lb)
Gross Weight	0.44 kg (0.97 lb)

1. The DORI distance is a measure of the general proximity for a specific classification to help pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4 , the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.
2. Transmission distance results verified by real-scene testing in Dahua's test laboratory. Actual transmission distances may vary due to external influences, cable quality, and wiring structures.
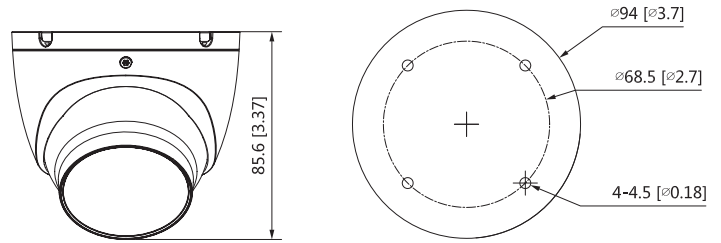
Ordering Information

Type	Part Number	Description
4K HDCVI Camera	A81AJ22	8MP IR HDCVI IR 2.8 mm Fixed Lens Eyeball Camera, True WDR
Accessories, optional	PFA106	Mount Adapter (For use with PFB305W wall mount)
	DH-PFA13A-E	Junction Box (For use alone or with PFA152-E pole mount)
	PFA150	Pole Mount (For use with PFA106 and PFB305W)
	PFA151	Corner Mount (For use with PFA106 and PFB305W)
	PFA152-E	Pole Mount (For use with PFA13A-E or PFB204W)
	PFB204W	Wall Mount
	PFB220C	Ceiling Mont (For use with PFA106)
	PFB305W	Wall Mount (For use with PFA106)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
	PFM800-4K	4K Passive HDCVI Balun

Mounting Diagram

Dimensions (mm/in.)

85.6 [3.37]

⌀94 [⌀3.7]
⌀68.5 [⌀2.7]
4-4.5 [⌀0.18]

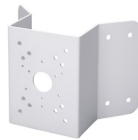## Accessories

Optional:

PFA106
Mount Adapter

DH-PFA13A-E
Junction Box

PFA150
Pole Mount

PFA151
Corner Mount

PFA152-E
Pole Mount

PFB204W
Wall Mount

PFB220C
Ceiling Mount

PFB305W
Wall Mount

DH-PFM321D-US
12 VDC, 1 A Power Adapter

DH-PFM800-4K
4K Passive HDCVI Balun

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