DAHUA
TECHNOLOGY

2 MP HDCVI Motorized Lens Bullet Camera
2 MP HDCVI Starlight Bullet Camera

HDCVI

- 2 MP at 30 fps Maximum Resolution
- HD and SD Switchable Output
- Starlight Technology for Ultra-low Light Sensitivity
- Supports Multiple Video Formats: HDCVI, CVBS, AHD and TVI
- 2.7 mm to 13.5 mm Motorized Optical Zoom Lens
- Maximum IR Length 60 m (197 ft) with Smart IR
- IP67 Environmental Protection
- Designed for Extreme Temperature Environments
- Five-year Warranty*

Pro Series	1080p FULL HD	Starlight	WDR	60m IR	AC 24V DC 12V	IP67

System Overview

Experience the superior clarity of Full HD 1080p video while leveraging your existing coaxial infrastructure. The camera features Starlight Technology and True Wide Dynamic Range to produce high-quality images under extreme low-light conditions. The camera provides multiple out formats for easy integration. The outstanding performance and low price make the camera an ideal choice for small businesses that value surveillance.

Functions

Starlight Technology
For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing details in low light down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

Three Signals over a Single Coaxial Cable
HDCVI technology simultaneously transmits video, power, and data over a single coaxial cable. Dual-way data transmission allows the HDCVI camera to communicate with an HCVR to send control signals or to trigger alarms. HDCVI along with PoC technology delivers power[1] to devices at the edge, simplifying installation.

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 surveillance 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 surveillance without the hassles of configuring a network.

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.

Smart IR
With IR illumination, detailed images can be captured in low light or total darkness. The camera's Smart IR technology adjusts the intensity of camera's infrared LEDs to compensate the distance of an object. Smart IR technology prevents IR LEDs from whitening out images as they come closer to the camera. The camera's integrated infrared illumination provides high performance in extreme low-light environments up to 60 m (197 ft).

Multi-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 via a UTC controller (PFM820), making the camera compatible with not only HDCVI DVRs but also most existing HD/SD DVRs.

Protection
The camera's outstanding reliability is unsurpassed due to its rugged design. The camera is protected against water and dust with IP67, making it suitable for indoor or outdoor environments.

With a working temperature range of –40 °C to +60 °C (–40 °F to +140 °F), the camera is designed for extreme temperature environments. Supporting ±25% 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.

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1. Requires PoC Transceivers for each channel and an external power supply for each transceiver.

*Warranty applies to products sold through an authorized Dahua Dealer.

Technical Specification

Camera

Image Sensor	1/2.8-in. CMOS
Effective Pixels	1937(H) x 1097(V), 2.1 MP
Scanning System	Progressive
Electronic Shutter Speed	1/30 s to 1/100000 s
Minimum Illumination	Color: 0.005 Lux at F1.3, 30 IRE 0 Lux (with IR on)
S/N Ratio	More than 65 dB
IR Distance	Up to 60 m (196.85 ft)
IR On/Off Control	Auto, Manual
IR LEDs	Four (4)

Lens

Lens Type	Motorized Lens / Fixed Iris
Mount Type	Board-in
Focal Length	2.7 mm to 13.5 mm
Max Aperture	F1.3
Horizontal Angle of View	99° to 29°
Focus Control	Auto, Manual
Close Focus Distance	200 mm (7.87 in.)

DORI[2] Distance

	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
Wide	47 m (154 ft)	19 m (62 ft)	9 m (30 ft)	5 m (16 ft)
Telephoto	153 m (502 ft)	61 m (200 ft)	31 m (102 ft)	15 m (49 ft)

Pan / Tilt / Rotation

Range	Pan: 0° to 360° Tilt: 0° to 87° Rotation: 0° to 360°

Video

Resolution	2 MP (1920 x 1080)
Frame Rate	2 MP at 30 fps 720p at 30 fps
Video Output	One (1) BNC HDCVI High-definition Channel, or One (1) BNC CVBS, AHD, or TVI Channel, switchable
Video Transmission[3]	RG-59/U Coax	720p: 800 m (2624.67 ft) 1080p: 500 m (1640.42 ft)
	RG-6/U Coax	720p: 1200 m (3937.01 ft) 1080p: 800 m (2624.67 ft)
	CAT 6 UTP (balun required)	720p: 450 m (1476.38 ft) 1080p: 300 m (984.25 ft)

Day/Night	Auto (ICR), Manual
OSD Menu	Multi-language
BLC Mode	BLC, HLC, WDR
WDR	True WDR (120 dB)
Gain Control	AGC
Noise Reduction	2D/3D
White Balance	Auto, Manual
Smart IR	Auto, Manual

Certifications

Safety	UL60950-1+CAN/CSA C22.2 No.60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 FCC Part 15 Subpart B ANSI C63.4-2014

Electrical

Power Supply	24 VAC ±25% or 12 VDC ±25%
Power Consumption	Maximum 14.1 W (at 12 VDC with IR on)

Environmental

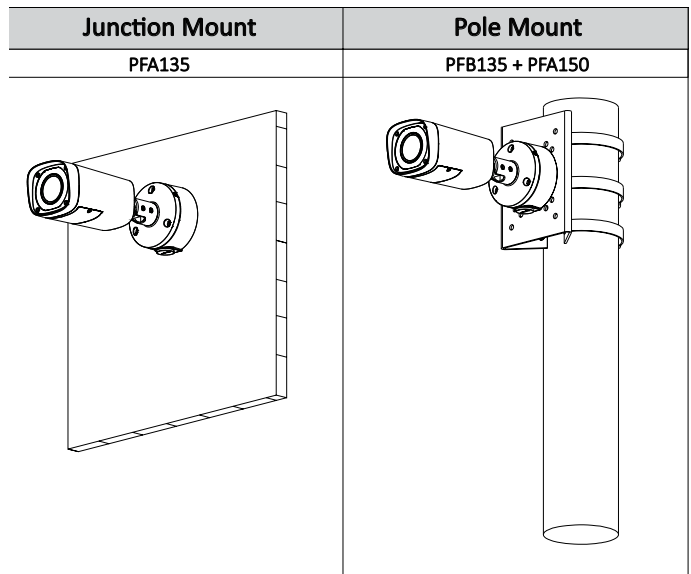|	
Operating Conditions	-40° C to +60° C (-40° F to +140° F), Less than 90% RH Initiate startup above -40° C (-40° F)
Storage Conditions	-40° C to +60° C (-40° F to +140° F), Less than 90% RH
Ingress Protection	IP67

Construction

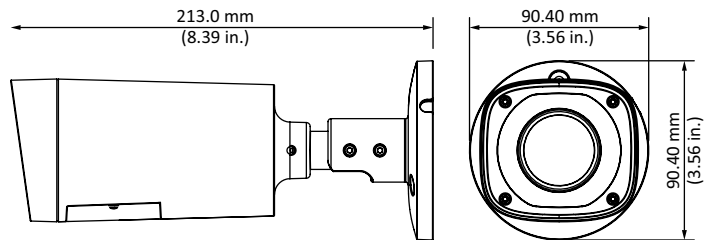|	
Casing	Aluminium
Dimensions	213.0 mm x 90.40 mm x 90.40 mm (8.39 in. x 3.56 in. x 3.56 in.)
Net Weight	0.63 kg (1.39 lb)
Gross Weight	0.76 kg (1.68 lb)

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2. 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.

3. 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
2 MP Camera	A22AC9Z	2 MP Starlight HDCVI IR Bullet Camera
Accessories, optional	PFM321	12 VDC, 1 A Power Supply
	PFA135	Junction Box (Use alone or with PFA150 pole mount)
	PFA150	Pole Mount (Use with PFA135 junction box)
	PFM800	Passive HDCVI Balun
	PFM801	Passive HDCVI Balun with Power
	PFM810	PoC Transceiver
	PFM820	UTC Controller

Junction Mount	Pole Mount
PFA135	PFB135 + PFA150

Accessories

Optional:

PFA135
Junction box

PFA150
Pole mount

PFM820
UTC Controller

PFM800
Passive HDCVI Balun

PFM801
Passive HDCVI Balun
with Power

PFM810
POC Transceiver

PFM321
Power Adapter

Dimensions (mm/inch)

213.0 mm
(8.39 in.)

90.40 mm
(3.56 in.)

90.40 mm
(3.56 in.)