

# 2 MP IR 2.8 mm HDCVI Dome

## Starlight HDCVI IR Dome Camera



### HDCVI

- 1/2.8-in. 2 MP Progressive-scan CMOS Sensor
- 1080p at 30 fps Maximum Resolution
- 2.8 mm Fixed Lens
- Multi-format Output (HDCVI, CVBS, AHD, and TVI)
- HD and SD Output, Switchable
- Starlight Technology for Low-light Applications
- Maximum IR Length 30 m (98 ft), Smart IR
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty\*



### System Overview

Experience the superior clarity of Dahua's 2 MP HDCVI cameras for vast coverage and superior image details. The 2 MP HDCVI series leverages existing coax infrastructures to deliver forensic-level images seamlessly and over long distances. The camera uses a progressive-scan CMOS sensor and next-generation ISP chip technology developed by Dahua to deliver stunning video with a wide field of view. This home-grown ISP features the latest image processing algorithms and is optimized for surveillance camera operations. With total control of the ISP features and production, Dahua can offer the latest security systems at a cost-effective price.

### Functions

#### Three Signals over One Coaxial Cable

HDCVI technology simultaneously transmits three signals (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<sup>1</sup> 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.

#### Starlight Technology

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

### 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.

### 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 the camera's infrared LEDs to compensate for 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 30 m (98 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 the switch located on the video output cable, making the camera compatible with not only HDCVI DVRs but also most existing HD/SD DVRs

### Environmental

With a built-in heater and a temperature range of  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ ), the camera is designed for extreme temperature environments. The camera complies with an IK10 impact rating making it capable of withstanding the equivalent of 5 kg (11.02 lbs) of force dropped from a height of 40 cm (15.75 in.). Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications. Supporting a  $\pm 30\%$  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.

1. Requires PoC Transceivers for each channel and an external 24 VDC or 36 VDC power supply for each transceiver.

### Technical Specification

#### Camera

|                          |   |
|--------------------------|---|
| Image Sensor             | 1/2.8-in. CMOS  |
| Effective Pixels         | 1920(H) x 1080(V), 2 MP                               |
| Scanning System          | Progressive   |
| Electronic Shutter Speed | 1/30 to 1/100,000 s                                   |
| Minimum Illumination     | Color: 0.005 lux at F1.6 (30 IRE)<br>0 lux with IR on |
| S/N Ratio                | More than 65 dB                                       |
| IR Distance              | Up to 30.0 m (98.43 ft)                               |
| IR On/Off Control        | Auto, Manual  |
| IR LEDs                  | 12  |

#### Lens

|                          |                        |
|--------------------------|------------------------|
| Lens Type                | Fixed lens, Fixed iris |
| Mount Type               | Board-in               |
| Focal Length             | 2.8 mm                 |
| Max Aperture             | F1.6                   |
| Horizontal Angle of View | 106.0°                 |
| Close Focus Distance     | 600.0 mm (23.60 in.)   |

#### DORI<sup>2</sup> Distance

| Detect<br>(8 ppf) | Observe<br>(19 ppf) | Recognize<br>(38 ppf) | Identify<br>(76 ppf) |
|-------------------|---------------------|-----------------------|----------------------|
| 39 m (127 ft)     | 15 m (51 ft)        | 8 m (25 ft)           | 4 m (13 ft)          |

#### Installation Angle

|       |  |
|-------|--|
| Range | Pan: 0° to 355°<br>Tilt: 0° to 65°<br>Rotation: 0° to 355° |
|-------|--|

#### Video

|                                 |  |  |
|---------------------------------|--|--|
| Resolution                      | 1080p (1920 x 1080)  |  |
| Frame Rate                      | 1080p at 30 fps<br>720p at 30/60 fps   |  |
| Video Output                    | One (1) BNC HDCVI High-definition Channel or<br>One (1) BNC CVBS, AHD or TVI Channel, switchable                             |  |
| Video Transmission <sup>3</sup> | RG-59/U Coax   | 720p: 800 m (2624.67 ft)<br>1080p: 500 m (1640.42 ft)  |
|                                 | RG-6/U Coax  | 720p: 1200 m (3937.01 ft)<br>1080p: 800 m (2624.67 ft) |
|                                 | CAT 6 UTP<br>(balun required)  | 720p: 450 m (1476.38 ft)<br>1080p: 300 m (984.25 ft)   |
| Day/Night                       | Auto (ICR), Manual   |  |
| On-screen Display Menu          | Multi-language<br>(Chinese, English, French, German, Italian, Japanese,<br>Korean, Polish, Portuguese, Russian, and Spanish) |  |
| BLC Mode                        | BLC, HLC, DWDR   |  |
| WDR                             | Digital WDR  |  |
| Gain Control                    | AGC  |  |
| Noise Reduction                 | 2D   |  |
| 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 Part 15 Subpart B<br>ANSI C63.4-2014<br>EN55032, EN55024, EN50130-4 |

#### Electrical

|                   |                               |
|-------------------|-------------------------------|
| Power Supply      | 12 VDC ±30%                   |
| Power Consumption | 3.1 W Maximum (12 VDC, IR on) |

#### Environmental

|                      |   |
|----------------------|---|
| Operating Conditions | -40° C to +60° C (-40° F to +140° F),<br>Less than 90% RH<br>Initiate startup above -40° C (-40° F) |
| Storage Conditions   | -40° C to +60° C (-40° F to +140° F),<br>Less than 90% RH   |
| Ingress Protection   | IP67  |
| Vandal Resistance    | IK10  |

#### Construction

|              |  |
|--------------|--|
| Casing       | Aluminium                                      |
| Dimensions   | ø109.90 mm x 81.0 mm<br>(ø4.33 in. x 3.19 in.) |
| Net Weight   | 0.31 kg (0.68 lb)                              |
| Gross Weight | 0.45 kg (0.99 lb)                              |

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           | A21CL02       | 2 MP Starlight HDCVI IR Dome Camera                       |
| Accessories, optional | PFA106        | Mount Adapter<br>(For use with PFB305W and PFB220C)       |
|                       | PFA136        | Junction Box  |
|                       | PFA151        | Corner Mount Bracket<br>(For use with PFB305W wall mount) |
|                       | PFA152-E      | Pole Mount<br>(For use with PFB204W wall mount)           |
|                       | PFA200W       | Sun/Rain Shield   |
|                       | PFB203W       | Wall Mount<br>(For use with PFA152-E pole mount)          |
|                       | PFB220C       | Ceiling Mount<br>(For use with PFA106 mount adapter)      |
|                       | PFB305W       | Wall Mount<br>(For use with PFA106 mount adapter)         |
|                       | PFM800-E      | Passive HDCVI Balun                                       |
|                       | PFM800-4K     | Passive 4K Video Balun                                    |
|                       | PFM810        | PoC Transceiver   |
|                       | DH-PFM321D-US | 12 VDC, 1 A Power Adapter                                 |
|                       | DH-PFM320D-US | 12 VDC, 2 A Power Adapter                                 |

**Accessories**

Optional:



PFA106  
Mount Adapter



PFA136  
Junction Box



PFA151  
Corner Mount



PFA152-E  
Pole Mount



PFA200W  
Sun/Rain Shield



PFB203W  
Wall Mount



PFB220C  
Ceiling Mount



PFB305W  
Wall Mount



PFM800-E  
Passive HDCVI Balun



PFM800-4K  
Passive Video Balun



PFM810  
PoC Transceiver



DH-PFM321D-US  
Power Adapter



DH-PFM320D-US  
Power Adapter

| Junction Mount             | Pole Mount                 |
|----------------------------|----------------------------|
| PFA136                     | PFB203W + PFA152-E         |
|                            |                            |
| Wall Mount                 |                            |
| PFB203W                    |                            |
|                            |                            |
|                            | Pole Mount with Rain Shade |
|                            | PFB203W + PFA152-E+PFA200W |
|                            |                            |
| Wall Mount with Rain Shade |                            |
| PFB203W+PFA200W            |                            |
|                            |                            |

**Dimensions (mm/inch)**

