

# DH-HAC-B1A21-U

2MP IR HDCVI Fixed-focal Bullet Camera



- Max. 30 fps@1080p.
- Smart IR Illumination.
- 30 m illumination distance.
- 3.6 mm fixed lens (2.8 mm, 6 mm optional).
- CVI/CVBS/AHD/TVI switchable.
- IP67, 12 VDC.



## Series Overview

The Cooper Series offers simple and highly cost-effective HDCVI solutions. It provides 24/7 reliable monitoring with high-quality image performance, saving cost on both material and labor force. It is also designed and built to the specific standards of Dahua.

## Functions

### Smart IR Illumination

With its IR illumination, the camera provides optimal performance in low light conditions, ensuring uniformity in the brightness of B/W images. Through its smart IR technology, the camera also compensates for the distance of targets by adjusting the intensity of its IR LEDs, preventing overexposure of images as targets move closer to the camera.

### Protection (IP67, Wide Voltage)

IP67: The camera passed a series of rigorous dust and immersion tests. Its enclosure is both dust-proof and waterproof, and can function normally while being immersed in 1 m deep water for up to 30 minutes. Wide voltage: The camera has  $\pm 30\%$  input voltage tolerance (for some power supplies) and a wide voltage range, making it suitable for a variety of outdoor scenarios.

## 4 Signals over 1 Coaxial Cable

HDCVI technology supports 4 signals (video, audio\*, data and power) which are simultaneously transmitted over a coaxial cable. Dual-way data transmission allows the HDCVI camera to interact with the XVR to perform various actions such as sending control signals and triggering alarms. HDCVI technology also supports PoC, which makes the camera easy and quick to install.

\* Audio input is available for select HDCVI camera models.

## Long Distance Transmission

HDCVI technology provides long distance transmission in real time without transmission loss. It supports transmission distances up to 700 m for 2-MP/5-MP/8-MP HD videos through coaxial cables, and up to 300 m through UTP cables. The results were obtained and verified through rigorous testing in Dahua's test laboratory.

## Simplicity

HDCVI technology inherits the simplicity of traditional analog surveillance systems, making it a great mechanism for protecting your valuables. HDCVI can be upgraded from the traditional analog system without replacing the existing coaxial cabling. Its plug and play design enables it to produce high-definition videos during surveillance without the hassle of configuring a network.

| Technical Specification    |                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------|
| Camera                     |                                                                                         |
| Image Sensor               | 2 MP CMOS                                                                               |
| Max. Resolution            | 1920 (H) × 1080 (V)                                                                     |
| Scanning System            | Progressive                                                                             |
| Electronic Shutter Speed   | PAL: 1/25 s–1/100,000 s;<br>NTSC: 1/30 s–1/100,000 s                                    |
| Min. Illumination          | 0.02 lux@F2.0 (Color, 30 IRE)<br>0.002 lux@F2.0 (B/W, 30 IRE)<br>0 lux (Illuminator on) |
| S/N Ratio                  | >65 dB                                                                                  |
| Illumination Distance      | 30 m (98.43 ft)                                                                         |
| Illuminator On/Off Control | Auto/Manual                                                                             |
| Illuminator Number         | 2 (IR light)                                                                            |
| Angle Adjustment           | Pan: 0°–360°<br>Tilt: 0°–90°<br>Rotation: 0°–360°                                       |

|                      |                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    |                       |                      |                      |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|----------------------|----------------------|
| Lens                 |                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    |                       |                      |                      |
| Lens Type            |                                                                                                                                                                                                                                                                                                                                                                                 | Fixed-focal                                                                                        |                       |                      |                      |
| Lens Mount           |                                                                                                                                                                                                                                                                                                                                                                                 | M12                                                                                                |                       |                      |                      |
| Focal Length         |                                                                                                                                                                                                                                                                                                                                                                                 | 2.8 mm; 3.6 mm; 6 mm                                                                               |                       |                      |                      |
| Max. Aperture        |                                                                                                                                                                                                                                                                                                                                                                                 | F2.0                                                                                               |                       |                      |                      |
| Field of View        |                                                                                                                                                                                                                                                                                                                                                                                 | 2.8 mm: H: 100°; V: 54°; D: 117°<br>3.6 mm: H: 80°; V: 43°; D: 94°<br>6 mm: H: 43°; V: 24°; D: 50° |                       |                      |                      |
| Iris Control         |                                                                                                                                                                                                                                                                                                                                                                                 | Fixed                                                                                              |                       |                      |                      |
| Close Focus Distance |                                                                                                                                                                                                                                                                                                                                                                                 | 2.8 mm: 0.5 m (1.64 ft)<br>3.6 mm: 0.8 m (2.62 ft)<br>6 mm: 2.4 m (7.87 ft)                        |                       |                      |                      |
| DORI Distance        | Lens                                                                                                                                                                                                                                                                                                                                                                            | Detect                                                                                             | Observe               | Recognize            | Identify             |
|                      | 2.8 mm                                                                                                                                                                                                                                                                                                                                                                          | 44.7 m<br>(146.65 ft)                                                                              | 17.9 m<br>(58.73 ft)  | 8.9 m<br>(29.20 ft)  | 4.5 m<br>(14.76 ft)  |
|                      | 3.6 mm                                                                                                                                                                                                                                                                                                                                                                          | 55.0 m<br>(180.45 ft)                                                                              | 22.0 m<br>(72.18 ft)  | 11.0 m<br>(36.09 ft) | 5.5 m<br>(18.04 ft)  |
|                      | 6 mm                                                                                                                                                                                                                                                                                                                                                                            | 102.9 m<br>(337.6 ft)                                                                              | 41.1 m<br>(134.84 ft) | 20.6 m<br>(67.59 ft) | 10.3 m<br>(33.79 ft) |
|                      | *DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool. |                                                                                                    |                       |                      |                      |

|                  |                                                                                                                                                                                           |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video            |                                                                                                                                                                                           |
| Video Frame Rate | CVI:<br>PAL: 1080p@25 fps<br>NTSC: 1080p@30 fps<br>AHD:<br>PAL: 1080p@25 fps<br>NTSC: 1080p@30 fps<br>TVI:<br>PAL: 1080p@25 fps<br>NTSC: 1080p@30 fps<br>CVBS:<br>PAL: 960H<br>NTSC: 960H |
| Resolution       | 1080p (1920 × 1080); 960H (960 × 576/960 × 480)                                                                                                                                           |

|                   |                     |
|-------------------|---------------------|
| Day/Night         | Auto(ICR)/Color/B/W |
| BLC               | BLC; DWDR           |
| WDR               | DWDR                |
| White Balance     | Auto                |
| Gain Control      | Auto                |
| Noise Reduction   | 2D NR               |
| Illumination Mode | Smart IR            |

|                |                                                   |
|----------------|---------------------------------------------------|
| Certification  |                                                   |
| Certifications | CE-LVD: EN 62368-1;<br>CE-EMC: EN 55032; EN 55035 |

|              |                                                          |
|--------------|----------------------------------------------------------|
| Port         |                                                          |
| Video Output | Video output choices of CVI/TVI/AHD/CVBS by one BNC port |

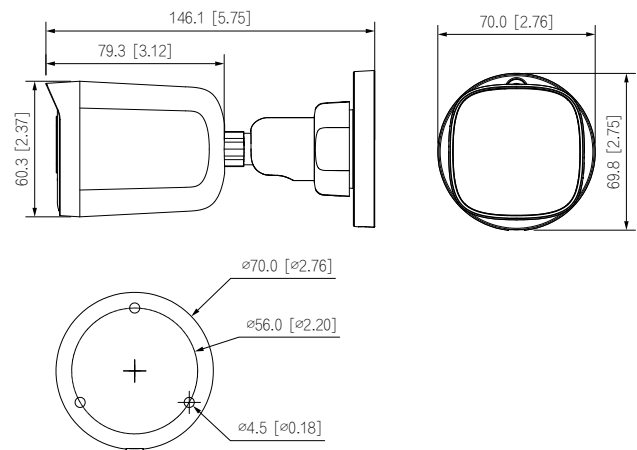
|                   |                           |
|-------------------|---------------------------|
| Power             |                           |
| Power Supply      | 12 VDC ± 30%              |
| Power Consumption | Max 2.8 W (12 VDC, IR on) |

|                       |                                      |
|-----------------------|--------------------------------------|
| Environment           |                                      |
| Operating Temperature | –40 °C to +60 °C (–40 °F to +140 °F) |
| Operating Humidity    | <95% (RH), non-condensing            |
| Storage Temperature   | –40 °C to +60 °C (–40 °F to +140 °F) |
| Storage Humidity      | <95% (RH), non-condensing            |
| Protection            | IP67                                 |
| Anti-corrosion Level  | Basic Protection                     |

|                    |                                                    |
|--------------------|----------------------------------------------------|
| Structure          |                                                    |
| Casing Material    | Plastic                                            |
| Product Dimensions | 146.1mm × 70.0 mm × 69.8mm (5.75" × 2.76" × 2.75") |
| Net Weight         | 0.15 kg (0.33 lb)                                  |
| Gross Weight       | 0.23 kg (0.51 lb)                                  |
| Installation       | Wall mount; ceiling mount; vertical pole mount     |

| Ordering Information   |                 |                                              |
|------------------------|-----------------|----------------------------------------------|
| Type                   | Model           | Description                                  |
| 2MP Camera             | DH-HAC-B1A21P-U | 2MP IR HDCVI Fixed-focal Bullet Camera, PAL  |
|                        | DH-HAC-B1A21N-U | 2MP IR HDCVI Fixed-focal Bullet Camera, NTSC |
| Accessories (Optional) | PFA134          | Junction Box                                 |
|                        | PFA130-E        | Water-proof Junction Box                     |
|                        | PFA152-E        | Pole Mount Bracket                           |
|                        | PFM800-E        | Passive HDCVI Balun                          |
|                        | PFM321D         | 12V 1A Power Adapter                         |
|                        | PFM904          | Integrated Mount Tester                      |

Dimensions (mm[inch])



Accessories

Optional:



PFA134  
Junction Box



PFA130-E  
Water-proof Junction Box



PFA152-E  
Pole Mount Bracket



PFM800-E  
Passive HDCVI Balun



PFM321D  
12V 1A Power  
Adapter



PFM904  
Integrated Mount Tester

| Ceiling Mount | Junction Mount | Pole Mount(Vertical) |
|---------------|----------------|----------------------|
|               |                |                      |