

DH-HAC-B1A21-U-IL-A

2MP Smart Dual Light HDCVI Fixed-focal Bullet Camera



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 Dual Light

With its smart dual light mechanism, the camera automatically turns on the white light when Perimeter Protection/SMD Plus function of AI XVR detects a target in the rule area to capture clear, vivid images. When the target leaves the rule area, the camera automatically switches over from the white light to the IR light to significantly reduce light pollution.

Broadcast-quality Audio

Audio signal transmission over coaxial cables is supported by the HDCVI camera. It adopts a unique audio processing and transmission technology that restores source audio and eliminates noise, ensuring the quality and reliability of the audio information that is collected. This becomes important for video surveillance applications that use audio information as a type of supplementary evidence.

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 ±30% input voltage tolerance (for some power supplies) and a wide voltage range, making it suitable for a variety of outdoor scenarios.

- * In order to use the Smart Dual Light HDCVI camera, the firmware of XVR must be upgraded to V4.001.0000004.1.R.220323 or later version.
- · Max. 30 fps@1080p.
- · Smart Dual Light.
- · 30 m illumination distance.
- \cdot Built-in MIC.
- · 3.6 mm fixed lens (2.8 mm,6 mm optional).
- · CVI/CVBS/AHD/TVI switchable.
- · IP67, 12 VDC.



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.

Cooper Series | DH-HAC-B1A21-U-IL-A

Technical Specification

Camera	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; NTSC: 1/30 s-1/100,000 s			
Min. Illumination		0.02 lux@F2.0 (Color, 30 IRE); 0.002 lux@F2.0 (B/W, 30 IRE); 0 lux (Illuminator on)			
S/N Ratio		>65 dB			
Illumination Distance		IR: 30 m (98.43 ft); Warm light: 20 m (65.62 ft)			
Illuminator On/Off Control		Auto; Manual			
Illuminator Number		2 (Warm light);2 (IR light)			
Angle Adjustment		Pan: 0°–360° Tilt: 0°–90° 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° 3.6 mm: H: 80°; V: 43°; D: 94° 6 mm: H: 43°; V: 24°; D: 50°			
Iris Control		Fixed			
Close Focus Distance		2.8 mm: 0.5 m (1.64 ft) 3.6 mm: 0.8 m (2.62 ft) 6 mm: 2.4 m (7.87 ft)			
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	44.7 m (146.65 ft)	17.9 m (58.73 ft)	8.9 m (29.20 ft)	4.5 m (14.76 ft)
	3.6 mm	55.0 m (180.45 ft)	22.0 m (72.18 ft)	11.0 m (36.09 ft)	5.5 m (18.04 ft)
	6 mm	102.9 m (337.60 ft)	41.1 m (134.84 ft)	20.6 m (67.59 ft)	10.3 m (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				

(EN-626/6-4) 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.

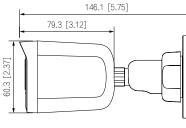
Video

Pay/NightAuto(ICR)/Color/B/WBLCBLC; HLC; DWDRBVDRDWDRWhite BalanceAuto,Area white balanceGain ControlAuto; ManualIlumination ModeDNRIlumination ModeSmart R&WL WL Mode; IR ModeMirrorVesChrifcationCff./DG (a reas, rectangle)CrtificationCff./DC (a Fedse-3t; Crtifications)PortCff./DC (a reas, rectangle)PortCff./DC (a reas, rectangle)Audio InputOne channel built-in MicPowerCrtificationPowerCrtificationPower SupplyQ No C 100 (Crtification)Power SupplyQ No C 100 (Crtification)Power ConsumptionSix (Nt) Non-CondensingPortaring TemperatureGond Crtification (Crtification)Portaring TemperatureGix (RH), non-condensingPortactionInFortaction (Crtification)PortactionInFortactionStrateger HumidityBis (Crtification)PortactionSix (RH), non-condensingPortactionInFortactionPortactionInFortactionPortactionSix (RH), non-condensingPortactionInfortactionPortactionSix (RH), non-condensingPortactionInfortactionPortactionInfortaction (Crtification)PortactionInfortactionPortactionInfortactionPortactionInfortactionPortactionInfortactionPortactionInfortactionPortaction <th>Resolution</th> <th>1080p (1920 × 1080); 960H (960 × 576/960 × 480)</th>	Resolution	1080p (1920 × 1080); 960H (960 × 576/960 × 480)			
NAMEWDRWDRWhite BalanceAto;Area white balanceGain ControlAto;Area white balanceIlumination ModeDNRIlumination ModeSmart IR&WL WL Mode; IR ModeMirrorVesChritoryStart IR&WL WL Mode; IR ModePrivacy MaskingOff/On (8 areas, rectangle)CertificationCit-UD: EN 62368-1; CE-EMC: EN 55032; EN 55032; EN 55032; EN 55032; EN 55032;	Day/Night	Auto(ICR)/Color/B/W			
NetroWhite BalanceAuto;Area white balanceGain ControlAuto;AnaualNoise Reduction20 NRIllumination ModeSmart IR&WL WL Mode; IR ModeMirrorYesOrrivacy MaskingOff/On (8 areas, rectangle)CertificationCE-LVD: EN 62368-1; CE-EMC: EN 55035; EN 55035PortCertificationsPortVideo output choices of CVI/TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPowerVideo output choices of CVI/TVI/AHD/CVBS by one BNC portPower Supply12 VOC ± 30%Power Supply12 VOC ± 30%PortorVideo output choice of CVI/TVI/AHD/CVBS by one BNC portPower Supply04 CO 12 OF 00 °C (-40 °F to +140 °F)Power Supply95% (RH), non-condensingPortaring Temperature95% (RH), non-condensingPortaction167Auti-corrosion Level95% (RH), non-condensingProtection167Auti-corrosion Level163 CO 12	BLC	BLC; HLC; DWDR			
ActionActionGain ControlActo;ManualNoise ReductionSmart IR&WL WL Mode; IR ModeIllumination ModeSmart IR&WL WL Mode; IR ModeMirrorVesPrivacy MaskingOff/On (8 areas, rectangle)CertificationE-LVD: EN 62368-1; CE-EMC: EN 55032; EN 55035PortVideo output choices of CVI/TVI/AHD/CVBS by one BNC ortAudio InputOne channel built-in MicPowerVideo output choices of CVI/TVI/AHD/CVBS by one BNC ortPower Supply12 VDC ± 30%Power Supply12 VDC ± 30%PortinormentVideo 10 (C + 00 °C +	WDR	DWDR			
Noise Reduction20 NRIllumination ModeKmart IR&WL WL Mode; IR ModeMirrorVesPrivacy MaskingOff/On (8 areas, rectangle)CertificationCE-LVD: EN 62368-1; CE-ENE: EN 55035CortificationsCE-LVD: EN 62368-1; CE-LVD: EN 55035PortVideo OutputVideo OutputOre channel built-in MicPowerOre channel built-in MicPower2 VOC ± 30%PowerStorage TemperaturePower Consumption12 VOC ± 30%PortionmentVideo Cutput Cuto ED on)Operating Temperature95% (RH), non-condensingPortactionSize Yoe Cuto Cuto Cuto Cuto Cuto Cuto Cuto Cuto	White Balance	Auto;Area white balance			
InterventionImage: ConstructionIllumination ModeSmart IR&WL WL Mode; IR ModeMirrorVesPrivacy MaskingOff/On (8 areas, rectangle)CertificationE-E-LVD: EN 62368-1; CE-E-EMC: EN 55032; EN 55035PortCertificationsVideo OutputVideo output choices of CVI/TVI/AHD/CVBS by one BNC ortYudeo OutputOne channel built-in MicPower12 VDC ± 30%Power Supply12 VDC ± 30%Power Consumption12 VDC ± 30%PortonmentVideo to for (-40 °F to +140 °F)Operating Temperature95% (RH), non-condensingPortaction95% (RH), non-condensingPortaction95% (RH), non-condensingProtection96% (RH), non-condensingProtection96% (RH), non-condensingProtectionPortactionStorage Humidity95% (RH), non-condensingProtection95% (RH), non-condensingProtectionPortactionMati-corrosion LevelBaic ProtectionProtuctureVerticitienProduct Dimension16.1 rum × 70.0 rum × 69.8 rum (5.75" × 2.75" × 2.75" × 2.75" × 2.75" × 2.75" × 2.75" × 2.75"Protection0.15kg (0.33 lb)ProtucturePortactionProtucturePortactionProtucture0.23kg (0.51 lb)	Gain Control	Auto;Manual			
InteractionIso a prime prim prime prime prime prime p	Noise Reduction	2D NR			
And Privacy MaskingOff/On (8 areas, rectangle)Privacy MaskingOff/On (8 areas, rectangle)CertificationsCE-LVD: EN 62368-1; CE-ENC: EN 55032; EN 55035PortVideo OutputPortVideo Output choices of CV//TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPowerOne channel built-in MicPower Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Portionoment	Illumination Mode	Smart IR&WL WL Mode; IR Mode			
InterfactionCertificationsCE-LVD: EN 62368-1; CE-EMC: EN 55032; EN 55035PortVideo 0utputVideo 0utputVideo output choices of CVI/TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPower12 VDC ± 30%Power Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Power Consumption-01 °C to + 60 °C (-40 °F to + 140 °F)Operating Temperature-03 °C to + 60 °C (-40 °F to + 140 °F)Potection-03 °C to + 60 °C (-40 °F to + 140 °F)Storage Temperature-04 °C to + 60 °C (-40 °F to + 140 °F)ProtectionIP67Anti-corrosion LevelBics ProtectionStructure-Casing MaterialPlaticProduct Dimensions161 st g (0.33 lb)Net Weight0.23 kg (0.51 lb)	Mirror	Yes			
CertificationsCE-LVD: EN 62368-1; CE-EMC: EN S5035; EN S5035PortVideo OutputVideo output choices of CVI/TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPower12 VDC ± 30%Power Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Power Consumption-40 °C to +60 °C (-40 °F to +140 °F)Operating Temperature-95% (RH), non-condensingOperating Humidity95% (RH), non-condensingStorage Temperature95% (RH), non-condensingProtection161 °C (-40 °F to +140 °F)Storage Temperature95% (RH), non-condensingFrotectionPioteCasing MaterialPioteProduct Dimensions161.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.75" × 2.75"Protekipt0.15 kg (0.33 lb)Prose Subject0.23 kg (0.51 lb)	Privacy Masking	Off/On (8 areas, rectangle)			
CertificationscE-EMC: EN 55032; EN 55035PortVideo OutputVideo output choices of CVI/TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPower12 VDC ± 30%Power Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Environment-40 °C to +60 °C (-40 °F to +140 °F)Operating Temperature-40 °C to +60 °C (-40 °F to +140 °F)Operating Humidity95% (RH), non-condensingStorage Temperature-40 °C to +60 °C (-40 °F to +140 °F)Storage Temperature95% (RH), non-condensingProtectionIP67Anti-corrosion LevelBasic ProtectionStructure	Certification				
NiceVideo OutputVideo output choices of CVI/TVI/AHD/CVBS by one BNC portAudio InputOne channel built-in MicPowerDoe channel built-in MicPower12 VDC ± 30%Power Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Environment-40 °C to +60 °C (-40 °F to ± 140 °F)Operating Temperature-40 °C to +60 °C (-40 °F to ± 140 °F)Operating Temperature-40 °C to +60 °C (-40 °F to ± 140 °F)Storage Temperature-40 °C to +60 °C (-40 °F to ± 140 °F)Storage Temperature-55% (RH), non-condensingProtectionIP67Anti-corrosion LevelBaic ProtectionStructure	Certifications	,			
Video OutputportAudio InputOne channel built-in MicPowerPowerPower Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Environment-40 °C to +60 °C (-40 °F to ±140 °F)Operating Temperature-40 °C to +60 °C (-40 °F to ±140 °F)Operating Humidity95% (RH), non-condensingStorage Temperature-40 °C to +60 °C (-40 °F to ±140 °F)Storage Temperature-40 °C to +60 °C (-40 °F to ±140 °F)Storage Temperature95% (RH), non-condensingProtectionIP67Anti-corrosion LevelBaic ProtectionStructureISicCasing MaterialPlasticProduct Dimensions146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75")Net Weight0.15 kg (0.33 lb)Gross Weight0.23 kg (0.51 lb)	Port				
Power Image: Power Supply Power Supply 12 VDC ± 30% Power Consumption Max 3.3 W (12 VDC, LED on) Environment -40 °C to ± 60 °C (-40 °F to ± 140 °F) 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 Temperature -40 °C to ± 60 °C (-40 °F to ± 140 °F) Protection 1967 Anti-corrosion Level Baic Protection Structure Imm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75") Product Dimensions 151 kg (0.33 lb) Net Weight 0.23 kg (0.51 lb)	Video Output	• • • • • • •			
Power Supply12 VDC ± 30%Power ConsumptionMax 3.3 W (12 VDC, LED on)Environment-40 °C to +60 °C (-40 °F to +140 °F)Operating Temperature-40 °C to +60 °C (-40 °F to +140 °F)Operating Humidity<95% (RH), non-condensing	Audio Input	One channel built-in Mic			
Power ConsumptionMax 3.3 W (12 VDC, LED on)EnvironmentOperating Temperature-40 °C to +60 °C (-40 °F to +140 °F)Operating Humidity<95% (RH), non-condensing	Power				
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 Temperature -60°C (-40°F to +140°F) Storage Temperature -95% (RH), non-condensing Protection IP67 Anti-corrosion Level Baic Protection Structure ISaic Protection Product Dimensions I46.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75") Net Weight 0.15 kg (0.33 lb) Gross Weight 0.23 kg (0.51 lb)	Power Supply	12 VDC ± 30%			
Poperating Temperature-40 °C to +60 °C (-40 °F to +140 °F)Operating Humidity<95% (RH), non-condensing	Power Consumption	Max 3.3 W (12 VDC, LED on)			
Note of the second se	Environment				
Storage Temperature-40 °C to +60 °C (-40 °F to +140 °F)Storage Humidity<95% (RH), non-condensing	Operating Temperature	-40 °C to +60 °C (-40 °F to +140 °F)			
Storage Humidity<95% (RH), non-condensingProtectionIP67Anti-corrosion LevelBasic ProtectionStructureCasing MaterialProduct Dimensions146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75")Net Weight0.15 kg (0.33 lb)Gross Weight0.23 kg (0.51 lb)	Operating Humidity	<95% (RH), non-condensing			
ProtectionIP67Anti-corrosion LevelBasic ProtectionStructureCasing MaterialPlasticProduct Dimensions146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75")Net Weight0.15 kg (0.33 lb)Gross Weight0.23 kg (0.51 lb)	Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)			
Anti-corrosion Level Basic Protection Structure Plastic Casing Material Plastic Product Dimensions 146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75") Net Weight 0.15 kg (0.33 lb) Gross Weight 0.23 kg (0.51 lb)	Storage Humidity	<95% (RH), non-condensing			
Structure Casing Material Plastic Product Dimensions 146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75") Net Weight 0.15 kg (0.33 lb) Gross Weight 0.23 kg (0.51 lb)	Protection	IP67			
Casing MaterialPlasticProduct Dimensions146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75")Net Weight0.15 kg (0.33 lb)Gross Weight0.23 kg (0.51 lb)	Anti-corrosion Level	Basic Protection			
Product Dimensions 146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75") Net Weight 0.15 kg (0.33 lb) Gross Weight 0.23 kg (0.51 lb)	Structure				
Net Weight 0.15 kg (0.33 lb) Gross Weight 0.23 kg (0.51 lb)	Casing Material	Plastic			
Gross Weight 0.23 kg (0.51 lb)	Product Dimensions	146.1 mm × 70.0 mm × 69.8 mm (5.75" × 2.76" × 2.75")			
• • •	Net Weight	0.15 kg (0.33 lb)			
Installation Wall mount; ceiling mount; vertical pole mount	Gross Weight	0.23 kg (0.51 lb)			
	Installation	Wall mount; ceiling mount; vertical pole mount			

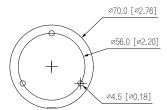
Cooper Series | DH-HAC-B1A21-U-IL-A

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

Dimensions (mm[inch])







Accessories

Optional:



PFA134 Junction Box



PFM321D 12V 1A Power Adapter



PFA130-E Water-proof Junction Box



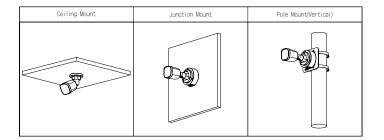
PFM800-E Passive HDCVI Balun



PFA152-E Pole Mount Bracket



PFM904 Integrated Mount Tester



Rev 002.000 © 2024 Dahua. All rights reserved. Design and specifications are subject to change without notice. The images, specifications and information mentioned in the document are only for reference, and might differ from the actual product.