

DH-HAC-HDBW2501RA-Z-A-DP

5MP Starlight HDCVI Motorized Vari-focal IR Dome Camera



System Overview

The Pro Series contains a series of highly reliable and flexible cameras, making it a great choice for SMB solutions and projects. It has Starlight technology, up to 130 dB true WDR and 3DNR, and produces vivid images in rich detail even under difficult lighting conditions.

Functions

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.

Starlight

With its large image sensor and large aperture, the camera delivers high performance and quality, even in low-light conditions. The starlight feature allows the camera to capture highly detailed images in accurate color, recognizing targets even at night or in scenes with limited light.

Wide Dynamic Range

With its advanced Wide Dynamic Range technology (WDR), the camera captures highly detailed images and produces high-definition recordings in high-contrast lighting conditions, and in scenes with backlighting or shadows.

Super Adapt

With its intelligent algorithm, the camera automatically adjusts its parameters to provide optimal performance and vivid images.

* The parameters and datasheets below can only be applied to 2501-S2 series.

* In order to use the 5MP 16:9 HDCVI camera, the firmware of XVR must be upgraded to V4.001.0000001.0.R.200908 or later version.

- Max 25 fps@5MP (16:9 video output).
- Starlight, 120 dB true WDR, 3D NR.
- Smart IR Illumination.
- 60 m illumination distance.
- Super Adapt.
- Built-in MIC.
- Auto focus, 2.7 mm–13.5 mm motorized lens.
- CVI/CVBS/AHD/TVI switchable.
- IP67, IK10, 24 VAC/12 VDC.



Advanced 3DNR

Dahua's advanced 3DNR technology reduces image noise with little to no impact on image sharpness, especially in poor lighting conditions. It detects the noise, and compares the sequential frames to effectively reduce the noise. It also makes efficient use of bandwidth, saving on storage space.

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, IK10, 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.
 IK10: The enclosure can withstand up to 5 punches from a 5 kg hammer falling from a height of 40 cm (impact energy is 20 J).
 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.

Technical Specification

Camera

| | |
|----------------------------|---|
| Image Sensor | 5 MP CMOS |
| Max. Resolution | 2880 (H) × 1620 (V) |
| Scanning System | Progressive |
| Electronic Shutter Speed | PAL: 1/3 s–1/100000 s NTSC: 1/4 s–1/100000 s |
| Min. Illumination | 0.01 lux@F1.6 (Color, 30 IRE) 0.001 lux@F1.6 (B/W, 30 IRE) 0 lux (Illuminator on) |
| S/N Ratio | >65 dB |
| Illumination Distance | 60 m (196.85 ft) |
| Illuminator On/Off Control | Auto/Manual |
| Illuminator Number | 3 (IR light) |
| Pan/Tilt/Rotation Range | Pan: 0°–355° Tilt: 0°–80° Rotation: 0°–355° |

Lens

| | | | | | |
|----------------------|--|------------------------|-----------------------|-----------------------|----------------------|
| Lens Type | Motorized Vari-focal | | | | |
| Auto Focus | Yes | | | | |
| Lens Mount | φ14 | | | | |
| Focal Length | 2.7 mm–13.5 mm | | | | |
| Max. Aperture | F1.6 | | | | |
| Field of View | H: 113°–31.4°; V: 58°–17.6°; D: 138°–36° | | | | |
| Iris Control | Fixed | | | | |
| Close Focus Distance | 0.8 m (2.62 ft) | | | | |
| DORI Distance | Lens | Detect | Observe | Recognize | Identify |
| | W | 64.0 m (209.97 ft) | 25.6 m (83.99 ft) | 12.8 m (41.99 ft) | 6.4 m (21.00 ft) |
| | T | 210.0 m (688.97 ft) | 84.0 m (275.59 ft) | 42.0 m (137.80 ft) | 21.0 m (68.89 ft) |

Video

| | |
|------------------|--|
| Video Frame Rate | CVI: PAL: 5M@25 fps; 4M@25 fps; 1080p@25 fps NTSC: 5M@25 fps; 4M@30 fps; 1080p@30 fps AHD: PAL: 4M@25 fps; NTSC: 4M@30 fps TVI: PAL: 4M@25 fps; NTSC: 4M@30 fps CVBS: PAL: 960H; NTSC: 960H |
| Resolution | 5M (2880 × 1620); 4M (2560 × 1440); 1080p (1920 × 1080); 960H (960 × 576/960 × 480) |
| Day/Night | Auto(ICR)/Color/B/W |
| BLC | BLC; HLC; WDR; HLC-Pro |
| WDR | 120 dB |
| White Balance | Auto;Area white balance |

| | |
|-------------------|-----------------------------|
| Gain Control | Auto/Manual |
| Noise Reduction | 3D NR |
| Illumination Mode | Smart IR |
| Defog | Electronic defog |
| Digital Zoom | 4× |
| Mirror | Yes |
| Privacy Masking | Off/On (8 areas, rectangle) |

Certification

| | |
|----------------|---|
| Certifications | CE-LVD: EN 62368-1; CE-EMC: EN 55032; EN 55035; FCC: 47 CFR FCC Part 15, Subpart B; UL: UL62368-1 + CAN/CSA C22.2 No. 62368-1-14 |
|----------------|---|

Port

| | |
|--------------|---|
| Video Output | Video output choices of CVI/TVI/AHD/CVBS by one BNC port (DIP Switch) |
| Audio Input | One channel built-in MIC |

Power

| | |
|-------------------|---------------------------|
| Power Supply | 12 VDC ± 10%;24 VAC ± 25% |
| Power Consumption | Max 9.3 W (12 VDC, IR on) |

Environment

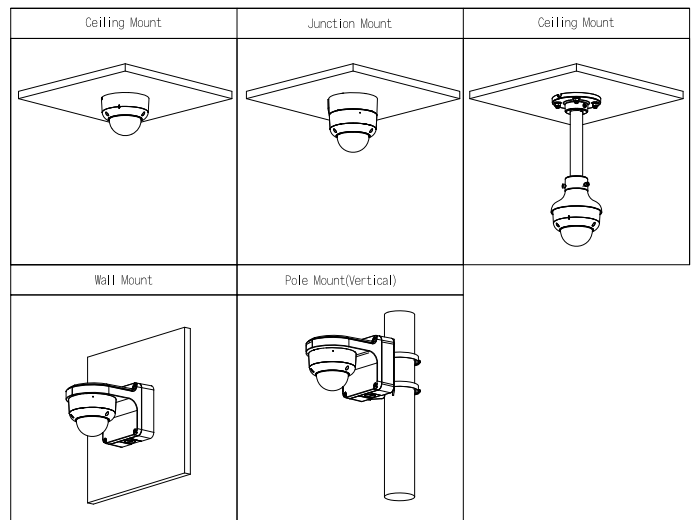
| | |
|-----------------------|--------------------------------------|
| Operating Temperature | –30 °C to +60 °C (–22 °F to +140 °F) |
| Operating Humidity | <95% (RH), non-condensing |
| Storage Temperature | –30 °C to +60 °C (–22 °F to +140 °F) |
| Storage Humidity | <95% (RH), non-condensing |
| Protection | IK10; IP67 |

Structure

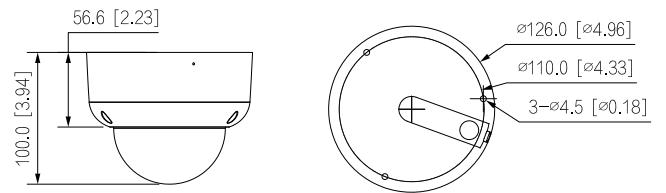
| | |
|--------------------|--|
| Casing Material | Metal |
| Product Dimensions | Φ126.0 mm × 100.0 mm (Φ4.96" × 3.94") |
| Net Weight | 0.66 kg (1.46 lb) |
| Gross Weight | 0.83 kg (1.83 lb) |
| Installation | Wall mount; ceiling mount; vertical pole mount |

Ordering Information

| Type | Model | Description |
|------------------------|----------------------------|---|
| 5M Camera | DH-HAC-HDB-W2501RAP-Z-A-DP | 5MP Starlight HDCVI Motorized Vari-focal IR Dome Camera, PAL |
| | DH-HAC-HDB-W2501RAN-Z-A-DP | 5MP Starlight HDCVI Motorized Vari-focal IR Dome Camera, NTSC |
| Accessories (Optional) | PFA197R | Junction Box |
| | PFB206W | Wall Mount Bracket |
| | PFA109 | Mount Adapter |
| | PFB220C | Ceiling Mount Bracket of Mini Dome & Eyeball Camera |
| | PFA156 | Pole Mount Bracket |
| | PFM800-4K | Passive HDCVI Balun |
| | PFM321D | 12V 1A Power Adapter |
| | PFM904 | Integrated Mount Tester |



Dimensions (mm[inch])



Accessories

Optional:



PFA197R
Junction
Box



PFB206W
Wall Mount
Bracket



PFA109
Mount
Adapter



PFB220C
Ceiling Mount Bracket
of Mini Dome & Eyeball
Camera



PFA156
Pole Mount
Bracket



PFM800-4K
1-CH Passive
Video Balun



PFM321D
12V 1A Power
Adapter



PFM904
Integrated Mount
Tester