**Dahua** TECHNOLOGY

# DH-HAC-HDBW2241R-Z
## 2MP Starlight HDCVI IR Dome Camera

**HDCVI**

· Starlight, 120dB true WDR, 3DNR
· Max. 30fps@1080P
· HD/SD output switchable
· Audio in interface
· 2.7-13.5mm motorized lens
· Max. IR length 30m, Smart IR
· IP67, IK10, DC12V

Pro Series | 1080p FULL HD | Starlight | WDR | Audio | DC 12V | Vandal-proof | IP67

## System Overview

Experience 1080P full HD video and the simplicity of reusing existing coaxial infrastructure with HDCVI. The Starlight HDCVI camera with 120dB true WDR presents a high quality image with rich details even in extreme low-light conditions. It offers various motorized/fixed lens models with a multi-language OSD and HD/SD switchable output. Its superior image performance and starlight feature makes the camera an ideal choice for mid to large-size businesses and projects where both highly reliable surveillance and construction flexibility are needed.

## Functions

### 4 Signals over 1 Coaxial Cable

HDCVI technology supports 4 signals to be transmitted over 1 coaxial cable simultaneously, i.e. video, audio*, data and power. Dual-way data transmission allows the HDCVI camera to interact with the HCVR, such as sending control signal or triggering alarm. Moreover, HDCVI technology supports PoC for construction flexibility.

* Audio input is available for some models of HDCVI cameras.

### Long Distance Transmission

HDCVI technology guarantees long-distance and real-time transmission without any loss. It supports up to 800m for 1080P Full HD video via coaxial cable, and up to 300m via UTP cable.*

*Actual results verified by real-scene testing in Dahua's test laboratory.

### Simplicity

HDCVI technology inherits the born feature of simplicity from traditional analog surveillance system, making itself a best choice for investment protection. HDCVI system can seamlessly upgrade the traditional analog system without replacing existing coaxial cabling. The plug and play approach enables full HD video surveillance without the hassle of configuring a network.

### Starlight

With the adoption of high performance sensor, the camera is able to provide incomparable performance even under extreme lowlight environment. The starlight feature allows more details to be captured and accurate color to be recognized at night or in scenes with limited illumination.

### Wide Dynamic Range

Embedded with industry leading wide dynamic range (WDR) technology, vivid pictures are achieved even in the most intense contrast lighting conditions. True WDR (120dB) 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 allows remarkable noise reduction with little impact to sharpness, especially under limited lighting condition. Besides, the advanced 3DNR effectively decreases the band width and saves the storage space.

### Multi-formats

The camera supports multiple video formats including HDCVI, CVBS and other two common HD analog formats in the market. The four formats can be switched over through OSD menu or by PFM820 (UTC controller). This feature makes the camera to be compatible with not only HCVRs but also most end users' 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.
The camera complies with an IK10 vandal resistance 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).
Supporting ±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.

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/2.8" CMOS |
| Effective Pixels | 1920(H)×1080(V), 2MP |
| Scanning System | Progressive |
| Electronic Shutter Speed | PAL: 1/4s~1/100000s<br>NTSC: 1/3s~1/100000s |
| Minimum Illumination | 0.004Lux/F1.6, 30IRE, 0Lux IR on |
| S/N Ratio | More than 65dB |
| IR Distance | Up to 30m (98feet) |
| IR On/Off Control | Auto / Manual |
| IR LEDs | 2 |

### Lens

| | |
|---|---|
| Lens Type | Motorized lens / Fixed iris |
| Mount Type | Board-in |
| Focal Length | 2.7-13.5mm |
| Max Aperture | F1.6 |
| Angle of View | H: 108.7°~28.7° |
| Focus Control | Auto / Manual |
| Close Focus Distance | 200mm<br>7.87'' |

### DORI Distance

*Note: The DORI distance is a "general proximity" of distance which makes it easy to pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specification and lab test result according to EN 62676-4 which defines the criteria for Detect, Observe, Recognize and Identify respectively.

| | DORI Definition | Distance | |
|---|---|---|---|
| | | Wide | Tele |
| Detect | 25px/m (8px/ft) | 44m(144ft) | 153m(502ft) |
| Observe | 63px/m (19px/ft) | 18m(59ft) | 61m(200ft) |
| Recognize | 125px/m (38px/ft) | 9m(30ft) | 31m(102ft) |
| Identify | 250px/m (76px/ft) | 5m(16ft) | 15m(49ft) |

### Pan / Tilt / Rotation

| | |
|---|---|
| Pan/Tilt/Rotation | Pan: 0° ~ 355°<br>Tilt: 0° ~ 75°<br>Rotation: 0° ~ 355° |

### Video

| | |
|---|---|
| Resolution | 1080P (1920×1080) |
| Frame Rate | 25/30fps@1080P, 25/30/50/60fps@720P |
| Video Output | 1-channel BNC high definition video output / CVBS video output (DIP switch) |

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

### Certifications

| | |
|---|---|
| Certifications | CE (EN55032, EN55024, EN50130-4)<br>FCC (CFR 47 FCC Part 15 subpartB, ANSI C63.4-2014)<br>UL (UL60950-1+CAN/CSA C22.2 No.60950-1) |

### Interface

| | |
|---|---|
| Audio Interface | 1 |

### Eelectrical

| | |
|---|---|
| Power Supply | 12V DC ±30% |
| Power Consumption | Max. 4.7W (12V DC, IR on) |

### Environmental

| | |
|---|---|
| Operating Conditions | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 95% RH<br>* Start up should be done at above-30°C (-22°F) |
| Storage Conditions | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 95% RH |
| Ingress Protection & Vandal Resistance | IP67 & IK10 |

### Construction

| | |
|---|---|
| Casing | Aluminium |
| Dimensions | Φ122mm×88.9mm (Φ4.8"×3.5") |
| Net Weight | 0.39kg (0.85lb) |
| Gross Weight | 0.49kg (1.08lb) |

## Ordering Information

| Type | Part Number | Description |
|---|---|---|
| 2MP Camera | DH-HAC-HDBW2241RP-Z | 2MP Starlight HDCVI IR Dome Camera, PAL |
| | DH-HAC-HDBW2241RN-Z | 2MP Starlight HDCVI IR Dome Camera, NTSC |
| Accessories | PFA137 | Junction box (For use alone) |
| | PFB200C | Inceiling mount (For use alone) |
| | PFB203W | Junction box (For use alone or with PFA152-E pole mount) |
| | PFA152-E | Pole mount (For use with PFA137 junction box) |
| | PFA200W | Rain Shade of Dome Camera |
| | PFA106 | Adapter Plate of Mini Dome & Eyeball Camera |
| | PFB220C | Ceiling Mount Bracket of Mini Dome & Eyeball Camera |
| | PFM321 | 12V 1A Power Adapter |
| | PFM320 | 12V 2A Power Adapter |
| | PFM300 | 12V 2A Power Adapter |

## Accessories

Optional:



PFA137
Junction box

PFB200C
Inceiling mount

PFB203W
Junction box

PFA152-E
Pole mount

PFA200W
Rain shade

PFA106
Adapter plate

PFB220C
Ceiling mount bracket

PFM800-E
Passive HDCVI Balun

PFM321
12V 1A Power Adapter

PFM320
12V 2A Power Adapter

PFM300
12V 2A Power Adapter

| Junction Mount | In-ceiling Mount |
|---|---|
| PFA137 | PFB200C |



| Wall Mount | Pole Mount |
|---|---|
| PFB203W | PFB203W + PFA152-E |



| Wall Mount with Rain Shade | Ceiling Mount (Extensible) |
|---|---|
| PFA137+PFA200W | PFA106+PFB220C |



| Pole Mount with Rain Shade | |
|---|---|
| PFA137+PFA200W+PFA152-E | |



## Dimensions (mm/inch)



122.0 [4.8"]

88.9 [3.5"]

⌀122.0 [⌀4.8"]

3-⌀4.5 [⌀0.18"]

⌀110.0 [⌀4.33"]