

DDF4320HD-DN

Hybrid HD Dome Camera, 1.3-Megapixel, 720p/30, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, Wide Dynamic Range (WDR), Motor-driven Varifocal Lens, P-Iris, PoE (Class 0)



The DDF4320HD-DN is a hybrid Wide Dynamic Range (WDR) HD dome camera.

The camera provides **real-time HD video (720p/30)** using the **H.264** codec, currently, the most advanced standard for **high-efficiency video compression**, and supports **resolutions up to 1.3-megapixel**.

In addition to **HD video over IP**, the **hybrid camera** provides for a simultaneous **analogue SD (PAL/NTSC) video output via BNC (CVBS)**.

The camera is characterized by its **Wide Dynamic Range (WDR)** and allows you to capture images with highest colour fidelity and superb detail reproduction even in scenes with a wide range of contrast and strong backlighting.

The **excellent low light performance** also provides for clear and low noise images even in low light conditions.

Besides a comprehensive set of automatic and manual image optimization functions and many other setting options, it features automatic **Day/Night** operation supported by integrated **ambient light sensing** and a **removable IR cut filter (ICR¹⁾** in order to meet even the most demanding of surveillance conditions.

In addition, the camera is equipped with a **fast (large maximum aperture)** and **motor-driven P-Iris megapixel varifocal lens** which allows for the convenient adjustment/configuration of the focal length (zoom), focus and iris (aperture) via the web browser.

The novel **P-Iris control** technology, designed for a precise and automatic adjustment of the best iris position (optimum aperture), thereby realizes a significantly improved image quality²⁾ with excellent contrast, brilliant clarity and enhanced detail resolution combined with a greater depth of field, under almost all lighting conditions.

At a resolution of 720p, the **Digital Image Shift** function additionally provides for a **subsequent digital fine alignment of the image section**.

Depending on the requirements, the camera can be conventionally supplied with 12V DC or conveniently operated via **Power over Ethernet** (PoE Class 0, IEEE 802.3af) which allows for an easy, quick and cost-effective cabling and commissioning.

Features

- 1/3" 1.3-megapixel CMOS image sensor
- Pure Digital Signal Processing
- Hybrid HD camera – HD video over IP (Ethernet, RJ45) and analogue SD (PAL/NTSC) video output via BNC (CVBS)
- Real-time HD video (720p/30)
- Wide Dynamic Range (WDR)
- Automatic Day/Night switching using ambient light sensing and ICR¹⁾ function (switching threshold level adjustable)
- Excellent low light performance
- Motor-driven megapixel varifocal lens
- Zoom, focus and iris control conveniently adjustable via web browser
- P-Iris control for an optimum image quality and significantly enhanced depth of field²⁾
- Resolution video over IP: SD (4CIF PAL/NTSC), HD (720p, SXGA-)
- Resolution analogue video output: SD (4CIF PAL/NTSC)
- Video compression: H.264, MJPEG
- Frame rate up to 30 fps
- Automatic Exposure (AE) preset and frame rate of 50/60 fps at 720p for casino applications optional³⁾
- Simultaneous Dual- or Tri-Streaming
- Manual White Balance (MWB)
- Automatic White Balance (ATW, One-Push AWB)
- Automatic Gain Control (AGC)
- Automatic Electronic Shutter (AES)
- Comprehensive set of image optimization functions like brightness, contrast, saturation and sharpness
- Digital Noise Reduction (DNR)
- Three different exposure metering modes: average metering (light information from entire scene), centre-weighted average metering and spot metering
- Privacy Zone Masking (hiding/masking of protected areas)
- Flip function (horizontal, vertical or both)
- Digital Image Shift⁴⁾
- Motion detection⁵⁾ with selectable sensitivity
- Alarm notification via DaVid Protocol⁵⁾, e-mail and FTP image upload
- Voltage supply with 12V DC or via PoE (Class 0, IEEE 802.3af)
- Low power consumption
- 3-axis adjustment
- ONVIF compliant
- DIN EN 50130-4 compliant

1) ICR = IR Cut Filter Removable

2) Compared to conventional DC auto iris lenses

3) Optional license **DLC - Casino Preset and Frame Rate 50/60 fps at 720p** (004717) required. The recording at 50/60 fps is supported by the **DIS-2/M NSU**.



4) Digital Image Shift = Provides digital fine alignment of the image section (only applicable at 720p, vertical alignment by 120 pixels up or down)

5) Function in preparation

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Variants/Accessories/Licences

| Variants | |
|-------------|--|
| 004497.406 | DDF4320HD-DN Hybrid HD dome camera, 1.3-megapixel, 720p/30, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, motor-driven varifocal lens, P-Iris, PoE (Class 0), white, clear bubble, surface mount housing, F1.2–F2.3 / 3–9mm |
| 004497.408 | DDF4320HD-DN Hybrid HD dome camera, 1.3-megapixel, 720p/30, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, motor-driven varifocal lens, P-Iris, PoE (Class 0), white, clear bubble, surface mount housing, F1.6–F2.6 / 10–23mm |
| Accessories | |
| 001041 |  Tinted Bubble Tinted bubble for surface mount variant 4" |
| 001431 |  EvC-1 High-Speed Ethernet data transmission via coaxial cable |
| 001678 |  Power Supply Unit (110–240 V AC -> 12V DC) Universal power supply, 110–240V AC to 12V DC, 850 mA, plug adapter EU/UK/US/AUS |
| Licences | |
| 004717 | DLC - Casino Preset and Frame Rate 50/60 fps at 720p⁶⁾ License for the use of the Automatic Exposure (AE) preset Casino and the frame rate of 50/60 fps at 720p |

6) The recording at 50/60 fps is supported by the DIS-2/M NSU.

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Specifications

Sensor

| | |
|---|--------------------------------------|
| Type | 1/3" 1.3-megapixel CMOS image sensor |
| Signal processing | Pure Digital Signal Processing |
| Image capture | Progressive Scan |
| Minimum illumination | 0.1 lux (F1.2, 50 IRE) |
| Dynamic range (WDR) | > 115 dB ⁸⁾ |
| Signal-to-noise ratio (SNR _{MAX}) | 43.9 dB |

Functions

| | |
|---------------------------------------|---|
| Hybrid Video | On/Off |
| Day/Night switching | Yes, using ambient light sensing and ICR ⁷⁾ function (switching threshold level adjustable) |
| B/W (black-and-white) mode | Automatic ⁹⁾ (in Night mode) |
| Automatic Electronic Shutter (AES) | 1/25(30)–1/10000 s (Auto Slow Shutter extends maximum exposure time to 1/4(5)s with AE Preset "Low light") |
| Digital Noise Reduction (DNR) | Yes |
| Automatic Exposure (AE) Presets | Outdoor, Indoor, Low light, Casino ¹⁰⁾ |
| Exposure metering mode | Average metering (light information from entire scene), centre-weighted average metering, spot metering |
| Brightness adjustment | Automatic (ALC)/Manual |
| Gain control | Automatic (AGC) |
| White balance | ATW (Auto Tracking White Balance), One-Push AWB (Automatic White Balance) |
| Privacy Zone Masking | Yes (max. 40% of the entire image) |
| Flip function | Horizontal, vertical or both |
| Digital Image Shift ¹¹⁾ | Yes |
| Motion detection ¹²⁾ (VMD) | With selectable sensitivity (5 levels) |
| Alarm notification | Via DaVID Protocol (Dallmeier Video Protocol) to PGuard advance ¹²⁾ , e-mail, FTP image upload |
| Configuration | Via web browser |
| Languages | German, English, Spanish, French, Italian |

Lens

| | |
|--------------------------|---|
| Type | <i>For specifications and available angles of view see "Lens Specifications" on page 6.</i> |
| Zoom control (Tele–Wide) | Motor-driven (controllable via web browser) |
| Focus control (Far–Near) | Motor-driven (controllable via web browser) |
| Iris control | P-Iris (motor-driven, configurable via web browser) |

Format and Encoding

| | |
|------------------------------------|--|
| Video standard | SDTV (PAL/NTSC) HDTV (SMPTE 296M) |
| Resolution video over IP | 4CIF (PAL: 704 × 576, NTSC: 704 × 480) 720p (1280 × 720) SXGA– (1280 × 960) |
| Resolution analogue SD video | 4CIF (PAL: 704 × 576, NTSC: 704 × 480) |
| Aspect ratio video over IP | 4:3 (4CIF, SXGA–) 16:9 (720p) |
| Aspect ratio analogue SD video | Scale Analog Output -> On: 4:3 (if Encoder 1 resolution: 4CIF, SXGA–) 16:9 Letterbox (if Encoder 1 resolution: 720p) |
| Video compression | Scale Analog Output -> Off: 4:3 (cropped from centre sensor area) H.264, MJPEG |
| Frame rate | <i>See tables "Maximum Frame Rates" on page 5.</i> |
| Video bit rate | 0.25–10 Mbit/s, CBR (constant bit rate) or VBR (variable bit rate) Video streaming Simultaneous Dual- or Tri-Streaming ¹³⁾ (<i>Note the tables "Available Encoder Combinations" on page 5.</i>) |
| Transfer format | Progressive (full image) |
| Live streaming transmission method | Unicast, Multicast |

7) ICR = IR Cut Filter Removable

8) According to the sensor manufacturer's specifications

9) Without colour information, or rather in black-and-white mode, the image quality in low light conditions will be much clearer (e.g. less colour noise).

10) Optional license **DLC - Casino Preset and Frame Rate 50/60 fps at 720p** (004717) required. The recording at 50/60 fps is supported by the **DIS-2/M NSU**.

11) Digital Image Shift = Provides digital fine alignment of the image section (only applicable at 720p, vertical alignment by 120 pixels up or down)

12) Function in preparation

13) Only usable if analogue video output is disabled

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Specifications (Continuation)

Protocols

Ethernet protocols IPv4, TCP, UDP, ARP, ICMP, DHCP, NTP, HTTP, RTSP, IGMP V2, FTP, SMTP, RTP, RTCP
 SNMP support Yes

Connections

Video OUT 1× BNC (CVBS, 1.0V_{p-p}, 75 Ohm)
 Ethernet 1× RJ45, 10BASE-T-/100BASE-TX-PoE
 Power IN 12V DC (Weidmüller male connector SL 3.50/02/90G)

Miscellaneous

Ambient light sensor Integrated
 Programming interface Open platform for integration into third-party systems using API and ActiveX*
 ONVIF compliance Core Specifications 1.01 & 1.02

Electrical Data

Voltage supply 12V DC ±10% or PoE (Class 0)
 PoE standard IEEE 802.3af
 Power consumption Max. 4.5W

Mechanical Data

Dimensions Approx. Ø149×H106 mm (Ø5.87×H4.17 inches)
 Weight Approx. 476 g (1.05 lb)
 Adjustment 3-axis
 Colour White (standard variant)
 Bubble Clear (with black inner liner for discrete surveillance)

Environmental Conditions

Operating temperature -20°C to +40°C (-4°F to 104°F)
 Relative humidity 0%–90% RH, non-condensing

Approvals/Certifications

Type CE, FCC, ACA, UVV "Kassen" (DGUV Test), UL, DIN EN 50130-4 compliant

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Available Encoder Combinations

Encoder 1 (H.264)

| Encoder 1 | Encoder 2 | Encoder 3** |
|--------------------------------|----------------------------|-----------------------------|
| H.264 | H.264/MJPEG | H.264 |
| SXGA- / - 30 fps | VGA (640 × 480) / - 15 fps | - |
| 720p / - 60 fps ¹⁴⁾ | - | - |
| 720p / - 30 fps | VGA (640 × 352) / - 30 fps | - |
| 720p / - 30 fps | VGA (640 × 352) / - 15 fps | QCIF (192 × 128) / - 15 fps |
| 4CIF / - 30 fps | 4CIF / - 30 fps | - |

Encoder 1 (MJPEG)

| Encoder 1 | Encoder 2 | Encoder 3** |
|--------------------------------|-------------|-------------|
| MJPEG | H.264/MJPEG | H.264 |
| SXGA- / - 30 fps | - | - |
| 720p / - 60 fps ¹⁴⁾ | - | - |
| 720p / - 30 fps | - | - |
| 4CIF / - 30 fps | - | - |

** only available if Encoder 2 -> MJPEG

Maximum Frame Rates

Hybrid Video Off

| Resolution | Encoder 1 | Analogue Output |
|------------|--------------------------|-----------------|
| SXGA- | 25/30 fps | 12.5/15 fps |
| 720p | 25/30 fps | 25/30 fps |
| 720p | 50/60 fps ¹⁴⁾ | - *** |
| 4CIF | 25/30 fps | 25/30 fps |

Hybrid Video ON

| Resolution | Encoder 1 | Analogue Output |
|------------|--------------------------|-----------------|
| SXGA- | 12.5/15 fps | 25/30 fps |
| 720p | 25/30 fps | 25/30 fps |
| 720p | 50/60 fps ¹⁴⁾ | - *** |
| 4CIF | 25/30 fps | 25/30 fps |

*** At 720p/50 (PAL) or 720p/60 (NTSC), no analogue video output and no encoding by Encoder 2 and Encoder 3 is possible

¹⁴⁾ Optional license **DLC - Casino Preset and Frame Rate 50/60fps at 720p** (004717) required. The recording at 50/60fps is supported by the **DIS-2/M NSU**.

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Lens Specifications

| Lens F1.2 – F2.3 / 3 – 9 mm | |
|---|---|
| Type | Motor-driven megapixel varifocal lens |
| Format | 1/2.7" |
| Mount | Board Lens |
| Focal length | 3 – 9 mm |
| Iris range (at wide end) | F1.2 – 360 (Closed) |
| Iris range (at tele end) | F2.3 – 360 (Closed) |
| Iris control | P-Iris (motor-driven) |
| Zoom | Motor-driven |
| Focus | Motor-driven |
| MOD (Minimum Object Distance) | 0.5 m |
| IR corrected | Yes |
| Available angles of view ¹⁵⁾ (H × V) at wide end | approx. 77° × 61° with 4CIF, SXGA– approx. 77° × 48° with 720p |
| Available angles of view ¹⁵⁾ (H × V) at tele end | approx. 29° × 22° with 4CIF, SXGA– approx. 29° × 17° with 720p |

| Lens F1.6 – F2.6 / 10 – 23 mm | |
|---|---|
| Type | Motor-driven megapixel varifocal lens |
| Format | 1/2.7" |
| Mount | Board Lens |
| Focal length | 10 – 23 mm |
| Iris range (at wide end) | F1.6 – F16 (Closed) |
| Iris range (at tele end) | F2.6 – F16 (Closed) |
| Iris control | P-Iris (motor-driven) |
| Zoom | Motor-driven |
| Focus | Motor-driven |
| MOD (Minimum Object Distance) | 0.8 m |
| IR corrected | Yes |
| Available angles of view ¹⁵⁾ (H × V) at wide end | approx. 27° × 20° with 4CIF, SXGA– approx. 27° × 15° with 720p |
| Available angles of view ¹⁵⁾ (H × V) at tele end | approx. 11° × 8° with 4CIF, SXGA– approx. 11° × 6° with 720p |

¹⁵⁾ All specifications ±5%. Minor deviations with lenses may be a result of manufacturing tolerances and do not constitute a defect.

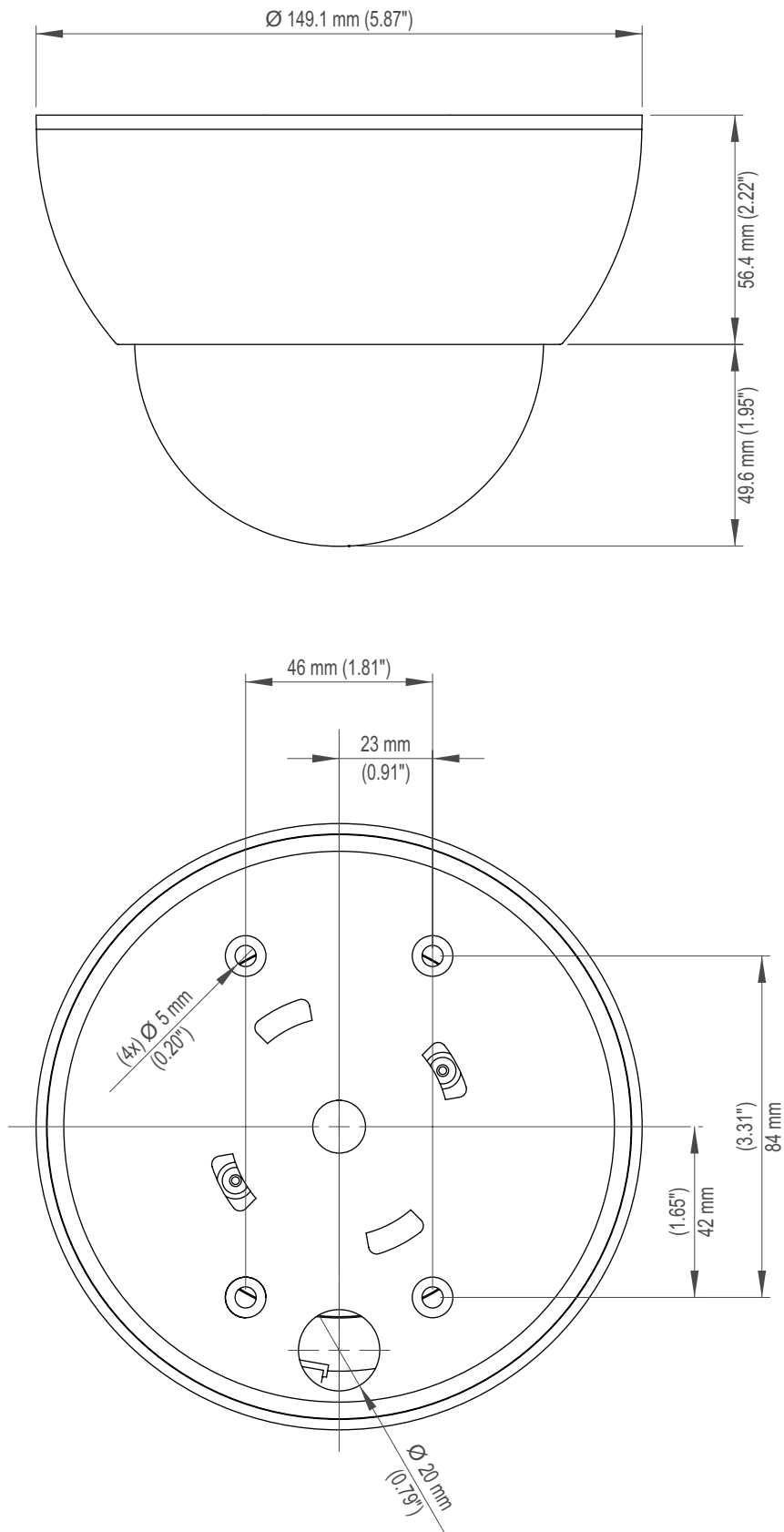
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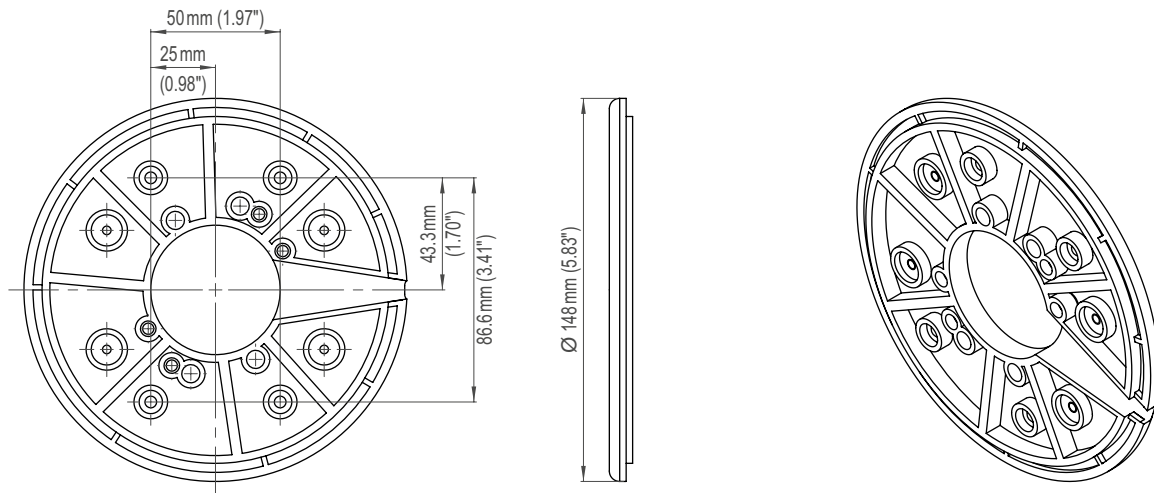
Dimensions



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Accessories



Mounting ring (compatible with flush-mounted sockets according to DIN 49073)