

DF4820HD-DN

HD Box Camera, 3-Megapixel, Full High-Definition, 1080p/30, H.264, Day/Night (ICR), Motor-Driven Varifocal Lens, One-Push Autofocus, P-Iris, PoE (Class 0)



The **DF4820HD-DN** is a **3-megapixel HD network camera** built into a compact and lightweight box housing.

The camera provides **real-time Full HD video (1080p/30)** using the **H.264** codec, currently, the most advanced standard for **high-efficiency video compression** and supports **resolutions up to 3-megapixel**.

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 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.

In conjunction with the **Digital Image Shift** function, which provides for a **subsequent digital fine alignment of the image section**, a convenient and straightforward camera installation is guaranteed.

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

- 1/2.5" CMOS image sensor
- Pure Digital Signal Processing
- Real-time Full HD video (1080p/30)
- Automatic Day/Night switching using ambient light sensing and ICR¹⁾ function (switching threshold level adjustable)
- High light sensitivity (0.5lux at F1.2, 50IRE)
- Motor-driven megapixel varifocal lens
- Zoom, focus and iris control conveniently adjustable via web browser
- One-Push AF (Autofocus) with manual fine adjustment
- P-Iris control for an optimum image quality and significantly enhanced depth of field²⁾
- Resolution: SD (up to D1), HD (720p, 1080p, 2MP, 3MP)
- Video compression: H.264, MJPEG
- Frame rate up to 30fps
- Simultaneous Dual- or Tri-Streaming
- Automatic White Balance (ATW, One-Push AWB)
- Manual White Balance (MWB)
- Automatic Gain Control (AGC)
- Automatic Electronic Shutter (AES)
- Comprehensive set of image optimization functions like brightness, contrast, saturation and sharpness
- 3D Digital Noise Reduction (3D DNR)
- Three different exposure metering modes: average metering (light information from entire scene), center-weighted average metering and spot metering
- Privacy Zone Masking (hiding/masking of protected areas)
- Flip function (horizontal, vertical or both)
- Digital Image Shift³⁾
- Motion detection⁴⁾ with selectable sensitivity
- Alarm notification via DaVid Protocol⁴⁾, e-mail and FTP image upload
- EdgeStorage for Emergency Recording with SmartBackfill⁵⁾
- Storage expansion with SDHC card (Class 10)
- Analogue video preview output (CVBS)
- Audio OUT⁶⁾ / Microphone IN⁶⁾
- Voltage supply with 12V DC or via PoE (Class 0, IEEE 802.3af)
- Low power consumption (max. 4.5W)
- Compact and lightweight housing
- ONVIF compliant
- DIN EN 50130-4 compliant

1) ICR = IR Cut Filter Removable

2) Compared to conventional DC auto iris lenses

3) Digital Image Shift = Provides digital fine alignment of the image section

4) Function in preparation

5) Note the handout "Edge Storage & SmartBackfill".

6) Audio IN/OUT Y-Cable Connector FGA-30 required (optionally available)

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Variants/Options

Variants	
004665.406	DF4820HD-DN HD box camera, 3-megapixel, Full High-Definition, 1080p/30, H.264, Day/Night (ICR), motor-driven varifocal lens, One-Push AF, P-Iris, PoE (Class 0), F1.2–F2.3 / 3–9mm
004665.408	DF4820HD-DN HD box camera, 3-megapixel, Full High-Definition, 1080p/30, H.264, Day/Night (ICR), motor-driven varifocal lens, One-Push AF, P-Iris, PoE (Class 0), F1.6–F2.6 / 10–23mm
Options	
001431	EvC-1 High-Speed Ethernet data transmission via coaxial cable
001678	Power Supply Unit (110–240 V AC -> 12 V DC) Universal power supply, 110–240V AC to 12V DC, 850 mA, plug adapter EU/UK/US/AUS
003694	Audio IN/OUT Y-Cable Connector FGA-30 3.5mm stereo plug to 2× RCA jack incl. galvanic isolation
Mounting Appliances	
003952	Wall Mount Bracket Indoor (HD Box) Grey, 1/4" tripod screw, for HD box cameras

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Specifications

Sensor

Type	1/2.5" CMOS image sensor
Total picture elements (H×V)	2592×1944 pixels (5-megapixel)
Effective picture elements (H×V)	2048×1536 pixels (3-megapixel)
Signal processing	Pure Digital Signal Processing
Image capture	Progressive Scan
Minimum illumination	0.5 lux (F1.2, 50 IRE)
Dynamic range	Max. 70 dB ⁸⁾

Functions

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)–1/2500 s (Auto Slow Shutter extends maximum exposure time to 1/4(5)s with AE Preset "Low light")
3D Digital Noise Reduction (3D DNR)	On/Off
Automatic Exposure (AE) Presets	Outdoor, Indoor, Low light
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) MWB (Manual White Balance)
Privacy Zone Masking	Yes (max. 20% of the entire image)
Flip function	Horizontal, vertical or both
Digital Image Shift ¹⁰⁾	Yes
Motion detection ¹¹⁾ (VMD)	With selectable sensitivity (5 levels)
Alarm notification	Via DaVID Protocol (Dallmeier Video Protocol) to PGuard advance ¹¹⁾ , 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 5.</i>
Zoom control (Tele–Wide)	Motor-driven (controllable via web browser)
Focus control (Far–Near)	Motor-driven (controllable via web browser: One-Push AF with manual fine adjustment)
Iris control	P-Iris (motor-driven, configurable via web browser)

Format and Encoding

Video standard	SDTV (PAL/NTSC), HDTV (SMPTE 296M, SMPTE 274M)
Resolution	Encoder 1: 4CIF (704×576) / 4SIF (704×480) D1 PAL (720×576) / D1 NTSC (720×480) 720p (1280×720) 1080p (1920×1080) 2MP (1600×1200) 3MP (2048×1536) Encoder 2: Wide-CIF (480×288 / 384×288) VGA (640×352 / 640×480) Encoder 3: 192×128
Video compression	H.264, MJPEG
Audio compression	G.711 µ-law
Frame rate	Up to 30 fps with 4SIF Up to 30 fps with D1 Up to 30 fps with 720p Up to 30 fps with 1080p Up to 30 fps with 2MP Up to 15 fps with 3MP
Video bit rate	0.25–10 Mbps, CBR (constant bit rate) or VBR (variable bit rate)
Audio bit rate	64 kbps
Video streaming	Simultaneous Dual- or Tri-Streaming (number of simultaneous streams depends on compression method, resolution and bit rate)
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 color information, or rather in black-and-white mode, the image quality in low light conditions will be much clearer (e.g. less color noise).

10) Digital Image Shift = Provides digital fine alignment of the image section

11) Function in preparation

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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

Analogue video preview output 1× BNC (CVBS) – for local installation only, e.g. for adjusting the focal length and image section
 Audio OUT (Mono) / Microphone IN (Mono) 1× 3.5 mm phone jack (for stereo plug)¹²⁾
 Mic IN: max. 63 mV (RMS), input resistance 10 kOhm, internal gain 20 dB
 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
 Local storage 50MB RAM storage
 Storage expansion SDHC card (Class 10 or higher) with up to 32 GB
 Programming interface Open platform for integration into 3rd-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. 4.5 W

Mechanical Data

Dimensions Approx. W71 × H66 × L160.5 mm (W2.8 × H2.6 × L6.32 inches)
 Weight Approx. 300 g (0.7 lb)
 Colour Black

Environmental Conditions

Operating temperature -20°C to +50°C (-4°F to 122°F)
 Relative humidity 0%–90% RH, non-condensing

Approvals/Certifications

Type CE, FCC, ACA, UVV “Kassen” (DGVU Test), UL, DIN EN 50130-4 compliant

12) Audio IN/OUT Y-Cable Connector FGA-30 required (optionally available)

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Lens Specifications

Lens F1.2 – F2.3 / 3 – 9 mm	
Type	Motor-driven megapixel varifocal lens
Format	1/2.7"
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 ¹³⁾ (H × V) at wide end	approx. 57° × 37° with D1 NTSC approx. 57° × 45° with D1 PAL approx. 62° × 47° with 4SIF approx. 62° × 47° with 4CIF approx. 80° × 42° with 720p approx. 80° × 42° with 1080p approx. 65° × 47° with 2 MP approx. 84° × 61° with 3 MP
Available angles of view ¹³⁾ (H × V) at tele end	approx. 20° × 14° with D1 NTSC approx. 20° × 16° with D1 PAL approx. 21° × 17° with 4SIF approx. 21° × 17° with 4CIF approx. 27° × 15° with 720p approx. 27° × 15° with 1080p approx. 22° × 17° with 2 MP approx. 29° × 21° with 3 MP

Lens F1.6 – F2.6 / 10 – 23 mm	
Type	Motor-driven megapixel varifocal lens
Format	1/2.7"
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 ¹³⁾ (H × V) at wide end	approx. 18.4° × 12.1° with D1 NTSC approx. 18.4° × 14.5° with D1 PAL approx. 20.4° × 14.4° with 4SIF approx. 20.4° × 14.4° with 4CIF approx. 24.8° × 13.5° with 720p approx. 24.8° × 13.5° with 1080p approx. 20.4° × 15.2° with 2 MP approx. 26.5° × 19.5° with 3 MP
Available angles of view ¹³⁾ (H × V) at tele end	approx. 8.2° × 5.5° with D1 NTSC approx. 8.2° × 6.6° with D1 PAL approx. 9.2° × 7° with 4SIF approx. 9.2° × 7° with 4CIF approx. 11° × 6.2° with 720p approx. 11° × 6.2° with 1080p approx. 9.2° × 6.9° with 2 MP approx. 11.8° × 9.2° with 3 MP

13) 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

