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 (ICR)**.

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 quality[1] 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 12 V 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

- Optimized housing design[2]
- 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 ICR function (switching threshold level adjustable)
- High light sensitivity (0.5 lux at F1.2, 50 IRE)
- 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 field[1]
- Resolution: SD (up to D1), HD (720p, 1080p, 2 MP, 3 MP)
- Video compression: H.264, MJPEG
- Frame rate up to 30 fps
- 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 Shift[3]
- Motion detection[4] with selectable sensitivity
- Alarm notification via DaVid Protocol[4], e-mail and FTP image upload
- EdgeStorage for Emergency Recording with SmartBackfill
- Storage expansion with SDHC card (Class 10)
- Analogue video preview output (CVBS)
- Audio OUT[5] / Microphone IN[5]
- Voltage supply with 12 V DC or via PoE (Class 0, IEEE 802.3af)
- Low power consumption (max. 4.5 W)
- Compact and lightweight housing
- ONVIF compliant
- DIN EN 50130-4 compliant

1) Compared to conventional DC auto iris lenses
2) The image of the camera in the graphical user interface may be different.
3) Digital Image Shift = Provides digital fine alignment of the image section
4) Function in preparation
5) 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 – 9 mm
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 – 23 mm

Accessories		
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 – 240 V AC to 12 V DC, 850 mA, plug adapter EU/UK/US/AUS
003694		**Audio IN/OUT Y-Cable Connector FGA-30** 3.5 mm stereo plug to 2× RCA jack incl. galvanic isolation
003952		**Wall Mount Bracket Indoor (HD Box)** Grey, 1/4" tripod screw, for HD box cameras
004316		**PoE Midspan 30 W** Midspan power supply unit, 1× Ethernet port, 10/100/1000Base-T, 802.3at, 802.3af, 30 W

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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[7]

Functions	
Day/Night switching	Yes, using ambient light sensing and ICR[6] function (switching threshold level adjustable)
B/W (black-and-white) mode	Automatic[8] (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[9]	Yes
Motion detection[10] (VMD)	With selectable sensitivity (5 levels)
Alarm notification	Via DaVid Protocol (Dallmeier Video Protocol) to PGuard advance[10], e-mail, FTP image upload
Configuration	Via web browser
Languages	German, English, Spanish, French, Italian

Lens	
Type	*For specifications and available angles of view see "Lens Specifications" on page 6.*
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)

6) ICR = IR Cut Filter Removable
7) According to the sensor manufacturer's specifications
8) 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).
9) Digital Image Shift = Provides digital fine alignment of the image section
10) Function in preparation

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Specifications

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) 2 MP (1600 × 1200) 3 MP (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 2 MP Up to 15 fps with 3 MP
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

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)[11] Mic IN: max. 63 mV (RMS), input resistance 10 kOhm, internal gain 20 dB
Ethernet	1× RJ45, 10BASE-T-/100BASE-TX-PoE
Power IN	12 V DC (Weidmüller male connector SL 3.50/02/90G)

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

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Miscellaneous	
Ambient light sensor	Integrated
Local storage	50 MB 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[12]
ONVIF compliance	Core Specifications 1.01 & 1.02

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

Mechanical Data	
Dimensions	Approx. W 71 × H 66 × L 176 mm (W 2.8 × H 2.6 × L 6.9 inches)
Weight	Approx. 300 g (0.7 lb)
Colour	Black/grey

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, UL, DIN EN 50130-4 compliant

12) ActiveX is a trademark or registered trademark of Microsoft Corporation headquartered in Redmond, Washington, USA.

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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

71 mm (2.8")

66 mm (2.6")

176 mm (6.9")

63 mm

6 mm