

DF4620HD-DN

Hybrid HD Camera, 1.3-Megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, Wide Dynamic Range (WDR), Remote Back Focus Control, PoE (Class 0)



The **DF4620HD-DN** is a **hybrid Wide Dynamic Range (WDR) HD camera** built into a compact and lightweight box housing.

The camera provides **real-time HD video (720p/60)** 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.

The built-in **Remote Back Focus Control** technology allows for a **precise and easy remote focusing over the network**.

At a resolution of 720p, the **Digital Image Shift³⁾** 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/60)
- Wide Dynamic Range (WDR)
- Automatic Day/Night switching using ambient light sensing and ICR¹⁾ function (switching threshold level adjustable)
- Excellent low-light performance
- Remote Back Focus Control
- Optional interface board for RS485 and Contact IN/OUT²⁾
- 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 60 fps (ideally suited for casino applications)
- 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)
- Privacy Zone Masking (hiding/masking of protected areas)
- Three different exposure metering modes: average metering (light information from entire scene), centre-weighted average metering and spot metering
- 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⁾
- Local storage expansion with microSDHC card (Class 10)
- Audio OUT⁶⁾ / Microphone IN⁶⁾
- Voltage supply with 12V DC or via PoE (Class 0, IEEE 802.3af)
- Low power consumption
- Different lens types optionally available
- Compact and lightweight housing
- ONVIF Profile S compliance for easy integration into 3rd party systems
- DIN EN 50130-4 compliant

1) ICR = IR Cut Filter Removable

2) Optional (ex factory only, article no. 004923)

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

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	
004669	DF4620HD-DN Hybrid HD camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), grey, w/o lens
Options	
002946	Lens F1.8 / 3.9–10 mm 1/2", 5-megapixel, varifocal, Day/Night, DC auto iris, CS-mount
001602	Lens F1.8 / 1.8–3 mm Ultra wide-angle, 1/2.5", 5-megapixel, varifocal, Day/Night, DC auto iris, CS-mount
002907	Lens F1.5 / 9–40 mm Telephoto, 1/2.5", 5-megapixel, varifocal, Day/Night, DC auto iris, CS-mount
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
004923	Interface Board RS485 & Contact IN/OUT 1× serial interface RS485 (full duplex, half duplex), 3× Contact IN, 1× Contact OUT; ex factory only (available as of Q3 2014)
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	1/3" 1.3-megapixel CMOS image sensor
Signal processing	Pure Digital Signal Processing
Image capture	Progressive Scan
Minimum illumination	0.06 lux (F1.0, 50 IRE)
Dynamic range	> 115 dB ⁷⁾
Signal-to-noise ratio (SNR _{MAX})	43.9 dB

Functions

Hybrid Video	On, Off
WDR (Wide Dynamic Range) mode	Automatic, On, Off
Day/Night switching	Yes, using ambient light sensing and ICR ⁸⁾ function (switching threshold level adjustable)
B/W (black-and-white) mode	Automatic (in Night mode or at low light) ⁹⁾ , On, Off
Automatic Electronic Shutter (AES)	1/4(5)–1/10000 s
Slow Shutter Limit	1/4(5)–1/100(120) s
Digital Noise Reduction (DNR)	Yes
Automatic Exposure (AE) Presets	Universal, Indoor, Fluorescent, Casino
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	MWB (Manual): 2500 K–6500 K, 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
Remote Back Focus Control	Yes (for easy remote focusing over the network during installation and maintenance)
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

Mount	CS-mount
Auto iris control	Compatible with DC drive auto iris lenses
Type	See "Lens Types" on page 6.

Format and Encoding

Video standard	SDTV (PAL/NTSC) HDTV (SMPTE 296M)
Resolution video over IP	SXGA- (1280 × 960) 720p (1280 × 720) 4CIF (PAL: 704 × 576, NTSC: 704 × 480) VGA (640 × 352 / 640 × 480) QCIF (192 × 128)
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) Scale Analog Output -> Off: 4:3 (cropped from centre sensor area)
Video compression	H.264, MJPEG
Audio compression	G.711
Frame rate	See tables "Maximum Frame Rates" on page 5.
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 ¹²⁾ (Note the tables "Available Encoder Combinations" on page 5.)
Transfer format	Progressive (full image)
Live streaming transmission method	Unicast, Multicast

7) According to the sensor manufacturer's specifications

8) ICR = IR Cut Filter Removable

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

11) Function in preparation

12) Only available with Hybrid Video -> Off

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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 output (analogue)	1× BNC (CVBS, 1.0V _{p-p} , 75 ohm)
Audio OUT (Mono) / Microphone IN (Mono)	1× 3.5 mm phone jack (for stereo plug) ¹³⁾ Mic IN: max. 63 mV (RMS), input resistance 10 kOhm, internal gain 20 dB
Ethernet	1× RJ45 female connector, 10BASE-T-/100BASE-TX PoE
Power IN	12V DC (Weidmüller male connector SL 3.50/02/90G)
Serial interface ¹⁴⁾	1× RS485 (full duplex, half duplex) for the connection of external devices (e.g. pan/tilt heads)
Contact IN ¹⁴⁾	3×
Contact OUT ¹⁴⁾	1×

Miscellaneous

Ambient light sensor	Integrated
Local storage	50 MB RAM storage
Storage expansion	microSDHC (Class 10 or higher) card with up to 32 GB
Programming interface	Open platform for integration into 3 rd party systems using API and ActiveX*
ONVIF compliance	Profile S

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 × L124.5 mm (W2.8 × H2.6 × L4.9 inches) w/o lens
Weight	Approx. 300 g (0.7 lb)
Colour	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, UVV "Kassen" (DGUV Test), UL, DIN EN 50130-4 compliant
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13) Audio IN/OUT Y-Cable Connector FGA-30 required (optionally available)
14) Optional (ex factory only, article no. 004923)

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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	-	-
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	-	-
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	- ***
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	- ***
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.

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Lens Types

Lens F1.8 / 3.9 – 10 mm	
Type	5-Megapixel varifocal lens
Format	1/2"
Mount	CS-mount
Focal length	3.9 – 10 mm
Iris range	F1.8 – 360
Iris control	DC auto iris
Zoom	Manual
Focus	Manual
MOD (Minimum Object Distance)	0.3 m
IR corrected	Yes
Available angles of view ¹⁵⁾ (H × V) at wide end	approx. 56° × 41° with 4CIF, SXGA– approx. 56° × 30° with 720p
Available angles of view ¹⁵⁾ (H × V) at tele end	approx. 26° × 19° with 4CIF, SXGA– approx. 26° × 14° with 720p

Ultra Wide-Angle Lens F1.8 / 1.8 – 3 mm	
Type	5-Megapixel varifocal lens
Format	1/2.5"
Mount	CS-mount
Focal length	1.8 – 3 mm
Iris range	F1.8 – Closed
Iris control	DC auto iris
Zoom	Manual
Focus	Manual
MOD (Minimum Object Distance)	0.5 m
IR corrected	Yes
Available angles of view ¹⁵⁾ (H × V) at wide end	approx. 99° × 81° with 4CIF, SXGA– approx. 99° × 65° with 720p
Available angles of view ¹⁵⁾ (H × V) at tele end	approx. 75° × 60° with 4CIF, SXGA– approx. 75° × 46° with 720p

Telephoto Lens F1.5 / 9 – 40 mm	
Type	5-Megapixel varifocal lens
Format	1/2.5"
Mount	CS-mount
Focal length	9 – 40 mm
Iris range	F1.5 – Closed
Iris control	DC auto iris
Zoom	Manual
Focus	Manual
MOD (Minimum Object Distance)	2.0 m
IR corrected	Yes
Available angles of view ¹⁵⁾ (H × V) at wide end	approx. 29° × 21° with 4CIF, SXGA– approx. 29° × 16° with 720p
Available angles of view ¹⁵⁾ (H × V) at tele end	approx. 7.2° × 5.3° with 4CIF, SXGA– approx. 7.2° × 3.8° with 720p

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

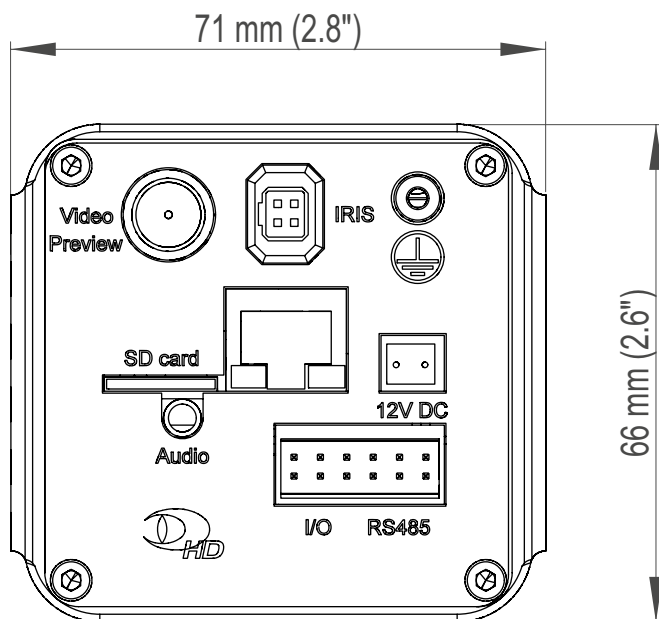
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Dimensions



Interface board for RS485 and Contact IN/OUT optional (ex factory only, article no. 004923)

