DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

The **DDF4620HDV-DN** is a **hybrid Wide Dynamic Range (WDR) HD camera** built into a **vandal-resistant (IK10) dome enclosure**.

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 (ICR[1])** 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 Shift**[2] function additionally provides for a subsequent **digital fine alignment of the image section**.

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

- 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 ICR[1] function (switching threshold level adjustable)
- Excellent low-light performance
- Remote Back Focus Control
- 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 Shift[2]
- Motion detection[3] with selectable sensitivity
- Alarm notification via DaVid Protocol[3], e-mail and FTP image upload
- EdgeStorage for Emergency Recording with SmartBackfill[4]
- Local storage expansion with microSDHC card (Class 10)
- Audio OUT[5] / Microphone IN[5]
- Voltage supply with 12 V DC or via PoE (Class 0, IEEE 802.3af)
- Low power consumption
- 3-axis adjustment
- Two available mounting variants: in-ceiling mount (IM) or surface mount (SM)
- Available with different lens types
- Compact vandal-resistant (IK10) housing
- IP67 (surface mount variant)
- ONVIF Profile S compliance for easy integration into 3rd party systems
- DIN EN 50130-4 compliant

1) ICR = IR Cut Filter Removable
2) Digital Image Shift = Provides digital fine alignment of the image section (only applicable at 720p, vertical alignment by 120 pixels up or down)
3) Function in preparation
4) Note the handout "Edge Storage & SmartBackfill".
5) Audio IN/OUT Y-Cable Connector FGA-30 required (optionally available)

DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

Variants/Accessories

Variants	
004489.403	**DDF4620HDV-DN-IM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), in-ceiling mount variant, F1.8 / 1.8−3 mm
004490.403	**DDF4620HDV-DN-SM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), surface mount variant, F1.8 / 1.8−3 mm
004489.404	**DDF4620HDV-DN-IM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), in-ceiling mount variant, F1.5 / 9−40 mm
004490.404	**DDF4620HDV-DN-SM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), surface mount variant, F1.5 / 9−40 mm
004489.405	**DDF4620HDV-DN-IM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), in-ceiling mount variant, F1.8 / 3.9−10 mm
004490.405	**DDF4620HDV-DN-SM** Hybrid HD dome camera, 1.3-megapixel, 720p/60, SD (PAL/NTSC), H.264, Day/Night (ICR), Low-Light, WDR, Remote Back Focus Control, PoE (Class 0), vandal-resistant (IK10), surface mount variant, F1.8 / 3.9−10 mm

Accessories	
001044	**Tinted Bubble** For in-ceiling and surface mount variant, 4.5"
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

DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

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[6]
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[7] function (switching threshold level adjustable)
B/W (black-and-white) mode	Automatic (in Night mode or at low light)[8], 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[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

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[11]
	(*Note the tables "Available Encoder Combinations" on page 5.*)
Transfer format	Progressive (full image)
Live streaming transmission method	Unicast, Multicast

6) According to the sensor manufacturer's specifications
7) ICR = IR Cut Filter Removable
8) 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).
9) Digital Image Shift = Provides digital fine alignment of the image section (only applicable at 720p, vertical alignment by 120 pixels up or down)
10) Function in preparation
11) Only available with Hybrid Video -> Off

V1.0.1 / 7.1.2.7   2014-12-02   Specifications subject to change without notice. Errors and misprints excepted.   © 2014 Dallmeier electronic

DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

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, 1.0 V_{p-p}, 75 ohm)
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 female connector, 10BASE-T-/100BASE-TX PoE
Power IN	12 V DC (Weidmüller male connector SL 3.50/02/90G)

Miscellaneous

Ambient light sensor	Integrated
Local storage	50 MB RAM storage
Storage expansion	microSDHC 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	Profile S

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	In-ceiling mount variant: approx. Ø 170 × H 135 mm (Ø 6.7 × H 5.3 inches)
	Surface mount variant: approx. Ø 153 × H 135 mm (Ø 6.0 × H 5.3 inches)
Weight	In-ceiling mount variant: approx. 1200 g (2.6 lb)
	Surface mount variant: approx. 1100 g (2.4 lb)
Adjustment	3-axis
Colour	White (standard variant)
Bubble	Clear (with black inner liner for discrete surveillance)
Vandal-resistant	Yes
IK protection	IK10 protection against external mechanical impacts (up to 20 joules)
IP rating	IP67 (surface mount variant only)

Environmental Conditions

Operating temperature	In-ceiling mount variant (indoor): −20°C to +40°C (−4°F to 104°F)
	Surface mount variant (in- and outdoor): −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

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

DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

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.

DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

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[13] (H × V) at wide end	approx. 56° × 41° with 4CIF, SXGA– approx. 56° × 30° with 720p
Available angles of view[13] (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[13] (H × V) at wide end	approx. 99° × 81° with 4CIF, SXGA– approx. 99° × 65° with 720p
Available angles of view[13] (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[13] (H × V) at wide end	approx. 29° × 21° with 4CIF, SXGA– approx. 29° × 16° with 720p
Available angles of view[13] (H × V) at tele end	approx. 7.2° × 5.3° with 4CIF, SXGA– approx. 7.2° × 3.8° with 720p

13) All specifications ±5%. Minor deviations with lenses may be a result of manufacturing tolerances and do not constitute a defect.
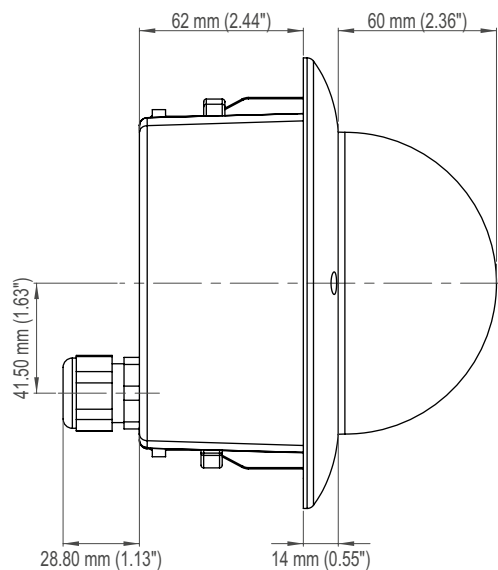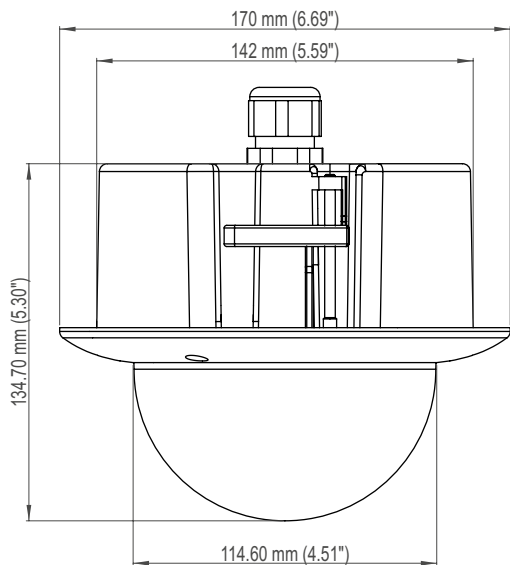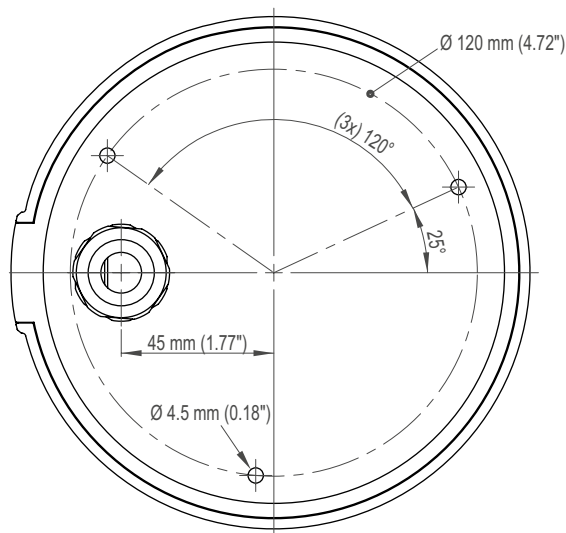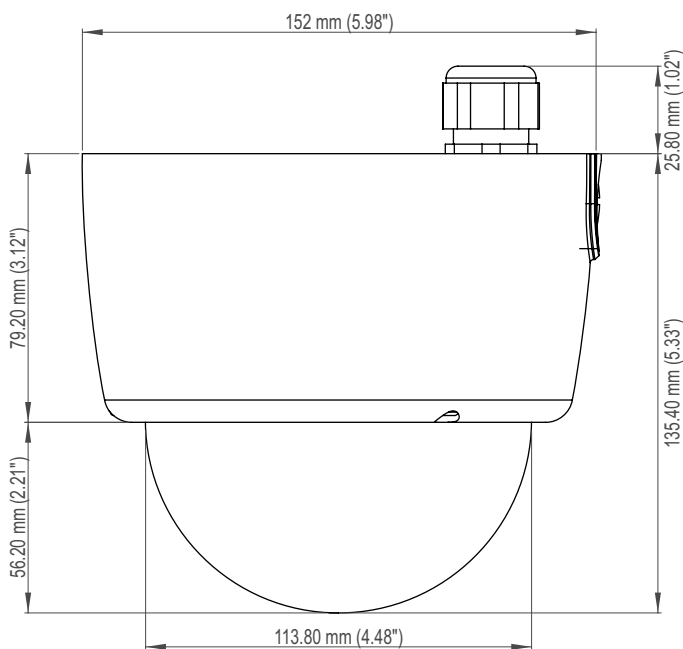
DDF4620HDV-DN

Hybrid HD Dome 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), Vandal-resistant (IK10)

Dimensions

170 mm (6.69")
142 mm (5.59")
134.70 mm (5.30")
114.60 mm (4.51")

62 mm (2.44")
60 mm (2.36")
41.50 mm (1.63")
28.80 mm (1.13")
14 mm (0.55")

In-ceiling mount variant

152 mm (5.98")
25.80 mm (1.02")
79.20 mm (3.12")
135.40 mm (5.33")
56.20 mm (2.21")
113.80 mm (4.48")

Ø 120 mm (4.72")
(3x) 120°
25°
45 mm (1.77")
Ø 4.5 mm (0.18")

Surface mount variant