DF5400HD-DN/IR

Ultraline

Ultra High Definition Camera, 2160p/30, 12 MP Sensor, 4 K, H.264, Day/Night (ICR), Integrated IR Illumination, Motor-driven Varifocal Lens, One-Push Autofocus, P-Iris, PoE, Outdoor Wall Mount Bracket

4K Ultra HD Resolution | **30 FPS** | **ICR Day-Night** | **Infrared** | **Motor Lens** | **P-Iris** | **Image Shift** | **EdgeStorage** | **Onvif | S**

The **DF5400HD-DN/IR** has been designed especially for applications requiring **images with highest resolution in real-time** at day and in the IR mode at night. Built into an **IP66-rated weather-proof enclosure**, the camera is designed for both indoor and for outdoor applications. The camera is operated with **Power over Ethernet** (PoE Class 0, IEEE 802.3af) which allows for an easy, quick and cost-effective cabling and commissioning.

Ultra HD resolution

The **high resolution** of the sensor and the sophisticated **image processing** enable real-time recordings with **UHD resolution** at a frame rate **up to 25/30 fps (2160p/30)** with excellent quality. Thus, the camera is ideally suited when capturing the **finest detail** is required **in real time**.

Automatic switching of presets

The camera is equipped with an **ambient light sensor** and a **removable IR cut filter** and can automatically switch between **day and night mode**. In addition, **different day and night presets** for the exposure settings can be defined and adjusted.

Integrated homogeneous IR illumination

The automatic Day/Night operation is supported by a **uniform IR illumination** by means of semi-covert 850 nm **high power LEDs**.
In the IR mode at night, the camera provides excellent results due to the **high infrared sensitivity** and thus meets the most demanding requirements in a 24-hour operation.

Motor-driven varifocal lens with P-Iris

The camera has a **motor-driven megapixel varifocal lens** that is perfectly tuned to the image sensor. The adjustment of zoom, focus and iris is made conveniently using a web browser. The manual lens setting directly at the installation site of the camera is not required.
The lens is equipped with a **P-Iris control** providing a precise and **automatic adjustment of the optimum aperture**. Thus, the camera achieves a much **better depth of field** than with conventional DC auto iris lenses under almost any lighting conditions.

Digital Image Shift

The **Digital Image Shift** function allows a comfortable **fine adjustment of the captured image section** via a web browser ensuring a quick and easy installation of the camera. Depending on the selected resolution, the used area on the image sensor can be moved and adapted to the local conditions. The manual fine alignment of the camera directly at the installation site is not necessary.

EdgeStorage

The camera is equipped with a **RAM memory** that is used by the **EdgeStorage** function for storing the video stream in case of a network failure. When the network is restored, the **SmartBackfill** function ensures a fast transmission to the **SMAVIA recording system**. This stores the video stream with high speed and then continues the recording of the live stream seamlessly.

Further Features

- 1/1.7" Ultra HD CMOS image sensor
- Adjustable IR intensity and Day/Night switching threshold level
- Minimum illumination 0 lux (with IR LED On)
- Memory expansion with microSDHC card
- Gigabit Ethernet interface
- Video compression H.264, MJPEG
- Simultaneous Dual- or Tri-Streaming

- Privacy Zone Masking
- Digital flip function
- Wide Dynamic Range (WDR)
- 3D Digital Noise Reduction (3D DNR)
- EdgeStorage for Emergency Recording with SmartBackfill
- Outdoor wall mount bracket (with internal cable routing)

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	Variants
005947	**DF5400HD-DN/IR** Ultra High Definition Camera, 2160p/30, 12 MP Sensor, 4 K, H.264, day/night (ICR), integrated IR illumination, motor-driven varifocal lens, one-push autofocus, P-Iris, PoE, outdoor wall mount bracket, F1.4 / 4 – 10 mm

	Power Supply
004316	**PoE Midspan 30 W** Midspan power supply unit, 1× Ethernet port, 10/100/1000Base-T, 802.3at, 802.3af, 30 W

	Wall Mount
004386	**WCPA – Support Plate Adapter**[1] Reinforcing support plate WCPA for adapting the wall brackets WBMA, WBOVA2 and IR housing wall mount bracket

	Corner Mount
004390	**WCWA – Corner Mount Adapter**[1] Corner mount adapter WCWA for corner mounting

	Pole Mount 65 – 110 mm
004387	**WSFPA – Pole Mount Adapter**[1] Pole mount adapter WSFPA for pole diameters 65 – 110 mm (2.6 – 4.3")

	Pole Mount 210 – 225 mm
004386	**WCPA – Support Plate Adapter**[1] Reinforcing support plate WCPA for adapting the wall brackets WBMA, WBOVA2 and IR housing wall mount bracket
004388	**DBHWGC – Pole Mount Adapter**[1] Pole mount adapter DBHWGC for pole diameters 210 – 225 mm (8.3 – 8.6")

[1] Note: The color of this mounting accessories (gray-white) differs from that of the IR camera / wall mount bracket (white).

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Sensor	
Type	1/1.7" 12.4 megapixel Ultra HD CMOS image sensor
Number of sensor pixels	12 MP
Signal processing	Pure Digital Signal Processing
Image capture	Progressive Scan
Sensor sensitivity	IR LED OFF: <0.05 lux (F1.4, AGC ON) IR LED On: 0 lux
Dynamic range	92 dB
Signal to noise ration (SNR_{MAX})	> 50 dB

Functions	
Day/Night switching	Ambient light sensing and removable IR cut filter (ICR), switching threshold level adjustable
Black-and-white mode	Automatic (at low light or in night mode)[2], On, Off
Automatic Electronic Shutter	1/1 – 1/8000 s
Slow Shutter Limit	1/1 – 1/1000 s
Lens control	Zoom control (Tele – Wide), Focus control (Far – Near, One-Push AF), Iris control (P-Iris) via web browser
Digital flip function	Horizontal, vertical or both axes
Digital Noise Reduction	3D-DNR (adjustable by 10 levels)
Exposure presets	Universal, Indoor, Fluorescent, Casino, Low-Light, User-Defined (with automatic day/night switching)
Exposure compensation	-2 EV (Exposure Value) to + 2 EV (adjustable by 200 levels)
Exposure metering	Average metering (light information from entire scene), center-weighted average metering, spot metering
Brightness adjustment	Automatic (ALC), Manual
Gain control	Automatic (AGC) with adjustable Gain Limit
White balance	Auto: ATW (Auto Tracking White Balance), One-Push AWB (Automatic White Balance) Fixed: 2800K, 4000K, 5000K, 6500K and 7500K
Privacy Zone Masking	Hiding/masking of any number of protected areas (up to 100% of the entire image)
Alarm notification[3]	Via DaVid protocol (Dallmeier Video Protocol) to PGuard advance, E-Mail, FTP image upload
Alarm trigger[3]	Application restart
Configuration and live video	Via web browser (all major platforms)
Languages	German, English

2) 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).
3) Function in preparation

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Format and Encoding	
Video standard	SDTV (PAL/NTSC) HDTV (SMPTE 296M, SMPTE 274M)
Resolution 4:3	12 MP (4000 × 3000) @ 12.5/15 fps 5 MP (2592 × 1920) @ 25/30 fps 4 MP (2336 × 1744) @ 25/30 fps 3 MP (2048 × 1536) @ 25/30 fps 1,5 MP (1440 × 1080) @ 25/30 fps 1,2 MP (1280 × 960) @ 25/30 fps 704 × 576 @ 25/30 fps 704 × 480 @ 25/30 fps 640 × 480 @ 25/30 fps
Resolution 16:9	8 MP (3840 × 2160, 2160p) @ 25/30 fps (Ultra High Definition) 5,3 MP (3072 × 1728) @ 25/30 fps 1080p (1920 × 1080) @ 25/30 fps 720p (1280 × 720) @ 25/30 fps
Video compression	H.264, MJPEG
Frame rate	Up to 30 fps
Video bit rate	1 – 50 Mbit/s, CBR (constant bit rate), VBR (variable bit rate), each with priority setting for image quality[4]
Video streaming	Simultaneous Dual- or Tri-Streaming
Transfer format	Progressive (full image)
Audio compression	G.711
Audio bit rate	64 kbit/s
Live streaming transmission method	Unicast, Multicast
Number of live streams	Up to 4 streams with up to 16 Mbit/s simultaneously

Protocols	
Ethernet protocols	IPv4, TCP, UDP, HTTP, RTP, RTCP, IGMP V2/V3, ICMP, ICMP V6, RTSP, ARP, NTP, DHCP
Ethernet protocols in preparation	HTTPS, SMTP, SOAP, LDAP, IPv6, FTP, 802.1x, DNS, DNS V6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), UPnP (SSDP), DiffServ (QoS), LLDP
SNMP support in preparation	SNMP v1

Connections	
Power&Ethernet	1× RJ45, 10BASE-T/100BASE-TX PoE/1000BASE-T PoE

IR Illumination	
Type	Semi-covert 850 nm high power LEDs
IR intensity	Adjustable
Photocell	Adjustable Day/Night switching threshold level
Range	Up to approx. 30 m
Beam angle	Up to approx. 90°

Miscellaneous	
Ambient light sensor	Integrated
Microphone	Integrated
Local memory	50 MB RAM memory
Memory extension	microSDHC 32 GB, Class 10, UHS-I (optional)[5]
Programming interface	Open platform for integration into 3rd party systems using API and ActiveX[6]
ONVIF compliance	Profile S[7]

4) If the total available bit rate is not sufficient, not the image quality but the number of frames is adjusted.
5) The installation of the memory card should be done by a certified Dallmeier service partner.
6) ActiveX is a trademark or registered trademark of Microsoft Corporation headquartered in Redmond, Washington, USA
7) Function in preparation

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Electrical Data	
Voltage supply	PoE (Class 0)
PoE standard	IEEE 802.3af
Power consumption	Max. 12.95 W

Mechanical Data	
Dimensions	See technical drawings
Weight	Approx. 2,2 kg with wall mount bracket
Color	White
Adjustment	2-axes
IP rating	IP66

Environmental Conditions	
Operating temperature	−40°C to +50°C (−40°F to 122°F), minimum start-up temperature: −30°C (−22°F)
Relative humidity	0% – 90% RH, non-condensing

Approvals/Certifications	
Type	CE, DIN EN 50130-4 compliant, tested against IEC/EN 62471

Lens	
Type	Motor-driven varifocal lens
Format	1/1.7"
Mount	Board Lens
Focal length	4 – 10 mm
Iris range	F1.4 – Closed
Iris control	P-Iris (motor-driven)
Zoom control	Motor-driven
Focus control	Motor-driven
MOD (Minimum Object Distance)	0.5 m
IR corrected	Yes
Available angles of view[8] (H × V) at wide end	Approx. 110° × 80° @ 12 MP (4000 × 3000) @ 5 MP (2592 × 1920) @ 4 MP (2336 × 1744) @ 3 MP (2048 × 1536) Approx. 105° × 56° @ 8 MP (3840 × 2160) @ 5,3 MP (3072 × 1728) @ 1080p (1920 × 1080) @ 720p (1280 × 720)
Available angles of view[8] (H × V) at tele end	Approx. 44° × 33° @ 12 MP (4000 × 3000) @ 5 MP (2592 × 1920) @ 4 MP (2336 × 1744) @ 3 MP (2048 × 1536) Approx. 42° × 23° @ 8 MP (3840 × 2160) @ 5,3 MP (3072 × 1728) @ 1080p (1920 × 1080) @ 720p (1280 × 720)

8)   All specifications ±5%. Minor shadowing (vignetting) may occur at extreme wide end due to the construction and do not constitute a defect.

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Dimensions

364 mm (14.31")

231 mm (9.08")

88 mm (3.48")

226 mm (8.90")

138 mm (5.42")

236 mm (9.28")

99 mm (3.89")

71 mm (2.81")