MDF5400HD-DN

Fisheye

High Definition Camera, Fisheye, 360° Panoramic View, 12 MP Sensor, 8 MP/30, H.264,
Day/Night (ICR), PoE, Compact Sensor Housing, Separate Encoder Housing

8MP Resolution | Compact | 360° View | **30** FPS @ 8MP | **ICR** Day-Night | WDR | VCA | EdgeStorage | **ONVIF | S**

The **MDF5400HD-DN Fisheye** is a network camera with fisheye lens specially designed for the image sensor. It offers a **vertical 90° field of view** and thus allows for the **acquisition of a complete half-space** with a **360° panoramic view**.

Discrete installation
The **MDF5400HD-DN Fisheye** consists of an ultra-compact **sensor housing** designed for **discrete installation in suspended ceilings**. In combination with the **separate encoder housing**, it can be **installed even in confined spaces** and operated with an external power supply or with **PoE Class 0**.

8 megapixel resolution
The high resolution of the sensor in combination with state-of-the-art encoder technology and sophisticated image processing enable the **recording of a complete half-space** (half sphere) in excellent quality and with an **8 megapixel resolution** at a **frame rate of up to 25/30 fps.** This makes the camera ideal for applications where detailed **capturing of an entire room** is required, **without blind spots and 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** can be defined and adjusted for the exposure settings.

Dewarped display
The **dewarped display of the live image and recordings** of an MDF5400HD-DN is supported by every workstation in the **SeMSy® Video Management System** with a digital PTZ function. In smaller video security systems, the convenient evaluation with the video management software **SMAVIA Viewing Client** is the ideal option. In addition to a PTZ function, SMAVIA Viewing client supports the **display of a dewarped 360° panoramic view** or **two 180° views of the half-space**.

Video Content Analysis
The integrated **Video Content Analysis** (VCA) detects **movements and objects** in the uncompressed image and analyzes them in real-time (depending on the analysis resolution) with highly developed analysis functions such as **Intrusion Detection** or **Line Crossing**. The detected **events** can be used to trigger the recording of a **SMAVIA recording system**. Together with the detected objects and the corresponding metadata, they are stored in a database. This allows the targeted search and evaluation of the recordings by **SMAVIA Viewing Client** with the **SmartFinder** function.

EdgeStorage
The camera is equipped with a **RAM memory** that is used by the **EdgeStorage** function to store the video stream in case of a network failure (e. g. Spanning Tree, Bursts). When the network is restored, the **SmartBackfill** function ensures fast transmission to the **SMAVIA recording system**. This stores the video stream with high speed and then continues to record the live stream seamlessly.

Further features
- 1/1.7" Ultra HD CMOS image sensor
- Horizontal field of view 360°
- Vertical field of view 90°
- Panoramic view 360°
- Memory expansion with microSDHC card
- Audio Line OUT and Audio Line IN
- Video compression H.264, MJPEG
- Privacy Zone Masking

- Digital flip function
- Wide Dynamic Range (WDR)
- 3D Digital Noise Reduction (3D DNR)
- Dewarped display with SMAVIA Viewing Client and SeMSy®
- Power supply with 24 V DC or over PoE (Class 0)
- Compact sensor housing for discrete in-ceiling installation
- Separate encoder housing

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Camera			Quantity		Price/Unit in £
006580		**MDF5400HV-DN** Fisheye network camera, 360° panoramic view, 12 MP sensor, resolution 8 MP/30, H.264, day/night (ICR), PoE, compact censor housing, separate encoder housing	1+ 10+	D D	801.00 761.00

Power Supply			Quantity		Price/Unit in £
004316		**PoE Midspan 30 W** Midspan power supply unit, 1× Ethernet port, 10/100/1000Base-T, 802.3at, 802.3af, 30 W	1+	G	108.00

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Sensor	
Type	1/1.7" 12.4 megapixel Ultra HD CMOS image sensor
Number of sensor pixels	12MP
Light sensitivity	<0,05lux
Dynamic range	92 dB
Signal to noise ration (SNR$_{MAX}$)	> 50 dB

Lens	
Type	Fisheye lens
Format	1/1.7"
Mount	Board Lens
Focal length	1.6 mm
Iris range	F2.8
Minimum object distance	0.5 mm
IR corrected	Yes
Horizontal field of view (hFOV)	360°
Vertical field of view (vFOV)	90°
Panoramic view	360°

Format and Encoding	
Video standard	SDTV (PAL/NTSC) HDTV (SMPTE 296M, SMPTE 274M)
Resolution (1:1)	8 MP (2880 × 2880) @ 25/30 fps 4 MP (1984 × 1984) @ 25/30 fps
Video compression	H.264, MJPEG
Frame rate	Up to 30 fps
Video bit rate	1 – 50 Mbps, CBR (constant bit rate), VBR (variable bit rate), with priority setting for image quality[1]
Video streaming	Up to 3 streams with different settings simultaneously
Audio compression	G.711
Audio bit rate	64 kbps
Live streaming transmission method	Unicast, Multicast
Number of live streams / clients	Up to 5 streams with up to 16 Mbps simultaneously

[1] If the total available bit rate is not sufficient, not the image quality but the number of frames is adjusted.

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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), On, Off
Automatic Electronic Shutter	1/1 – 1/8000 s
Slow Shutter Limit	1/1 – 1/1000 s
Digital flip function	Horizontal, vertical or both axes
Digital Noise Reduction	3D-DNR (adjustable by 10 levels)
Exposure presets	Universal, Indoor, Outdoor, 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	Via DaVid protocol (Dallmeier Video Protocol) to PGuard advance Via E-Mail and FTP image upload in preparation
Alarm trigger	Application restart, EdgeStorage status
Video Content Analysis[2]	Intrusion Detection (detection of access to a defined area) Line Crossing (detection of a virtual line crossing) Tamper Detection (detection of manipulations on the camera) Object Classification (classification of objects) Face Detection (detection of faces)[3]

Protocols	
Ethernet protocols	IPv4 (ARP, ICMP, IGMPv2/IGMPv3), UDP, TCP, LLDP, CDP (v1,v2), DSCP (QoS), DNS, DHCP, NTP, HTTP/HTTPS, RTSP/RTP/RTCP, SNMP (v1, v2c, v3)
Ethernet protocols in preparation	IPv6 (NDP, ICMPv6, MLDv1/MLDv2, SLAAC, RDNSS), UDPv6, TCPv6, DNSv6, DHCPv6, LDAP
Communication protocols	DaVid, DaVidS, ONVIF Profil S, SNMP (v1, v2c, v3)
Security	HTTPS encryption, SSL/TLS 1.2 (AES), network access control according to IEEE 802.1X

Connections	
Video preview output	1× HDMI micro connector (type D), 1080p (1920 × 1080) @ 25/30 fps (16:9)
Audio Line IN	1× 3.5 mm phone jack for stereo plug Input level: max. 2.83 V_{p-p} Input impedance: 29 kΩ
Audio Line OUT	1× 3.5 mm phone jack for stereo plug Output level at 10 kΩ load: max. 3.11 V_{p-p} Output impedance: 320 Ω
Ethernet	1× RJ45, 10BASE-T-/100BASE-TX PoE/1000BASE-TX PoE
Power IN	1× Weidmüller male connector SL 3.50/02/90G (mating connector Weidmüller BL 3.50/02/180 SN)

Electrical Data	
Voltage supply	24 V DC PoE (Class 0)
PoE standard	IEEE 802.3af
Power consumption	Max. 12 W (8 W typically)

2) Depending on the CPU load. Video content analysis is not available if more than 2 streams or bit rates > 16 Mbps are configured.
3) The function detects the presence of a face (Face Detection). The analysis of the manifestation of visible features and the link to the data of a person (Face Recognition) are not supported.

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Mechanical Data	
Dimensions	Approx. Ø 95 × H 49 mm (sensor housing) Approx. W 62 × H 42 × D 115 mm (encoder housing)
Cable length	Approx. 160 mm (between sensor housing and encoder housing)
Weight	Approx. 270 g (sensor housing) Approx. 400 g (encoder housing with cable)
Color	Black with white housing ring

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

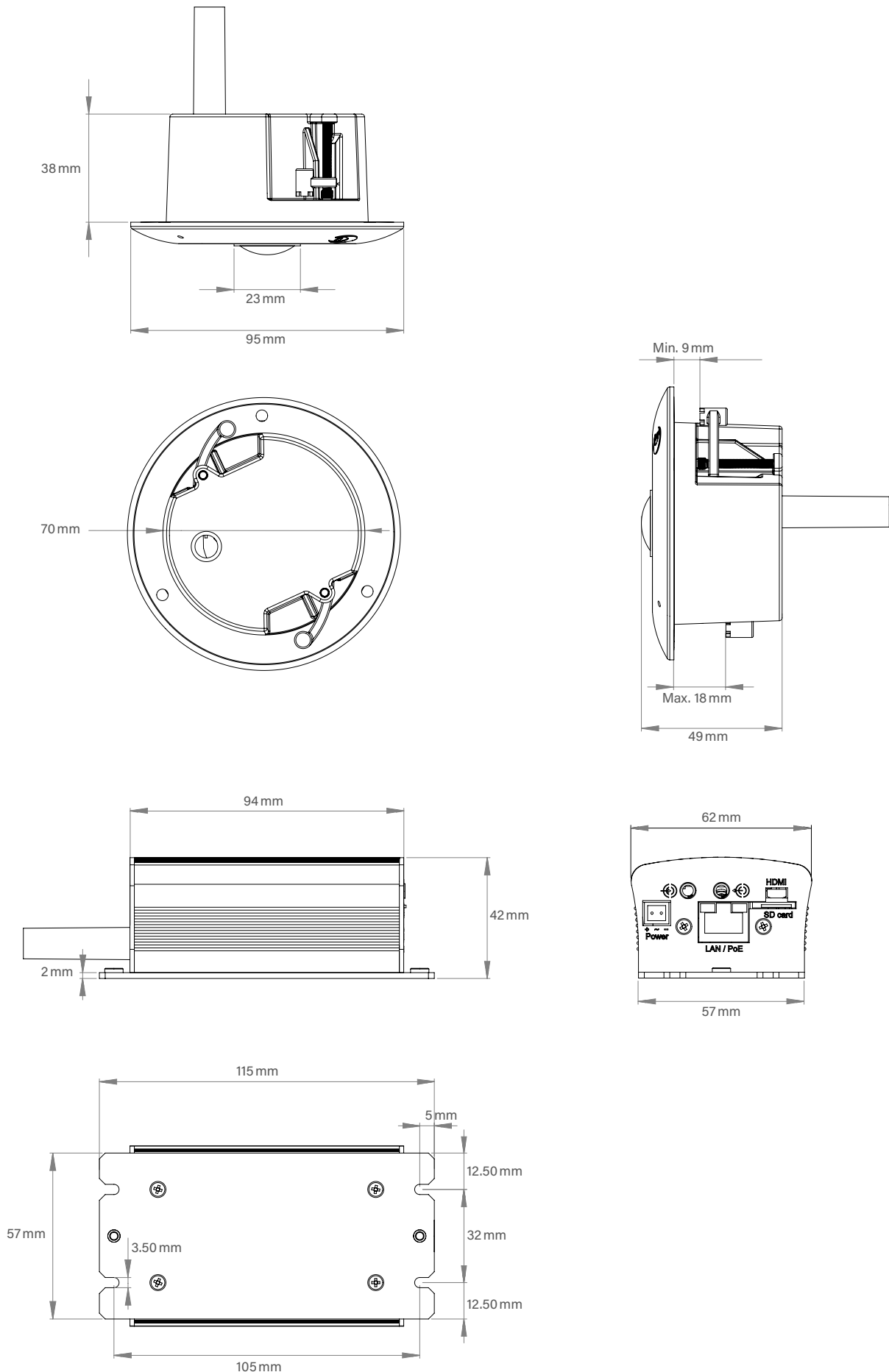| Miscellaneous	
Ambient light sensor	Integrated
Local memory	50 MB RAM memory
Memory extension	microSDHC 32 GB, Class 10, UHS-I (optional)
Configuration and live video	Via web browser (all major platforms)
Languages	German, English
Programming interface	Open platform for integration into 3rd party systems using API and ActiveX[4]

Approvals/Certifications	
Type	CE, FCC, RCM, UL, DIN EN 50130-4 compliant

[4] ActiveX is a trademark or registered trademark of Microsoft Corporation headquartered in Redmond, Washington, USA

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38 mm

23 mm

95 mm

70 mm

Min. 9 mm

Max. 18 mm

49 mm

94 mm

42 mm

2 mm

62 mm

HDMI

SD card

Power

LAN / PoE

57 mm

115 mm

5 mm

12.50 mm

57 mm

3.50 mm

32 mm

12.50 mm

105 mm

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