

# 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



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 25/30fps**. 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

006580



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Fisheye network camera, 360° panoramic view, 12 MP sensor, resolution 8 MP/30, H.264, day/night (ICR), PoE, compact sensor housing, separate encoder housing

## Power Supply

004316



### PoE Midspan 30 W

Midspan power supply unit, 1x Ethernet port, 10/100/1000Base-T, 802.3at, 802.3af, 30 W

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Sensor	
Type	1/1.7" CMOS
Number of sensor pixels	12MP
Light sensitivity	<0,05lux
Dynamic range	92 dB
Signal to noise ration	> 50 dB

Lens	
Type	Fisheye
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	360°
Vertical field of view	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 <sup>1)</sup>
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

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 und 7500K
Privacy Zone Masking	Hiding/masking of up to 16 protected areas (up to 100% of the entire image)
Alarm notification	Via DaVid protocol to PGuard advance, via E-Mail and FTP image upload in preparation
Alarm trigger	Application restart, EdgeStorage status
Video Content Analysis <sup>2)</sup>	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) <sup>3)</sup>

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

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 visible features and the link to person data (Face Recognition) are not supported.

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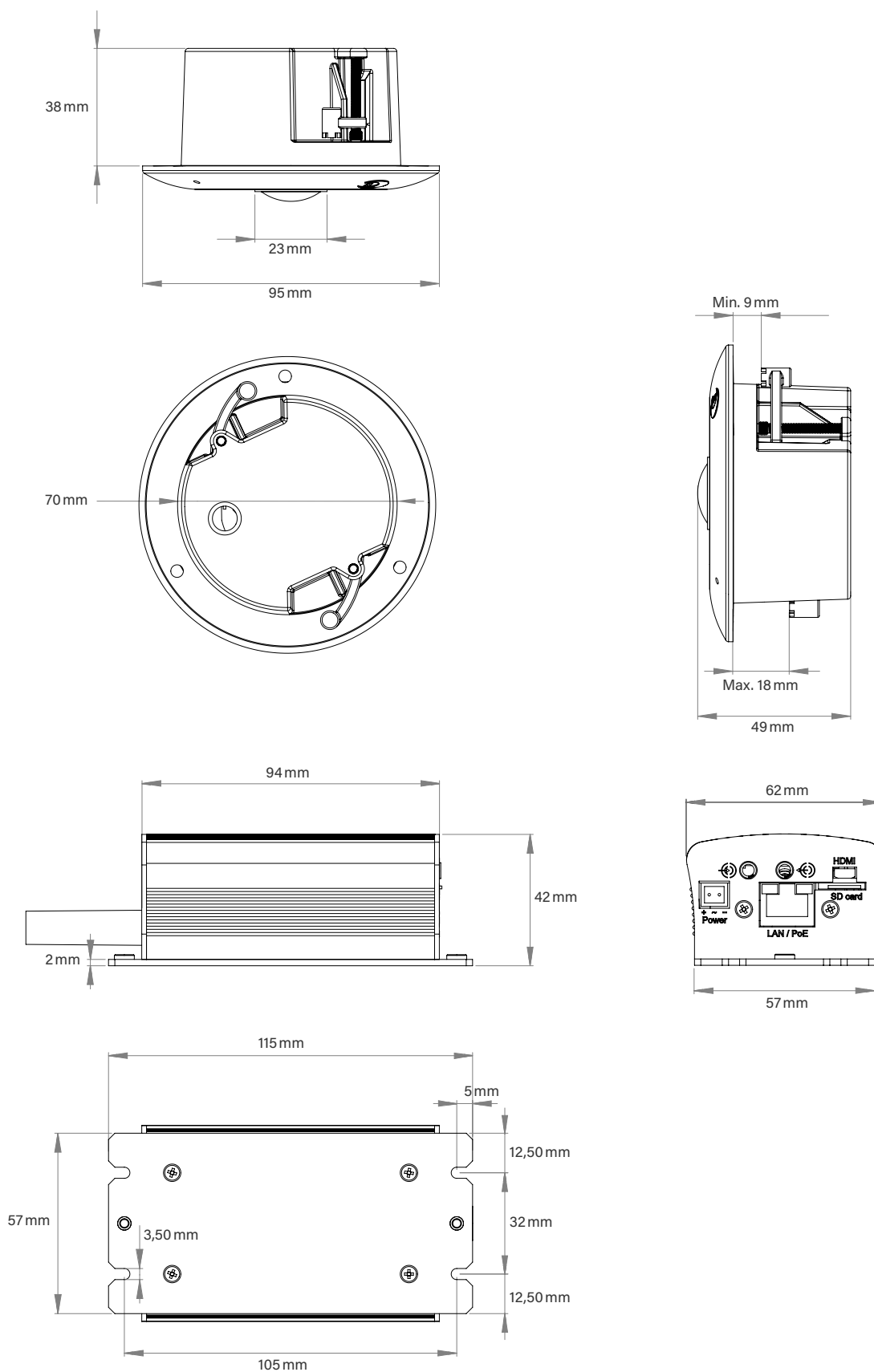
Protocols	
Ethernet protocols	IPv4 (ARP, ICMP, IGMPv2/IGMPv3), UDP, TCP, LLDP, CDP (v1,v2), DSCP (QoS), DNS, DHCP, NTP, HTTP/HTTPS, RTSP/RTP/RTCP, SNMP (v1, v2c, v3)
Ethernet protocols in preparation	IPv6 (NDP, ICMPv6, MLDv1/MLDv2, SLAAC, RDNSS), UDPv6, TCPv6, DNSv6, DHCPv6, LDAP
Communication protocols	DaVid, DaVidS, ONVIF Profile 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	1x HDMI micro connector (type D), 1080p (1920 × 1080) @ 25/30 fps (16:9)
Audio Line IN	1x 3.5 mm phone jack for stereo plug Input level: max. 2.83 V <sub>p-p</sub> Input impedance: 29 kΩ
Audio Line OUT	1x 3.5 mm phone jack for stereo plug Output level at 10 kΩ load: max. 3.11 V <sub>p-p</sub> Output impedance: 320 Ω
Ethernet	1x RJ45, 10BASE-T-/100BASE-TX PoE/1000BASE-TX PoE
Power IN	1x 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)
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	microSDXC 64 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 <sup>4)</sup>
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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