

SDF6800DN

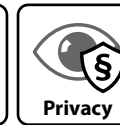
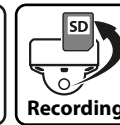
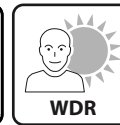
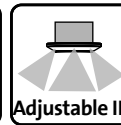
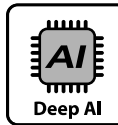
DOMERA®

Ultra high definition camera, 8 MP, H.265, day/night, WDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, fisheye lens, 360° panoramic view, motorized fine alignment, variable Domera® mounting system



reddot winner 2022

ONVIF | G M S T



The SDF6800DN is a network camera with a fisheye lens specifically designed for the image sensor, allowing it to capture a complete half-space with a 360° panoramic view. It is offered with a resolution of 8 MP in a vandal-resistant dome housing.

Domera®OS

The cameras are equipped with the hardened Linux operating system Domera® OS. In addition to a kernel with long-term support, it offers extensive security functions such as the deactivation of unused ports or the enforcement of strict passwords. In addition, Domera® OS supports secure network authentication (IEEE 802.1X) and encrypted data transmission (TLS 1.3/AES-256). All software components are subject to permanent monitoring, maintenance and updating, while the effectiveness of all measures is ensured by regular external penetration tests.

AI Analysis - Deep AI Object Classification

The camera is equipped with an intensively trained neural network that analyzes the captured images in high resolution and independent of movements in the background (green spaces, water areas, etc.) and reliably classifies defined objects (persons, vehicles, etc.) in real time. The captured data is sent with the video stream to the Dallmeier recording system for evaluation and storage and is available for further processing with the integrated EdgeAnalytics Apps.

AI Analysis - EdgeAnalytics Apps

The embedded EdgeAnalytics AI apps use the raw data of the Deep AI Object Classification to assess the captured operations according to the specific criteria of various use cases. The Line Crossing App, for example, detects the crossing of a defined line by a relevant object (person, vehicle, etc.) and generates a corresponding message with time and direction of movement. On the other hand, the various counting apps cyclically determine the number of persons or vehicles in a defined area and report when a set threshold value is exceeded. The generated event messages and values complete the raw data already contained in the video stream and can be displayed and evaluated with a Dallmeier client software.

Motorized Fine Alignment

The camera is equipped with a motor-driven mechanism for precise fine alignment of the image sensor over the network. Remote control is performed via the Domera® OS user interface and allows easy adjustment of the horizontal axis to the captured scene.

Adjustable IR Illumination

The homogeneous illumination of the IR models is discreetly integrated under the permeable housing cover and can be individually adjusted to the captured scene. The illumination intensity of the five semi-discrete high-power LEDs can be adjusted individually and independently of each other. This means that disruptive side effects, such as reflections from white walls next to the detection area, can be avoided as far as possible.

EdgeRecording

The camera allows parallel recording of two video streams (including audio and analysis data) with different settings on an integrated SD card (optional). Local recording is triggered by the EdgeAnalytics event with the option to set a pre- and post-recording time. Additionally, the first video stream can be transferred to a recording system for permanent recording as usual.

Further features

- Field of view 360° horizontally and 90° vertically
- Video compression H.264, H.265, MJPEG
- Dynamic range WDR/HDR supported
- EdgeStorage (buffer) or EdgeRecording (two tracks)
- Ambient light sensor and removable IR cut filter
- Automatic switching of presets for day and night
- Position sensor for automatic orientation (wall, ceiling)
- GDPR-compliant functions for data protection and security
- In-ceiling housing UL 2043 "plenum rated" compliant
- Compatible with ONVIF Profile G, M, S and T
- Network protocol MQTT supported

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Included EdgeAnalytics AI Essential Apps



The **AI Motion Detection App** analyzes the entire image content and reliably detects all movements triggered by persons or vehicles. The motion events are sent to the recording system with the video stream. Afterwards, they are available with metadata such as object type, time and position for targeted evaluation with Dallmeier client software.



The **AI Tamper Detection App** is classically used for detecting and reporting attempted tampering with the camera. The app detects a general change in the captured scene, such as typically occurs when the camera is manually rotated or tilted, and immediately issues a corresponding message.



The **AI Loitering Detection App** analyzes the movement of persons detected by the neural networks and evaluates their dwell time in a defined sensitive zone. If the set limit value of the dwell time is exceeded, a corresponding message can be displayed to the operator. At the same time, undesired attendants can be requested to leave the area by outputting a stored audio sequence.



The **AI Intrusion Detection App** allows the definition of protected zones and issues a message as soon as an object intrudes into them. The object type relevant for the message can be defined as, for example, person or vehicle. For targeted operator attention, a pre-zone can be defined for each protected zone, which can be used to escalate the messages.



The **AI Line Crossing App** issues a message as soon as a person or vehicle crosses a virtual line drawn in the image. Uninteresting crossings of the virtual lines, for example by animals, can be effectively excluded. An operator is thus less distracted and can concentrate much better on relevant observations.



The **AI People Counting App** analyzes the entire image content in a defined cycle and determines the number of people present in defined areas. Irrelevant objects are effectively filtered out by object classification based on a neural network to achieve the most accurate count result possible. In addition, a message can be output when a set threshold value is exceeded.



The **AI Vehicle Counting App** allows the subdivision of large scenes into different zones and cyclically determines the number of objects. Based on an accurate object classification using a neural network, the number of vehicles present is output immediately. In addition, a message can be output when a set threshold value is exceeded.

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Camera		
	008355	SDF6800DN Ultra high definition camera, 8 MP, H.265, day/night, Deep AI/VCA, WDR, PoE, Domera® in-ceiling housing, design cover black IR translucent ¹⁾ , fisheye lens F2.8 / 1.6 mm
Illumination (series RDF6000DN and RDF5000DN, SDF6800DN)		
	008406	Domera® Dual Matrix LED Ring Illumination for Domera® in-ceiling housing, five IR LEDs and five white light LEDs, event-controlled switching between IR and white light illumination, individual control of the intensity of individual LEDs or automatic adjustment to the captured scene, microphone included, recommended for models with 4.5 - 9.7 mm or fisheye lens (only ex factory)
Housing cover		
	008529	Domera® Housing Cover Vandalproof Black Housing cover for Domera® in-ceiling housing, can be combined with Domera® Surface Mount Adapter and Domera® Wall Bracket, aluminum, black, cannot be combined with cameras with Domera® Dual Matrix LED Ring
	008410	Domera® Housing Cover Vandalproof White Housing cover for Domera® in-ceiling housing, can be combined with Domera® Surface Mount Adapter and Domera® Wall Bracket, aluminum, white, cannot be combined with cameras with Domera® Dual Matrix LED Ring
Adapter		
	008407	Domera® Surface Mount Adapter Adapter for surface mounting a Domera® in-ceiling housing, safety rope included, polycarbonate, white
	009177	Domera® Surface Mount Adapter Vandalproof Adapter for surface mounting a Domera® in-ceiling housing, safety rope included, aluminum, white
	008209	Domera® Wall Bracket Multifunctional bracket for mounting a Domera® in-ceiling housing on a wall or pole, compatible with the Mountera® Vandalproof Pole Adapter and the Mountera® Box, safety rope included, aluminum, white
Extensions		
	008421	Domera® Breakout Cable Breakout cable with 1x Audio Line IN, 1x Audio Line OUT, 2x Contact IN, 2x Contact OUT, 1x power supply
	008976	Domera® SDF Internal Audio OUT Upgrade Extension of a Domera® SDF series camera with a 1.4 W AF amplifier for audio output via the integrated speaker, recommended for use as an intercom system (retrofitting not possible, only ex works) ²⁾

1) Installation without tool, IR transmission 70%, white light transmission 10%
 2) Audio output via integrated speaker not supported in conjunction with Domera® Breakout Cable

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Memory Extensions



008275 SD Card microSDHC 32 GB
SD card microSDHC 32 GB for the memory extension of cameras,
App Performance Class 1 (A1)

008276 SD Card microSDHC 64 GB
SD card microSDHC 64 GB for the memory extension of cameras,
App Performance Class 1 (A1)

009318 SD Card microSDHC 128 GB
SD card microSDHC 128 GB for the memory extension of cameras,
UHS Speed Class 3 (U3), App Performance Class 1 (A1)

009319 SD Card microSDHC 256 GB
SD card microSDHC 256 GB for the memory extension of cameras,
UHS Speed Class 3 (U3), App Performance Class 1 (A1)

009160 SD Card microSDHC 512 GB
SD card microSDHC 512 GB for the memory extension of cameras,
App Performance Class 1 (A1)

009103 SD Card microSDHC 1TB
SD card microSDHC 1TB for the memory extension of cameras,
App Performance Class 1 (A1)

Power supply



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

Included licenses and Warranty

DLC - Camera Support Level Premium

License for the use of the support services of the Support Level Premium for 60 months

DLC - Camera Software Update

License for the update of Domera® OS with bug fixes, feature updates, feature upgrades and security updates³⁾ for 60 months
License for the update of the neural network for object classification for 60 months

DLC - EdgeAnalytics AI Essential Apps

Unlimited license for the use of EdgeAnalytics AI Essential Apps (AI Motion Detection, AI Tamper Detection, AI Loitering Detection, AI Intrusion Detection, AI Line Crossing, AI People Counting, AI Vehicle Counting) based on the neural network for object classification (person, animal, car, large vehicle, two-wheeler)

DLC - VCA Functions

Unlimited license for the use of the VCA function (VCA Motion Detection, VCA Tamper Detection, VCA Intrusion Detection, VCA Line Crossing) based on motion detection

Camera Hardware Warranty

Extended bring-in warranty of 60 months in total

Optional Maintenance (after the included 60 months)

008416 Camera Software Maintenance (Plus 12 Months)
License for the update of Domera® OS with updates, upgrades and security updates³⁾ for 12 months
License for the update of the neural network for object classification for 12 months

Optional License

008419 DLC - Audio IN/OUT and Intercom
License for the use of the Audio Line IN/OUT interface, audio compression G.711, AAC or Opus,
recommended for use as intercom system (additional hardware required)

³⁾ Security updates for relevant CVE vulnerabilities that become known will be provided (subject to technical feasibility) for the entire runtime of the software maintenance.

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Sensor	
Type	1/1.7" CMOS
Number of sensor pixels	12 MP
Light sensitivity	Models with IR illumination: 0 lux (IR LED ON) Models without IR illumination: < 0.05 lux (F1.4, AGC ON)
Dynamic range	92 dB
Signal to noise ration	> 50 dB
Lenses	
Type	Fisheye
Format / Mount	1/1.7" Board Lens
Focal length	1.6 mm
Iris range	F2.8
Minimum object distance	0,5 m
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 6 MP (2448 × 2448) @ 25/30 fps 4 MP (1984 × 1984) @ 25/30 fps
Video compression	H.264, H.265, MJPEG
Frame rate	Up to 30 fps
Video bit rate	1 – 50 Mbps, constant or variable bit rate with priority setting for image quality ⁴⁾
Video streaming	Up to 3 streams with different settings simultaneously
Audio compression ⁵⁾	G.711 (A-LAW, µ-LAW), AAC, Opus
Audio bit rate ⁵⁾	64 kbps (G.711), 48 – 96 kbps (AAC, Opus)
Live streaming transmission method	Unicast, Multicast
Number of live streams / clients	Up to 5 streams with up to 16 Mbps simultaneously
Recording	
Source track 1	Encoder 1
Source track 2	Encoder 2
Memory and track management	Automatic, manual, track prioritization
Triggering of the recording	Events of the VCA and AI analytics (recording duration before and after event adjustable)
Image age restriction	Supported (from 1 hour to 360 days)
Analysis and event data	Database integrated (for VCA and AI analytics)
Storage medium ⁶⁾	Optional SD card (microSDXC min. Class 10, UHS Class 1, App Performance Class 1)

4) Limited to 12 Mbps with EdgeAnalytics active. If the total available bit rate is not sufficient, not the image quality but the number of frames is adjusted.

5) Optional license for the use of the Audio Line IN and OUT interface required (DLC - Audio Line IN/OUT).

6) Please note that SD cards with App Performance Class 2 (A2) are not supported.

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Functions	
Operating system	Domera® OS
Secure Boot	Supported (activation optional) ⁷⁾
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, 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 up to 16 protected areas (up to 100% of the entire image)
Alarm notification	Via DaVid protocol to PGuard advance
Alarm trigger	EdgeStorage status, contact input, certificate expiration, service interval
EdgeAnalytics AI Apps (Essentials)	AI Motion Detection, AI Tamper Detection, AI Loitering Detection, AI Intrusion Detection, AI Line Crossing, AI People Counting, AI Vehicle Counting
EdgeAnalytics object classes	Person, animal, car, large vehicle, two-wheeler
EdgeAnalytics actions	Relay and LED switching, audio output, messaging via MQTT, HTTP and email

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), MQTT
Ethernet protocols in preparation	IPv6 (NDP, ICMPv6, MLDv1/MLDv2, SLAAC, RDNS), UDPv6, TCPv6, DNSv6, DHCPv6, LDAP
Communication protocols	DaVid, DaVidS, ONVIF Profile G, ONVIF Profile M, ONVIF Profile S, ONVIF Profile T, SNMP (v1, v2c, v3)
Security	HTTPS encryption, SSL/TLS 1.2, 1.3 (AES), network access control according to IEEE 802.1X

Connections	
Ethernet	1x RJ45, 10BASE-T/100BASE-TX PoE
Audio Line IN ^{8) 9)}	1x 3.5 mm phone jack for stereo plug Input level: max. 2.83 V _{p-p} Input impedance: 29 kΩ
Audio Line OUT ^{8) 9)}	1x 3.5 mm phone jack for stereo plug Output level at 10 kΩ load: max. 3.11 V _{p-p} Output impedance: 320 Ω
Contact I/O interface ⁸⁾	2x Contact IN / 2x Contact OUT
Power IN ⁸⁾	1x Connection terminal 2 poles

LED Illumination (optional)	
Type	Five semi-covert 850 nm IR LEDs Five white light LEDs
Intensity	Individually adjustable per LED
IR Range	Up to approx. 30 m
IR Beam angle	Up to approx. 90° per LED, adaptively controlled according to focal length
Day/Night switching threshold	Adjustable

7) Once Secure Boot has been activated, it is no longer possible to downgrade to an older version of the operating system that does not support Secure Boot.

8) Available only in connection with the optional Domera® Breakout Cable.

9) Optional license for the use of the Audio Line IN and OUT interface required (DLC - Audio Line IN/OUT).

Electrical Data	
Voltage supply	PoE (Class 0) 24 V DC - 48 V DC ±5% (with Domera® Breakout Cable)
PoE standard	IEEE 802.3af
Power consumption	Max. 12 W
Mechanical Data	
Dimensions	Approx. Ø 171 × H 76 mm (H 80 with surface mount adapter) Ø 6.7 × H 3.0 inches (H 3.1 with surface mount adapter)
Weight	Approx. 1.2 kg (1.4 kg with surface mount adapter) 2.6 kg (3.0 kg with surface mount adapter)
Adjustment	Motorized fine alignment via the network
Vandal-resistant	Yes
IK protection	IK10
IP rating	IP55 (in-ceiling mount or in connection with Domera® Surface Mount Adapter) IP66 (in connection with Domera® Wall Bracket or Domera® Surface Mount Adapter Vandalproof and Domera® Housing Cover Vandalproof)
Finish	Powder coating, tested for seawater resistance according to DIN EN 60068-2 (in connection with Domera® Wall Bracket or Domera® Surface Mount Adapter Vandalproof and Domera® Housing Cover Vandalproof)
Color	In-ceiling housing black Housing cover black
Environmental Conditions	
Operating temperature	−40°C to +50°C (−40°F to +122°F) (peak up to +65°C (+149°F), not permanent, installation with Domera® Wall Bracket recommended)
Start-up temperature	−25°C to +50°C (−13°F to +122°F)
Relative humidity	0% – 90% RH, non-condensing
Compatibility	
Recording	SMAVIA Recording Server V8.x.x SMAVIA Recording Server V9.x.x SeMSy® Recording Server V10.x.x
Evaluation	SMAVIA Viewing Client SeMSy® Workstation Software SeMSy® Compact SeMSy® Mobile Client
Miscellaneous	
Security module	Integrated (fTPM)
Ambient light sensor	Integrated
Position sensor	Integrated
Microphone	Integrated in Domera® Dual Matrix LED Ring
Local memory	50 MB RAM memory
Memory extension ¹⁰⁾	microSDXC min. Class 10, UHS Class 1, App Performance Class 1 (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
ONVIF compliance	Profile G, Profile M, Profile S, Profile T
GDPR compliance	Supported
NDAA compliance	Supported
Approvals/Certifications	
Type	CE, FCC, RCM, EAC, IEC/EN 62471 and UL2043 compliant

10) Please note that SD cards with App Performance Class 2 (A2) are not supported.

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