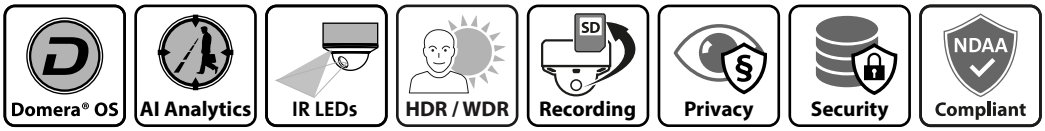
DDF6050DN

Picoline

High Definition Camera, 5 MP, H.265, day/night, WDR/HDR, PoE, Basic AI EdgeAnalytics optional, integrated IR illumination, compact surface mount dome housing



The cameras of the DDF6050DN series are designed for applications that require real-time, high-resolution images during the day and in IR mode at night. Installed in a compact surface-mounted housing, they can be mounted on ceilings or walls in the tightest of spaces and operated via PoE.

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.

Basic AI Object Classification (optional)

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.

Basic AI EdgeAnalytics Apps (optional)

The Basic EdgeAnalytics AI apps use the raw data of the 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. 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.

Wide Dynamic Range

The camera offers a WDR function (also known as High Dynamic Range (HDR)) for optimal recording of scenes with very bright and dark areas. Each image is captured with two special settings that are combined in real time to create a balanced result. The resulting video stream offers much more detail in both light and dark areas and is visually very close to the human eye's perception.

EdgeRecording

The camera allows parallel recording of two video streams (including 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

- Video compression H.264, H.265, MJPEG
- Dynamic range WDR/HDR supported
- EdgeStorage (buffer) or EdgeRecording (two tracks)
- Ambient light sensor and integrated IR illumination
- Automatic switching of presets for day and night
- GDPR-compliant functions for data protection and security
- Compatible with ONVIF Profile G, M, S and T
- Network protocol MQTT supported

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Camera

009257 **DDF6050DN-FL**
High Definition Camera, 5 MP, H.265, day/night, WDR/HDR, PoE, Basic AI EdgeAnalytics optional, integrated IR illumination, compact surface mount dome housing, fixed focus lens 2.8 mm

009258 **DDF6050DN-VL**
High Definition Camera, 5 MP, H.265, day/night, WDR/HDR, PoE, Basic AI EdgeAnalytics optional, integrated IR illumination, compact surface mount dome housing, motor-driven varifocal lens 2.8 – 8 mm

Memory Extensions

009318 **SD Card microSDXC 128 GB**
SD card microSDXC 128 GB for the memory extension of cameras, App Performance Class 1 (A1)

009319 **SD Card microSDXC 256 GB**
SD card microSDXC 256 GB for the memory extension of cameras, App Performance Class 1 (A1)

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

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

Accessories

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

Included Maintenance, Warranty and Licenses

DCP - Camera Software Maintenance
License for the update of Domera® OS with bug fixes, feature updates, feature upgrades and security updates[1] for 5 years, license for the update of the neural network for object classification for 5 years

DCP - Camera Hardware Warranty
Bring-in warranty of 2 years

DLC - AI Basic Apps (30 Days)
License for the use of the EdgeAnalytics AI Basic Apps (AI Motion Detection, AI Tamper Detection, AI Loitering Detection, AI Intrusion Detection, AI Line Crossing, AI People Counting, AI Vehicle Counting, AI Vehicle Parking) based on the neural network for object classification with a runtime of 30 days (test function)

DLC - VCA Functions
License for the use of the VCA function (VCA Motion Detection, VCA Tamper Detection, VCA Intrusion Detection, VCA Line Crossing) based on motion detection

Optional Maintenance (after the included 5 years - maximum 10 years)

008416 **DCP - Camera Software Maintenance (Plus 1 Year)**
License for the update of Domera® OS with updates, upgrades and security updates[1] for 1 year, license for the update of the neural network for object classification for 1 year

009602 **DCP - Camera Software Maintenance (Plus 5 Years)**
License for the update of Domera® OS with updates, upgrades and security updates[1] for 5 years, license for the update of the neural network for object classification for 5 years

Optional Licenses

009321 **DLC - Camera AI Basic Apps**
License for the use of EdgeAnalytics AI Basic Apps (AI Motion Detection, AI Tamper Detection, AI Loitering Detection, AI Intrusion Detection, AI Line Crossing, AI People Counting, AI Vehicle Counting, AI Vehicle Parking) based on the neural network for object classification

009322 **DLC - Multicast Package**
License for the use of the Multicast Streaming function (static, dynamic, RTSP)

1) 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	CMOS
Number of sensor pixels	5MP (2688 × 1944)
Light sensitivity	0 lux (IR LED ON) 0,2 lux (F1.6, AGC ON)
High Dynamic Range	> 100 dB WDR
Signal to noise ration	> 50 dB

Lens	DDF6050DN-FL	DDF6050DN-VL
Type	Fixed focus lens	Motor-driven varifocal lens
Mount	Board Lens	Board Lens
Focal length	2,8 mm	2.8 – 8 mm
Iris	F2.0 (fixed)	F1.6 (fixed)
Zoom / Focus control	Fixed	Motor-driven
Minimum object distance	0.3 m	0.5 m
IR corrected	No	Yes
Available angles of view (H × V)[2]	103.6° × 76.5° @ all 4:3 resolutions 107.8° × 59.5° @ all 16:9 resolutions	Wide end: 103.1° × 74.5° @ all 4:3 resolutions 107.8° × 57.3° @ all 16:9 resolutions Tele end: 33.7° × 25.2° @ all 4:3 resolutions 35.0° × 19.7° @ all 16:9 resolutions

Format and Encoding	
Video standard	SDTV (PAL/NTSC) HDTV (SMPTE 296M, SMPTE 274M)
Resolution 4:3[3]	5 MP (2592 × 1944) @ 25/30 fps 4 MP (2336 × 1744) @ 25/30 fps 3 MP (2016 × 1504) @ 25/30 fps 2 MP (1600 × 1200) @ 25/30 fps 1.5 MP (1440 × 1080) @ 25/30 fps 1.2 MP (1280 × 960) @ 25/30 fps 640 × 480, 320 × 240 @ 25/30 fps
Resolution 16:9[3]	4 MP (2688 × 1520) @ 25/30 fps 1080p (1920 × 1080) @ 25/30 fps 720p (1280 × 720) @ 25/30 fps 720 × 400, 480 × 272, 352 × 200 @ 25/30 fps
Video compression	H.264, H.265, MJPEG
Frame rate[3]	Up to 30 fps
Video bit rate	1 – 12 Mbps, CBR (constant bit rate), VBR (variable bit rate), with priority setting for image quality[4]
Video streaming	Up to 2 streams with different settings simultaneously
Live streaming transmission method	Unicast, multicast[5]
Number of live streams / clients	Up to 4 Streams with up to 12 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	Optional SD card (microSDXC min. Class 10, App Performance Class 1)

2) All specifications ±5%. Minor deviations with lenses may be a result of manufacturing tolerances and do not constitute a defect.
3) If the HDR function is activated, a frame rate of maximum 25 fps can be used at all resolutions.
4) If the total available bit rate is not sufficient, not the image quality but the number of frames is adjusted.
5) Optional license DLC - Multicast Package required.

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Functions	
Operating system	Domera OS
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)
Automatic Electronic Shutter	1/1 – 1/8000 s
Slow Shutter Limit	1/1 – 1/1000 s
Lens control[6)]	Zoom control (Tele – Wide) and focus control (Far – Near, One-Push AF) via web browser
Digital flip function	Horizontal, vertical or both axes
Corridor mode	Automatic (activation via user interface)
Digital Noise Reduction	3D-DNR (off, low, medium, high)
Digital image optimization[7)]	Wide Dynamic Range (WDR), also known as High Dynamic Range (HDR)
Exposure presets	Universal, Universal WDR/HDR, Low-Light, Low-Light WDR/HDR, Indoor, Indoor WDR/HDR, Outdoor, Casino (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)
Brightness adjustment	Automatic (ALC), manual
Gain control	Automatic (AGC) with adjustable gain limit
White balance	ATW (Auto Tracking White Balance), One-Push AWB (Automatic White Balance)
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, certificate expiration, service interval
EdgeAnalytics AI Apps (Basic)[8)]	AI Motion Detection, AI Tamper Detection, AI Loitering Detection, AI Intrusion Detection, AI Line Crossing, AI People Counting, AI Vehicle Counting, AI Vehicle Parking
EdgeAnalytics object classes[8)]	Person, animal[9)], car, large vehicle, two-wheeler
EdgeAnalytics actions[8)]	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, RDNSS), UDPv6, TCPv6, DNSv6, DHCPv6, LDAP
Communication protocols	DaVid, DaVidS, ONVIF Profile G, Profile M, Profile S, Profile T, SNMP (v1, v2c, v3)
Security	HTTPS encryption with TLS 1.2 and TLS 1.3, network access control according to IEEE 802.1X

Connections	
Ethernet	1× RJ45, 10BASE-T/100BASE-TX/1000BASE-T PoE (on connection cable with 30 cm length)

LED Illumination	
Type	Four semi-covert IR LEDs
Intensity	Adjustable
IR Range	Up to approx. 30 m
Day/Night switching threshold	Adjustable

Electrical Data	
Voltage supply	PoE (Class 0)
PoE standard	IEEE 802.3af
Power consumption	Max. 9.6 W

6) Available only with DDF6050DN-VL.
7) Function in preparation. If the WDR/HDR function is activated, a frame rate of maximum 25 fps can be used at all resolutions.
8) Optional license DLC - EdgeAnalytics AI Apps (Basic) required.
9) If the lens is oriented vertically downwards, the object class "animal" is not available because the neural network is not yet trained for animal recognition from above.

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Mechanical Data	
Dimensions	Approx. Ø 117 × H 83 mm
Weight	Approx. 415 g
Adjustment	3-axes
Bubble	Clear
Construction material	Aluminum
Vandal-resistant	Yes
IK protection	IK10
IP rating	IP66
Color	White

Environmental Conditions	
Operating temperature	–20°C to +50°C (peak up to +60°C, not permanent, when installed with a sunshield)
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 SeMSy® Recording Server V11.x.x
Evaluation	SMAVIA Viewing Client SeMSy® Workstation Software SeMSy® Compact SeMSy® Mobile Client

Miscellaneous	
Ambient light sensor	Integrated
Local memory	50 MB RAM memory
Memory extension	microSDXC min. Class 10, App Performance Class 1 (optional)
Configuration and live video	Via web browser (all major platforms)
Languages	German, English (others on request)
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 and Certifications	
Type	CE, FCC, RCM

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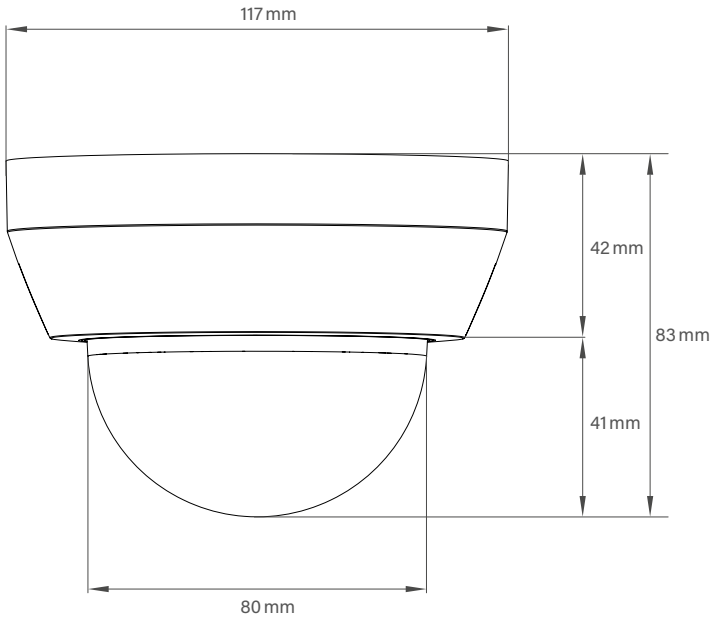

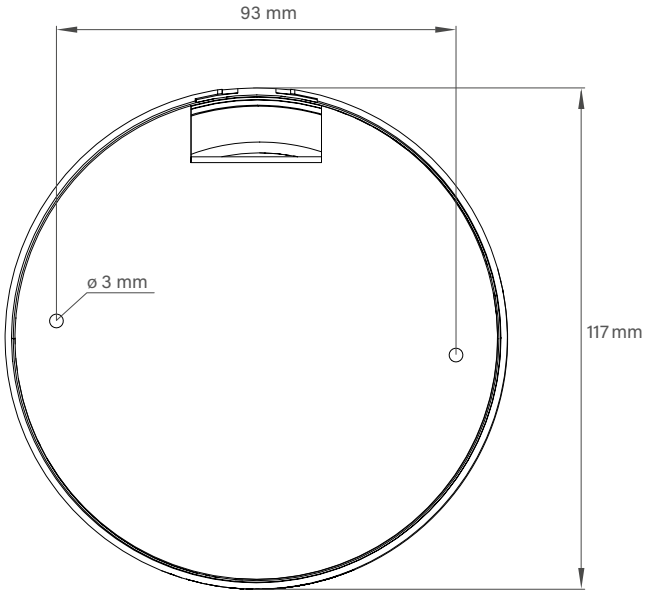

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