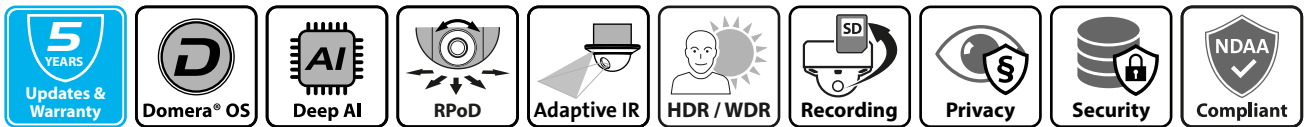# Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

reddot winner 2022

ONVIF | MST

| 5 YEARS Updates & Warranty | Domera® OS | Deep AI | RPoD | Adaptive IR | HDR / WDR | Recording | Privacy | Security | Compliant |

The cameras of the RDF6000DN series are designed for applications that require real-time, high-resolution images during the day and, depending on the model, in IR mode at night. The different models are offered with a resolution of 4 or 8 MP and an integrated lens 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 1.2/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.

Remote Positioning Dome
The camera is equipped with a motor-driven gimbal for precise lens alignment over the network (RPoD / PTRZ). Remote control is provided by the Domera® OS user interface and allows for simple installation and easy adjustment of the captured scene if requirements change. In addition, Domera® OS supports the adjustment of zoom, focus and iris of the P-Iris lens over the network. After installation and commissioning of the camera, no further measures are required on site.

Adaptive IR Illumination
The homogeneous illumination of the IR models is discreetly integrated under the permeable housing cover and can be manually or automatically adapted to the captured scene. Orientation and intensity of the illumination are dynamically determined by the position of the lens and the exposure control. In this way, disturbing 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
- 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)
- Automatic corridor mode supported
- GDPR-compliant functions for data protection and security
- In-ceiling housing UL 2043 "plenum rated" compliant
- Compatible with ONVIF Profile M, Profile S and Profile T
- Network protocol MQTT supported

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

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.

The **AI Queueing App**[1] is applied to display the fill level in defined zones. During configuration, the relevant zone and a limit for the number of people present is defined. After a cyclic analysis, the utilization is displayed and a message is issued if the limit is exceeded. This allows the initiation of targeted measures to avoid overcrowding situations or queues.
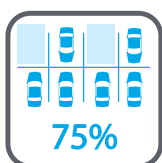
The **AI Parking App**[1] was developed in particular for the effective evaluation of parking situations. It detects, verifies and counts vehicles in the defined parking zones and cyclically outputs the occupancy rate based on a defined limit. This allows an operator to get a quick overview of the parking lot occupancy at any time.

[1] In preparation

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

Series 6400

	008297.401	**RDF6400DN** High definition camera, 4 MP, H.265, day/night, Deep AI/VCA, WDR/HDR, PoE, Domera® RPoD in-ceiling housing, design cover black IR translucent[2], motor-driven varifocal lens F1.3 / 4,5 – 9,7 mm
	008297.402	**RDF6400DN** High definition camera, 4 MP, H.265, day/night, Deep AI/VCA, WDR/HDR, PoE, Domera® RPoD in-ceiling housing, design cover black IR translucent[2], motor-driven varifocal lens F1.8 / 12 – 40 mm

Series 6800

	008298.401	**RDF6800DN** Ultra high definition camera, 8 MP, H.265, day/night, Deep AI/VCA, WDR/HDR, PoE, Domera® RPoD in-ceiling housing, design cover black IR translucent[2], motor-driven varifocal lens F1.3 / 4,5 – 9,7 mm
	008298.402	**RDF6800DN** Ultra high definition camera, 8 MP, H.265, day/night, Deep AI/VCA, WDR/HDR, PoE, Domera® RPoD in-ceiling housing, design cover black IR translucent[2], motor-driven varifocal lens F1.8 / 12 – 40 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, recommended for models with 4.5 - 9.7 mm or fisheye lens (only ex factory)

Housing cover

	008408	**Domera® Housing Cover Aluminium LED Black** Aluminium housing cover for Domera® in-ceiling housing, can be combined with Domera® Surface Mount Adapter and Domera® Wall Bracket, black, with cut-outs for IR and white light LEDs[3]
	008529	**Domera® Housing Cover Aluminium Black** Aluminium housing cover for Domera® in-ceiling housing, can be combined with Domera® Surface Mount Adapter and Domera® Wall Bracket, black, cannot be combined with cameras with Domera® Dual Matrix LED Ring
	008410	**Domera® Housing Cover Aluminium White** Aluminium housing cover for Domera® in-ceiling housing, can be combined with Domera® Surface Mount Adapter and Domera® Wall Bracket, 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 Aluminium** Adapter for surface mounting a Domera® in-ceiling housing, safety rope included, aluminum, white (available as of mid-June 2024)
	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
	008508	**Domera® Wall Bracket with Speaker** 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, Domera® Speaker with connection cable and NF amplifier 1.4 W included, recommended for use as intercom system, safety rope included, aluminum, white

2) Installation without tool, IR transmission 70%, white light transmission 10%, reflection-free at tilt from 25° to 90°
3) Installation with tool, IR transmission 100%, white light transmission 100%, reflection-free at tilt from 0° to 90°

Camera Series RDF6000DN

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

	Extensions	
	008421	**Domera® Breakout Cable** Breakout cable with 1× Audio Line IN, 1× Audio Line OUT, 2× Contact IN, 2× Contact OUT, 1× power supply
	008423	**Domera® Passive Heating Kit** Fan based heating by using the waste heat of the electronic components (approx. 6 W) to prevent fogging on the inside of the dome, manual remote control via Domera® OS user interface[4] (ex factory only)

	Memory Extensions	
32 GB	**008275**	**SD Card microSDHC 32 GB** SD card microSDHC 32 GB for the memory extension of cameras, App Performance Class 1 (A1)
64 GB	**008276**	**SD Card microSDHC 64 GB** SD card microSDHC 64 GB for the memory extension of cameras, App Performance Class 1 (A1)

	Power supply	
	004316	**PoE Midspan 30 W** Midspan power supply unit, 1× 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 updates[5] 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[6], 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 License

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

---

4) When the fan is active, the audio signal of the microphone may be superimposed.
5) Security updates for relevant CVE vulnerabilities that become known will be provided (subject to technical feasibility) for the entire runtime of the software maintenance.
6) 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.

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

Sensor	RDF6400DN	RDF6800DN
Type	1/2" CMOS	1/1.7" CMOS
Number of sensor pixels	4MP	8MP
Light sensitivity	Models with IR illumination: 0 lux (IR LED ON) Models without IR illumination: < 0.0005 lux (F1.6, AGC ON)	Models with IR illumination: 0 lux (IR LED ON) Models without IR illumination: < 0.05 lux (F1.4, AGC ON)
High Dynamic Range	120 dB WDR	120 dB WDR
Signal to noise ration	> 50 dB	> 50 dB

Lenses	F1.3 / 4.5 – 9.7 mm	F1.8 / 12 – 40 mm
Type	Motor-driven varifocal lens	Motor-driven varifocal lens
Format / Mount	1/1.8" Board Lens	1/1.8" Board Lens
Focal length	4.5 – 9.7 mm	12 – 40 mm
Iris range	F1.3 – Closed	F1.8 – Closed
Iris control	P-Iris (motor-driven)	P-Iris (motor-driven)
Zoom / Focus control	Motor-driven	Motor-driven
Minimum object distance	0.5 m	1.5 m
IR corrected	Yes	Yes

Available angle of view RDF6400DN	F1.3 / 4.5 – 9.7 mm	F1.8 / 12 – 40 mm
Wide end (H × V)[7]	111.2° × 56.4°	36.1° × 19.9°
Tele end (H × V)[7]	47.5° × 26.2°	12.4° × 7.0°

Available angle of view RDF6800DN	F1.3 / 4.5 – 9.7 mm	F1.8 / 12 – 40 mm
Wide end (H × V)[7]	110.0° × 55.4°	35.2° × 19.3°
Tele end (H × V)[7]	47.0° × 26.2°	12.1° × 6.8°

Format and Encoding	RDF6400DN	RDF6800DN
Video standard	SDTV (PAL/NTSC) HDTV (SMPTE 296M, SMPTE 274M)	SDTV (PAL/NTSC) HDTV (SMPTE 296M, SMPTE 274M)
Resolution 16:9	4 MP (2688 × 1520) @ 50/60 fps 1080p (1920 × 1080) @ 50/60 fps 720p (1280 × 720) @ 50/60 fps 640 × 480, 640 × 368, 480 × 272, 320 × 240 @ 50/60 fps	8.3 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 480 × 272, 320 × 240 @ 25/30 fps
Video compression	H.264, H.265, MJPEG	H.264, H.265, MJPEG
Frame rate	Up to 60 fps	Up to 30 fps
Video bit rate	1 – 12 Mbps, constant or variable bit rate with priority setting for image quality[8]	1 – 50 Mbps, constant or variable bit rate with priority setting for image quality[8]
Video streaming	Up to 3 streams with different settings simultaneously	Up to 3 streams with different settings simultaneously
Audio compression[9]	G.711 (A-LAW, µ-LAW), AAC, Opus	G.711 (A-LAW, µ-LAW), AAC, Opus
Audio bit rate[9]	64 kbps (G.711), 48 – 96 kbps (AAC, Opus)	64 kbps (G.711), 48 – 96 kbps (AAC, Opus)
Live streaming transmission method	Unicast, Multicast	Unicast, Multicast
Number of live streams / clients	Up to 5 streams with up to 12 Mbps simultaneously	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[10]	Optional SD card (microSDXC min. Class 10, UHS Class 1, App Performance Class 1)

7)   All specifications ±5%. Minor distortions (barrel-shaped) may occur at wide-angle settings greater than 90° due to the construction and do not constitute a defect.
8)   Limited to 20 Mbps with EdgeAnalytics active. If the total available bit rate is not sufficient, not the image quality but the number of frames is adjusted.
9)   Optional license for the use of the Audio Line IN and OUT interface required (DLC - Audio Line IN/OUT).
10) Please note that SD cards with App Performance Class 2 (A2) are not supported.

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

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
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)
Digital image optimization	Wide Dynamic Range (WDR), also known as High Dynamic Range (HDR)[11]
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[14], 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, RDNSS), UDPv6, TCPv6, DNSv6, DHCPv6, LDAP
Communication protocols	DaVid, DaVidS, ONVIF Profile M, ONVIF Profile S, ONVIF Profile T, SNMP (v1, v2c, v3)
Security	HTTPS encryption, SSL/TLS 1.2 (AES), network access control according to IEEE 802.1X

Connections	
Ethernet	1× RJ45, 10BASE-T/100BASE-TX PoE
Audio line IN[12] [13]	1× 3.5 mm phone jack for stereo plug Input level: max. 2.83 V_{p-p} Input impedance: 29 kΩ
Audio line OUT[12] [13]	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
Contact I/O interface[12]	2× Contact IN / 2× Contact OUT
Power IN[12]	1× 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

11) In combination with the WDR/HDR function, frame rates of up to 30 fps can be used.
12) Available only in connection with the optional Domera® Breakout Cable.
13) Optional license DLC - Audio IN/OUT and Intercom required.
14) 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.

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system
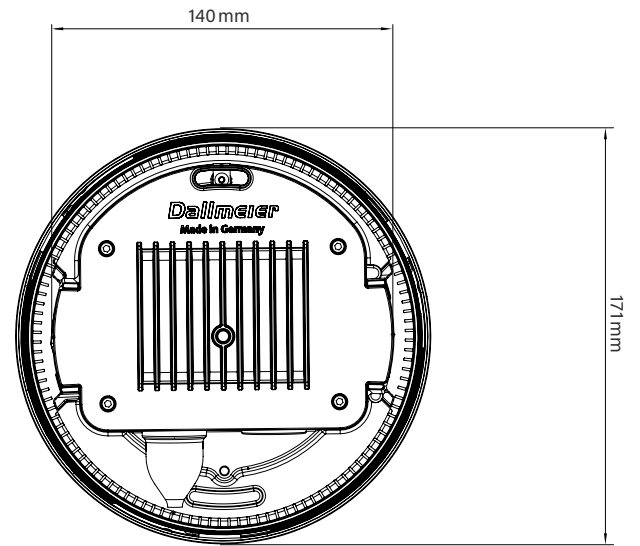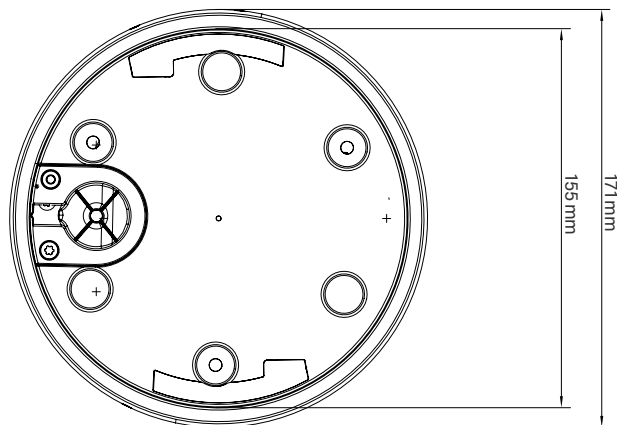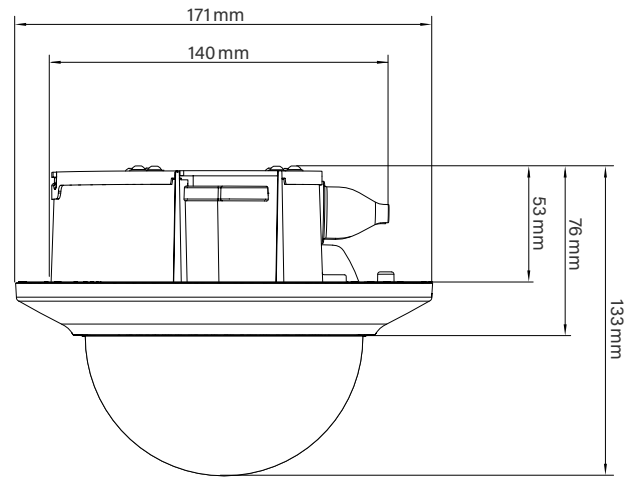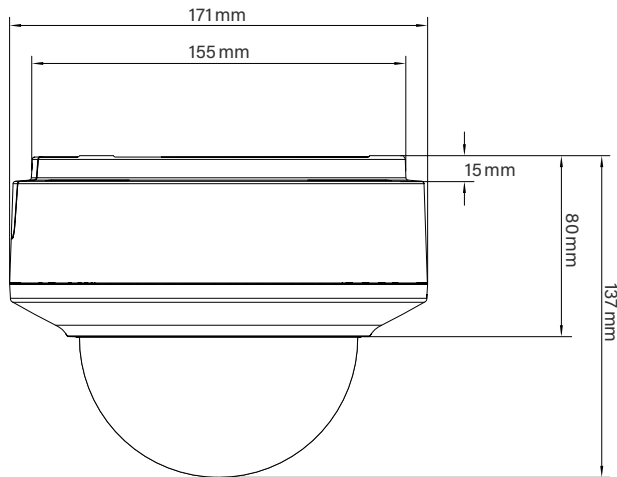
Electrical Data	
Voltage supply	PoE (Class 0) 24 V DC - 48 V DC ±5% (with Domera® Breakout Cable)
PoE standard	IEEE 802.3af
Power consumption	Max. 12 W

Mechanical Data	
Dimensions	Approx. Ø 171 × H 133 mm (H 137 with surface mount adapter) Ø 6.7 × H 5.2 inches (H 5.4 with surface mount adapter)
Weight	Approx. 1.2 kg (1.4 kg with surface mount adapter) 2.6 lb (3.0 lb with surface mount adapter)
Adjustment	3-axes (remote positioning over network)
Bubble	Clear
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 Aluminium)
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)
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	
Ambient light sensor	Integrated
Position sensor	Integrated
Microphone	Integrated in Domera® Dual Matrix LED Ring
Local memory	50 MB RAM memory
Memory extension[15]	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 M, Profile S, Profile T
GDPR compliance	Supported
NDAA compliance	Supported

Approvals/Certifications	
Type	CE, FCC, RCM, EAC, UL, IEC/EN 62471 and UL2043 compliant

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

Camera Series RDF6000DN

DOMERA®

High definition camera, 4/8 MP, H.265, day/night, WDR/HDR, PoE, Deep AI object classification, EdgeAnalytics AI Apps, motor-driven varifocal lens, motorized 3-axis adjustment (RPoD), variable Domera® mounting system

See more.

Dallmeier

MADE IN GERMANY