AXIS M4227-LVE Dome Camera

Compact 5 MP AI-powered dome with audio analytics

This compact varifocal dome camera offers great image quality in 5 MP. With Lightfinder 2.0, Forensic WDR, and OptimizedIR, it provides detailed images regardless of light conditions. It comes preinstalled with AXIS Object Analytics to detect, classify, track, and count objects such as humans and vehicles. With AXIS Audio Analytics, it can detect and classify specific sounds as well as sudden changes in sound volume. Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and protects sensitive information from unauthorized access. Furthermore, this IP66- and IK10-rated camera has an operating temperature range from -30 °C to 50 °C (-22 °F to 122 °F).

- > Great image quality in 5 MP
- > Varifocal lens with remote zoom and focus
- > Lightfinder 2.0, Forensic WDR, and OptimizedIR
- > AI-based audio and video analytics
- > Built-in cybersecurity with Axis Edge Vault

FIPS 140-3
FIPS-3 Inside 4679

ONVIF | GMST

AXIS M4227-LVE Dome Camera

Camera

Image sensor
1/2.7" progressive scan RGB CMOS
Pixel size 2.00 µm

Lens
Varifocal, 3.2–7.2 mm, F1.6–2.7
Horizontal field of view: 98–38°
Vertical field of view: 66°–26°
Minimum focus distance: 1.0 m (3.2 ft)
Fixed iris, IR corrected, remote zoom and focus

Day and night
Automatic IR-cut filter

Minimum illumination
Color: 0.13 lux at 50 IRE, F1.6
B/W: 0.03 lux at 50 IRE, F1.6
0 lux with IR illumination on

Shutter speed
1/33500 s to 1/5

Camera adjustment
Pan ±180°, tilt -10 to +65°, rotation ±180°

System on chip (SoC)

Model
ARTPEC-8

Memory
2 GB RAM, 8 GB Flash

Compute capabilities
Deep learning processing unit (DLPU)

Video

Video compression
H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles
H.265 (MPEG-H Part 2/HEVC) Main Profile
Motion JPEG

Resolution
16:9: 2688x1512 to 640x360
4:3: 2592x1944 to 320x240

Frame rate
Up to 25/30 fps (50/60 Hz) in all resolutions

Video streaming
Up to 20 unique and configurable video streams[1]
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Low latency mode
Video streaming indicator

Signal-to-noise ratio
>55 dB

WDR
Forensic WDR: Up to 120 dB depending on scene

Image settings
Saturation, contrast, brightness, sharpness, white balance, day/night threshold, exposure mode, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay, privacy masks

Image processing
Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

Pan/Tilt/Zoom
Digital PTZ, optical zoom, preset positions
Limited guard tour, control queue, on-screen directional indicator
Tour recording (max 10, max duration 16 minutes each), guard tour (max 100), adjustable zoom speed

1. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*

Network

Network protocols
IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[2], HTTP/2, TLS[2], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, PTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf)

System integration

Application Programming Interface
Open API for software integration, including VAPIX®, metadata and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*.
One-click cloud connection
ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specifications at *onvif.org*

Video management systems
Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at *axis.com/vms*.

Onscreen controls
Autofocus
Day/night shift
Wide dynamic range
Video streaming indicator
IR illumination
Privacy masks
Heater

Edge-to-edge
Siren and light pairing

Event conditions
Application
Device status: above/below/within operating temperature, IP address removed, new IP address, network lost, system ready, live stream active
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: manual trigger, virtual input
MQTT: stateless
Scheduled and recurring: schedule
Video: average bitrate degradation, day-night mode, tampering

Event actions
Day-night mode
Illumination: use lights, use lights while the rule is active
Images: FTP, HTTP, HTTPS, SFTP, network share and email
LEDs: flash status LED, flash status LED while the rule is active
MQTT: publish
Notifications: HTTP, HTTPS, TCP and email
Overlay text
Recordings: record video, record video while the rule is active
Security: erase configuration
SNMP trap messages: send, send while the rule is active
Video clips: FTP, HTTP, HTTPS, SFTP, network share and email
WDR mode

Built-in installation aids
Pixel counter, remote zoom and focus, level grid

Analytics

Applications
Included
AXIS Object Analytics, AXIS Image Health Analytics, AXIS Audio Analytics, AXIS Scene Metadata, AXIS Live Privacy Shield[3], AXIS Video Motion Detection
Supported
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

AXIS Object Analytics
Object classes: humans, vehicles (types: cars, buses, trucks, bikes, other)
Scenarios: line crossing, object in area, time in area, crossline counting, occupancy in area, tailgating detection, PPE monitoring[BETA], motion in area, motion line crossing
Up to 10 scenarios
Other features: triggered objects visualized with trajectories, color-coded bounding boxes and tables
Polygon include/exclude areas
Perspective configuration
ONVIF Motion Alarm event

AXIS Image Health Analytics
Detection settings:
Tampering: blocked image, redirected image
Image degradation: blurred image, underexposed image
Other features: sensitivity, validation period

2. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
3. *Available for download*

AXIS Audio Analytics
Features: sound pressure level, adaptive audio detection, audio classification
Audio classes: scream, shout, glass break, speech
Event metadata: audio detections, classifications

AXIS Scene Metadata
Object classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates
Object attributes: vehicle color, upper/lower clothing color, confidence, position
Audio data: audio level

Approvals

Product markings
UL/cUL, UKCA, CE, EAC, VCCI, RCM, BSMI

Supply chain
TAA compliant

EMC
CISPR 35, CISPR 32 Class A, EN 55035,
EN 55032 Class A, EN 61000-6-1, EN 61000-6-2
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES(A)/NMB(A)
Japan: VCCI Class A
USA: FCC Part 15 Subpart B Class A

Safety
CAN/CSA C22.2 No. 62368-1 ed. 3,
IEC/EN/UL 62368-1 ed. 3, IEC/EN 62471 risk group exempt, IS 13252

Environment
IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6,
IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78,
IEC/EN 60529 IP66, IEC/EN 62262 IK10, NEMA 250 Type 4X

Network
NIST SP500-267

Cybersecurity
ETSI EN 303 645, BSI IT Security Label, FIPS 140

Cybersecurity

Edge security
Software: Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, password protection, Axis Cryptographic Module (FIPS 140-2 level 1)
Hardware: Axis Edge Vault cybersecurity platform
Secure keystore: secure element (CC EAL 6+, FIPS 140-3 Level 3), system-on-chip security (TEE)
Axis device ID, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security
IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)[4], IEEE 802.1AR, HTTPS/HSTS[4], TLS v1.2/v1.3[4], Network Time Security (NTS), X.509 Certificate PKI, host-based firewall

Documentation
AXIS OS Hardening Guide
Axis Vulnerability Management Policy
Axis Security Development Model
AXIS OS Software Bill of Material (SBOM)
To download documents, go to *axis.com/support/cybersecurity/resources*
To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing
IP66-, NEMA 4X- and IK10-rated
Polycarbonate hard-coated dome
Plastic casing, polycarbonate (PC) dome, weathershield (PC/ASA)
Color: white NCS S 1002-B
For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
This product can be repainted.

Power
Power over Ethernet (PoE) IEEE 802.3af/802.3at/802.3bt Type 1 Class 3, max 12.3 W, typical (heater off, IR off) 3.1 W
Features: power meter

Connectors
Network: Shielded RJ45 10BASE-T/100BASE-TX

4. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Sensor
Acoustic sensor

IR illumination
OptimizedIR with power-efficient, long-life 850 nm IR LEDs
Range of reach 20 m (66 ft) or more depending on the scene

Storage
Support for microSD/microSDHC/microSDXC card
Support for SD card encryption (AES-XTS-Plain64 256bit)
Recording to network-attached storage (NAS)
For SD card and NAS recommendations see *axis.com*

Operating conditions
Temperature: -30 °C to 50 °C (-22 °F to 122 °F)
Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F)
Start-up temperature: -20 °C (-4 °F)
Humidity: 10–100% RH (condensing)

Storage conditions
Temperature: -40 °C to 65 °C (-40 °F to 149 °F)
Humidity: 5–95% RH (non-condensing)

Dimensions
For the overall product dimensions, see the dimension drawing in this datasheet.
Effective Projected Area (EPA): 0.007 m^2 (0.08 ft^2)

Weight
540 g (1.2 lb)

Box content
Camera, weathershield, installation guide, connector guard, cable gaskets, owner authentication key

System tools
AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator
Available at *axis.com*

Languages
English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

Warranty
5-year warranty, see *axis.com/warranty*

Part numbers
Available at *axis.com/products/axis-m4227-lve#part-numbers*

Optional accessories

Installation
AXIS T8415 Wireless Installation Tool

Mounting
AXIS TM3601-E Counduit Back Box, AXIS TM4101 Pendant Kit

Storage
AXIS Surveillance Cards

For more accessories, go to *axis.com/products/axis-m4227-lve#accessories*

Sustainability

Substance control
PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709
RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*

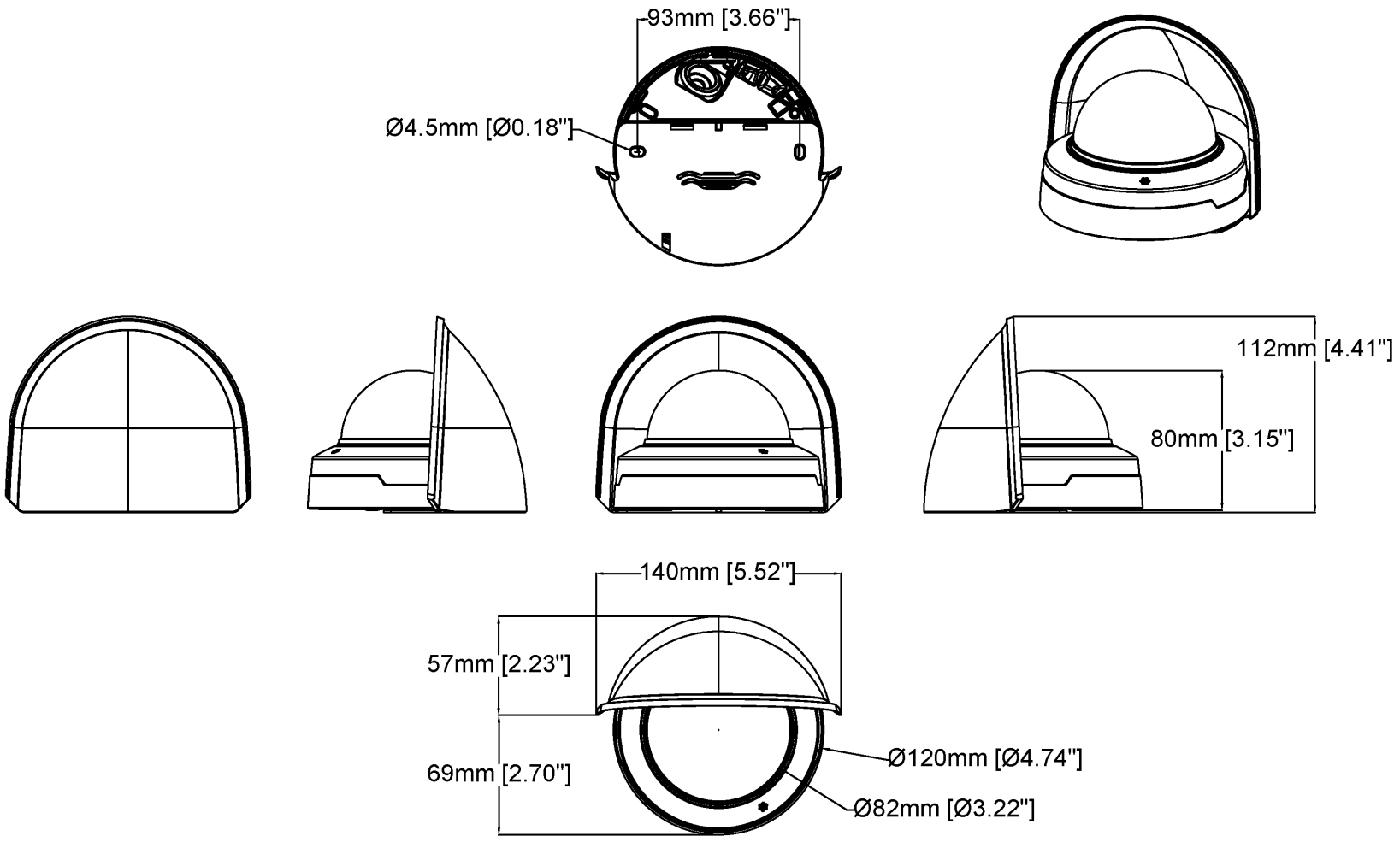
Materials
Renewable carbon-based plastic content: 44% (bio-based: 43%, carbon capture based: 1%)
Screened for conflict minerals in accordance with OECD guidelines
To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*

Environmental responsibility
axis.com/environmental-responsibility
Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

Detect, Observe, Recognize, Identify (DORI)

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	63.4 m (208.0 ft)	147.6 m (484.1 ft)
Observe	63 px/m (19 px/ft)	25.2 m (82.7 ft)	59.6 m (195.5 ft)
Recognize	125 px/m (38 px/ft)	12.7 m (41.7 ft)	29.5 m (96.8 ft)
Identify	250 px/m (76 px/ft)	6.3 m (20.7 ft)	14.8 m (48.5 ft)

The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.



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Paper size	A4	Release date	2024-02-23
Created by	MS	Scale	1:3

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Highlighted capabilities

AXIS Object Analytics

AXIS Object Analytics is a preinstalled, multifeatured video analytics that detects and classifies humans, vehicles, and types of vehicles. Thanks to AI-based algorithms and behavioral conditions, it analyzes the scene and their spatial behavior within – all tailored to your specific needs. Scalable and edge-based, it requires minimum effort to set up and supports various scenarios running simultaneously.

AXIS Audio Analytics

AXIS Audio Analytics uses adaptive audio detection to generate alarms on sudden increases in sound volume. With AI-based classifiers, it can detect screaming and shouting. You can also get extra confirmation by combining AXIS Audio Analytics with video analytics. This smart application only transmits metadata, ensuring privacy is safeguarded. A core feature of AXIS OS, AXIS Audio Analytics comes preinstalled at no extra cost.

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

To read more about Axis Edge Vault, go to *axis. com/ solutions/edge-vault*.

Lightfinder

The Axis Lightfinder technology delivers high-resolution, full-color video with a minimum of motion blur even in near darkness. Because it strips away noise, Lightfinder makes dark areas in a scene visible and captures details in very low light. Cameras with Lightfinder discern color in low light better than the human eye. In surveillance, color may be the critical factor to identify a person, an object, or a vehicle.

OptimizedIR

Axis OptimizedIR provides a unique and powerful combination of camera intelligence and sophisticated LED technology, resulting in our most advanced camera-integrated IR solutions for complete darkness. In our pan-tilt-zoom (PTZ) cameras with OptimizedIR, the IR beam automatically adapts and becomes wider or narrower as the camera zooms in and out to make sure that the entire field of view is always evenly illuminated.

For more information, see *axis.com/glossary*

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