AXIS P3738-PLE Panoramic Camera

4x 4K multidirectional with deep learning

This multidirectional camera offers four channels with 4K per channel to deliver excellent overviews and detailed coverage. It includes 360° IR illumination for clear, reflection-free footage and excellent image quality even in low light or complete darkness. This flexible camera offers various mounting options. For instance, it can be recessed mounted for discreet surveillance or mounted in ceilings for complete 360° coverage. With highly efficient power consumption, it ensures lower operating costs. It also supports powerful analytics based on deep learning. Furthermore, Axis Edge Vault, a hardware-based cybersecurity platform, guarantees the device's integrity and protects it from unauthorized access.

- > 4x 4K at 15 fps per channel
- > 360° IR illumination with individually controlled LEDs
- > Flexible mounting options
- > Support for advanced analytics
- > Axis Edge Vault safeguards the device

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Camera	
Image sensor	4x 1/2.8" progressive scan RGB CMOS Pixel size 1.45 µm
Lens	Varifocal, 3.2–8.1 mm, F1.9-3.2 Horizontal field of view: 108°–40° Vertical field of view: 55°–23° Diagonal field of view: 131°–46° Minimum focus distance: 0.5 m (1.6 ft) Fixed iris, IR corrected, remote zoom and focus
Day and night	Automatic IR-cut filter
Minimum illumination	**Color:** 0.19 lux at 50 IRE, F1.9 **B/W:** 0 lux at 50 IRE, F1.9 0 lux with IR illumination on
Shutter speed	**WDR on**: 1/8000 s to 2 s **WDR off**: 1/16000 s to 2 s
Camera angle adjustment	Pan ±90°, tilt +25 to +95°, rotation -5° to +95°, twist ±20°
System on chip (SoC)	
Model	ARTPEC-8
Memory	4096 MB RAM, 8192 MB 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	4x 3840x2160 (4x 4K) to 4x 320x180
Frame rate	Up to 12.5/15 fps (50/60 Hz) in all resolutions
Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPG 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
Noise reduction	Spatial filter (2D noise reduction) Temporal filter (3D noise reduction)
Image settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping , exposure mode, exposure zones, barrel distortion correction, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay, dynamic text and image overlay, privacy masks, polygon privacy mask
Image processing	Forensic WDR, Lightfinder, OptimizedIR
Audio	
Audio input/output	Audio features through portcast technology: two-way audio connectivity with AXIS T61 Mk II
Audio streaming	Two-way (half duplex, full duplex) via network speaker pairing technology
Network	
Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[a], HTTP/2, TLS[a], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, 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), IEEE 802.1X (EAP-TLS), IEEE 802.1AR
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.* ACAP includes Native SDK and Computer Vision SDK. 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 Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at *axis.com/vms*
Onscreen controls	Autofocus Video streaming indicator IR illumination Privacy masks Media clip
Edge-to-edge	Speaker pairing
Event conditions	Device status: above operating temperature, above or below operating temperature, below operating temperature, within operating temperature, IP address removed, new IP address, network lost, system ready, live stream active, casing open 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 MQTT: publish Notification: HTTP, HTTPS, TCP, and email Overlay text Recordings: record, record while the rule is active SNMP traps: send, send while the rule is active Status LED: flash, flash while the rule is active Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share, and email
Built-in installation aids	Remote zoom and focus, pixel counter, barrel distortion correction
Analytics	
Multisensor analytics	4 channels analytics support[b]
AXIS Object Analytics	**Object classes**: humans, vehicles (types: cars, buses, trucks, bikes) **Features**: line crossing, object in area, crossline counting[BETA], occupancy in area[BETA] Up to 8 scenarios Metadata visualized with trajectories and color-coded bounding boxes and tables Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Metadata	**Object data**: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position **Attributes**: Vehicle color, upper/lower clothing color, confidence, position **Event data**: Producer reference, scenarios, trigger conditions
Applications	**Included** AXIS Object Analytics, AXIS Video Motion Detection, active tampering alarm **Supported** Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*
Approvals	
Product markings	CSA, UL/cUL, UKCA, CE, KC, EAC, VCCI, RCM
Supply chain	TAA compliant
EMC	CISPR 35, CISPR 32 Class A, EN 55035, EN 55032 Class A, EN 50121-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A **Canada:** ICES-3(A)/NMB-3(A) **Japan:** VCCI Class A **Korea:** KS C 9835, KS C 9832 Class A **USA:** FCC Part 15 Subpart B Class A **Railway:** IEC 62236-4

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, RCM AS/NZS 62368.1:2022,
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/IP67, IEC/EN 62262 IK09, ISO 21207 (Method B), MIL-STD-810H (Method 501.7, 502.7, 505.7 506.6, 507.6 509.7, 512.6), NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9), VDMA 24364
Network	NIST SP500-267, IPv6 USGv6
Cybersecurity	ETSI EN 303 645

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication, password protection **Hardware:** Axis Edge Vault cybersecurity platform TPM 2.0 (CC EAL4+, FIPS 140-2 Level 2), secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)
Network security	IEEE 802.1X (EAP-TLS)[a], IEEE 802.1AR, HTTPS/HSTS[a], TLS v1.2/v1.3[a], 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*

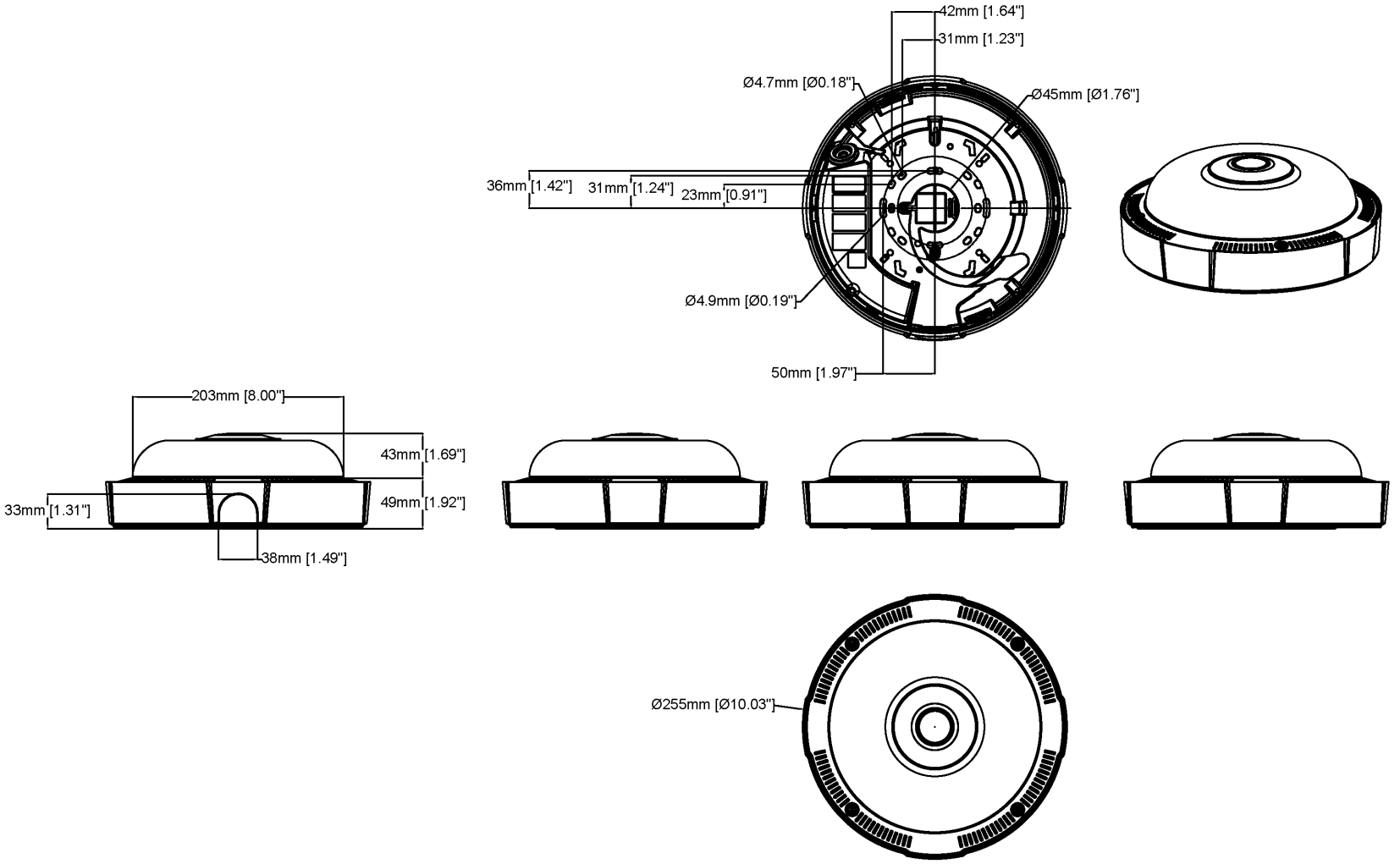
General

Casing	IP66-, IP67-, NEMA 4X- and IK09-rated Polycarbonate hard-coated dome Aluminum and plastic casing, polycarbonate (PC) dome 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.*
Mounting	Mounting bracket with junction box holes (double-gang, single-gang, 4" square, and 4" octagon) ½" (M20) conduit side entry
Power	Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4 IR illumination on: typical 14.98 W, max 25.50 W IR illumination off: typical 8.92 W, max 14.70 W
Connectors	Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
IR illumination	OptimizedIR with power-efficient, long-life 850 nm IR LEDs Range of reach 15m (49.2 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	-30°C to 50 °C (-22 °F to 122 °F) Humidity 10–100% RH (condensing) Maxiumum temperature according to NEMA TS 2 (2.2.7): 74 °C(165 °F)
Storage conditions	-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): 0.022 m^2 (0.24 ft^2)
Weight	2 kg (4.4 lb)
Box content	Camera, installation guide, connector guard, cable gaskets
Optional accessories	AXIS TP3105-E Pendant Kit Black, AXIS TP3204-E Recessed Mount, AXIS TP3832-E Dome Smoked, AXIS TP3833-E Dome Casing Black, AXIS T94N01D Pendant Kit, AXIS TP3004–E Wall Mount Black, AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards For more accessories, go to *axis.com/products/axis-p3738-ple#accessories*
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-p3738-ple#part-numbers*

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: 17% (recycled: 9%, bio-based: 1%, carbon capture based: 7%) 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*

a. *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).*
b. *For more information, go to the User manual on axis.com.*



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Revision	v.01	Revision date	2023-05-16
Paper size	A4	Release date	2023-05-16
Created by	MF	Scale	1:5

Key features and technologies

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 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 offers features to protect the device's identity, safeguard its integrity from factory and protect sensitive information from unauthorized access.

Establishing the root of trust starts at the device's boot process. In Axis devices, the hardware-based mechanism **secure boot** verifies the operating system (AXIS OS) that the device is booting from. AXIS OS, in turn, is cryptographically signed (**signed firmware**) during the build process. Secure boot and signed firmware tie into each other and ensure that the firmware has not been tampered with during the lifecycle of the device and that the device only boots from authorized firmware. This creates an unbroken chain of cryptographically validated software for the chain of trust that all secure operations depend on.

From a security aspect, 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 is provided through a Common Criteria and/or FIPS 140 certified hardware-based cryptographic computing module. Depending on security requirements, an Axis device can have either one or multiple such modules, like a TPM 2.0 (Trusted Platform Module) or a secure element, and/or a system-on-chip (SoC) embedded Trusted Execution Environment (TEE).

Signed video ensures that video evidence can be verified as untampered without proving the chain of custody of the video file. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream. This allows video to be traced back to the Axis camera from where it originated, so it's possible to verify that the footage has not been tampered with after it left the camera.

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

Zipstream

The Axis Zipstream technology preserves all the important forensic in the video stream while lowering bandwidth and storage requirements by an average of 50%. Zipstream also includes three intelligent algorithms, which ensure that relevant forensic information is identified, recorded, and sent in full resolution and frame rate.

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