

AXIS M4318-PLR Panoramic Camera

12 MP fisheye camera for buses

Optimized for surveillance onboard buses, this discreet, panoramic camera is designed to withstand shock and vibrations. It delivers a complete 180° or 360° overview for total situational awareness. Thanks to built-in IR illumination with individually controllable LEDs, it ensures clear, reflection-free footage and excellent image quality even in low light or complete darkness. Delivered factory-focused, it includes digital roll functionality to remotely adjust the rotation of the camera overview. Furthermore, this high-performance camera includes built-in cybersecurity features to help prevent unauthorized access and safeguard your system. Plus, it supports advanced analytics based on deep learning on the edge.

- > [Sharpdome technology](#)
- > [Complete 180° and 360° overview](#)
- > [Built-in IR with individual IR LEDs](#)
- > [Support for advanced analytics](#)
- > [Built-in cybersecurity features](#)



AXIS M4318-PLR Panoramic Camera

Camera

Image sensor

1/2.3" progressive scan RGB CMOS

Lens

Focal length: 1.2 mm, F2.2
Horizontal field of view: 182°
Vertical field of view: 182°
Fixed iris, IR corrected, fixed focus

Day and night

Automatic IR-cut filter

Minimum illumination

Color: 0.19 lux at 50 IRE, F2.2
B/W: 0.04 lux at 50 IRE, F2.2
0 lux with IR illumination on

Shutter speed

1/8100 s to 0.5 s

Camera adjustment

Digital roll: ± 180°

System on chip (SoC)

Model

ARTPEC-8

Memory

2048 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

Overview: 2992x2992 to 160x160
Panorama: 3840x2160 to 192x72
Double Panorama: 3584x2688 to 512x288
Quad view: 3584x2688 to 384x288
View area 1-4: 2048x1536 to 256x144
Corner right and left: 3200x1200 to 192x72
Double corner: 2880x2880 to 384x288
Corridor: 2560x1920 to 256x144

Frame rate

360° overview only up to max resolution without WDR:
25/30 fps @ 50/60 Hz
360° overview and 4 dewarped views up to max
resolution with WDR: up to 25/20 fps @ 50/60 Hz

Video streaming

Multiple, individually configurable streams in H.264,
H.265 and Motion JPEG
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Video streaming indicator

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, local
contrast, tone mapping, white balance, day/night
threshold, exposure mode, exposure zones, compression,
mirroring, dynamic text and image overlay, polygon
privacy mask

Image processing

Axis Zipstream, Forensic WDR, Lightfinder, OptimizedIR

Pan/Tilt/Zoom

Digital PTZ of view areas, digital PT of panorama,
corner, corridor and quad views, preset positions, guard
tours

Audio

Audio features

Network speaker pairing

Audio input/output

Audio features through portcast technology: two-way audio connectivity, voice enhancer

Network

Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS¹, HTTP/2, TLS¹, 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, DHCPv4/v6, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, 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.

One-click cloud connection

ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specification at onvif.org
Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX.

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

Privacy masks
IR illumination
Media clip

Event conditions

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

Event actions

Day-night mode: use while the rule is active
I/O: toggle once, toggle while the rule is active
Illumination: use lights, use lights while the rule is active
Images: FTP, HTTP, HTTPS, SFTP, email and network share
MQTT: publish
Notification: HTTP, HTTPS, TCP and email
Overlay text: use, use while the rule is active
Recordings: record video, record video while the rule is active
SNMP trap messages: send, send while the rule is active
Status LED: flash, flash while the rule is active
Video clips: FTP, HTTP, HTTPS, SFTP, email and network share
WDR mode: set, set while the rule is active

Built-in installation aids

Pixel counter, level grid, digital roll

Analytics

Applications

Included

AXIS Object Analytics, AXIS Image Health Analytics, AXIS Scene Metadata, AXIS Video Motion Detection, active tampering alarm

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)

Scenarios: line crossing, object in area, crossline counting, occupancy in area^{BETA}

Up to 10 scenarios

Other features: triggered objects visualized with trajectories and color-coded bounding boxes

Polygon include/exclude areas

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

AXIS Scene Metadata

Object classes: humans, faces, vehicles (types: cars, buses, trucks, bikes)

Object attributes: vehicle color, confidence, position

1. 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).

Approvals

Product markings

CSA, UL/cUL, BIS, UKCA, CE, KC

Supply chain

TAA compliant

EMC

ECE R10 rev.06, EN 55035, EN 55032 Class A, EN 50121-4, EN 61000-6-1, EN 61000-6-2, EN 61547
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

IEC/EN/UL 62368-1 ed. 3,
CAN/CSA C22.2 No. 62368-1 ed. 3, IEC/EN 62471 risk group exempt, UN ECE R118, 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 TR 60721-4-5 Class 5M3 (Vibration, Shock), IEC/EN 62262 IK10, IEC/EN 60529 IP66, ISO 4892-2, NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9), IEC/EN 61373 Category 1 Class B, ISO 21207 (Method B)

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 OpenID Authorization Code Flow for centralized ADFS account management, password protection, Axis Cryptographic Module (FIPS 140-2 level 1), AES-XTS-Plain64 256bit SD card encryption
Hardware: Axis Edge Vault cybersecurity platform 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, PEAP-MSCHAPv2)², IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS², TLS v1.2/v1.3², 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
Aluminum
Color: white NCS S 1002-B
Repaintable skin cover accessory

Mounting

Mounting bracket with junction box holes (double-gang, single-gang, and 4" octagon)
1/4"-20 UNC tripod screw thread

Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3
Typical 6.4 W, max 12.95 W

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX PoE
I/O: Terminal block for 1 supervised alarm input and 1 output (12 VDC output, max. load 25 mA)
Audio: Audio and I/O connectivity via portcast technology

IR illumination

Optimized IR with power-efficient, long-life 850 nm IR LEDs
Range of reach 15 m (49.2 ft) depending on the scene

Storage

Support for microSD/microSDHC/microSDXC card
Recording to network-attached storage (NAS)
For SD card and NAS recommendations see axis.com

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).

Operating conditions

-40 °C to 50 °C (-40 °F to 122 °F)

Start-up temperature: -30 °C

Humidity 10-100% RH (condensing)

Storage conditions

-40 °C to 65 °C (-40 °F to 149 °F)

Humidity 5-95% RH (non-condensing)

Dimensions

Height: 70 mm (2.7 in)

Ø 149 mm (5.9 in)

Effective Projected Area (EPA): 0.0076 m² (0.025 ft²)

Weight

860 g (1.9 lb)

Box content

Camera, installation guide, terminal block connector, connector guard, cable gaskets, cable hole lid, owner authentication key

Optional accessories

AXIS T8415 Wireless Installation Tool, AXIS T94T02D Pendant kit, AXIS TM3814 Skin Cover Black, AXIS TM3204 Recessed Mount, AXIS TM3206 Recessed Mount, AXIS Mounts and Cabinets, AXIS Surveillance Cards

For more accessories, go to axis.com/products/axis-m4318-plr#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

Warranty

5-year warranty, see axis.com/warranty

Part numbers

Available at axis.com/products/axis-m4318-plr#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 axis.com/partner.

Materials

Renewable carbon-based plastic content: 29.6% (bio-based)

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

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 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.

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