AXIS Q1728-LE Block Camera

8 MP, superior light-sensitivity, outdoor camera

Built on ARTPEC-9, this AI-powered camera offers 4K and a large 1/1.2" sensor for outstanding performance even in low-light. A deep learning processing unit lets you run advanced features and powerful analytics on the edge. Preinstalled with AXIS Object Analytics, it detects and tracks objects. And AXIS Image Health Analytics notifies you if your image is blocked, degraded, underexposed, or redirected. Axis Zipstream with support for AV1 and H.264/H.265 significantly reduces bandwidth and storage needs. Furthermore, it's available with wide or tele lens, and a front window with carbon nanotube film heater guarantees great images every time.

- > Superior image quality in 4K
- > Built-in wiper for harsh weather
- > Next-generation AI-powered analytics
- > Wide or tele lenses available
- > Built-in cybersecurity with Axis Edge Vault



FIPS-3 Inside 4679

AXIS Q1728-LE Block Camera

Camera

Variants
AXIS Q1728-LE 13 mm
AXIS Q1728-LE 48 mm

Image sensor
1/1.2" progressive scan RGB CMOS
Pixel size 2.9 µm

Lens
IR corrected, P-iris control
13 mm lens:
Varifocal, 5.9–13.3 mm, F1.6–2.9
Horizontal field of view: 108°–49°
Vertical field of view: 58°–27°
Minimum focus distance: 0.5 m (1.6 ft)
48 mm lens:
Varifocal, 15.2–48.7 mm, F1.7
Horizontal field of view: 42°–13°
Vertical field of view: 24°–7°
Minimum focus distance: 1.5 m (4.9 ft)

Day and night
Automatic IR-cut filter
Hybrid IR filter

Minimum illumination
13 mm lens:
With WDR and Lightfinder
Color: 0.05 lux at 50 IRE, F1.6–2.9
B/W: 0.01 lux at 50 IRE, F1.6–2.9
0 lux with IR illumination on
48 mm lens:
With WDR and Lightfinder
Color: 0.05 lux at 50 IRE, F1.7
B/W: 0.01 lux at 50 IRE, F1.7
0 lux with IR illumination on

Shutter speed
1/66500 s to 2 s

System on chip (SoC)

Model
ARTPEC-9

Memory
4 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
AV1

Resolution
16:9:3840x2160 to 160x120
16:10: 2560x1600 to 160x120
4:3: 2592x1944 to 160x120

Frame rate
With WDR: Up to 25/30 fps (50/60 Hz) in all resolutions
No WDR: Up to 50/60 fps (50/60 Hz) in all resolutions

Video streaming
Up to 20 unique and configurable video streams[1]
Axis Zipstream technology in H.264, H.265 and AV1
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265/AV1
Low latency mode
Video streaming indicator

Signal-to-noise ratio
>55 dB

WDR
Forensic WDR: Up to 120 dB depending on scene

Multi-view streaming
Up to 7 individually cropped out view areas

Noise reduction
Spatial filter (2D noise reduction)
Temporal filter (3D noise reduction)

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.*

Image settings
Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping, exposure mode, exposure zones, defog, barrel distortion correction, electronic image stabilization, compression, rotation: auto, 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay, overlay widget, privacy masks, target aperture
Scene profiles: forensic, vivid, traffic overview

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

Pan/Tilt/Zoom
Digital PTZ, preset positions, preset position tour
Uploadable PTZ driver (Pelco D, Visca and APTP pre-installed)

Audio

Features
Automatic gain control
10-band graphic equalizer for audio input
Speaker pairing, microphone pairing

Streaming
Configurable duplex:
One-way (simplex, half duplex)
Two-way (half duplex, full duplex)

Input
Input for external balanced or unbalanced microphone
Digital input, optional 12 V ring power
Balanced or unbalanced line input
Input through microphone pairing

Output
Output through speaker pairing

Encoding
AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM 48 kHz

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
Defog
Electronic image stabilization
Enable-disable all privacy masks
Fan
Heater
IR LED
Play media clip
Timed wiper
Video streaming indicator
WDR

Edge-to-edge
Microphone pairing
Speaker pairing

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).*

Event conditions
Audio: audio detection
Casing open
Device status: above/below/within operating temperature, IP address blocked, IP address removed, live stream active, network lost, new IP address, system ready, ring power overcurrent protection, shock detected
Digital audio: digital signal contains Axis metadata, digital signal has invalid sample rate, digital signal missing, digital signal okay
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: digital input, manual trigger, virtual input
MQTT: stateless
Scheduled and recurring: schedule
Video: average bitrate degradation, day-night mode

Event actions
Day-night mode
Defog
Guard tour
I/O
LEDs
MQTT
Notification: HTTP, HTTPS, TCP and email
Overlay text
Recordings
Security
SNMP trap messages
Images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email
WDR mode
Wiper

Built-in installation aids
Remote zoom and focus
Pixel counter
Traffic camera installation assistance

Analytics

Applications
Included
AXIS Object Analytics, AXIS Image Health Analytics, AXIS Scene Metadata, AXIS Live Privacy Shield, AXIS Speed Monitor[3]
AXIS Video Motion Detection
Supported
AXIS Perimeter Defender, AXIS License Plate Verifier
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, 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

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

AXIS Live Privacy Shield
Object classes: Humans, (entire body or face only), license plates, backgrounds
Masking type: Pixelated with adjustable block size, color (solid), masking inclusion and exclusion areas
Other features: Dynamic masking up to 10 fps.
Supports multiple dynamically masked streams, and one unmasked stream with full frame rate, simultaneously.

Approvals

Product markings
CE, EAC, FCC, ICES, KC, RCM, UL, VCCI

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, IEC 62236-4
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

3. *Available for download*

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

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, NEMA TS 2 (2.2.7-2.2.9),
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 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, password protection
Hardware: Axis Edge Vault cybersecurity platform
Secure keystore: secure element (CC EAL 6+, FIPS 140-3 Level 3), system-on-chip security (TEE)

Network security
IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)[4], IEEE 802.1AE (MACsec PSK/EAP-TLS), 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-, 67-, NEMA 4X- and IK10-rated
Aluminum and plastic casing
Color: NCS S 1002-B
Tamper switch, cable holes in bottom
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*.

Power
Power over Ethernet IEEE 802.3af/802.3at Type 2
Class 4, max 25.5 W, typical (heater off, IR off) 9.0 W
10–28 V DC, max 25.5 W, typical (heater off, IR off) 7.8 W
Features: dynamic power mode, low power mode, power meter

Connectors
Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
Network: IDC punchdown connector PoE
I/O: 6-pin 2.5 mm terminal block for four configurable inputs
Serial communication: RS485/RS422, 2 pcs, 2 pos, full duplex, terminal block
Audio: 3.5 mm mic/line in
Power: DC input, terminal block
AHI (Axis Housing Interface)
Security lock slot

IR illumination
OptimizedIR with power-efficient, long-life 850 nm IR LEDs
Range of reach 50 m (164 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: -40 °C to 60 °C (-40°F to 140 °F)
Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F)
Humidity: 10–100% RH (condensing)
Wind load (sustained): 60 m/s (134 mph)

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).*

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): 0.068 m^2 (0.73 ft^2)

Weight
13 mm lens:
4800 g (10.6 lb)
48 mm lens:
4880 g (10.8 lb)

Box content
Camera, installation guide, owner authentication key, connector guard, cable gaskets, AXIS TQ1003-E Wall Mount

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-q1728-le#part-numbers*

Optional accessories

Installation
AXIS T8415 Wireless Installation Tool

Storage
AXIS Surveillance Cards

For more accessories, go to *axis.com/products/axis-q1728-le#compatible-products*

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 2015/863, and standard EN IEC 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*

Materials
Renewable carbon-based plastic content (recycled: 4%, bio-based: 42%, carbon capture based: 0%)
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)

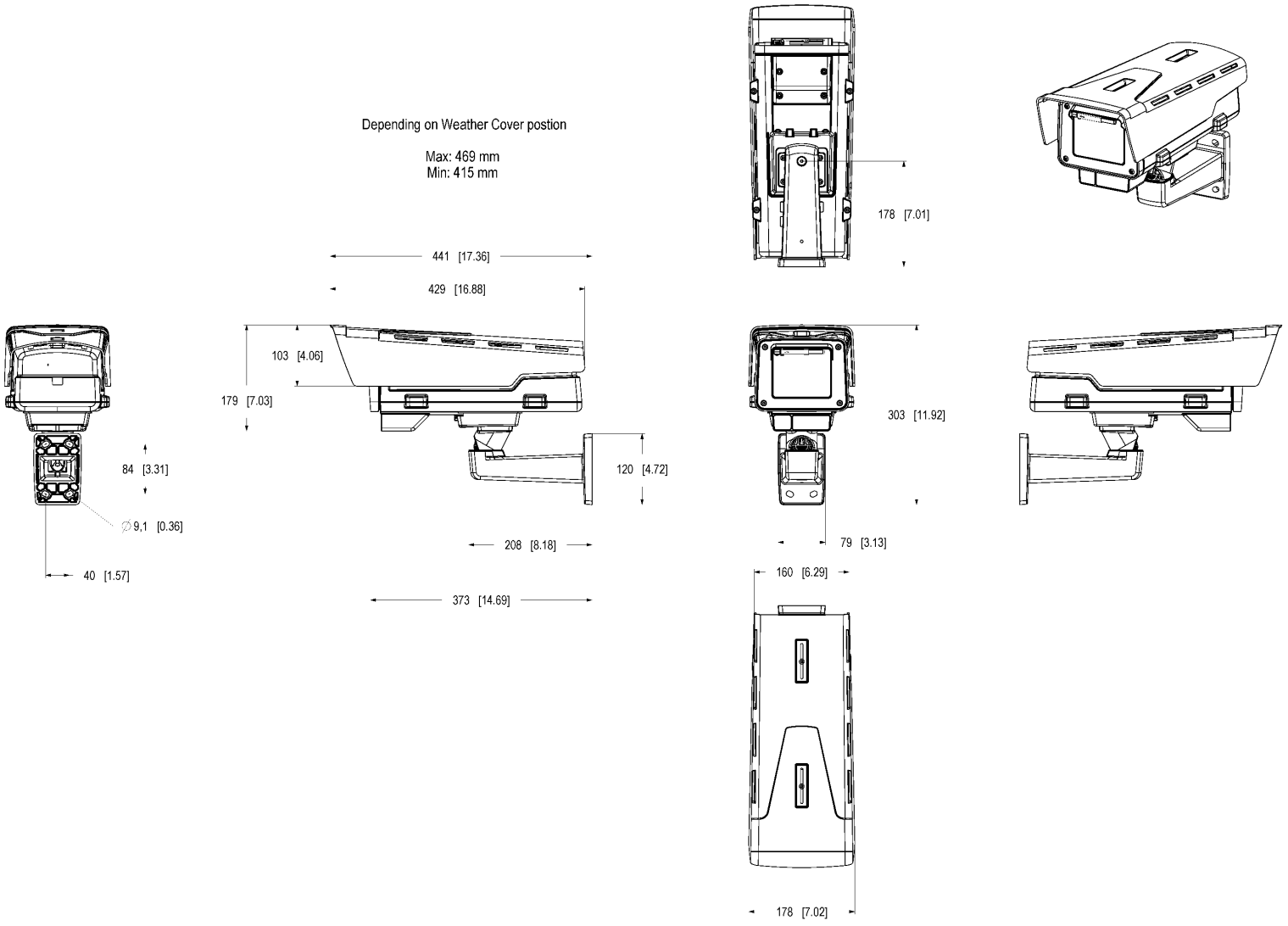
13 mm lens

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	84.6 m (277.5 ft)	177.9 m (583.5 ft)
Observe	63 px/m (19 px/ft)	33.6 m 110.2 ft)	70.6 m (231.6 ft)
Recognize	125 px/m (38 px/ft)	16.9 m (55.4 ft)	35.6 m (116.8 ft)
Identify	250 px/m (76 px/ft)	8.5 m (27.9 ft)	17.8 m (58.4 ft)

48 mm lens

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	211 m (692.1 ft)	672.9 m (2207.1 ft)
Observe	63 px/m (19 px/ft)	83.7 m (274.5 ft)	267.0m (875.8 ft)
Recognize	125 px/m (38 px/ft)	42.2 m (138.4 ft)	134.6 m (441.5 ft)
Identify	250 px/m (76 px/ft)	21.1 m (69.2 ft)	67.3 m (220.7 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.



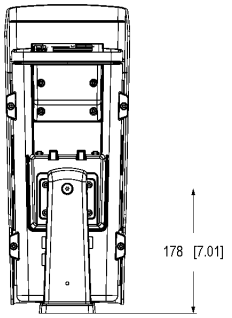
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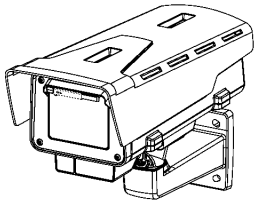
AXIS Q1728-LE Block Camera

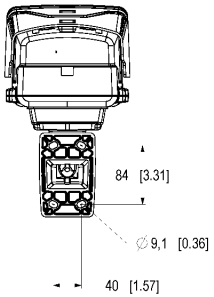
Dimensions in mm [inch]
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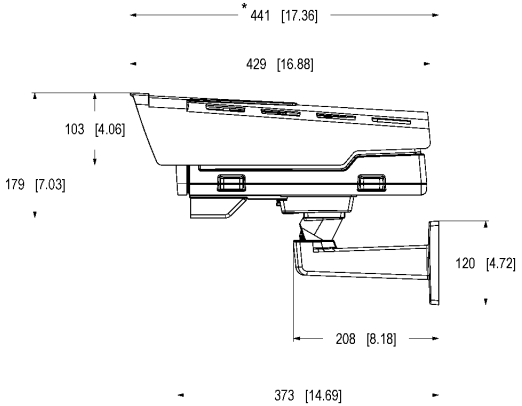
* Depending on Weather Cover position

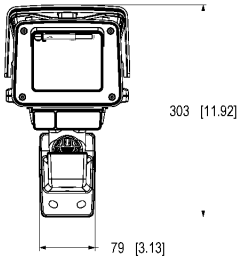
Max: 469 mm
Min: 415 mm

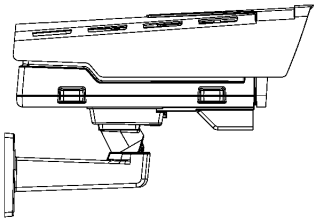


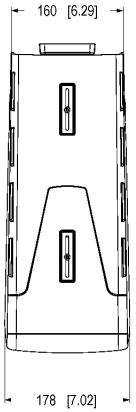












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AXIS Q1728-LE Block Camera 48mm

Dimensions in mm [inch]

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Highlighted capabilities

AV1

AV1 is a modern video encoding standard optimized for video transmission over the internet by Alliance for Open Media (AoM). It was designed to provide better compression efficiency than older codecs including H.264 (also known as AVC) and H.265 (HEVC), while being royalty-free and open-source.

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*.

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.

Electronic image stabilization

Electronic image stabilization (EIS) provides smooth video in situations where a camera is subject to vibrations. Built-in gyroscopic sensors continuously detect the camera's movements and vibrations, and they automatically adjust the frame to ensure you always capture the details you need. Electronic image stabilization relies on different algorithms for modeling camera motion, which are used to correct the images.

Forensic WDR

Axis cameras with wide dynamic range (WDR) technology make the difference between seeing important forensic details clearly and seeing nothing but a blur in challenging light conditions. The difference between the darkest and the brightest spots can spell trouble for image usability and clarity. Forensic WDR effectively reduces visible noise and artifacts to deliver video tuned for maximal forensic usability.

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.

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