

AXIS Q1809-LE Bullet Camera

All-in-one 41 MP camera for extreme detail

Built on a dual Axis system-on-chip, this all-in-one, outdoor-ready bullet camera delivers superior 41 MP resolution. And a 4/3" image sensor ensures exceptional low-light performance. It's available with a wide lens for open areas or a tele lens for surveillance from a distance. Enclosed in a robust aluminum casing, it includes a mounting arm for easy installation. Plus, a spacious back box ensures secure cable management. Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and offers FIPS 140-3 Level 3 certified secure key storage and operations. Furthermore, PoE out lets you connect and power another device without additional cabling.

- > **Out-of-the-box and outdoor-ready**
- > **Superior image quality in 8K**
- > **High light-sensitive 4/3" sensor**
- > **Wide or tele Canon lens**
- > **Built-in cybersecurity with Axis Edge Vault**



AXIS Q1809-LE Bullet Camera

Camera

Variants

AXIS Q1809-LE
AXIS Q1809-LE 150 mm

Image sensor

4/3" progressive scan RGB CMOS
Pixel size 2.315 µm

Lens

24 mm lens:
Varifocal, 12-24 mm, F2.0-3.0
8K
Horizontal field of view: 90°-44°
Vertical field of view: 49°-25°
41 MP
Horizontal field of view: 87°-42°
Vertical field of view: 64°-32°
Minimum focus distance: 1.5 m (4.9 ft)
Remote zoom and focus, P-Iris control
150 mm lens:
Varifocal, 50-150 mm, F4.0
8K
Horizontal field of view: 21°-7°
Vertical field of view: 12°-4°
41 MP
Horizontal field of view: 20°-6.6°
Vertical field of view: 15°-5°
Minimum focus distance: 5 m (16.4 ft)
Remote zoom and focus, P-Iris control

Day and night

Automatically removable IR-cut filter in day mode and IR-pass filter 800-900 nm in night mode

Minimum illumination

24 mm lens:
Color: 0.12 lux at 50 IRE, F2.0
B/W: 0.02 lux at 50 IRE, F2.0
0 lux with IR illumination on
150 mm lens:
Color: 0.2 lux at 50 IRE, F4.0
B/W: 0.04 lux at 50 IRE, F4.0
0 lux with IR illumination on

Shutter speed

4:3: 1/10500 s to 2 s
16:9: 1/15500 s to 2 s

Camera adjustment

Pan ±180°, tilt 0 to -90°, roll -90 to 270°

System on chip (SoC)

Model

ARTPEC-8 (x2)

Memory

4096 MB RAM (x2), 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⁽¹⁾
Motion JPEG

Resolution

4:3: 7424x5568
16:9: 7680x4320
21:9: 7680x3240

Frame rate

Up to 30 fps (50/60 Hz) in 8K mode
Up to 15 fps (50/60 Hz) in 41 MP mode

Video streaming

Up to 20 unique and configurable video streams⁽²⁾
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

Dynamic contrast

1. Due to the high resolution of AXIS Q1809-LE, H.265 is the recommended encoding format.
2. 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.

Multi-view streaming

Up to 8 individually cropped out view areas

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, defog, barrel distortion correction, compression, mirroring, text and image overlay, dynamic text and image overlay, privacy masks, polygon privacy mask
Scene profiles: forensic, vivid

Image processing

Axis Zipstream, Lightfinder, OptimizedIR

Pan/Tilt/Zoom

Digital PTZ

Audio

Features

Automatic gain control

Speaker pairing

Spectrum visualizer⁽³⁾

10-band graphic equalizer for audio input

Input

Input for external unbalanced microphone, optional 5 V microphone power

Digital input, optional 12 V ring power

Unbalanced line input

Microphone pairing

Output

Output through speaker pairing

Encoding

24bit LPCM, AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM

8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz

Configurable bitrate

Network

Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS⁽⁴⁾, HTTP/2, TLS⁽⁴⁾, 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, NTCIP, 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, and video management software from Axis' partners available at axis.com/vms.

Onscreen controls

Autofocus

Image stabilization

Day/night shift

Defog

Video streaming indicator

IR illumination

Privacy masks

Media clip

Edge-to-edge

Microphone pairing

Speaker pairing

3. Feature available with ACAP

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 (eyay@cryptsoft.com).

Event conditions

Device status: above/below operating temperature, IP address blocked, IP address removed, live stream active, network lost, new IP address, ring power overcurrent protection, system ready, within operating temperature
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 is active, manual trigger, virtual input
MQTT: stateless
Scheduled and recurring: schedule
Video: average bitrate degradation, day-night mode, tampering

Event actions

Day-night mode
Defog
I/O
Illumination
Images: FTP, HTTP, HTTPS, SFTP, email and network
MQTT
Notification: HTTP, HTTPS, TCP and email
Overlay text
Recordings
Security: erase configuration
SNMP trap messages
Video clips: FTP, HTTP, HTTPS, SFTP, email and network

Built-in installation aids

Pixel counter, remote zoom and focus, level grid, leveling assistant

Analytics

Applications

Included

AXIS Video Motion Detection, active tampering alarm, audio detection

Supported

Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap

Approvals

Product markings

CSA, UL/cUL, 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 61000-6-1, EN 61000-6-2
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES(A)/NMB(A)
Japan: VCCI Class A
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 2, 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/IP67, IEC/EN 62262 IK10 body, IK08 glass, NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9)

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 element (CC EAL 6+, FIPS 140-3 Level 3), 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)⁽⁵⁾, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS⁽⁵⁾, TLS v1.2/v1.3⁽⁵⁾, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall

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

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-, and NEMA 4X-rated

IK10 impact-resistant aluminum enclosure with integrated dehumidifying membranes, IK08 impact-resistant glass front window, weathershield with black anti-glare coating

Color: white NCS S 1002-B, black NCS S 9000-N

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 (PoE) IEEE 802.3at Type 2 Class 4, typical 18.9 W, max 25.5 W

Power over Ethernet (PoE) IEEE 802.3bt Type 3 Class 6, typical 18.9 W, max 51 W

Midspan 60 W, IEEE 802.3bt Type 3 Class 6, required for PoE out IEEE 802.3at Type 2 Class 4 (30 W) to a second device

10–28 V DC, typical 17.6 W, max 35 W

20–24 V AC, typical 25 VA, max 33 VA

Features: power profiles, power meter

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE, RJ45 1000BASE-T PoE output to power an external PoE device

I/O: 4-pin 2.5 mm terminal block for 1 alarm input and 1 output

Audio: 3.5 mm mic/line in

Power: DC input

IR illumination

24 mm lens: Optimized IR with power-efficient, long-life 850 nm IR LEDs and white LED combo

Range of reach 60 m (197 ft) or more depending on the scene

150 mm lens: Optimized IR with power-efficient, long-life 850 nm IR LEDs

Range of reach 100 m (328.1 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 with 30 W: -20 °C to 55 °C (4 °F to 131 °F)

Temperature with 60 W: -40 °C to 55 °C (-40 °F to 131 °F)

Maximum temperature according to NEMA TS 2 (2.2.7.3 - 2.2.7.7): 74 °C (165 °F)

Humidity: 10–100% RH (condensing)

Wind load (sustained): 60 m/s (134 mph)

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.

24 mm lens: Effective Projected Area (EPA): 0.0455 m² (0.49 ft²)

150 mm lens: Effective Projected Area (EPA): 0.0478 m² (0.51 ft²)

Weight

24 mm lens camera: 3.4 kg (7.50 lb)

150 mm lens camera: 3.2 kg (7.05 lb)

Box content

Camera, installation guide, terminal block connector, RJ45 cable, connector guard, cable gaskets, owner authentication key

Optional accessories

AXIS T8415 Wireless Installation Tool

AXIS Surveillance Cards

For more accessories, go to axis.com/products/axis-q1809-le#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-q1809-le#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 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: 65% (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

Detect, Observe, Recognize, Identify (DORI)

Q1809-LE

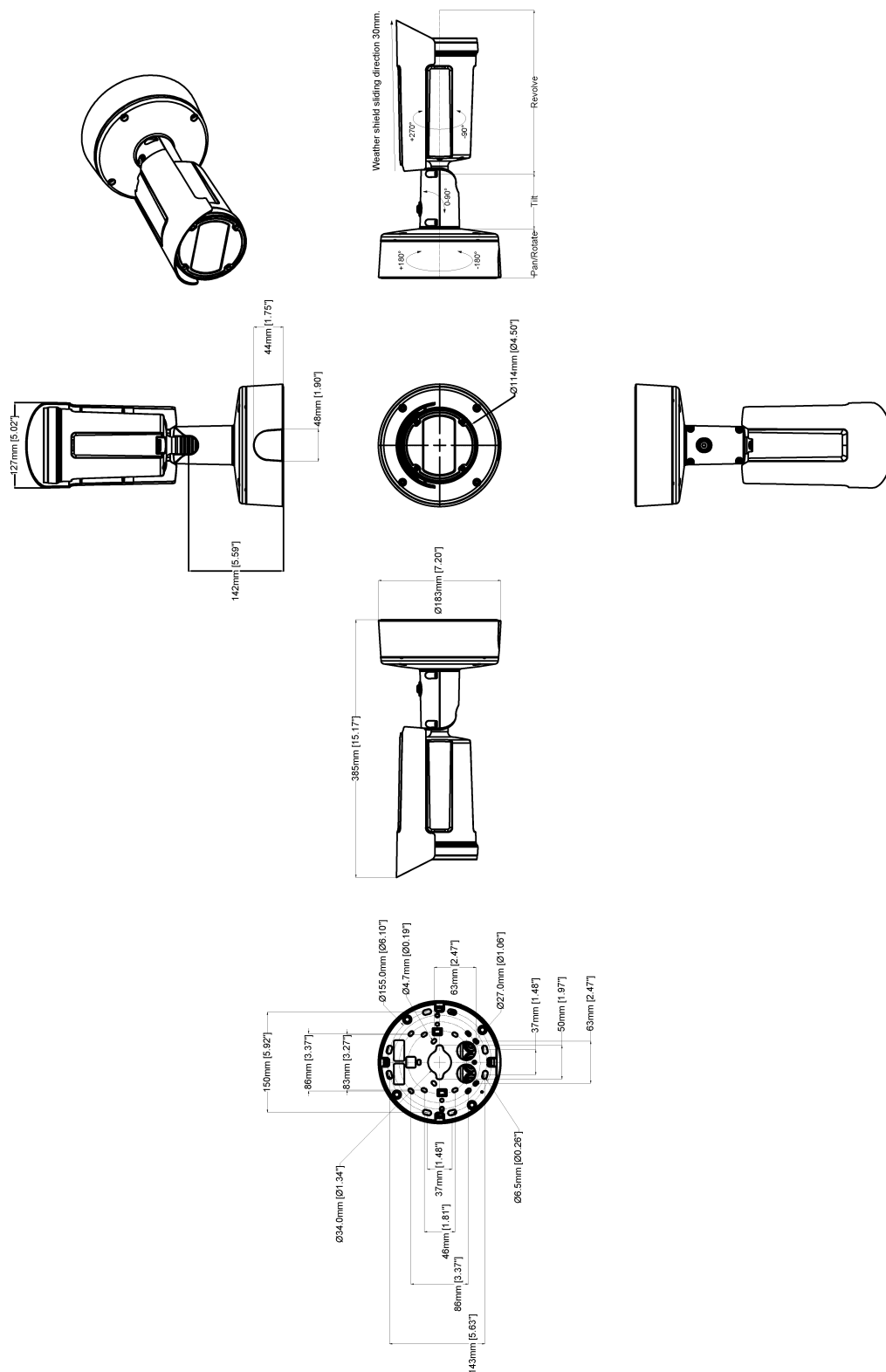
	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	210.8 m (691.4 ft)	407.1 m (1335.3 ft)
Observe	63 px/m (19 px/ft)	83.6 m (274.2 ft)	161.6 m (530.0 ft)
Recognize	125 px/m (38 px/ft)	42.2 m (138.4 ft)	81.4 m (267.0 ft)
Identify	250 px/m (76 px/ft)	21.0 m (68.9 ft)	40.7 m (133.5 ft)

Q1809-LE 150 mm

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	853.8 m (2800.5 ft)	2551.6 m (8369.2 ft)
Observe	63 px/m (19 px/ft)	338.8 m (1111.3 ft)	1012.6 m (3321.3 ft)
Recognize	125 px/m (38 px/ft)	170.8 m (560.2 ft)	510.2 m (1673.5 ft)
Identify	250 px/m (76 px/ft)	85.4 m (280.1 ft)	255.2 m (837.1 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.

Dimension drawings

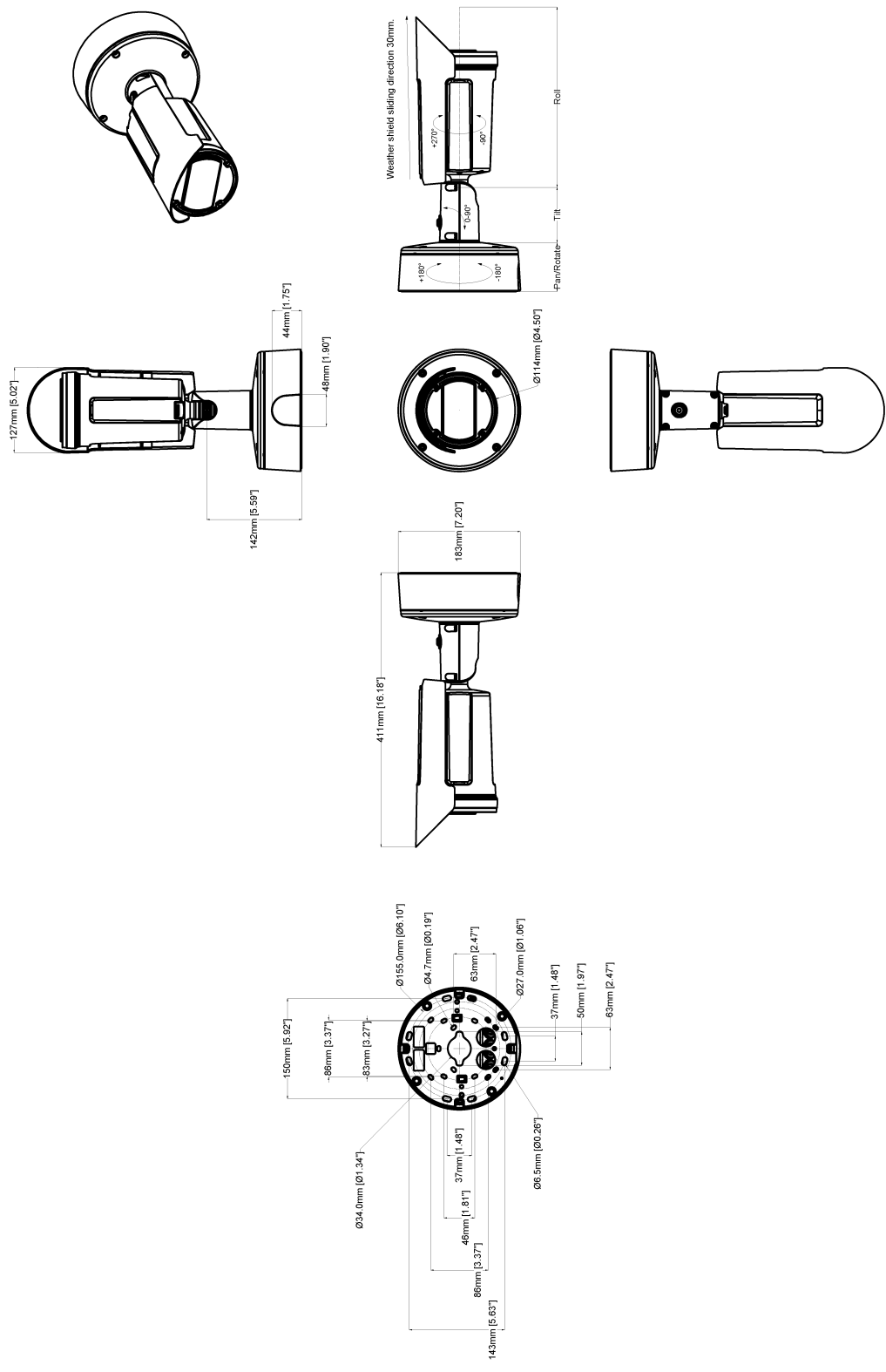


Revision	v.01	Revision date	2024-05-15
Paper size	A4	Release date	2024-05-15
Created by	MS	Scale	1:8

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Highlighted capabilities

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.

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.

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