AXIS Q1972-E Thermal Camera

High-resolution thermal imaging

AXIS Q1972-E delivers a high-resolution thermal video stream for reliable detection 24/7. Ideal for perimeter security, it includes AXIS Motion Guard, AXIS Fence Guard, and AXIS Loitering Guard for proactive surveillance. With a powerful analytics platform, it's easy to add third-party analytics. Built-in cybersecurity features prevent unauthorized access and safeguard your system. For instance, Axis Edge Vault protects your Axis device ID and simplifies authorization of Axis products on your network. AXIS Q1972-E also includes a Trusted Platform Module (TPM) that is FIPS 140-2 level 2 certified. Furthermore, this halogen-free, compact camera is robust and suitable even for harsh conditions.

> **Reliable detection 24/7**
> **Built-in cybersecurity features**
> **Compact, robust, halogen-free design**
> **Support for AI-based analytics**
> **Electronic image stabilization (EIS)**

AXIS Q1972-E Thermal Camera

Camera

Variants
AXIS Q1972-E 10 mm
AXIS Q1972-E 19 mm
AXIS Q1972-E 25 mm
AXIS Q1972-E 35 mm

Image sensor
Uncooled microbolometer 640x480 pixels, pixel size: 17 µm.
Spectral range: 8-14 µm

Lens
Athermalized
10 mm, F1.2
Horizontal field of view: 63°
Vertical field of view: 46°
Near focus distance: 2.8 m (9.2 ft)
19 mm, F1.0
Horizontal field of view: 31°
Vertical field of view: 24°
Near focus distance: 8.5 m (28 ft)
25 mm, F1.0
Horizontal field of view: 24°
Vertical field of view: 18.5°
Near focus distance: 18.5 m (61 ft)
35 mm, F1.2
Horizontal field of view: 17°
Vertical field of view: 13°
Near focus distance: 33 m (108 ft)

Sensitivity
NETD <20 mK @25 °C, F1.0

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
Sensor is 640x480. Image can be scaled up to 800x600 (SVGA).

Frame rate
Up to 8.3 fps and 30 fps

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
Video streaming indicator

Image settings
Contrast, brightness, sharpness, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay,polygon privacy mask, electronic image stabilization, thermal palettes

Image processing
Axis Zipstream

Audio

Features
Automatic gain control
Speaker pairing
Spectrum visualizer[2]

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

---

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.*
2. *Feature available with ACAP*

Input

10-band graphic equalizer
Input for external unbalanced microphone, optional 5 V
microphone power
Digital input, optional 12 V ring power
Unbalanced line input

Output

Output via speaker pairing

Encoding

24bit LPCM, AAC-LC 8/16/32/48 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[3], HTTP/
2, TLS[3], 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, DHCPv4/v6, 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

Electronic image stabilization
Video streaming indicator
Privacy masks
Media clip
Heater

Edge-to-edge

Speaker pairing

Event conditions

Audio: audio detection, audio clip playing, audio clip
currently playing
Device status: above/below/within operating
temperature, IP address removed, new IP address,
network lost, system ready, ring power overcurrent
protection, live stream active, shock detected
Digital audio input status
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, tampering

Event actions

Audio clips: play, stop
I/O: toggle I/O once, toggle I/O while the rule is active
MQTT: publish
Notification: HTTP, HTTPS, TCP and email
Overlay text
Pre- and post-alarm video or image buffering for
recording or upload
Recordings: SD card and network share
SNMP traps: send, send while the rule is active
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS,
network share and email

Built-in installation aids

Pixel counter

Analytics

Applications

Included
AXIS Video Motion Detection, AXIS Motion Guard,
AXIS Fence Guard, AXIS Loitering Guard, active
tampering alarm, audio detection
Supported
AXIS Perimeter Defender
Support for AXIS Camera Application Platform enabling
installation of third-party applications, see *axis.com/
acap*

Approvals

Product markings

CSA, UL/cUL, CE, KC

Supply chain

TAA compliant

---

3. *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).*

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
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

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[4],
ISO 21207 Method B, MIL-STD-810H (Method 501.7,
502.7, 505.7, 506.6, 507.6, 509.7, 510.7, 514.8, 516.8,
521.4), 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 firmware, 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), AES-XTS-Plain64 256bit SD card
encryption
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, 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

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 IK10-rated[4]
Aluminum and polycarbonate (PC)
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.*

Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1
Class 3
Typical 5.0 W, max 12.95 W
12–28 V DC, typical 4.8 W, max 12.95 W

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/
1000BASE-T PoE
Audio: 3.5 mm mic/line in
Power: DC input, terminal block
I/O: Terminal block for 1 supervised alarm input and 1
output (12 V DC output, max. load 50 mA)

Storage

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

Operating conditions

-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)

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)

---

4. *Excluding front window*
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 (eay@cryptsoft.com).*

Weight

1.4 kg (3.1 lb)

Box content

Camera, installation guide, drill template, TORX® L-keys, RESISTORX® L-key, terminal block connector, connector guard, cable gaskets, owner authentication key

Optional accessories

AXIS T94F01M J-Box/Gang Box Plate, AXIS T91A47 Pole Mount, AXIS T94P01B Corner Bracket, AXIS T94F01P Conduit Back Box, AXIS Weather Shield K, Axis PoE Midspans
AXIS T8415 Wireless Installation Tool
AXIS Surveillance Cards
For more accessories, go to *axis.com/products/axis-q1972-e#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*

Export control

This product is subject to export control regulations, and you should always comply with all applicable national and international export or re-export control regulations.

Part numbers

Available at *axis.com/products/axis-q1972-e#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

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, Recognize, Identify (DRI)

AXIS Q1972-E (10 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 291 m (954 ft)
		Vehicle: 890 m (2920 ft)
Recognize	6 pixels	Human: 73 m (240 ft)
		Vehicle: 223 m (731 ft)
Identify	12 pixels	Human: 36 m (118 ft)
		Vehicle: 112 m (367 ft)

AXIS Q1972-E (19 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 559 m (1830 ft)
		Vehicle: 1596 m (5234 ft)
Recognize	6 pixels	Human: 140 m (460 ft)
		Vehicle: 430 m (1410 ft)
Identify	12 pixels	Human: 70 m (230 ft)
		Vehicle: 215 m (705 ft)

AXIS Q1972-E (25 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 735 m (2410 ft)
		Vehicle: 2100 m (6900 ft)
Recognize	6 pixels	Human: 184 m (603 ft)
		Vehicle: 566 m (1855 ft)
Identify	12 pixels	Human: 91m (299 ft)
		Vehicle: 283 m (928 ft)

AXIS Q1972-E (35 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 1079 m (3539 ft)
		Vehicle: 3307 m (10850 ft)
Recognize	6 pixels	Human: 270 m (885 ft)
		Vehicle: 827 m (2712 ft)
Identify	12 pixels	Human: 135 m (442 ft)
		Vehicle: 413 m (1355 ft)

We used Johnson's criteria to calculate the theoretical values shown in the table. Human and vehicle sizes were assumed to be 1.8 x 0.5 m and 4.0 x 1.5 m, respectively.

Thoroughly evaluate your scene using, for example, AXIS Site Designer. Consider factors like weather conditions when determining actual detection distances.

Dimension drawing

AXIS Q1972-E Thermal Camera

95 [3.75]

21 [0.82]

22 [0.88]

45 [1.75]

⌀ 132 [5.19]

272 [10.73]

151 [5.94]

264 [10.39]

270°

90°

90°

185°

185°

73 [2.88]

⌀ 26 [1.03]

32 [1.26]

⌀ 5,6 [0.22]

87 [3.43]

6 [0.22]
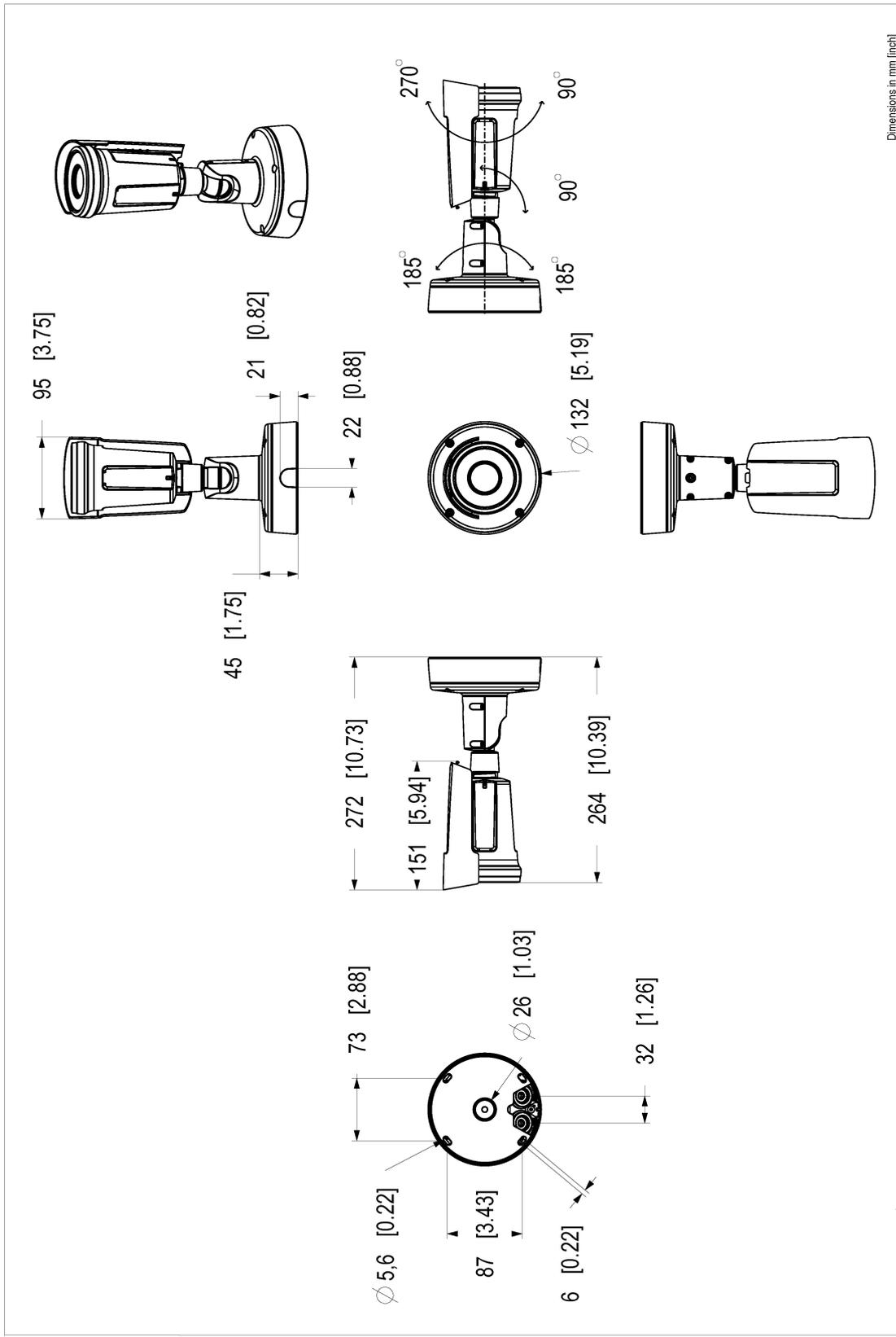
Dimensions in mm [inch]

Date	Version	Scale
2024 Dec-17	M1.1	1:4
Drawing Number	Size	Sheet
3222659	A3	1(1)

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.

Thermal palettes

A mode that allows the user to select a color range to show relative temperature differences in a scene. The user can choose between black-and-white ranges, color ranges, or a mix between the two. The same input (measured thermal radiation) can result in different visual appearance depending on how each pixel value is mapped to a color range.

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*

AXIS®
COMMUNICATIONS