

# AXIS Q1961-XTE Explosion-Protected Thermal Camera

Class/Division 2- and Zone 2-certified thermometric camera

Designed and certified for Zone and Division 2 hazardous areas, this compact and lightweight explosion-protected camera can remotely monitor temperatures from -40 °C to 350 °C (-40 °F to 660 °F). You'll receive a notification if the temperature exceeds or falls below a set threshold. It will also send a notification if the temperature increases or decreases too rapidly. It supports up to 10 configurable polygonal detection areas, and spot temperature reading shows the exact temperature in specific areas. Furthermore, Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and protects sensitive information from unauthorized access.

- > [Thermometric for remote temperature measuring](#)
- > [Configurable temperature monitoring areas](#)
- > [Spot temperature reading](#)
- > [Worldwide hazardous area certifications](#)
- > [Built-in cybersecurity with Axis Edge Vault](#)



# AXIS Q1961-XTE Explosion-Protected Thermal Camera

## Camera

### Variants

AXIS Q1961-XTE 7 mm 8.3 fps  
AXIS Q1961-XTE 7 mm 30 fps

### Image sensor

Uncooled microbolometer 384x288 pixels, pixel size 17  $\mu\text{m}$ .  
Spectral range: 8-14  $\mu\text{m}$

### Lens

Athermalized  
Horizontal field of view: 55°, F1.18  
Minimum focus distance: 1.3 m (4.3 ft)

### Sensitivity

NETD 40 mK @25C, F1.0

## Thermometry

### Object temperature range

-40 °C to 350 °C (-40 °F to 662 °F)

### Temperature accuracy

Below 120 °C (248 °F):  $\pm 5$  °C ( $\pm 9$  °F) accuracy  
Above 120 °C (248 °F):  $\pm 15\%$  accuracy

### Detection range

We recommend the size of a monitored object to cover at least 10x10 pixels in 384x288.

### General

Spot temperature meter, up to 10 polygon temperature detection areas

## System on chip (SoC)

### Model

ARTPEC-8

### Memory

2048 MB RAM, 8192 MB Flash

### Compute capabilities

Deep learning processing unit (DLPU)

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

## 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 384x288. Image can be scaled up to 768x576.

### Frame rate

Up to 8.3 fps or 30 fps

### Video streaming

Up to 20 unique and configurable video streams<sup>1</sup>  
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, local contrast, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay, polygon privacy mask, electronic image stabilization, multiple color palettes

### Image processing

Axis Zipstream

## Audio

### Features

AGC automatic gain control  
Speaker pairing  
Spectrum visualizer<sup>2</sup>

### Streaming

Configurable duplex:  
One-way (simplex, half duplex)

## Input

Input through speaker pairing  
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 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 bit rate

## Network

### Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS<sup>3</sup>, HTTP/2, TLS<sup>3</sup>, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP<sup>®</sup>, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, PTP, NTS, RTSP, RTP, SRTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, 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<sup>®</sup> and AXIS Camera Application Platform (ACAP); specifications at [axis.com/developer-community](https://axis.com/developer-community).  
One-click cloud connection  
ONVIF<sup>®</sup> Profile G, ONVIF<sup>®</sup> Profile M, ONVIF<sup>®</sup> Profile S, and ONVIF<sup>®</sup> Profile T, specifications at [onvif.org](https://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](https://axis.com/vms).

---

### Onscreen controls

Electronic image stabilization  
Heater

---

## Event conditions

Application: early fire detection  
Audio: audio detection, audio clip playing, audio clip currently playing  
Call: state, state change  
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, ring power overcurrent protection, live stream active  
Digital audio input status  
Edge storage: recording ongoing, storage disruption, storage health issues detected  
I/O: digital input, manual trigger, virtual input  
MQTT: subscribe  
Scheduled and recurring: schedule  
Video: average bitrate degradation, tampering, temperature detection (above/below/increasing/decreasing)

---

## 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, early fire detection, 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](https://axis.com/acap)

## Approvals

### Product markings

ATEC, IECEX, cULus, INMETRO, IA, JPEX, KCs, PESO, TD

---

3. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. ([openssl.org](https://openssl.org)), and cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)).

## 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-3(A)/NMB-3(A)

**Japan:** VCCI Class A

**Korea:** KS C 9832 Class A, KS C 9835

**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, 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<sup>4</sup>, ISO 21207 Method B, NEMA 250 Type 4X

---

## Network

NIST SP500-267

---

## Cybersecurity

ETSI EN 303 645, BSI IT Security Label, FIPS 140

---

## Explosion

IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31, UL 60079-0, UL 60079-7, UL 60079-31, CSA C22.2 No. 60079-0, CSA C22.2 No. 60079-7, CSA C22.2 No. 60079-31, CSA C22.2 No. 213-17, UL121201

---

## Certifications

### ATEX:

II 3 G Ex ec IIC T4 Gc

II 2 D Ex tb IIIC T135°C Db

**Certificate:** UL 22 ATEX 2732X, UL 22 ATEX 2888X

### IECEX:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** ULD 22.0011X

### cULus:

Class I Div 2 Group A, B, C, D T4

Class II Div 2 Group F, G T135°C T4

Class III Div 2

Class I Zone 2 AEx ec IIC T4 Gc

Zone 21 AEx IIIC T135°C Db

**Certificate:** E525121

### INMETRO:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** NCC 25.0028 X

### IA:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** MASC S/23-8118X

### OSHA Taiwan:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** TD100043

### PESO:

Ex ec IIC T4 Gc

**Certificate:** P603185/2

### Korea:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** 24-KA4BO-0713X and 24-KA4BO-0714X

### JPEX:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

**Certificate:** DEK24.0037X

## 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 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)<sup>5</sup>, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS<sup>5</sup>, TLS v1.2/v1.3<sup>5</sup>, 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](https://axis.com/support/cybersecurity/resources)

To read more about Axis cybersecurity support, go to [axis.com/cybersecurity](https://axis.com/cybersecurity)

## General

### Casing

IP66/IP67-, NEMA 4X-, and IK10-rated<sup>6</sup>  
Polycarbonate blend and aluminum, germanium window  
Color: gray NCS S 5502-B

### Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3  
Typical 4.3 W, max 12.95 W  
10–28 V DC, typical 4.1 W, max 12.95 W

### Connectors

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

### Storage

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

### Operating conditions

-30 °C to 60 °C (-22 °F to 140 °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<sup>2</sup> (0.24 ft<sup>2</sup>)

## Weight

1.5 kg (3.3 lb)

## Box content

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

## System tools

AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator  
Available at [axis.com](https://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](https://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-q1961-xte#part-numbers](https://axis.com/products/axis-q1961-xte#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 EN IEC 63000:2018  
REACH in accordance with (EC) No 1907/2006.

### Materials

Screened for conflict minerals in accordance with OECD guidelines  
To read more about sustainability at Axis, go to [axis.com/about-axis/sustainability](https://axis.com/about-axis/sustainability)

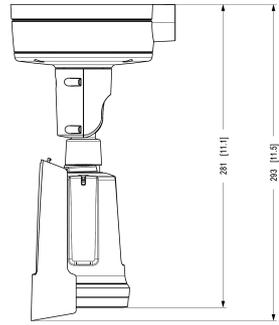
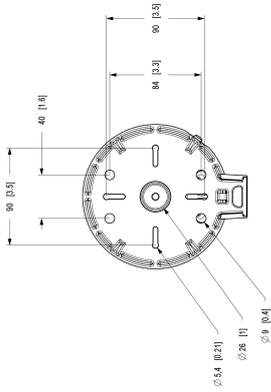
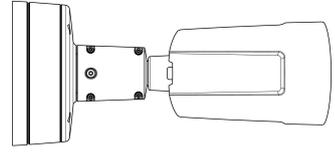
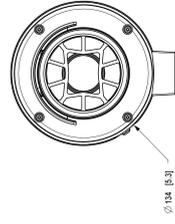
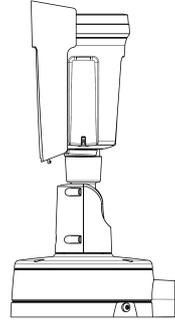
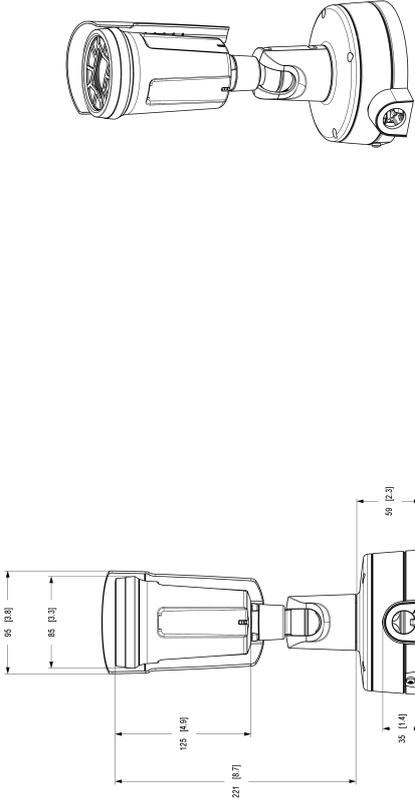
5. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. ([openssl.org](https://openssl.org)), and cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)).

6. Excluding front window

**Environmental responsibility**

*axis.com/environmental-responsibility*

Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*



Dimensions in mm (inch)	
2002 Dec-18	M1.1 [2]
199905	A1 [10]

AXIS Q1961-XTE Panoramic Camera

## 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](https://axis.com/solutions/edge-vault).

### Isothermal palette

A mode that allows the user to select a color range to represent different temperatures in a scene. Each color in an isotherm palette corresponds to a specific temperature value. 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.

### Thermometry

Thermal cameras detect objects using the infrared radiation (heat) emitted by all objects. Temperature-calibrated thermal cameras, called thermometric cameras, can measure absolute temperatures, while surveillance-optimized thermal cameras show relative temperatures. All types of thermal cameras have excellent object detection capabilities regardless of light conditions – even in total darkness.

### Zone/Division 2

Hazardous areas are divided into zones or divisions, defined by the probability that hazardous material will be present in an ignitable concentration in the surrounding atmosphere.

Zone/Division 2 areas are less hazardous than Zone/Division 1 areas, and explosions are not likely to occur during normal operations.

With 'Ex e' or 'non-incendive' protection, cameras certified for Zone/Division 2 offer increased safety. This explosion-protection approach ensures that no arcs and sparks can appear, and that excessive temperatures can't be reached, during normal operation of electrical equipment. As a result, electrical equipment using 'Ex e' protection can't ignite gas or dust in the surrounding potentially combustible environment.

For more information, see [axis.com/glossary](https://axis.com/glossary)