

## AXIS Q2112-E Thermal Camera

### Outstanding high-resolution detection and verification

Ideal for perimeter security, this high-resolution thermal camera offers reliable detection and verification 24/7 all while protecting privacy. It features a powerful sensor with extremely high thermal sensitivity for a low false alarm rate. And there's a choice of six lens options. It can be mounted on a positioning unit for 360° unobstructed views. AXIS Perimeter Defender is available for enhanced protection. Built on a powerful platform, it's possible to add third-party analytics. With edge-to-edge technology, you can easily integrate and trigger other devices such as a network speaker. Furthermore, Axis Edge Vault safeguards your device and protects sensitive information from unauthorized access.

- > [High-resolution detection, low false alarm rate](#)
- > [Lens options available](#)
- > [Flexible mounting options](#)
- > [Support for powerful analytics](#)
- > [Built-in cybersecurity with Axis Edge Vault](#)



# AXIS Q2112-E Thermal Camera

## Camera

### Variants

AXIS Q2112-E 10 mm  
AXIS Q2112-E 19 mm  
AXIS Q2112-E 25 mm  
AXIS Q2112-E 35 mm  
AXIS Q2112-E 60 mm  
AXIS Q2112-E 100 mm

### Image sensor

Uncooled microbolometer 640x480 pixels, pixel size 17  $\mu\text{m}$ .  
Spectral range: 8-14  $\mu\text{m}$

### 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)  
**60 mm**, F1.2  
Horizontal field of view: 10°  
Vertical field of view: 7.7°  
Near focus distance: 84 m (276 ft)  
**100 mm**, F1.4  
Horizontal field of view: 6.2°  
Vertical field of view: 4.6°  
Near focus distance: 190 m (623 ft)

### Sensitivity

NETD <20 mK @25 °C, F1.0

### Pan/Tilt

Supporting guard tour with up to 256 preset positions  
(positioning unit sold separately)

## 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.

### Frame rate

Up to 8.3 fps or 30 fps depending on model

### 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

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.

## Audio

### Features

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

### Streaming

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

### 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 network speaker pairing  
Line output

### 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/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<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  
Video streaming indicator  
Privacy masks  
Media clip  
Heater

### Edge-to-edge

Speaker pairing

### Event conditions

Audio: audio detection, audio clip playing  
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, casing open  
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

### 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  
Status LED: flash  
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share, and email

### Built-in installation aids

Pixel counter, level grid

2. Feature available with ACAP

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 ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)).

## 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](http://axis.com/acap)

## Approvals

### Product markings

CSA, UL/cUL, CE, KC, VCCI, RCM

### Supply chain

TAA compliant

### EMC

CISPR 35, CISPR 32 Class A, EN 50121-4, EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, 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, 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, MIL-STD-810H (Method 501.7, 502.7, 505.7, 506.6, 507.6, 509.7, 510.7, 512.6, 514.8, 516.8, 521.4)<sup>5</sup>, 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)

**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>6</sup>, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS<sup>6</sup>, TLS v1.2/v1.3<sup>6</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](http://axis.com/support/cybersecurity/resources)

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

## General

### Casing

IP66/IP67-, NEMA 4X-, and IK10-rated<sup>4</sup>

Aluminum

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](http://axis.com/warranty-implication-when-repainting).

### Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 2 Class 4

Typical 5.2 W, max 25.5 W

10-28 V DC, typical 4.6 W, max 25.5 W

4. Excluding front window

5. 514.8 and 516.8 only applicable to 60mm lens variant.

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

## Connectors

Network: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE  
I/O: Terminal block for two supervised and two unsupervised configurable inputs / digital outputs ( 12 V DC output, max. load 50 mA)  
Audio: 3.5 mm mic/line in, 3.5 mm line out  
Serial communication: RS485/RS422, 2 pcs, 2 pos, full duplex, terminal block  
Power: DC input, terminal block

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## 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](https://axis.com)

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## 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)

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## Storage conditions

-40 °C to 65 °C (-40 °F to 149 °F)  
Humidity 5–95% RH (non-condensing)

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## Dimensions

For the overall product dimensions, see the dimension drawing in this datasheet.  
Effective Projected Area (EPA): 0.05 m<sup>2</sup> (0.48 ft<sup>2</sup>)

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## Weight

10 mm, 19 mm, 25 mm, 35 mm: 3.3 kg (7.3 lb)  
60 mm, 100 mm: 3.5 kg (7.7 lb)

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## Box content

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

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## Optional accessories

AXIS TQ1818-E Positioning Unit, AXIS TQ1003-E Wall Mount  
For more accessories, go to [axis.com/products/axis-q2112-e#accessories](https://axis.com/products/axis-q2112-e#accessories)

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## System tools

AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator  
Available at [axis.com](https://axis.com)

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## Languages

English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

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## Warranty

5-year warranty, see [axis.com/warranty](https://axis.com/warranty)

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## 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.

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## Part numbers

Available at [axis.com/products/axis-q2112-e#part-numbers](https://axis.com/products/axis-q2112-e#part-numbers)

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## 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.

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### Materials

Renewable carbon-based plastic content: 7% (recycled: 2%, bio-based: 5%)<sup>7</sup>  
Renewable carbon-based plastic content: 8% (recycled: 2%, bio-based: 6%)<sup>8</sup>  
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)

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### Environmental responsibility

[axis.com/environmental-responsibility](https://axis.com/environmental-responsibility)  
Axis Communications is a signatory of the UN Global Compact, read more at [unglobalcompact.org](https://unglobalcompact.org)

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7. Applicable to 10 mm, 19 mm, 25 mm, and 35 mm.

8. Applicable to 60 mm and 100 mm.

## Detect, Recognize, Identify (DRI)

AXIS Q2112-E (10 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 291 m (954 ft) Vehicle: 890 m (2,920 ft)
Recognize	6 pixels	Human: 73 m (240 ft) Vehicle: 223 m (731 ft)
Identify	12 pixels	Human: 36 m (120 ft) Vehicle: 112 m (367 ft)

AXIS Q2112-E (19 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 559 m (1,834 ft) Vehicle: 1,596 m (5,235 ft)
Recognize	6 pixels	Human: 140 m (460 ft) Vehicle: 430 m (1,410 ft)
Identify	12 pixels	Human: 70 m (230 ft) Vehicle: 215 m (705 ft)

AXIS Q2112-E (25 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 735 m (2,410 ft) Vehicle: 2,100 m (6,888 ft)
Recognize	6 pixels	Human: 184 m (604 ft) Vehicle: 566 m (1,856 ft)
Identify	12 pixels	Human: 91 m (298 ft) Vehicle: 283 m (928 ft)

AXIS Q2112-E (35 mm lens)		
	Definition	Distance
Detect	1.5 pixels	Human: 1,079 m (3,539 ft) Vehicle: 3,307 m (10,850 ft)
Recognize	6 pixels	Human: 270 m (886 ft) Vehicle: 827 m (2,710 ft)
Identify	12 pixels	Human: 135 m (443 ft) Vehicle: 413 m (1,355 ft)

AXIS Q2112-E (60 mm lens)		
	Definition	Distance
<b>Detect</b>	1.5 pixels	Human: 1,833 m (6,012 ft) Vehicle: 5,623 m (18,440 ft)
<b>Recognize</b>	6 pixels	Human: 458 m (1,500 ft) Vehicle: 1,406 m (4,611 ft)
<b>Identify</b>	12 pixels	Human: 229 m (751 ft) Vehicle: 703 m (2,305 ft)

AXIS Q2112-E (100 mm lens)		
	Definition	Distance
<b>Detect</b>	1.5 pixels	Human: 2,941 m (9,646 ft) Vehicle: 8,403 m (27,560 ft)
<b>Recognize</b>	6 pixels	Human: 735 m (2,410 ft) Vehicle: 2,262 m (7,419 ft)
<b>Identify</b>	12 pixels	Human: 368 m (1,210 ft) Vehicle: 1,131 m (3,710 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.

