

# AXIS I8116-E Network Video Intercom

## Small and flexible with deep learning

This compact and powerful network video intercom operates as a communication device and security camera, providing 5MP video, two-way communication, and remote entry control. Open standards such as ONVIF and Session Initiation Protocol (SIP) combined with its small size enables unique opportunities for system design and integration. WDR and efficient noise cancellation ensure performance in demanding situations, such as strong backlight or surrounding noise. It's also possible to wire an OSDP reader to the IO connector for trouble-free access control using Axis Access Control solutions. Furthermore, it comes with AXIS Object Analytics preinstalled, and built-in cybersecurity features help prevent unauthorized access.

- > **Mullion form factor**
- > **High quality 5 MP video with audio**
- > **SIP support**
- > **Support for analytics based on deep learning**
- > **Built-in cybersecurity features**



# SIP

ONVIF<sup>®</sup> | GMST

# AXIS I8116-E Network Video Intercom

## Camera

### Image sensor

1/2.7" progressive scan RGB CMOS  
Pixel size 2  $\mu$ m

### Lens

1.95 mm, F2.2  
Horizontal field of view: 162°  
Vertical field of view: 118°  
M12 mount, fixed iris, fixed focus

### Minimum illumination

Color: 0.15 lux at 50 IRE, F2.2  
0 lux with LED lit

### Shutter speed

1/38500 s to 1/5 s

## System on chip (SoC)

### Model

CV25

### Memory

2048 MB RAM, 1024 MB Flash

### Compute capabilities

Deep learning processing unit (DLPUs)

## Video

### Video compression

H.264 (MPEG-4 Part 10/AVC) Main and High Profiles  
H.265 (MPEG-H Part 2/HEVC) Main Profile  
Motion JPEG

### Resolution

16:9: 1920x1080 to 1280x720  
4:3: 2592x1944 to 640x480

### Frame rate

Up to 30/25 fps (60/50 Hz) with H.264 and H.265<sup>1</sup> in all resolutions

### Video streaming

Multiple, individually configurable video streams in H.264, H.265, and Motion JPEG  
Axis Zipstream technology in H.264 and H.265  
Controllable frame rate and bandwidth  
VBR/ABR/MBR H.264/H.265

### WDR

WDR

### Image settings

Saturation, contrast, brightness, sharpness, white balance, exposure mode, exposure zones, compression, dynamic text and image overlay, polygon privacy mask

### Image processing

Axis Zipstream, WDR, Lightfinder

## Audio

### Features

Echo cancellation, noise reduction, beamforming

### Streaming

Two-way (full duplex)

### Input

2x built-in microphones (can be disabled)

### Output

Built-in speaker  
85 dB at 1 kHz (at 0.5 m / 20 in)  
79 dB at 1 kHz (at 1 m / 39 in)

### Encoding

LPCM 16kHz, AAC-LC 8/16 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16 kHz  
Configurable bit rate

## Lock control

### Lock integration

Integration with AXIS A9801 Security Relay: 350 mA at 12 V DC  
Integration with Axis network door controllers: maximum current/voltage: 0.7 A at 30 V  
Integration with OSDP reader  
Integrated entry list with up to 50 credentials

1. Reduced frame rate in Motion JPEG

## Network

### Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS<sup>2</sup>, HTTP/2, TLS<sup>2</sup>, 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, 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), IEEE 802.1X (EAP-TLS), IEEE 802.1AR

## System integration

### Application Programming Interface

Open API for software integration, including VAPIX® and AXIS Camera Application Platform (ACAP); specifications at [axis.com/developer-community](http://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](http://onvif.org)

### VoIP

Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX.  
Tested with various SIP software such as Cisco and Grandstream  
Tested with various PBX software such as Cisco, Avaya and Asterisk  
AXIS Parallel Call Forking, AXIS Sequential Call Forking  
Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN), contact list, parallel call forking, sequential call forking  
Supported codecs: PCMU, PCMA, Opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32, G.722

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

### Onscreen controls

Privacy masks  
Media clip  
Custom controls

### Event conditions

Application  
Audio: audio detection, audio clip 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, live stream active, casing open, shock detected, RFID tag detected  
Edge storage: recording ongoing, storage disruption, storage health issues detected  
I/O: digital input, manual trigger, relay or digital output, virtual input  
MQTT: subscribe  
Scheduled and recurring: schedule  
Video: average bitrate degradation, tampering

### Event actions

Audio clips: play, stop  
Calls: answer call, end call, make call  
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  
Security: erase configuration  
SNMP traps: send, send while the rule is active  
Status LED: flash, flash while the rule is active  
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email  
WDR mode

### Built-in installation aids

Pixel counter, level grid

## Analytics

### AXIS Object Analytics

Object classes: humans, vehicles (types: cars, buses, trucks, bikes)  
Scenarios: line crossing, object in area, time in area, crossline counting, occupancy in area  
Up to 10 scenarios  
Metadata visualized with color-coded bounding boxes  
Polygon include/exclude areas  
Perspective configuration  
ONVIF Motion Alarm event

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

## Metadata

**Object data:** Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates  
**Attributes:** Vehicle color, upper/lower clothing color, confidence, position  
**Event data:** Producer reference, scenarios, trigger conditions

## Applications

### Included

AXIS Object Analytics, AXIS Video Motion Detection, AXIS Barcode Reader, active tampering alarm, audio detection  
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, UKCA, CE, KC, ANATEL

### Supply chain

TAI compliant

### EMC

EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2

**Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A

**Canada:** ICES-3(A)/NMB-3(A)

**Japan:** VCCI Class A

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

**USA:** FCC Part 15 Subpart B Class A

### Safety

IEC/EN/UL 60950-22, IEC/EN/UL 62368-1, NOM-001

### 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 IP65, IEC/EN 62262 IK08, NEMA 250 Type 4X

### Cybersecurity

ETSI EN 303 645, BSI IT Security Label

## 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, AES-XTS-Plain64 256bit SD card encryption  
**Hardware:** Axis Edge Vault cybersecurity platform 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>3</sup>, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS<sup>3</sup>, TLS v1.2/v1.3<sup>3</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

IP65-, NEMA 4X- and IK08-rated (IK10-rated when mounted with AXIS TI8605 Protection Cover). Speaker is IK07-rated.

Powder coated, chromate aluminum and zinc casing, polycarbonate (PC) dome

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

### Mounting

Wall mount or recessed with AXIS TI8204 Recessed Mount

Recommended height: 0.9–1.5 m (3.0–4.9 ft)

### Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3

Typical 4 W, max 10.8 W

Power out: 1x12 V DC, max out: 350 mA at 12 V DC

Relay: see Lock control

<sup>3</sup> 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 ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)).

## Connectors

Network: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE  
I/O: Terminal block for two configurable inputs / digital outputs<sup>4</sup>  
Serial communication: RS485, half duplex/2-wire<sup>4</sup>

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

## Operating conditions

-30 °C to 60 °C (-22 °F to 140 °F)  
Start-up temperature: -25 °C (-13 °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.

## Weight

400 g (14.1 lb)

## Box content

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

## Optional accessories

AXIS TI8204 Recessed Mount, AXIS A9801 Security Relay, AXIS TI8605 Protection Cover, AXIS TI8606 Wedge Mount  
AXIS T8415 Wireless Installation Tool  
AXIS Surveillance Cards  
For more accessories, go to [axis.com/products/axis-i8116-e#accessories](http://axis.com/products/axis-i8116-e#accessories)

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

## Part numbers

Available at [axis.com/products/axis-i8116-e#part-numbers](http://axis.com/products/axis-i8116-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 [axis.com/partner](http://axis.com/partner).

### Materials

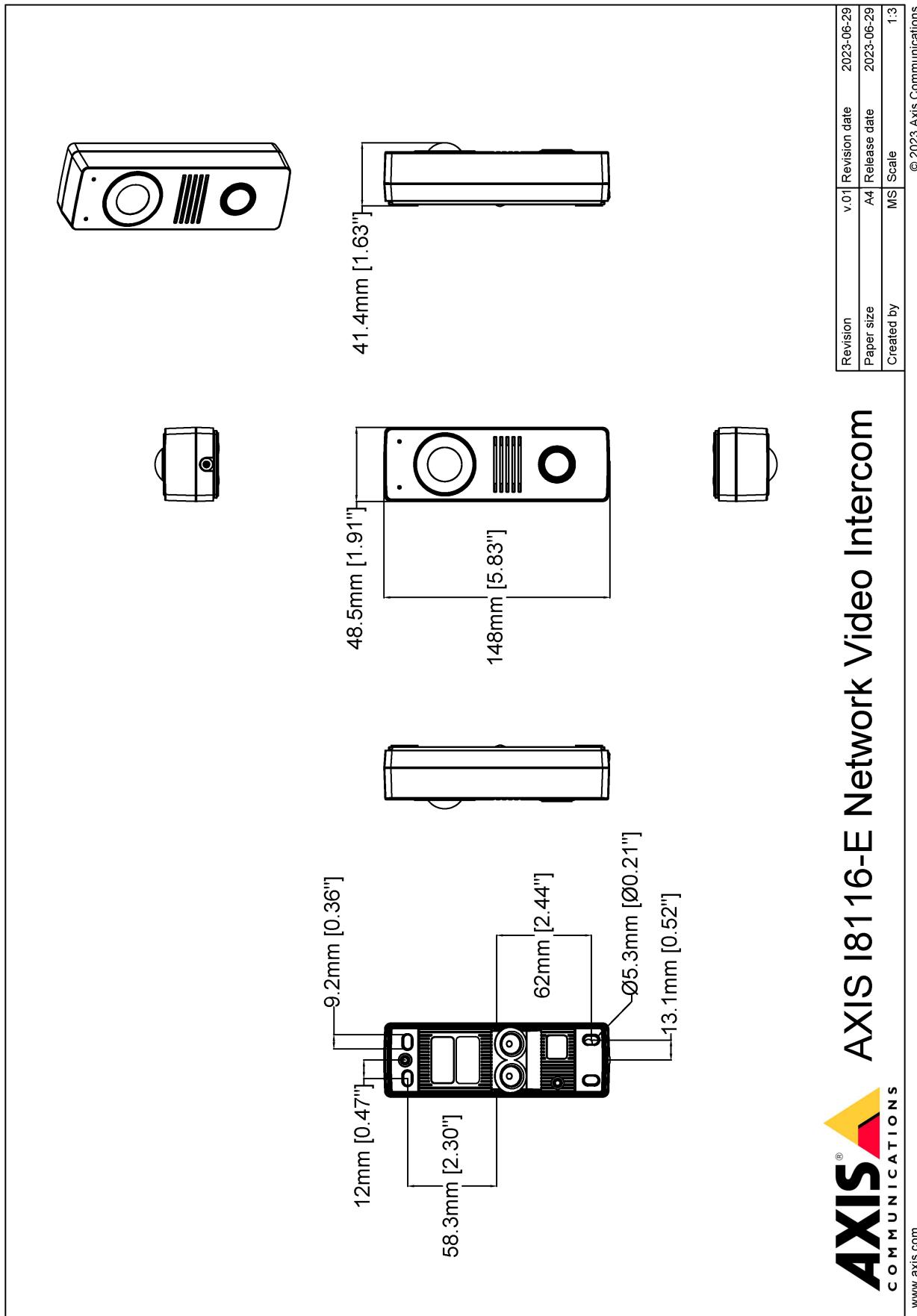
Screened for conflict minerals in accordance with OECD guidelines  
To read more about sustainability at Axis, go to [axis.com/about-axis/sustainability](http://axis.com/about-axis/sustainability)

### Environmental responsibility

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

4. One connector for I/O or RS485 usage

## Dimension drawing





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[www.axis.com](http://www.axis.com)

## Highlighted capabilities

### 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.

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

### 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.

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