

# 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> | G M S T

# AXIS I8116-E Network Video Intercom

## Camera

<b>Image sensor</b>	1/2.7" progressive scan RGB CMOS Pixel size 2 µm
<b>Lens</b>	1.95 mm, F2.2 Horizontal field of view: 162° Vertical field of view: 118° M12 mount, fixed iris, fixed focus
<b>Minimum illumination</b>	Color: 0.15 lux at 50 IRE, F2.2 0 lux with LED lit
<b>Shutter speed</b>	1/38500 s to 1/5 s

## System on chip (SoC)

<b>Model</b>	CV25
<b>Memory</b>	2048 MB RAM, 1024 MB Flash
<b>Compute capabilities</b>	Deep learning processing unit (DLPU)

## Video

<b>Video compression</b>	H.264 (MPEG-4 Part 10/AVC) Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
<b>Resolution</b>	16:9: 1920x1080 to 1280x720 4:3: 2592x1944 to 640x480
<b>Frame rate</b>	Up to 30/25 fps (60/50 Hz) with H.264 and H.265 <sup>a</sup> in all resolutions
<b>Video streaming</b>	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
<b>WDR</b>	WDR
<b>Image settings</b>	Saturation, contrast, brightness, sharpness, white balance, exposure mode, exposure zones, compression, dynamic text and image overlay, polygon privacy mask
<b>Image processing</b>	Axis Zipstream, WDR, Lightfinder

## Audio

<b>Audio features</b>	Echo cancellation, noise reduction, beamforming
<b>Audio streaming</b>	Two-way (full duplex)
<b>Audio input</b>	2x built-in microphones (can be disabled)
<b>Audio output</b>	Built-in speaker 85 dB at 1 kHz (at 0.5 m / 20 in) 79 dB at 1 kHz (at 1 m / 39 in)
<b>Audio encoding</b>	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

<b>Lock integration</b>	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
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## Network

<b>Network protocols</b>	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS <sup>b</sup> , HTTP/2, TLS <sup>c</sup> , QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP <sup>d</sup> , SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, 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
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## System integration

<b>Application Programming Interface</b>	Open API for software integration, including VAPIX <sup>®</sup> and AXIS Camera Application Platform (ACAP); specifications at <a href="https://axis.com/developer-community">axis.com/developer-community</a> . 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 <a href="https://onvif.org">onvif.org</a>
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## 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

<b>Video management systems</b>	Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at <a href="https://axis.com/vms">axis.com/vms</a> .
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<b>Onscreen controls</b>	Privacy masks Media clip Custom controls
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<b>Event conditions</b>	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
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<b>Event actions</b>	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
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<b>Built-in installation aids</b>	Pixel counter, level grid
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## Analytics

<b>AXIS Object Analytics</b>	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
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<b>Metadata</b>	<b>Object data:</b> Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates <b>Attributes:</b> Vehicle color, upper/lower clothing color, confidence, position <b>Event data:</b> Producer reference, scenarios, trigger conditions
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<b>Applications</b>	Included AXIS Object Analytics, AXIS Video Motion Detection, active tampering alarm, audio detection Support for AXIS Camera Application Platform enabling installation of third-party applications, see <a href="https://axis.com/acap">axis.com/acap</a>
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## Approvals

<b>Product markings</b>	CSA, UL/cUL, UKCA, CE, KC, ANATEL
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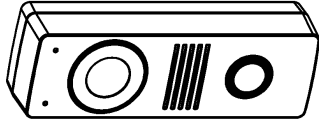
<b>Supply chain</b>	TAA compliant
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<b>EMC</b>	EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2 Australia/New Zealand: RCM AS/NZS CISPR 32 Class A Canada: ICES-3(A)/NMB-3(A) Japan: VCCI Class A Korea: KS C 9835, KS C 9832 Class A USA: FCC Part 15 Subpart B Class A
<b>Safety</b>	IEC/EN/UL 60950-22, IEC/EN/UL 62368-1, NOM-001
<b>Environment</b>	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
<b>Cybersecurity</b>	ETSI EN 303 645, BSI IT Security Label
<b>Cybersecurity</b>	
<b>Edge security</b>	Software: Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 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)
<b>Network security</b>	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2) <sup>d</sup> , IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS <sup>e</sup> , TLS v1.2/v1.3 <sup>f</sup> , Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
<b>Documentation</b>	<i>AXIS OS Hardening Guide</i> <i>Axis Vulnerability Management Policy</i> <i>Axis Security Development Model</i> AXIS OS Software Bill of Material (SBOM) To download documents, go to <a href="https://axis.com/support/cybersecurity/resources">axis.com/support/cybersecurity/resources</a> To read more about Axis cybersecurity support, go to <a href="https://axis.com/cybersecurity">axis.com/cybersecurity</a>
<b>General</b>	
<b>Casing</b>	IP65-, NEMA 4X- and IK08-rated (IK10-rated when mounted with AXIS T18605 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
<b>Mounting</b>	Wall mount or recessed with AXIS T18204 Recessed Mount Recommended height: 0.9–1.5 m (3.0–4.9 ft)
<b>Power</b>	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
<b>Connectors</b>	Network: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE I/O: Terminal block for two configurable inputs / digital outputs <sup>g</sup> Serial communication: RS485, half duplex/2-wire <sup>h</sup>
<b>Storage</b>	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 <a href="https://axis.com">axis.com</a>
<b>Operating</b>	-30 °C to 60 °C (-22 °F to 140 °F)

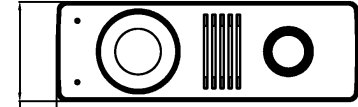
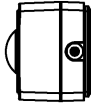
<b>conditions</b>	Start-up temperature: -25 °C (-13 °F) Humidity 10–100% RH (condensing)
<b>Storage conditions</b>	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95% RH (non-condensing)
<b>Dimensions</b>	For the overall product dimensions, see the dimension drawing in this datasheet.
<b>Weight</b>	400 g (14.1 lb)
<b>Box content</b>	Intercom, installation guide, terminal block connector, connector guard, cable gaskets, owner authentication key
<b>Optional accessories</b>	AXIS T18204 Recessed Mount, AXIS A9801 Security Relay, AXIS T18605 Protection Cover, AXIS T18606 Wedge Mount AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards For more accessories, go to <a href="https://axis.com/products/axis-i8116-e#accessories">axis.com/products/axis-i8116-e#accessories</a>
<b>Languages</b>	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
<b>Warranty</b>	5-year warranty, see <a href="https://axis.com/warranty">axis.com/warranty</a>
<b>Part numbers</b>	Available at <a href="https://axis.com/products/axis-i8116-e#part-numbers">axis.com/products/axis-i8116-e#part-numbers</a>
<b>Sustainability</b>	
<b>Substance control</b>	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 <a href="https://axis.com/partner">axis.com/partner</a> .
<b>Materials</b>	Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to <a href="https://axis.com/about-axis/sustainability">axis.com/about-axis/sustainability</a>
<b>Environmental responsibility</b>	<a href="https://axis.com/environmental-responsibility">axis.com/environmental-responsibility</a> Axis Communications is a signatory of the UN Global Compact, read more at <a href="https://unglobalcompact.org">unglobalcompact.org</a>

- Reduced frame rate in Motion JPEG
- 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 ([eyay@cryptsoft.com](mailto:eyay@cryptsoft.com)).
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- One connector for I/O or RS485 usage
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# Dimension drawing

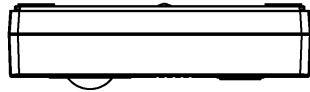
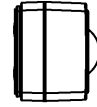


41.4mm [1.63"]



48.5mm [1.91"]

148mm [5.83"]



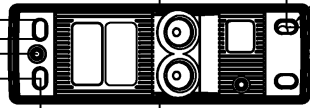
12mm [0.47"]

58.3mm [2.30"]

62mm [2.44"]

Ø5.3mm [Ø0.21"]

13.1mm [0.52"]



AXIS I8116-E Network Video Intercom

Revision	v.01	Revision date	2023-06-29
Paper size	A4	Release date	2023-06-29
Created by	MS	Scale	1:3

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