

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[®] | G M S T

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Camera		Tested with various SIP software such as Cisco, Bria and Grandstream Tested with various PBX software such as Cisco, Avaya and Asterisk AXIS Parallel Call Forking, AXIS Sequential Call Forking
Image sensor	1/2.7" progressive scan RGB CMOS Pixel size 2 µm	
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: 0.2 lux at 50 IRE, F2.2	
Shutter speed	1/38500 s to 1/5 s	Video management systems Compatible with AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at axis.com/vms
System on chip (SoC)		
Model	CV25	
Memory	2048 MB RAM, 1024 MB Flash	
Compute capabilities	Deep learning processing unit (DLPU)	Onscreen controls Privacy masks Media clip Custom controls
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 ^a in all resolutions	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
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, Lightfinder	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
Audio		
Audio features	Echo cancellation, noise reduction, beamforming	
Audio streaming	Two-way (full duplex)	
Audio input	2x built-in microphones (can be disabled)	Built-in installation aids Pixel counter, level grid
Audio 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)	
Audio 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: 300 mA at 12 V DC Integration with Axis network door controllers: maximum current/voltage: 0.7 A at 30 V	Analytics AXIS Object Analytics Object classes: humans, vehicles (types: cars, buses, trucks, bikes) Trigger conditions: line crossing, object in area Up to 10 scenarios Metadata visualized with trajectories and color-coded bounding boxes Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Network		
Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS ^b , HTTP/2, TLS ^b , QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP ^c , 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	
System integration		
Application Programming Interface	Open API for software integration, including VAPIX [®] 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	Metadata Object data: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position Event data: Producer reference, scenarios, trigger conditions
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX.	
		Approvals Product markings CSA, UL/cUL, UKCA, CE, KC
		Supply chain TAA compliant
		EMC EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3 Japan: VCCI Class A USA: FCC Part 15 Subpart B Class A
		Safety IEC/EN/UL 60950-22, IEC/EN/UL 62368-1
		Environment IEC/EN 60529 IP65, IEC/EN 62262 IK07, NEMA 250 Type 4X

PRELIMINARY Datasheet

Wireless	ANATEL, IFETEL
Cybersecurity	
Edge security	Software: Signed firmware, brute force delay protection, digest authentication, password protection, AES-XTS-Plain64 256bit SD card encryption Hardware: Secure boot, Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys)
Network security	IEEE 802.1X (EAP-TLS) ^b , IEEE 802.1AR, HTTPS/HSTS ^b , TLS v1.2/v1.3 ^b , Network Time Security (NTS), X.509 Certificate PKI, IP address filtering
Documentation	<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 axis.com/support/cybersecurity/resources To read more about Axis cybersecurity support, go to axis.com/cybersecurity
General	
Casing	IP65-, NEMA 4X- and 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: 0.38–1.22 m (1.2–4.0 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
Connectors	Network: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE I/O: Terminal block for two configurable inputs / digital outputs ^c Serial communication: RS485, half duplex/2-wire ^c
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

Operating conditions	-25 °C to 55 °C (-13 °F to 131 °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	H x D x W: 148.1 x 41.4 x 48 mm (5.83 x 1.63 x 1.5 in)
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 T8415 Wireless Installation Tool AXIS Surveillance Cards For more accessories, go to axis.com/products/axis-i8116-e#accessories
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese
Warranty	5-year warranty, see axis.com/warranty
Part numbers	Available at 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 .
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

- a. Reduced frame rate in Motion JPEG
b. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eyay@cryptsoft.com).
c. One connector for I/O or RS485 usage

Dimension drawing

Key features and technologies

AXIS Object Analytics

AXIS Object Analytics adds value to your camera for free. It 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.

Built-in cybersecurity

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It offers features to guarantee the device's identity and integrity and to protect your sensitive information from unauthorized access.

Establishing the root of trust starts at the device's boot process. In Axis devices, the hardware-based mechanism **secure boot** verifies the operating system (AXIS OS) that the device is booting from. AXIS OS, in turn, is cryptographically signed (**signed firmware**) during the build process. Secure boot and signed firmware tie into each other and ensure that the firmware has not been tampered with during the lifecycle of the device and that the device only boots from authorized firmware. This creates an unbroken chain of cryptographically validated software for the chain of trust that all secure operations depend on.

From a security aspect, 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 is provided through a Common Criteria and/or FIPS 140 certified hardware-based cryptographic computing module. Depending on security requirements, an Axis device can have either one or multiple such modules, like a TPM 2.0 (Trusted Platform Module) or a secure element, and/or a system-on-chip (SoC) embedded Trusted Execution Environment (TEE).

To read more about Axis Edge Vault, go to axis.com/solutions/edge-vault.

Signed firmware is implemented by the software vendor signing the firmware image with a private key, which is secret. When firmware has this signature attached to it, a device will validate the firmware before accepting and installing it. If the device detects that the firmware integrity is compromised, it will reject the firmware upgrade. Axis signed firmware is based on the industry-accepted RSA public-key encryption method.

Secure boot is a boot process that consists of an unbroken chain of cryptographically validated software, starting in immutable memory (boot ROM). Being based on signed firmware, secure boot ensures that a device can boot only with authorized firmware. Secure boot guarantees that the Axis device is completely clean from possible malware after resetting to factory default.

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