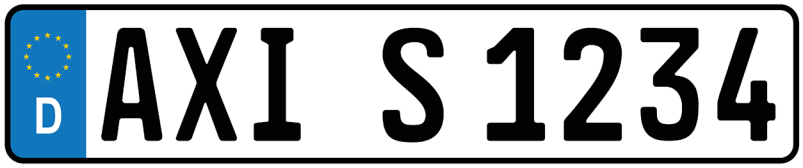
AXIS P1465-LE-3 License Plate Verifier Kit

Easy, cost-effective kit for slow traffic

AXIS P1465-LE-3 includes an HDTV 1080p bullet camera and comes with AXIS License Plate Verifier pre-installed. Featuring freeflow mode, it's ideal for use in slow-speed traffic, such as in city centers, gated communities, and campuses. The compact and robust IK10-rated camera includes shock detection for installation in all environments. Featuring a 29 mm telephoto lens, this cost-effective solution can read license plates from 7 to 20 meters (20-65 feet). It includes Axis image enhancement technologies as well as OptimizedIR – to ensure sharp images for license plate reading 24/7. Furthermore, it offers tight integration with AXIS Camera Station.

- > Ideal for slow-speed traffic
- > Read license plates from 7-20m/20-65ft
- > Proven for tough weather conditions
- > OptimizedIR for recognition in darkness
- > Integration with AXIS Camera Station



AXIS License Plate Verifier

Application	
Compute platform	Edge
Licenses	AXIS License Plate Verifier license included.
Configuration	Web configuration included
Settings	Define area of interest in scene. Allow- and blocklist logic. Barrier mode: Open to all, open to allowlisted, open to all but blocklisted. Minimum width: 130 pixels for one-row license plates; 70 pixels for two-row license plates. FIFO event log entries including thumbnail image of license plate. Up to 1000 entries on camera storage. Up to 100 000 entries on AXIS Surveillance Cards. Configurable retention time of stored events
Detection range	7.0 to 20 m (20 to 65 ft)
Vehicle speed	Up to 70 km/h (45 mph)
Detection time	Less than 1 second.
Scenarios	
Typical applications	**License plate recognition in slow speed traffic** In Freeflow, the application can detect and read license plates in slow speed traffic on larger access roads, city centers and enclosed areas like campuses, ports or airports. This allows for LPR-forensic search and LPR triggered events in a VMS such as AXIS Camera Station. **Vehicle access control** In Access control, the application monitors entrances and exits of gated areas such as parking areas. The application verifies detected license plates against an allowlist or a blocklist for granting or denying access to an area. Maximum 10,000 license plates in each list. For a scenario where greater functionality and flexibility are required, use AXIS A1001 Network Door Controller. AXIS A1001 with AXIS Entry Manager software supports access rules including schedules and a more detailed event log. Multiple partner software that support a great number of credentials and features are available.
System integration	
Application Programming Interface	Open API for software integration.
Event streaming	Integrates with camera event management system to enable event streaming to management software and camera actions such as I/O control, notification, and edge storage.
Supported devices	Direct integration with AXIS A1001 Network Door Controller, AXIS A91 Network I/O Relay Modules, AXIS A1601 Network Door Controller, and 2N IP Device.
General	
Supported countries	For a complete list of supported countries, go to the product page at *axis.com*
Languages	English

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Camera

Image sensor	1/2.8" progressive scan RGB CMOS Pixel size 2.9 µm
Lens	Varifocal, remote focus and zoom, P-Iris control, IR corrected Varifocal, 10.9-29 mm, F1.7-1.7 Horizontal field of view 29°-11° Vertical field of view 16°-6° Minimum focus distance: 2.5 m (8.2 ft)
Day and night	Automatic IR-cut filter Hybrid IR filter
Minimum illumination	0 lux with IR illumination on **Color:** 0.07 lux, at 50 IRE F1.7 **B/W:** 0.01 lux, at 50 IRE F1.7
Shutter speed	**With Forensic WDR:** 1/37000 s to 2 s **No WDR:** 1/71500 s to 2 s

System on chip (SoC)

Model	ARTPEC-8
Memory	1024 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	**16:9:** 1920x1080 to 160x90 **16:10:** 1280x800 to 160x100 **4:3:** 1280x960 to 160x120
Frame rate	**With Forensic WDR:** Up to 25/30 fps (50/60 Hz) in all resolutions **No WDR:** Up to 50/60 fps (50/60 Hz) in all resolutions
Video streaming	Up to 20 unique and configurable video streams[a] Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265 Low latency mode Video streaming indicator
Signal-to-noise ratio	>55 dB
WDR	Forensic WDR: Up to 120 dB depending on scene
Multi-view streaming	Up to 8 individually cropped out view areas
Noise reduction	Spatial filter (2D noise reduction) Temporal filter (3D noise reduction)
Image settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, exposure mode, exposure zones, defogging, compression, orientation: auto, 0°, 180° including, mirroring of images, dynamic text and image overlay, polygon privacy masks Scene profiles: forensic, vivid, traffic overview, license plate Electronic image stabilization
Image processing	Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR
Pan/Tilt/Zoom	Digital PTZ, digital zoom

Audio

Audio features	AGC automatic gain control Network speaker pairing
Audio streaming	Configurable duplex: One-way (simplex, half duplex) Two-way (half duplex, full duplex)
Audio 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
Audio output	Output via network speaker pairing
Audio 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[b], HTTP/2, TLS[b], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, 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®, metadata, and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*. ACAP includes Native SDK and Computer Vision SDK. One-click cloud connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S and ONVIF® Profile T, specification at *onvif.org*
Video management systems	Compatible with AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at *axis.com/vms*
Onscreen controls	Autofocus Day/night shift Defogging Video streaming indicator Wide dynamic range IR illumination Privacy masks Media clip Electronic image stabilization
Event conditions	Application 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, day-night mode, tampering
Event actions	Audio clips: play, stop Day-night mode I/O: toggle I/O once, toggle I/O while the rule is active Illumination: use lights, use lights while the rule is active MQTT: publish Notification: HTTP, HTTPS, TCP and email Overlay text 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 WDR mode
Built-in installation aids	Pixel counter, remote zoom (3x optical), remote focus, auto rotation

Analytics

Applications	**Included** AXIS License Plate Verifier AXIS Live Privacy Shield, AXIS Video Motion Detection, active tampering, shock detection **Supported** AXIS Perimeter Defender, AXIS Speed Monitor[c] Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Approvals

Product markings	CSA, UL/cUL, BIS, UKCA, CE, KC, EAC
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 **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 **Railway:** IEC 62236-4
Safety	CAN/CSA C22.2 No. 62368-1 ed. 3, IEC/EN/UL 62368-1 ed. 3, IEC/EN 62471 risk group exempt, 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, NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9)
Network	NIST SP500-267

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) **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, signed video, secure bootSecure boot, Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys) **Hardware:** , Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys) **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, signed video, secure boot, Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys) **Hardware:** , signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys) **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, signed video, secure boot, 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	*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* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

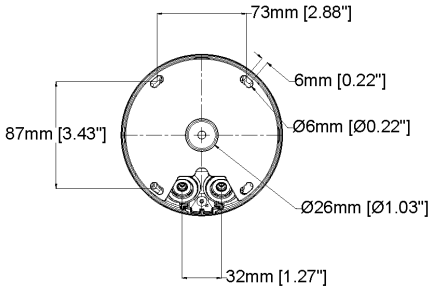
Casing	IP66/IP67-, NEMA 4X-, and IK10-rated casing Polycarbonate blend and aluminium Color: white NCS S 1002-B For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
Power	Power over Ethernet IEEE 802.3af/802.3at Type 1 Class 3 Typical: 7.9 W, max 12.95 W 10–28 V DC, typical 7.2 W, max 12.95 W
Connectors	Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T Audio: 3.5 mm mic/line in I/O: Terminal block for 1 alarm input and 1 output (12 V DC output, max. load 25 mA) Power: DC input
IR illumination	OptimizedIR with power-efficient, long-life 850 nm IR LEDs Range of reach 45 m (150 ft) or more depending on the scene
Storage	Support for microSD/microSDHC/microSDXC card Recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	-40 °C to 60 °C (-40 °F to 140 °F) Maximum temperature according to NEMA TS2 (2.2.7): 74 °C (165 °F) Start-up temperature: -40 °C Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5-95% RH (non-condensing)
Dimensions	Ø132 x 132 x 280 mm (Ø5.2 x 5.2 x 11.0 in) Effective Projected Area (EPA): 0.022 m^2 (0.24 ft^2)
Weight	With weather shield: 1.2 kg (2.65 lb)
Box content	Camera, installation guide, TORX® L-keys, terminal block connector, connector guard, cable gaskets, AXIS Weather Shield L, owner authentication key
Optional accessories	AXIS T94F01M J-Box/Gang Box Plate, AXIS T91A47 Pole Mount, AXIS T94P01B Corner Bracket, AXIS T94F01P Conduit Back Box, AXIS Weather Shield K, Axis PoE Midspans For more accessories, go to *axis.com/products/axis-p1465-le-3/support#compatible-products*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*
Part numbers	Available at *axis.com/products/axis-p1465-le-3#how-to-buy*

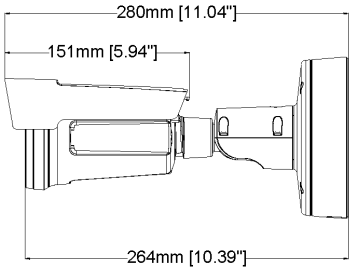
Sustainability

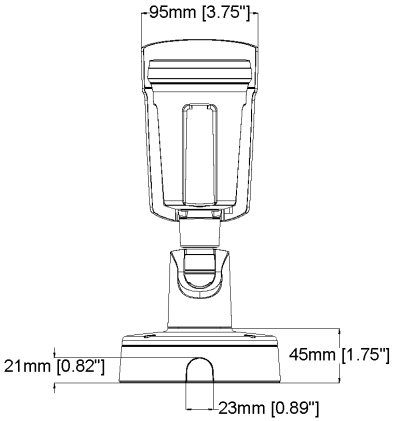
Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *axis.com/partner.*
Materials	Screened for conflict minerals in accordance with OECD 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*

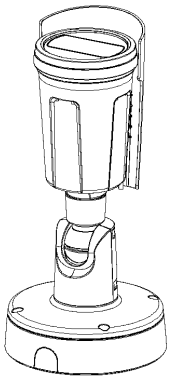
a. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*
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 (eay@cryptsoft.com).*
c. *It also requires AXIS D2110-VE Security Radar with firmware 10.12 or later.*

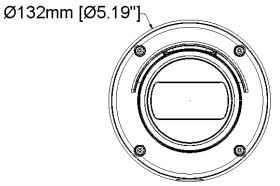
Dimension drawing

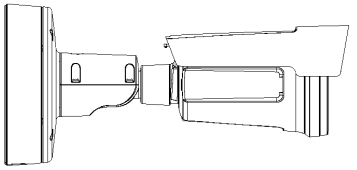


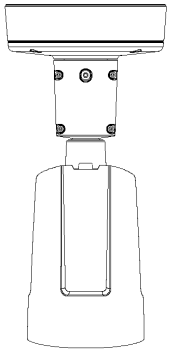












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Revision	v.01	Revision date	2023-04-05
Paper size	A4	Release date	2023-04-05
Created by	MS	Scale	1:5

Key features and technologies

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 offers features to protect the device's identity, safeguard its integrity from factory and protect 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).

Signed video ensures that video evidence can be verified as untampered without proving the chain of custody of the video file. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream. This allows video to be traced back to the Axis camera from where it originated, so it's possible to verify that the footage has not been tampered with after it left the camera.

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

Forensic WDR

Axis cameras with wide dynamic range (WDR) technology make the difference between seeing important forensic details clearly and seeing nothing but a blur in challenging light conditions. The difference between the darkest and the brightest spots can spell trouble for image usability and clarity. Forensic WDR effectively reduces visible noise and artifacts to deliver video tuned for maximal forensic usability.

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.

OptimizedIR

Axis OptimizedIR provides a unique and powerful combination of camera intelligence and sophisticated LED technology, resulting in our most advanced camera-integrated IR solutions for complete darkness. In our pan-tilt-zoom (PTZ) cameras with OptimizedIR, the IR beam automatically adapts and becomes wider or narrower as the camera zooms in and out to make sure that the entire field of view is always evenly illuminated.

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*