AXIS P3748-PLVE Panoramic Camera

4x4K MP multidirectional with AI analytics

AXIS P3748-PLVE offers four channels with 4K per channel at 12.5/15 fps. It includes 360° IR illumination with individually controllable LEDs and a removable IR cut filter. All four sensors are fully motorized and PTRZ functionality ensures ease of installation and configuration. Plus, presets make it easy to configure multiple devices. This discreet camera can be mounted on ceilings for complete 360° coverage. Or corner mounted for 270° coverage. It supports advanced analytics on the edge. Furthermore, Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and offers FIPS 140-2 Level 2 certified secure key storage and operations.

- > 4x8 MP at 12.5/15 fps per channel
- > Remote pan, tilt, roll, zoom (PTRZ)
- > Support for powerful analytics
- > 360° IR illumination with individually controlled LEDs
- > Built-in cybersecurity with Axis Edge Vault

AXIS P3748-PLVE Panoramic Camera

Camera

Image sensor	4x 1/2.9" progressive scan RGB CMOS Pixel size 1.4 µm
Lens	Varifocal, 3.18–7.42 mm, F1.6–2.7 Horizontal field of view: 360° (103°–41° per sensor) Vertical field of view: 54.5°–23° Minimum focus distance: 1.5 m (4.9 ft) Fixed iris, IR corrected, remote zoom and focus
Day and night	Automatic IR-cut filter
Minimum illumination	**Color:** 0.4 lux at 50 IRE, F1.6 **B/W:** 0 lux at 50 IRE, F1.6 (with IR on)
Shutter speed	1/14000 s to 1/2 s
Camera adjustment	Pan ±180°, tilt -23° to -150°, roll +5° to -95°

System on chip (SoC)

Model	ARTPEC-8
Memory	4096 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	4x 3840x2160 (4x 4K) to 4x 640x360
Frame rate	Up to 12.5/15 fps (50/60 Hz) in all resolutions
Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPG 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
Noise reduction	Spatial filter (2D noise reduction) Temporal filter (3D noise reduction)
Image settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping , exposure mode, exposure zones, barrel distortion correction, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay, dynamic text and image overlay, privacy masks, polygon privacy mask
Image processing	Axis Zipstream, Forensic WDR, Lightfinder, OptimizedIR

Audio

Audio features	Speaker pairing
Audio streaming	Two-way (half duplex, full duplex)
Audio input	Input through speaker pairing or portcast technology
Audio output	Output through speaker pairing or portcast technology

Network

Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[a], 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, specifications at *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*.
Onscreen controls	Autofocus Video streaming indicator IR illumination Privacy masks Media clip
Edge-to-edge	Speaker pairing
Event conditions	Device status: above/below/within operating temperature, IP address removed, new IP address, network lost, system ready, live stream active, casing open, shock detected Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: manual trigger, virtual input MQTT: stateless Scheduled and recurring: schedule Video: average bitrate degradation, day-night mode, tampering
Event actions	Day-night mode Illumination: use lights, use lights while the rule is active LEDs: flash status LED, flash status LED while the rule is active MQTT: publish Notification: HTTP, HTTPS, TCP and email Overlay text Recordings: record, record while the rule is active Security: erase configuration 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 and focus, level grid, barrel distortion correction, preset positions, pan-tilt-roll: designed to withstand at least 200 full movement cycles

Analytics

Applications	**Included** AXIS Object Analytics, AXIS Scene Metadata, AXIS Video Motion Detection, active tampering alarm **Supported** Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*
Multisensor analytics	4 channels analytics support, AXIS Object Analytics
AXIS Object Analytics	**Object classes:** humans, vehicles (types: cars, buses, trucks, bikes, other) **Scenarios:** line crossing, object in area, time in area, crossline counting, occupancy in area, motion in area, motion line crossing Up to 10 scenarios **Other features:** triggered objects visualized with trajectories, color-coded bounding boxes and tables Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
AXIS Scene Metadata	**Object classes:** humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates **Object attributes:** vehicle color, upper/lower clothing color, confidence, position

Approvals

Product markings	UL/cUL, CE, FCC, ICES, KC, VCCI, RCM, BSMI
Supply chain	TAA compliant
EMC	CISPR 35, CISPR 32 Class A, EN 55035, EN 55032 Class A, EN 50121-4, 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 **Taiwan:** CNS 15936 **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, RCM AS/NZS 62368.1:2022

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, IEC/EN 62262 IK10, MIL-STD-810H (Method 501.7, 502.7, 505.7 506.6, 507.6 509.7), 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 OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 OpenID Authorization Code Flow for centralized ADFS account management, password protection **Hardware:** Axis Edge Vault cybersecurity platform Secure keystore: TPM 2.0 (CC EAL4+, FIPS 140-2 Level 2), system-on-chip security (TEE) Axis device ID, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)
Network security	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)[c], IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS[d], TLS v1.2/v1.3[e], 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* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing	IP66-, NEMA 4X- and IK10-rated Polycarbonate hard-coated dome Aluminum and plastic casing, polycarbonate (PC) dome 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*.
Mounting	Mounting bracket with junction box holes (double-gang, single-gang, 4" square, and 4" octagon) ½" (M20) conduit side entry
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 2 Class 4 Typical 10.9 W, max 23.6 W
Connectors	Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE Audio: Audio and I/O connectivity via portcast technology
IR illumination	OptimizedIR with power-efficient, long-life 850 nm IR LEDs Range of reach 20 m (65.6 ft) at 0 lux, 30 m (98.4 ft) at 0.2 lux
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	-40 °C to 50 °C (-40 °F to 122 °F) Minimum temperature for PTR functionality: -30 °C (-22 °F) Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F) Start-up temperature: -30 °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	For the overall product dimensions, see the dimension drawing in this datasheet. Effective Projected Area (EPA): 0.030862 m^2 (0.33 ft^2)
Weight	3 kg (6.6 lb)
Box content	Camera, installation guide, connector guard, cable gasket, mounting plate, dome casing
Optional accessories	AXIS TP3107 Pendant Kit, AXIS TP3108-E Pendant Kit, AXIS TP3840-E Dome Casing Black, AXIS TP3841-E Dome Smoked, AXIS T90D Illuminators, AXIS T8415 Wireless Installation Tool, AXIS Surveillance Cards For more accessories, go to *axis.com/products/axis-p3748-plve#accessories*
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, Polish, 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-p3748-plve#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 2015/863, and standard EN IEC 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 40% (recycled: 13%, bio-based: 25%, carbon capture based: 2%) 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*

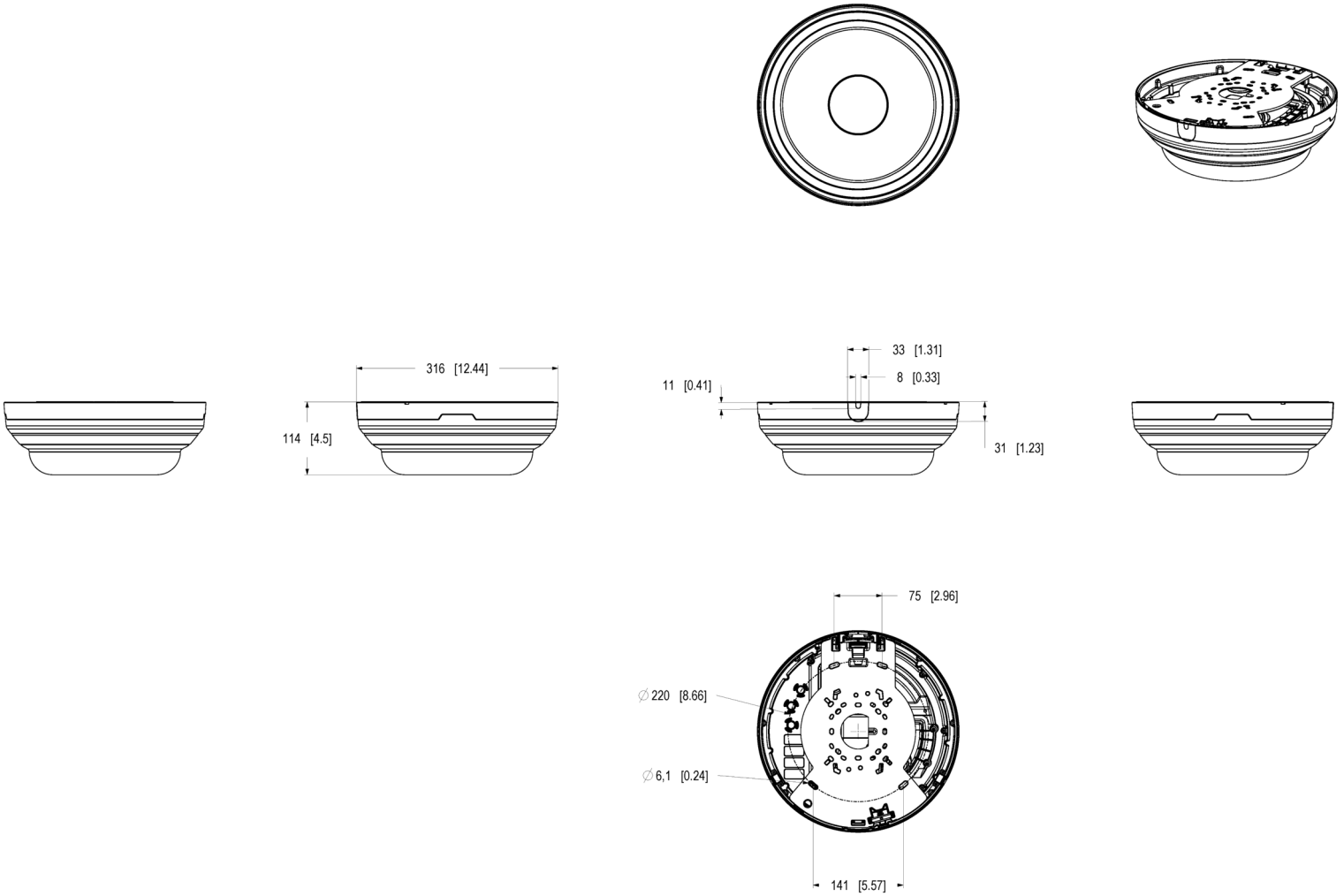
a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
b. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
c. *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).*
d. *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).*
e. *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).*

Detect, Observe, Recognize, Identify (DORI)

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	86.4 m (283.4 ft)	230.5 m (756.0 ft)
Observe	63 px/m (19 px/ft)	34.3 m (112.5 ft)	91.5 m (300.1 ft)
Recognize	125 px/m (38 px/ft)	17.3 m (56.7 ft)	46.1 m (151.2 ft)
Identify	250 px/m (76 px/ft)	8.6 m (28.2 ft)	23 m (75.4 ft)

The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.

Dimension drawing



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Dimensions in mm [inch]

Date	Material	Scale
2024-Oct-31	M1.1	1:3
Drawing Number	Size	Sheet
3185475	A1	1(1)

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*.

Pan-tilt-roll-zoom (PTRZ)

PTRZ functionality includes the ability of a camera to rotate around its vertical, lateral, and longitudinal axes. The camera's focal length is adjustable to achieve a narrower or wider field of view. Thanks to the remote functionality, you can quickly adjust and readjust the camera view remotely over the network, saving time and effort. PTRZ functionality also gives you the flexibility to make future adjustments easily, ensuring less disruption, less downtime, and that no dispatched technician is needed.

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*