# AXIS P1468-XLE Explosion-Protected Bullet Camera

## Class/Division- and Zone-certified camera with deep learning

This explosion-protected camera is designed and certified for Zone and Division 2 according to international standards (ATEX, IECEx, cULus). Built on ARTPEC-8, it includes a deep learning processing unit (DLPU) enabling advanced features and powerful analytics that run on the edge. Ideal for health and safety applications as well as operational efficiency, you can gain a deeper understanding and awareness by creating an advanced data-driven sensory network that can be integrated with existing sensors and systems. Including Lightfinder 2.0, Forensic WDR, and OptimizedIR, AXIS P1468-XLE ensures sharp, detailed 4K images under any light conditions. Furthermore, this impact-resistant, outdoor-ready camera includes built-in cybersecurity features.

- Certified for Zone and Division 2
- Deep learning-based analytics
- Excellent video quality with 4K at 60 fps
- Detailed images in any light conditions
- Impact- and weather-resistant

# AXIS P1468-XLE Explosion-Protected Bullet Camera

## Camera

**Image sensor**
1/1.2" progressive scan RGB CMOS
Pixel size 2.9 µm

**Lens**
Varifocal, 6.2–12.9 mm, F1.6–2.9
Horizontal field of view 108˚–49˚
Vertical field of view 58˚–27˚
Minimum focus distance: 1 m (3.3 ft)
Varifocal, remote focus and zoom, P-iris control, IR corrected

**Day and night**
Automatic IR-cut filter
Hybrid IR filter

**Minimum illumination**
**With WDR and Lightfinder**:
**Color:** 0.07 lux, at 50 IRE F1.6
**B/W:** 0.01 lux, at 50 IRE F1.6
0 lux with IR illumination on

**Shutter speed**
1/66500 s to 2 s

## System on chip (SoC)

**Model**
ARTPEC-8

**Memory**
2 GB RAM, 8 GB 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**
3840x2160 to 160x90

**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[1]
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
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, tone mapping, exposure mode, exposure zones, motion-adaptive exposure, defogging, barrel distortion correction, compression, orientation: auto, 0°, 90°, 180°, 270° including Corridor Format, mirroring of images, dynamic text and image overlay, polygon and mosaic privacy masks
Scene profiles: forensic, vivid, traffic overview

**Image processing**
Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

**Pan/Tilt/Zoom**
Digital PTZ, digital zoom
Guard tour (max 100), control queue, fixed orientation aid

1. *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.*

## 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[2], HTTP/2, TLS[2], 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, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf), IEEE 802.1X (EAP-TLS), IEEE 802.1AR

## 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*.
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 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
Video streaming indicator
Day/night shift
Defog
WDR
Privacy masks
Media clip
Light control

### Event conditions
Audio: audio clip playing, audio clip currently playing
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: digital signal contains Axis metadata, digital signal has invalid signal rate, digital signal missing, digital signal okay
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: digital input, manual trigger, virtual input
MQTT subscribe
Scheduled and recurring: schedule
Smoke alert
Video: average bitrate degradation, day-night mode, tampering

### Event actions
Day-night mode, overlay text, WDR mode
Audio clips: play, stop
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
Record video: 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

### Built-in installation aids
Pixel counter, remote zoom, remote focus, auto rotation

2. *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).*

## Analytics

### Applications
**Included**
AXIS Object Analytics, AXIS Scene metadata
AXIS Video Motion Detection, active tampering, shock detection, audio detection, orientation aid, smoke alert
**Supported**
AXIS Perimeter Defender, AXIS License Plate Verifier, AXIS Digital Autotracking
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

### AXIS Object Analytics
**Object classes:** humans, vehicles (types: cars, buses, trucks, bikes, other)
**Trigger conditions**: line crossing, object in area, time in area, PPE monitoring
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:** confidence, position

## Approvals

### Product markings
ATEC, IECEx, cULus, INMETRO, IA, PESO, TD, KCs

### Supply chain
TAA compliant

### EMC
**EMC**
CISPR 35, 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)
**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, IEC/EN/UL 62368-1 ed. 3, IEC 62471 risk group exempt, IS 13252

### Environment
**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 62262 IK10, IEC/EN 60529 IP66, IEC/EN 60529 IP67, NEMA 250 Type 4X, ISO 21207 (Method B)

### Network
NIST SP500-267

### Cybersecurity
ETSI EN 303 645, BSI IT Security Label

### Explosion
IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31, UL 60079-0, UL 60079-7, UL 60079-31, CSA C22.2 No. 60079-0, CSA C22.2 No. 60079-7, CSA C22.2 No. 60079-31, CSA C22.2 No. 213-17, UL121201

### Certifications
**ATEX:**
II 3 G Ex ec IIC T4 Gc
II 2 D Ex tb IIIC T135°C Db
**Certificate:** UL 22 ATEX 2732X, UL 22 ATEX 2888X
**IECEx:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** ULD 22.0011X
**cULus:**
Class I Div 2 Group A, B, C, D T4
Class II Div 2 Group F, G T135°C T4
Class III Div 2
Class I Zone 2 AEx ec IIC T4 Gc
Zone 21 AEx IIIC T135°C Db
**Certificate:** E525121
**INMETRO:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** CPEx 23.1253 X
**IA:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** MASC S/23-8118X
**OSHA Taiwan:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** TD100043
**PESO:**
Ex ec IIC T4 Gc
**Certificate:** P576392/1
**Korea:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** 23-KA4BO-0686X and 23-KA4BO-0687X
**JPEx:**
Ex ec IIC T4 Gc
EX tb IIIC T135°C Db
**Certificate:** DEK23.0065X

## 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, Axis Cryptographic Module (FIPS 140-2 level 1), 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)[3], IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS[3], TLS v1.2/v1.3[3], Network Time Security (NTS), X.509 Certificate PKI, host-based firewall

### Documentation
*AXIS OS Hardening Guide*
*Axis Vulnerability Management Policy*
*Axis Security Development Model*
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: grey NCS S 5502-B

### Power
Power over Ethernet IEEE 802.3af/802.3at Type 1
Class 3
Typical: 7.7 W, max 12.95 W
12–28 V DC, typical 7.6 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 supervised 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 40 m (131 ft) or more depending on the scene

### 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 60 °C (-40 °F to 140 °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
Ø132 x 294 x 146 mm (Ø5.2 x 11.6 x 5.7 in)
Effective Projected Area (EPA): 0.022 $m^2$ (0.24 $ft^2$)

### Weight
With weather shield:
1.3 kg (2.87 lb)

### Box content
Camera, AXIS Weather Shield L, connector kit, connector guard, TORX® L-keys, installation guide, owner authentication key, Declaration of Conformity

### 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, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

### Warranty
5-year warranty, see *axis.com/warranty*

### Part numbers
Available at *axis.com/products/axis-p1468-xle#part-numbers*

3. *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).*

## 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.*

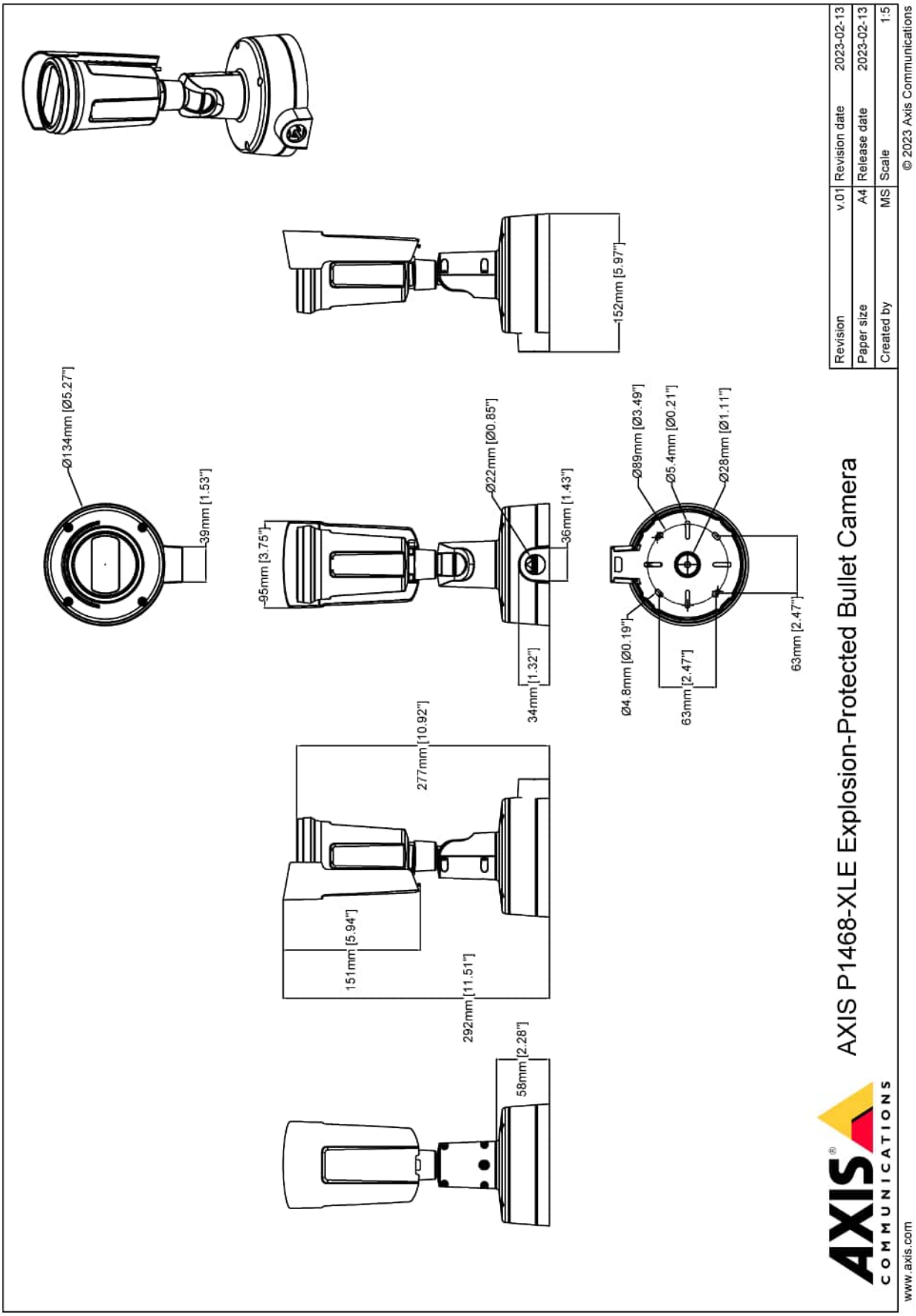
### Materials

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*

## Dimension drawing



## 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*.

### 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.

### Smoke alert

Smoke alert analytics serve as an additional layer of safety, monitoring for signs of smoke or fire (and are also able to detect the early stages of fire, even if smokeless). These analytics can provide the early warning that will alert responders to an issue early enough to prevent it escalating, avoiding accidents and costly shutdowns.

### Zone/Division 2

Hazardous areas are divided into zones or divisions, defined by the probability that hazardous material will be present in an ignitable concentration in the surrounding atmosphere.

Zone/Division 2 areas are less hazardous than Zone/ Division 1 areas, and explosions are not likely to occur during normal operations.

With 'Ex e' or 'non-incendive' protection, cameras certified for Zone/Division 2 offer increased safety. This explosion-protection approach ensures that no arcs and sparks can appear, and that excessive temperatures can't be reached, during normal operation of electrical equipment. As a result, electrical equipment using 'Ex e' protection can't ignite gas or dust in the surrounding potentially combustible environment.

For more information, see *axis.com/glossary*

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