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Veilux Explosion-Proof Camera Placement Guide

Engineered for Hazardous & Classified Locations

Purpose of This Guide

This guide provides practical, field-tested recommendations for placing **Veilux explosion-proof cameras** in hazardous and classified environments. It is intended for safety managers, facility engineers, EPCs, and compliance teams responsible for monitoring operations where flammable gases, vapors, dust, or fibers may be present.

1. Define the Objective First

Before mounting any camera, clearly document the primary goal: - **Safety monitoring** (process visibility, hazard detection) - **Security & loss prevention** (perimeter, access control) - **Operational oversight** (equipment status, workflow) - **Compliance & documentation** (incident review, audits)

> Tip: One camera should have **one primary job**. Avoid trying to solve multiple objectives with a single placement.

2. Camera Type Selection (Placement-Driven)

Placement requirements often determine the correct Veilux camera type.

Common Veilux Explosion-Proof Camera Types

- **Fixed Explosion-Proof Cameras** – Continuous monitoring of defined hazard zones
- **Explosion-Proof PTZ Cameras** – Wide-area coverage for tank farms, docks, and processing units
- **Explosion-Proof Thermal Cameras** – Early detection of overheating equipment, leaks, or process anomalies

> Always confirm the camera certification matches the **hazard classification** of the intended mounting location.

3. Recommended Mounting Heights & Angles

Indoor Industrial Areas

- **Mounting height:** 8–15 ft (2.5–4.5 m)

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- **Viewing angle:** 15–30° downward
- **Use case:** Assembly lines, control rooms, loading bays

Outdoor & Perimeter Areas

- **Mounting height:** 12–25 ft (3.5–7.5 m)
- **Viewing angle:** 20–35° downward
- **Use case:** Fence lines, tank farms, substations

Hazardous Locations

- **Mounting height:** Based on blast zone and gas dispersion modeling
- **Viewing angle:** Minimize glare and reflective surfaces
- **Use case:** Refineries, chemical plants, grain facilities

Avoid mounting too high—excessive height reduces facial detail and object recognition.

4. Field of View (FOV) Planning

Proper placement ensures the camera sees **what matters**, not empty space.

Best Practices

- Identify **critical points** (valves, gauges, vents, conveyor transfers)
- Avoid wide-angle lenses when detail is required
- Overlap FOVs in high-risk areas for redundancy

Industry-Specific Callouts

Oil & Gas – Focus on wellheads, separators, flare knock-out drums, and valve manifolds

Chemical Processing – Monitor reactor vessels, transfer points, and pressure relief zones

Grain & Bulk Handling – Prioritize bucket elevators, silos, and dust-prone conveyor transitions

Battery & Energy Storage – Cover charging rooms, thermal runaway risk zones, and exhaust paths

5. Lighting & Environmental Considerations

Lighting

- Position cameras **with** existing light sources, not directly facing them

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- Avoid direct sunlight during sunrise/sunset
- Use IR or low-light models where illumination is inconsistent

Environmental Factors

- Heat sources (furnaces, boilers)
- Vibration from rotating equipment
- Corrosive atmospheres or washdown zones

Select enclosures and mounts rated for temperature, vibration, and corrosion exposure.

6. Hazardous Area Placement (When Applicable)

Key Considerations

- Confirm **area classification** (Class/Division or Zone)
- Maintain required **clearances** from ignition sources
- Route cabling through approved conduit and glands

Placement Tips

- Avoid direct exposure to pressure release points
- Ensure lens window remains accessible for cleaning
- Verify sightlines during both normal and upset conditions

7. Mounting Hardware & Stability

Recommended Mounting Options

- Wall mounts (most common)
- Pole mounts (perimeter and tank farms)
- Ceiling mounts (indoor process monitoring)

Stability Checklist

- Use vibration-resistant fasteners
- Avoid flexible or thin mounting surfaces
- Confirm load rating exceeds camera weight

8. Network, Power & Accessibility

Cabling Considerations

- Minimize cable length where possible

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- Protect connections from moisture and chemicals
- Allow drip loops for outdoor installations

Maintenance Access

- Ensure safe access for lens cleaning and inspection
- Avoid placements requiring process shutdowns for service

A camera that can't be safely maintained will eventually fail.

9. Cybersecurity & System Integration

Placement-Related Security

- Avoid exposed network ports
- Place cameras outside of tamper-prone areas
- Integrate with existing Veilux control and monitoring systems where applicable

10. Pre-Installation Placement Checklist

- ☐ Objective clearly defined
- ☐ Correct camera type selected
- ☐ Area classification verified
- ☐ Mounting height and angle confirmed
- ☐ Lighting evaluated
- ☐ Environmental risks addressed
- ☐ Stable mounting surface selected
- ☐ Network and power access confirmed
- ☐ Maintenance access planned

Final Thoughts

In hazardous environments, camera placement is not just a design choice, it is a safety decision. When **Veilux explosion-proof cameras** are positioned with intent and installed according to area classification, environmental exposure, and operational risk, they provide dependable visibility without compromising safety.

Early collaboration between engineering, safety, and IT teams is essential to ensure compliant and effective deployment in classified locations.

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About Veilux Explosion-Proof Solutions

Veilux provides solutions for explosion-proof camera systems certified for hazardous and classified environments worldwide. Our solutions support oil & gas, chemical processing, energy, food production, and heavy industrial facilities where ignition-safe surveillance is mandatory.