

Electric Vehicle Fire and Explosion Danger in Parking Garage – The Thermal Runaway

Keeping an eye on your safety

One battery can start a chain of events that leads to colossal fire and risk for the entire building.

The primary safety concern with lithium-ion batteries originates from the individual battery cells that make up the battery pack. The battery cell may release gas when abused, which can ignite or cause an explosion.

Challenges

Once the battery's voltage or temperature limits are exceeded, certain chemical reactions may be triggered inside the battery. This may lead to an internal short circuit or increase of the internal temperature by other mechanisms.

The battery cell can subsequently fail by venting flammable gas, burn, explode, or become a projectile.

Solutions

Early detection and fire containment is the only solution.

- The goal is to prevent overheating, which could lead to combustion, by using ultra fast flame detectors that will alert in an instant to prevent a chain reaction
- Using Spectrex 40/40 Series Next Generation Quad-Sense flame detectors



The Next Generation of SharpEye™ Quad-Sense™ 40/40 Flame Detectors

- field-proven, reliable detectors that provide the fastest, longest distance detection to optimize the area coverage.



LIBs Fire cannot be extinguished by any conventional method Find a solution to cool the area, but the only way to put out such fires is to flood the facility or let it burn itself out.

- Quad-Sense is designed to avoid false alarms from hot CO₂ released by cars' exhaust
- A detection speed of <50 milliseconds
- Long (90 m) distance detection to optimize the area coverage
- Tested and Approved by FM for lithium-ion batteries fires

