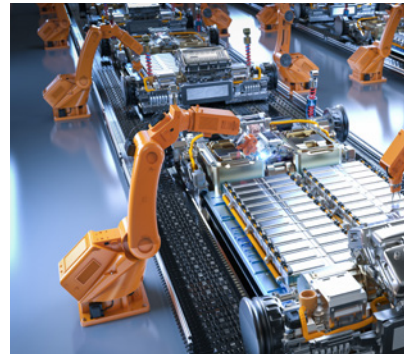
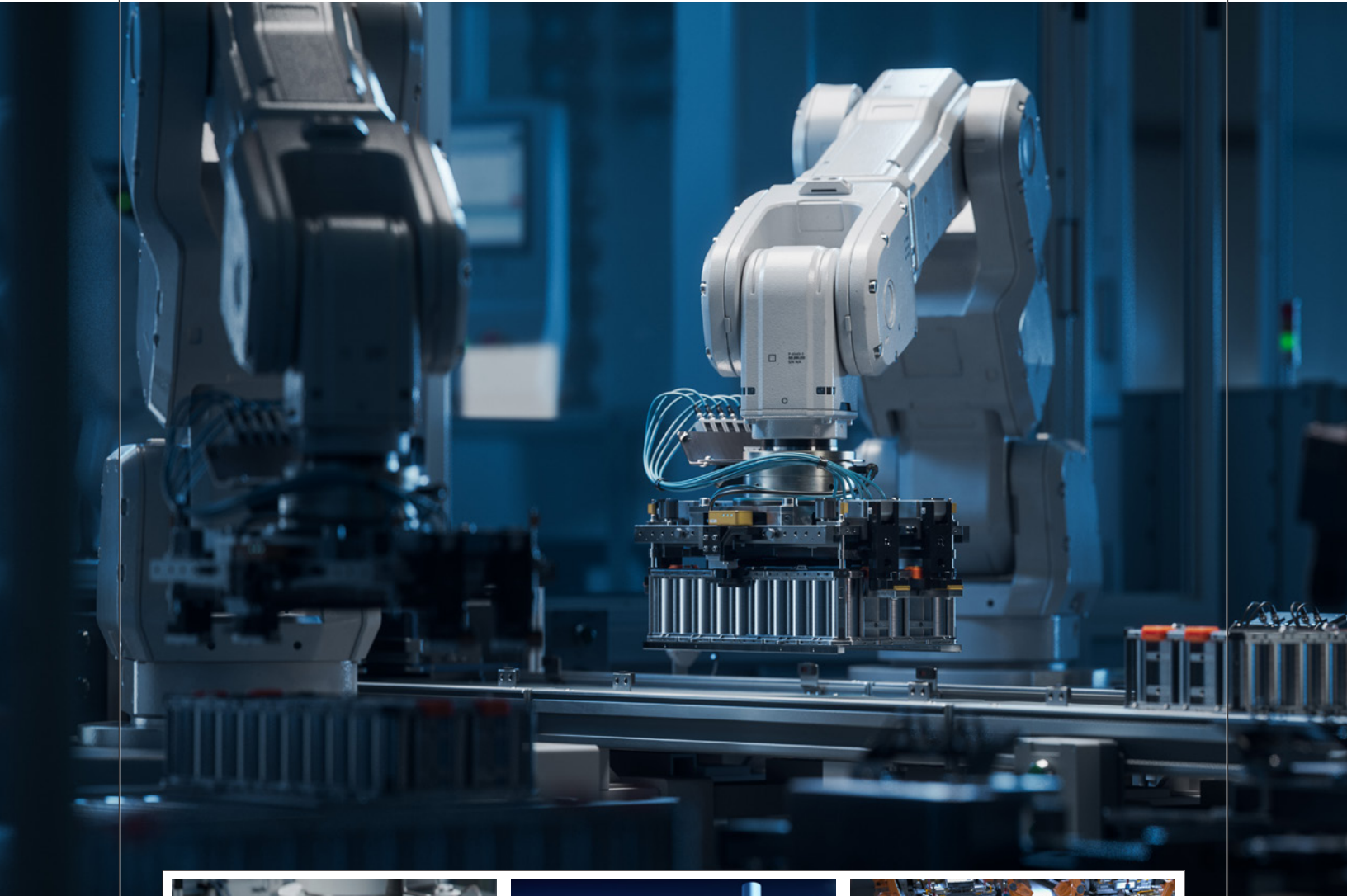


THE WORLD LEADER IN CLEAN AIR SOLUTIONS



Powering Precision: Advanced Filtration for EV Battery Production

LOWER RISK. CLEANER AIR. GREATER EFFICIENCY.

Supporting the World's Leading Battery Manufacturers

As the demand for electric vehicles accelerates, so does the need for advanced manufacturing environments that protect product quality, operational uptime, and sustainability goals. At AAF, we design high-performance filtration systems that meet the exacting standards of lithium-ion battery production supporting everything from cleanroom integrity to gas-phase contaminant control.

Trusted by the world's leading battery manufacturers, AAF helps reduce risk, streamline maintenance, and minimize energy consumption across every stage of production.

Protecting Every Stage of EV Battery Production

Lithium-ion battery manufacturing demands precision at every stage from dry room humidity control to particle and gas-phase management. AAF's filtration systems are engineered to protect sensitive materials, maintain stable conditions, and ensure the highest levels of production quality and efficiency.

Our solutions go beyond basic filtration support to:

Control Humidity and Particulates:

High efficiency prefilters and HEPA filters help maintain stable air conditions that protect cell chemistry and reduce contamination risk.

Manage Airborne Molecular Contamination (AMC):

Outgassing from chemicals, equipment, and people must be tightly controlled to protect production integrity.

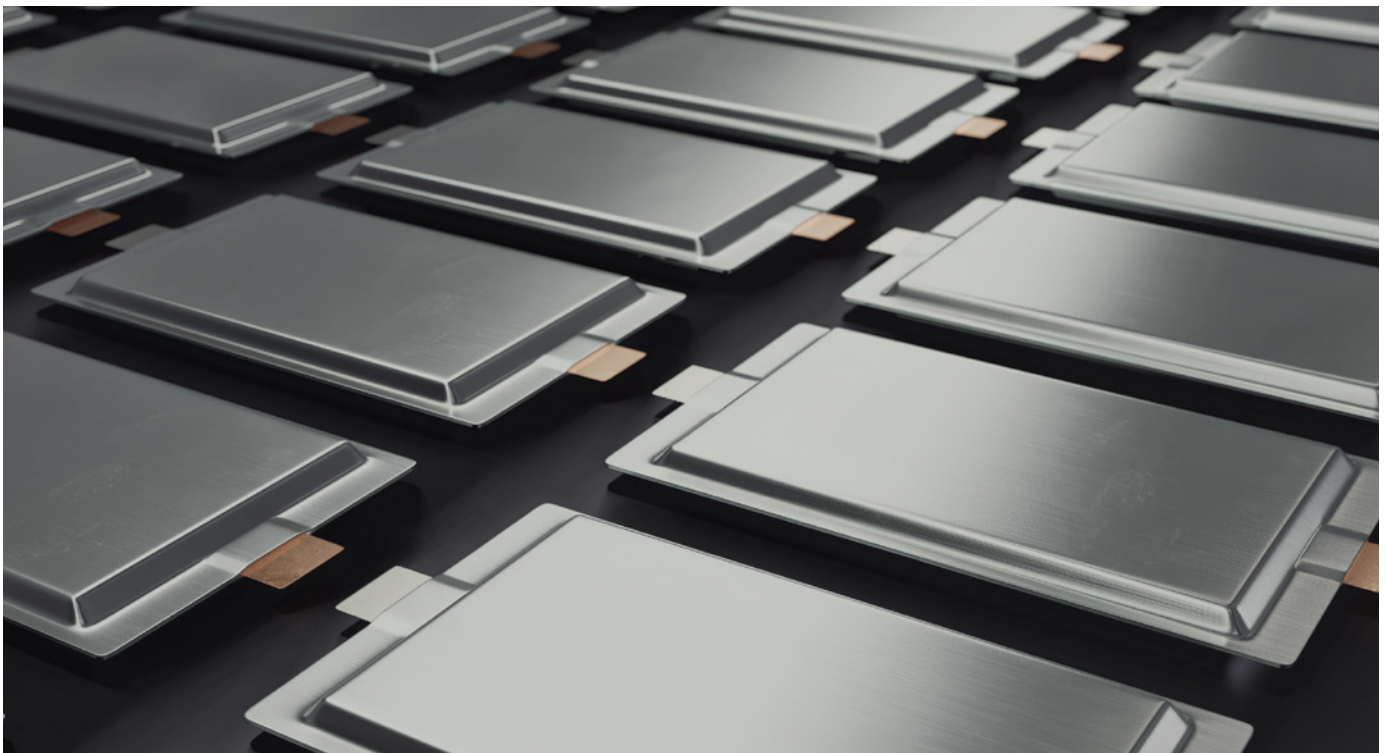
Ensure Leak-Free Containment:

Gas-phase contaminants can cause long-term degradation of sensitive materials, requiring leak-free containment at every air change.

Improve Energy and Maintenance Efficiency:

Low-resistance, long-life filters reduce fan power requirements and extend service intervals, lowering total cost of ownership while supporting sustainability goals.

AAF's advanced filtration solutions give EV battery manufacturers the confidence to maintain cleaner, safer, and more efficient production environments. By controlling contaminants and optimizing system performance, AAF helps ensure consistent quality and long-term operational success.



Advanced Air Solutions for Lithium-Ion Facilities

From dry rooms to cell assembly zones, every stage of lithium-ion battery production depends on precise environmental control. AAF's advanced filtration technologies are engineered to reduce risk, improve operational efficiency, and support your facility's long-term sustainability goals.

MEGAcel® I | HEPA Filter

*Scan-testable, boron-free
HEPA performance*

- Membrane media is chemically inert and boron-free, no risk to sensitive chemistries
- Resists handling damage better than glass media
- Allows scan testing to verify leak-free performance

Ideal for: Dry room HEPA zones, anode/cathode coating lines, and particle-sensitive equipment bays



MEGAcel® II ME | ULPA Filter

Ultra-low offgassing membrane media ideal for critical cleanroom environments

- Reduces energy consumption by over 30% with ultra-low resistance
- Meets I300I cleanroom specifications and UL 900, ULC S111 Classified
- Proven media technology trusted by advanced manufacturers worldwide

Ideal for: ISO-classified dry rooms, lithium mixing zones, and all cell assembly areas



MEGApleat® M9 | PreFilter

The longest-lasting pleated prefilter available, ideal for demanding production lines

- 3–4x the service life of standard pleats
- Low initial resistance reduces HVAC energy use
- High dust-holding capacity for extended performance

Ideal for: General HVAC intake, battery cell preparation areas, and energy-efficient facility retrofits



SAAF™ Cassettes

Secure gas-phase filtration for AMC control and leak-free protection

- Patent-pending design eliminates harmful glues and labels
- Snap-fit system ensures a chemical-free, airtight seal
- Commonly applied in close-coupled or recirculating air systems

Ideal for: Coating, drying, and electrolyte fill zones sensitive to VOCs and acidic gases



AstroHood® S-III

Roomside-replaceable HEPA terminal hood that reduces maintenance costs

- Tool-free HEPA filter replacement
- Supports validation in cleanrooms and controlled zones
- Compatible with MEGAcel filters for high efficiency and low-pressure drop

Ideal for: Cleanroom ceilings, gloveboxes, and tool enclosures requiring frequent filter changeout

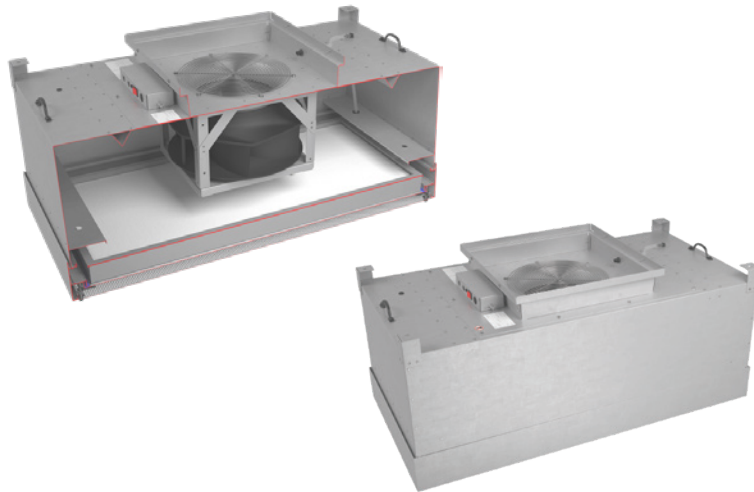


AstroFan™ EC FFU

Complete Fan Filter Unit solution for ISO-classified environments

- Energy-efficient EC motors provides 30-40% energy savings compared to AC alternatives
- Industry-leading resistance for optimized airflow
- Easy to integrate with tool enclosures and cleanroom ceilings

Ideal for: Custom cleanroom builds, ISO Class3-7 environments, and modular battery lines



Case Study: Cutting Energy Costs in a Lithium-Ion Battery Facility

Overview

The example below represents a common scenario in a lithium-ion battery manufacturing facility. While not based on a specific customer site, it demonstrates how advanced filtration design can deliver measurable energy and cost savings in production environments requiring tight particulate and gas-phase control.

Facility Profile

A mid-sized EV battery plant (~150,000 ft² of clean and controlled environments) operating at ISO Class 5–7 in key zones sought to reduce HVAC energy use while maintaining high standards for air cleanliness and process reliability.

Baseline Conditions

- Conventional glass-media HEPA filters and standard pleated prefilters created a system pressure drop of ~0.30 in. w.g.
- Cleanroom fan and HVAC systems consumed approximately **\$1.2 million per year** in electricity.
- Filter replacements and downtime added another **\$150,000 annually** in labor and parts

Proposed Filtration Strategy

By integrating AAF's high-efficiency, low-resistance technologies, MEGAcel® HEPA/ULPA filters, MEGApleat® long-life prefilters, SAAF™ Cassettes for gas-phase control, and AstroFan™ FFUs with EC motors, overall system performance can improve dramatically.

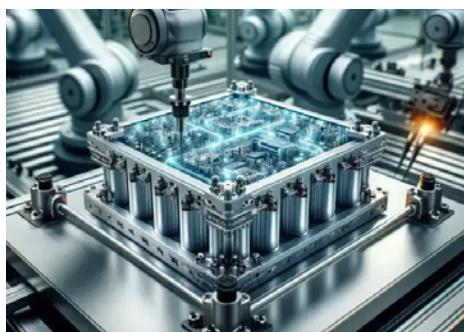
Potential Results

- **30% reduction in fan energy** due to lower pressure drop and optimized airflow (~240,000 kWh/year)
- **12% reduction in HVAC cooling load**, translating to roughly **\$36,000** in annual savings
- **40% fewer filter changeouts**, cutting maintenance and material costs by approximately **\$90,000**
- **Estimated total annual savings:** around **\$150,000**, with a **three-year payback period**
- **Potential CO₂ reduction:** ~350 metric tons per year, supporting sustainability objectives

Outcome

This example illustrates how upgrading filtration systems can yield double-digit reductions in energy and maintenance costs while maintaining the strict environmental controls essential to lithium-ion battery production.

This case study is a hypothetical example provided for illustrative purposes only. Actual savings and performance results will vary based on system design, operating conditions, energy rates, and other site-specific factors. Consult with AAF International to assess the potential benefits for your facility.



Explore Filtration in an EV Battery Facility

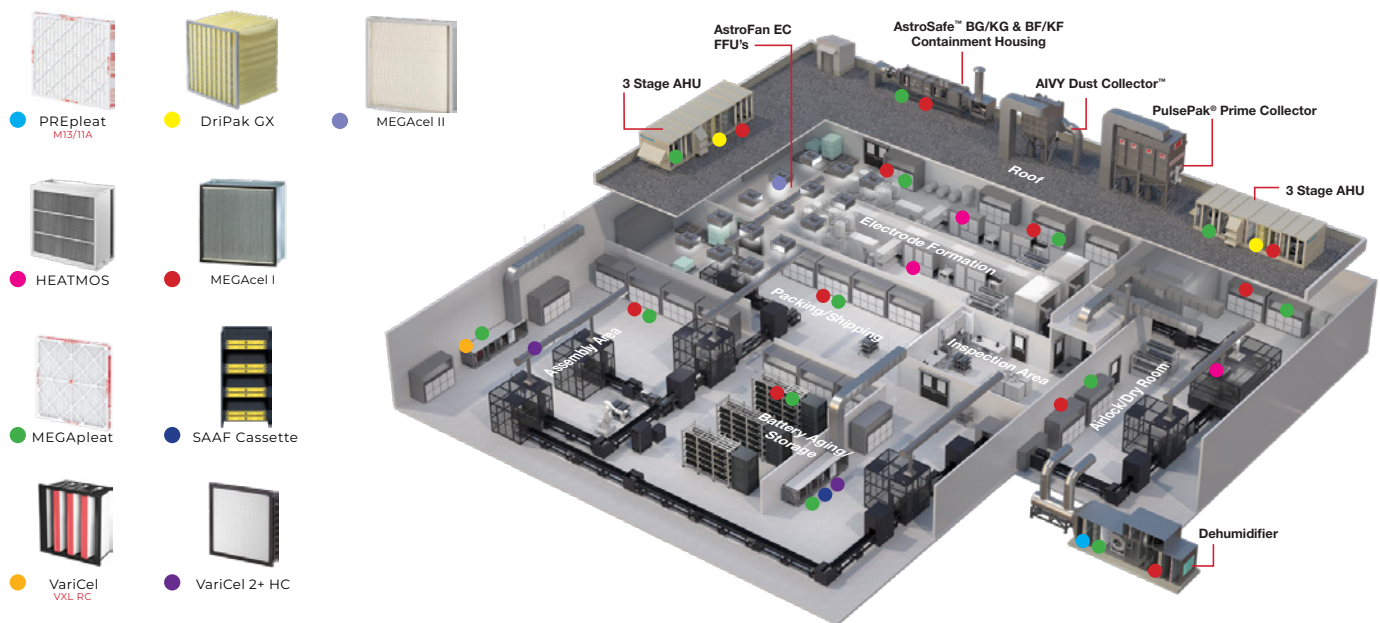
Curious how advanced filtration fits into lithium-ion battery production? Scan the QR code below to explore an interactive EV facility rendering on our website. You'll discover how our solutions are engineered to protect every zone of production:



SCAN HERE

- Where prefilters, HEPA filters, gas-phase filtration, and fan filter units are deployed
- How terminal hoods and roomside-replaceable units integrate into dry rooms and clean zones
- Which products best support each process area, from mixing and coating to cell assembly and final packaging

Whether you're building a new gigafactory or retrofitting an existing line, this tool helps you visualize a filtration strategy that supports quality, efficiency, and compliance.



Why Choose AAF?

AAF is your strategic partner in clean manufacturing. Our team works closely with EV battery producers to tailor air quality solutions that protect processes, cut costs, and align with net-zero objectives. Backed by our Clean Air Center and deep R&D capabilities, we offer testing, documentation, and expertise to support you at every stage, from factory floor to compliance audits.

Proven Expertise of AAF International

AAF International offers the most comprehensive air filtration portfolio in the industry, including particulate, HEPA, ULPA, and gas-phase filters, to provide a customized clean air solution. Each product is carefully designed, manufactured, and tested in full compliance with all applicable standards to meet the most challenging demands with the lowest Total Cost of Ownership.

Contact your local AAF representative for a complete list of AAF Air Filtration Product Solutions.

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AAF International has a policy of continuous product research and improvement. We reserve the right to change design and specifications without notice.

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ISO Certified Firm

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