

CIRQURA for Batteries

Decades of detection expertise.
Now applied to battery sorting.

Smiths Detection's automated battery sorting solution for mixed portable batteries and battery packs up to 5kg, using advanced sensing and AI-powered classification.

See more. Classify with confidence. Sort at scale.

From mixed battery streams to more consistent material fractions.

THE CHALLENGE

Seeing Beyond the Surface

Every battery has a chemistry. CIRQURA for Batteries sees it.

Portable batteries arrive at recycling facilities in many chemistries, formats and conditions. Labels may be missing or unreliable, casings damaged or degraded, and battery packs can reveal little about the cells inside. External appearance alone is not always enough for confident classification.

Accurate classification helps direct batteries and packs to the appropriate recycling route, supports more consistent material fractions for downstream recycling and helps prevent potentially higher-risk items from entering unsuitable streams.

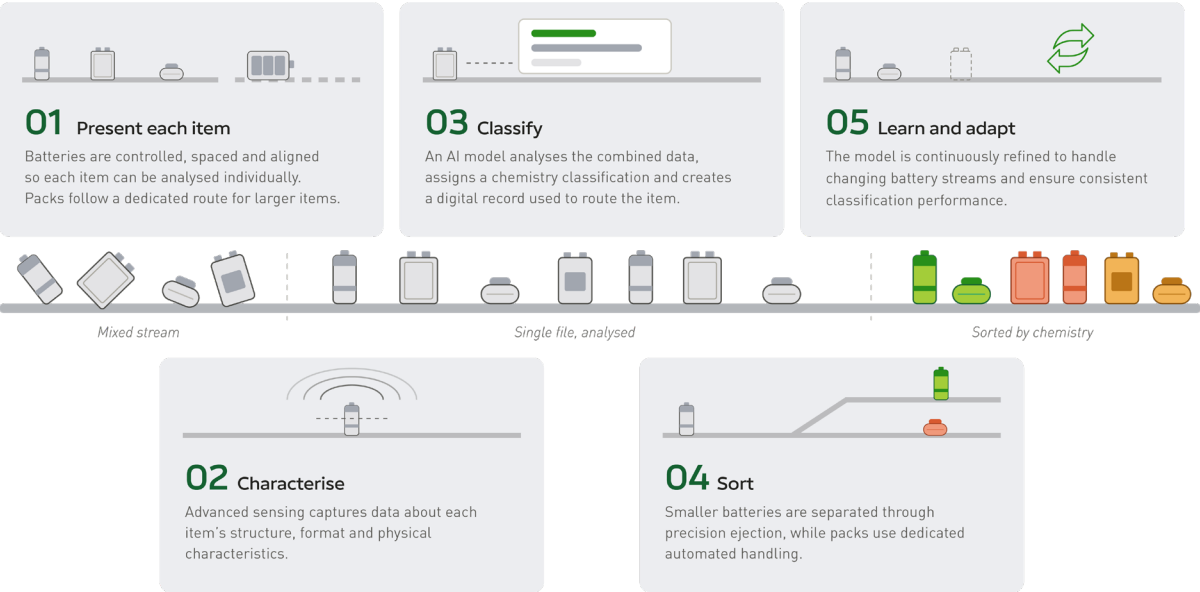
For decades, Smiths Detection has used X-ray detection and advanced imaging to identify what cannot be understood from external appearance alone. CIRQURA for Batteries applies that expertise to a growing circular economy challenge.

The modular solution combines advanced sensing, AI-powered classification and automated separation to characterise and sort mixed portable batteries and battery packs by chemistry. Each battery or pack is analysed, assigned a chemistry classification and linked to a digital record used to route it through the process.

This helps recycling operators to:

-  **Improve consistency:** apply a consistent classification process across complex battery streams.
-  **Automate sorting:** automatically classify and sort individual batteries and portable battery packs weighing up to 5kg.
-  **Reduce direct manual handling:** limit contact with damaged, degraded and difficult-to-identify items.
-  **Adapt to changing streams:** continuously refine the model to handle changing and complex mixed streams, maintaining consistent classification performance over time.
-  **Configure and scale:** set up individual stages or an integrated end-to-end solution.

From Mixed Stream to Confident Sort



Detect Early. Remove Quickly. Reduce Intervention.

The safety approach supports early identification and rapid removal of affected items, creating valuable response time and reducing the need for direct intervention. It prioritises early detection and removal rather than attempting to extinguish an incident within the sorting line.

Performance Demonstrated in Live Operation

 Over 97% classification accuracy in live operation	 Up to 3 tonnes per hour processing throughput
 Up to 5 kg batteries and packs automatically classified and sorted	 MODULAR staged or end-to-end configuration

Reported figures reflect project data from live operation at Sortbat. Performance will depend on the incoming material mix, operating conditions and selected system configuration.

THE SOLUTION

From Mixed Stream to Confident Sort



LIVE-OPERATION PROOF

Proven in Real-world Battery Streams



Proven in live operation at Sortbat's facility in Belgium, CIRQURA for Batteries has demonstrated performance against changing input mixes and real operating conditions. The installation processes streams including alkaline and lithium-based cells and portable battery packs, demonstrating automated sorting at scale in a working recycling environment.

“ CIRQURA for Batteries has significantly improved safety by reducing the need for our operators to handle damaged, degraded and unpredictable batteries directly. The ability to automatically classify and sort portable battery packs as well as individual batteries is equally important when processing mixed battery streams.” - Daniel Cheret, CEO, Sortbat

3-4 years
indicative payback

A tangible business case

Indicative modelling for a facility processing approximately 5,000 tonnes per year, based on classification accuracy above 97%. Actual payback depends on site-specific factors including input mix, current process, labour costs, operating hours and system configuration.

Why Smiths Detection?

Smiths Detection brings more than 75 years of detection experience, thousands of aviation screening systems deployed worldwide and a global service network providing 24/7/365 support across 191 countries, backed by 1,200 engineers. Established expertise in X-ray imaging and AI, together with experience in highly regulated operating environments, provides the technology and global infrastructure behind CIRQURA for Batteries.

Explore CIRQURA for Batteries

Discover how the system can be configured for your facility.

www.smithsdetection.com

