

Battery Abuse Test Chamber with Gas Scrubber

CAPABILITY SHEET · ABUSE · CONTAIN · EXTRACT · SCRUB · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	The test is meant to make the battery fail, so the chamber is built for the failure, and the test ends when the room is safe, not when the battery fails.
WHY IT MATTERS	A failing lithium-ion battery can give off heat and flame, hot particles, and a gas that is both flammable and toxic, including hydrogen fluoride from its electrolyte. The chamber must be ready for all of it at once.

THE CHAMBER

SHELL & RELIEF	A sealed steel chamber built for the worst article the customer will test, with a pressure-relief path that opens in a chosen direction into the extraction, never into the room.
ABUSE	Remotely driven actuators for crush and nail penetration, an electrical test supply for short circuit, overcharge and forced discharge, and a controlled heating system, applied one test at a time from a control desk.
WATCH	An observation window and cameras, and sensors and data acquisition that log voltage, temperature, pressure, gas and video on one clock.
EXTRACT & MAKE SAFE	Gas extraction through a filter and a wet scrubber in which an alkaline liquid neutralises acid gases, with the used liquid handled as waste; fire suppression and purge; and interlocks that release the door only when the room is safe.

CONFIGURATIONS

CELL CHAMBER	A compact chamber for single cells on a bench.
MODULE AND PACK CHAMBER	A larger chamber with heavier actuators and a bigger relief and extraction.
TEST BAY	A room-sized bay with its own extraction and scrubber, run from a control room.

STANDARDS & SCOPE

STANDARDS	IEC 62619 is the public reference for industrial lithium battery safety, IEC 62660-3 for vehicle cell safety, UN 38.3 for transport tests and ISO/IEC 17025 for calibration. Actuators, heaters, sensors and fans are proven catalogue items.
SCOPE BOUNDARY	This is the chamber that takes a battery to failure. It is not the cyclers and conditioning system that measures performance and ageing, not a pressure vessel test to destruction of a gas cylinder, and not a weather chamber.
STATUS	Neometrix engineers battery abuse test chambers to order, and no delivered battery abuse test chamber is claimed.

DEFENCE PROGRAMMES DESK

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