

Helium Leak Detection System

CAPABILITY SHEET - HELIUM MASS-SPECTROMETER LEAK DETECTION - ENGINEERED TO ORDER

THE SYSTEM

WHAT	A helium leak detection system - the mass-spectrometer method that finds, locates and quantifies leaks to $\sim 10^{-12}$ mbar.L/s, far finer than pressure decay.
OUR ROLE	The detector, reference leak and pumps are bought-in; Neometrix engineers the vacuum/bombing chamber, fixturing, helium supply and controls around them.
STATUS	Engineered to order; sized to the part, the leak-rate spec and the method. No specific delivered system is claimed on this sheet.

THREE METHODS

VACUUM (SPRAY)	Evacuate the part and spray helium outside; helium drawn in through a leak reaches the mass spectrometer - the most sensitive mode, it locates and quantifies.
SNIFFER (PROBE)	Pressurise the part with helium and move a probe over the outside to locate leaks - for a large, open or installed assembly that cannot go in a chamber.
BOMBING	For hermetically sealed parts with no test port: force helium in under pressure, then measure it leaking back out - the way sealed electronics and sensors are proven.

WHY IT WINS

HELIUM	Helium is the smallest safe inert tracer, ~ 5 ppm in air, so a mass spectrometer tuned to it picks a real micro-leak out of the noise where a bigger tracer could not.
QUANTIFIED	A leak rate in mbar.L/s, calibrated to a traceable reference leak - so a part is accepted to a specification, not just called 'no bubbles seen'.
SEES THE UNSEEABLE	Pressure decay bottoms out $\sim 10^{-3}$ mbar.L/s; a vacuum vessel, cryostat or sealed device fails from a leak 1000x smaller. Helium mass-spec resolves it and numbers it.

DISTINCTNESS & ENGAGEMENT

NOT PRESSURE-DECAY	Distinct from our pressure-decay leak rigs (coarse, pass/fail) and our helium charging stations (which handle helium, not detect) - this is the mass-spec method.
FRANCHISE FIT	It draws on the vacuum-chamber and helium-handling competence behind our thermal-vacuum chamber and helium-charging systems - the chamber-and-helium half is our own.
ENGAGEMENT	Send the part, the leak-rate spec and the method to sales@neometrixgroup.com for a clause-by-clause compliance matrix in two working days.

PROJECTS DESK

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