Laboratory Oven

CAPABILITY SHEET · THE SENSOR IS NOT THE SAMPLE. · A CHAMBER, HEATERS, A CONTROLLER AND A SEPARATE

THE ONE IDEA

PRINCIPLE	The sensor is not the sample.
WHY IT MATTERS	The controller reads one point and the material sits somewhere else, so the chamber is mapped with the oven loaded, and a sample is placed where the map says.

THE OVEN

CHAMBER	An insulated stainless chamber with a sealed door and shelves, built to carry the pressure of the outside air when it is a vacuum chamber.
HEAT	Heaters placed so that the chamber warms evenly, with a fan and baffles in a hot-air oven, and heated shelves in a vacuum oven.
VACUUM	A vacuum pump suited to the vapour, a cold trap before it, and a bleed valve to return the chamber to the air.
PROTECTION	A controller with a sensor holds the set point, and a separate over-temperature cut-out with its own sensor acts when it cannot.

THE METHOD

ORDER	Duty, chamber and shelves, heat and air or vacuum, control and cut-out, build and prove. The map and the cut-out are the two that a quick job skips.
LIMITS	Temperatures, pressures, volumes and powers come from the customer's samples, and are not printed here.

CONFIGURATIONS

HOT-AIR	A hot-air oven: heaters, a fan and baffles, with a vent for moisture.
VACUUM OVEN	A vacuum oven: heated shelves, a vacuum pump, a cold trap and a bleed valve.
SPECIAL	A special oven: a size, a shelf layout or an atmosphere that is not standard.

STANDARDS & SCOPE

STANDARDS	Public reference: ASTM E145 for gravity-convection and forced-ventilation ovens, and IEC 61010-2-010 for the safety of laboratory equipment for the heating of materials.
SCOPE BOUNDARY	It is the laboratory oven: not an environmental chamber, not a hot-air generator and not a vacuum pumping station.
STATUS	Neometrix has quoted against successive laboratory oven and vacuum oven requirements, and no delivered laboratory oven or vacuum oven is claimed.

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