

Large Temperature Cycling Test Chamber For Environmental Reliability Testing

Item Number: DA13



Introduction

Large temperature cycling test chamber delivers controlled -40°C to +150°C environmental reliability testing for battery cells automotive components electrical and electronic products with 800L capacity 5°C per minute thermal transitions and precise monitoring for demanding laboratory qualification programs.

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Application	Description	Key Benefit
Battery Cell Environmental Reliability Testing	Subjects battery cells to low temperature, high temperature, and temperature cycling conditions within the specified operating range.	Supports evaluation of cell behavior under controlled environmental temperature exposure.
Automotive Component Qualification	Tests automotive parts and assemblies under alternating hot and cold conditions relevant to vehicle operating environments.	Provides an 800L workspace for larger component-level test articles.
Electrical Product Temperature Testing	Evaluates electrical products and components during controlled high- and low-temperature environmental simulations.	Enables defined temperature fluctuation, deviation, and gradient conditions after stabilization.
Electronic Product Reliability Assessment	Applies temperature cycling to electronic products and related parts during development or qualification programs.	The 0.01°C indication resolution supports detailed condition monitoring and documentation.
Materials Thermal Exposure Studies	Exposes materials and material samples to specified temperature extremes and transitions.	Combines -40°C to +150°C coverage with controlled average transition-rate specifications.
Large Assembly Environmental Simulation	Accommodates products, parts, and materials that require a larger chamber envelope for temperature-based reliability evaluation.	Internal dimensions of 1000 × 1000 × 800 mm provide practical test volume.
Comparative Temperature Cycling Programs	Runs repeatable unloaded transitions between -40°C and +85°C for comparative environmental studies.	Specified average 5°C/min heating and cooling rates help establish consistent test schedules.

Parameter	Specification
Item Number	DA13
Applicable Test Scope	High-temperature, low-temperature, high-low temperature alternating, and humidity environmental simulation reliability tests for various battery cells, automotive components, electrical and electronic products, other products, parts, and materials
Effective Volume	800L
Internal Chamber Dimensions	W 1000mm × H 1000mm × D 800mm
External Chamber Dimensions	W 1200mm × H 1913mm × D 2380mm
Ambient Temperature Test Condition	5~ 35°C
Ambient Humidity Test Condition	10%~ 85%RH
Test Specimen Weight	None

Parameter	Specification
Test Specimen Heat Generation	None
Temperature Indication Resolution	0.01°C
Temperature Range	-40°C ~ +150°C
Temperature Fluctuation	±0.5°C
Temperature Deviation	≤±2°C (after temperature stabilization, within any time period, the difference between the highest temperature, lowest temperature, and nominal temperature)
Temperature Gradient	≤±2.0°C (after temperature stabilization, within any time interval, the maximum difference between the average temperatures of any two points inside the chamber; the new standard uses temperature gradient in place of the former temperature uniformity)
Heating Rate	-40°C ~ +85°C full-range average heating rate 5°C/minute (non-linear, unloaded)
Cooling Rate	+85°C ~ -40°C full-range average cooling rate 5°C/minute (non-linear, unloaded)
Equipment Noise	≤70dB (A Level)
Equipment Weight	800KG
Power Supply Voltage	AC 380V, 50HZ three-phase