

Small Temperature Cycling Test Chamber For Battery Cells Automotive Electronics And Materials

Item Number: DA04



Introduction

Small temperature cycling test chamber for battery cells automotive components electronics and materials with -40°C to +150°C control 5°C per minute transitions and reliable environmental testing performance for demanding high low temperature alternating humidity reliability evaluations in research and applications

[Learn More](#)

Application	Description	Key Benefit
Battery Cell Reliability Testing	Expose battery cells to controlled low-temperature, high-temperature, and alternating temperature conditions to evaluate environmental response during research and validation.	Supports repeatable thermal stress testing across a broad temperature range.
Automotive Component Validation	Test automotive components under temperature transitions representative of demanding vehicle operating environments.	Helps identify temperature-related performance or durability concerns before production deployment.
Electrical and Electronic Product Testing	Evaluate electrical and electronic products, assemblies, and components during low-temperature and elevated-temperature environmental simulations.	Provides a consistent chamber environment for reliability and quality verification.
Materials Research	Study the response of materials to repeated or sustained temperature exposure across -40°C to +150°C.	Enables controlled comparison of material behavior under defined thermal conditions.
Environmental Reliability Programs	Conduct high-temperature, low-temperature, and high-low temperature alternating environmental tests on products, parts, and materials.	Consolidates multiple thermal test requirements in one laboratory system.
Academic and Industrial R&D	Support research programs that require measured thermal transitions, stabilized temperature conditions, and documented test parameters.	Delivers a practical platform for repeatable experiments and development testing.

Category	Parameter	Specification
Product Identification	Product item number	DA04
Application	Applicable test objects	Battery cells, automotive components, electrical and electronic products, other products, parts, and materials
Test capability	Environmental simulation	High-temperature, low-temperature, and high-low temperature alternating humidity reliability tests
Chamber capacity	Effective volume	150 L
Internal dimensions	Width × height × depth	W 500 mm × H 600 mm × D 500 mm
External dimensions	Width × height × depth	W 750 mm × H 1780 mm × D 1500 mm
Test conditions	Ambient temperature	5°C to 30°C
Test conditions	Ambient humidity	10% to 85% RH
Test conditions	Test specimen weight	None specified

Category	Parameter	Specification
Test conditions	Test specimen heat generation	None specified
Temperature measurement	Analysis resolution	0.01°C
Temperature performance	Temperature range	-40°C to +150°C
Temperature performance	Temperature fluctuation	±0.5°C
Temperature performance	Temperature deviation	≤±2°C after temperature stabilization; at any time, the difference between the highest and lowest temperatures and the nominal temperature
Temperature performance	Temperature gradient	≤±2.0°C after temperature stabilization; the maximum difference between the average temperatures at any two points in the chamber over any time interval. The new standard uses temperature gradient in place of the former temperature uniformity specification.
Thermal transition	Heating rate	Average 5°C per minute from -40°C to +85°C, non-linear, empty load
Thermal transition	Cooling rate	Average 5°C per minute from +85°C to -40°C, non-linear, empty load
Noise	Equipment noise	≤70 dB (A Level)
Physical data	Equipment weight	650 kg
Electrical requirements	Power supply	AC 380 V, 50 Hz, three-phase