Advanced Battery Chamber Next

Overview of Equipment > Features

Charge-discharge tests of automotive secondary batteries have problems of being unable to perform accurate evaluation and having differences in environment temperature due to high heating of the battery during high input-output characteristic measurement and increased heat generation caused by battery degradation during long cycle and life testing.
In addition, when charge-discharge testing several batteries installed in the test area at the same time, deviations in temperature uniformity and heat generation of a battery to be cause of changes in the heat history of the batteries, thereby hindering correct evaluation.
In an effort to solve these problems, ESPEC applied its long-cultivated environment control technology to develop the Advanced Battery Chamber Next (precision temperature control chamber) with multi-area temperature control.

Main specifications (example)

Category	Item	Specifications and features
Performance	Temperature range	-40°C to +100°C
	Temperature uniformity	±0.5°C (deviation from temperature setting for central air temperature (total 6 points) for each battery installation area)
	Allowable heat load	500 W (at -20°C with air temperature control)
Dimensions	Inside dimensions (W × H × D mm)	800 × 790 × 525 (excluding protrusions)
	Outside dimensions (W × H × D mm)	1000 × 2196 × 1255 (including protrusions)
Safety Devices	Pressure release vent	φ100mm
Options	Specimen temperature control	Applicable temperature range: -20°C to +60°C Allowable heat load: Supports number of specimens and usage temperature range
	Relay module	Supports no-wiring inside of test area with test chamber rear pass-through method (Standard: φ 100 cable port × 3)

	Rear power supply storage box	Store various charge-discharge power supply devices (ESPEC or other manufacturers) and reduces installation space
	Rear power supply storage stand	
	CO_2 fire extinguisher	Automatically extinguishes fire after detecting heat or smoke at thermal runaway and stops operation, linkable to intake/exhaust damper
	Smoke detector	Uses optical spot detector for efficient detection of smoke during thermal runaway
	CO/H_2 gas detector	Pump suction type that collects gas generated from battery, 2-stage alert, linkable to intake/exhaust damper
	Intake/exhaust damper	Supports forced ventilation of gas inside of the chamber after CO_2 fire extinguisher spray, interlock to gas detector

Other test chamber models for charge-discharge testing

Advanced Battery Chamber (ADBC) series

- Features a special design for charge-discharge testing and horizontal laminar flow for high temperature uniformity performance.
- Uses a charge-discharge power supply from another manufacturer and has an integrated design to enable space savings.

Item	ADBC-S (1-chamber type)	ADBC-W (1-chamber wide type)	ADBC-T (3-chamber type)
Temperature range	-40°C to +100°C		
Temperature uniformity	±1.5°C		
Inside dimensions (W × H × Dmm)	640 × 850 × 544	1110 × 850 × 544	510 × 400 × 400 × 3 chambers
Outside dimensions (W × H × Dmm)	1250 × 1875 × 1560	1720 × 1875 × 1560	1200 × 2022 × 1300
Weight (kg)	540	600	800

* 2-chamber type is also available.

BPU (Temperature (& Humidity) Chamber For Charge-Discharge Testing) series > Click here for details.

- Left/right open space for improved connectivity with charge-discharge chamber.
- Vertical air flow control similar to the Platinous Series.

Item	BPU-2	BPU-3	BPU-4
Temperature range	-40°C to +100°C		
Inside dimensions (W × H × D mm)	500 × 750 × 600	600 × 850 × 800	1000 × 1000 × 800
Outside dimensions (W × H × D mm)	700 × 1760 × 1343	800 × 1860 × 1543	1200 × 2010 × 1543
Weight (kg)	340	420	610

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