



**Battery Test
Equipment**

IEC 60335 Battery Enclosure Pressure Tester

KP-35B3 Product Catalogue

Laboratory pressure test equipment for evaluating pressure-relief behaviour and enclosure response of applicable battery-operated appliances incorporating integral metal-ion cells.

1-2.5 MPa

IEC 60335-1

6 Stations



Standards

IEC 60335-1:2020 Annex B.20.1; applicable IEC 60335-2-120

Test Object

Battery-operated appliance enclosures with integral metal-ion cells

Pressure

1-2.5 MPa range; 2070 kPa $\pm$ 10% initial condition

Air Volume

6 / 10 / 20 / 30 / 50 / 100 mL selectable

Product Overview and Test Architecture

The KP-35B3 is a dedicated IEC 60335 battery enclosure pressure tester for controlled pressure testing of applicable battery-operated appliances. It combines high-pressure pressurization, defined air-volume injection, real-time pressure monitoring and data review for laboratory compliance evaluation and product development.

Standard-oriented test scope

Designed around IEC 60335-1 Annex B enclosure pressure testing and applicable IEC 60335-2-120 projects.

Defined pressure sequence

The high-pressure pump establishes the required pressure condition before the selected air volume is introduced.

Selectable air-volume configuration

6, 10, 20, 30, 50 and 100 mL options support capacity-based setup for the highest-capacity metal-ion cell.

Pressure monitoring and data review

Real-time sensor feedback, pressure curve display and USB export support process review and test documentation.

KP-35B3

Battery Enclosure Pressure Tester



High-pressure pump

Defined air-volume injection

Pressure curve monitoring

USB data export

Functional Test Flow

1 Connect Sample

Confirm pressure interface and enclosure connection.

2 Set Parameters

Select pressure, test time and applicable air volume.

3 Pressurize

Establish the defined initial pressure condition.

4 Inject Air

Introduce the selected air volume through the test orifice.

5 Review Response

Monitor pressure reduction, curve and enclosure response.

Detailed Technical Specifications

The following values summarize the KP-35B3 catalogue-level configuration. Final setup should be reviewed according to the applicable standard edition, test clause, cell capacity and sample connection method.

Standard and Test Scope

Parameter	Specification
Product model	KP-35B3
Applicable standards	IEC 60335-1:2020 Annex B.20.1; applicable IEC 60335-2-120
Test object	Enclosures of applicable battery-operated appliances with integral metal-ion cells
Test purpose	Pressure-relief and enclosure response evaluation
Test stations	6 stations

Instrument Configuration

Parameter	Specification
Control method	PLC with touch-screen HMI
Pressure drive	High-pressure pump
Test medium	Gas
Pressure monitoring	Pressure sensor with real-time feedback
Pressure curve	Displayed on control interface
Data export	USB
Test time	0-9999 s, adjustable
Power supply	AC 220 V $\pm$ 10%, 50-60 Hz

Pressure and Air Injection Parameters

Parameter	Specification
Test pressure range	1-2.5 MPa
Initial pressure condition	2070 kPa $\pm$ 10%
Air volume options	6, 10, 20, 30, 50 and 100 mL
Test orifice	Diameter 2.85 $\pm$ 0.05 mm
Pipe volume	< 3 mL
Test process	Automatic test process

Dimensions and Operating Environment

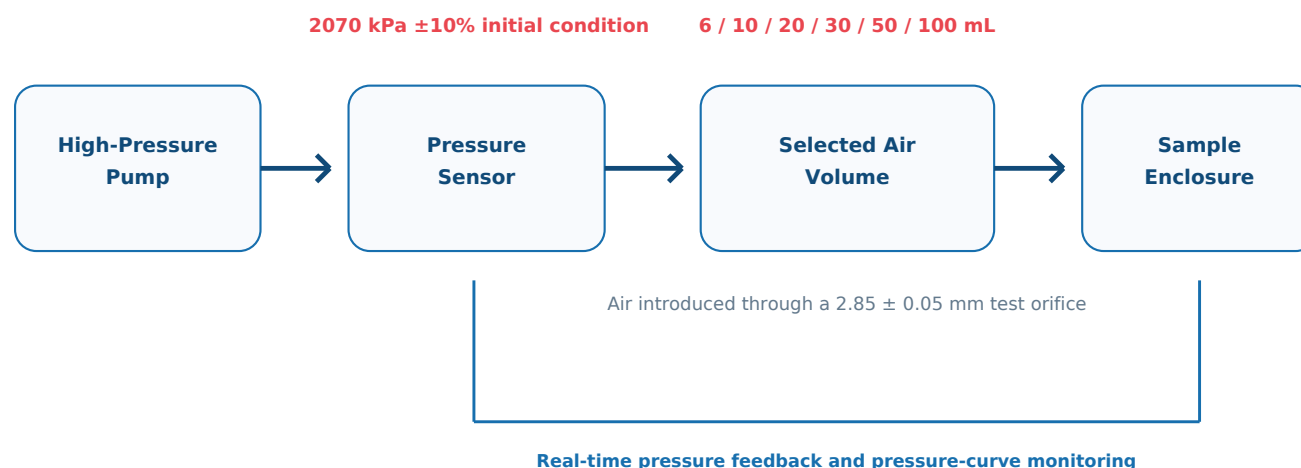
Parameter	Specification
Dimensions / weight	1320 $\times$ 660 $\times$ 1250 mm / approx. 200 kg
Ambient conditions	5-40°C; 20-80% RH; atmospheric pressure 80-106 kPa
Installation note	Stable location; no severe vibration, strong EMI, excessive dust, explosive or corrosive gases

Pressure Test Principle and Test Sequence

The system establishes a defined pressure condition, introduces the selected air volume through the specified test orifice and continuously monitors the enclosure pressure response.

Controlled Pressure Test Concept

Representative functional path for IEC 60335 battery enclosure pressure testing



Catalogue concept only. Formal testing should follow the applicable standard edition and laboratory procedure.

Core Test Values

Initial pressure 2070 kPa $\pm$ 10%

Pressure range 1–2.5 MPa

Test orifice 2.85 $\pm$ 0.05 mm

Pipe volume < 3 mL

Reduction check < 70 kPa within 30 s

Test Method Notes

- Confirm standard edition, clause and sample pressure connection.
- Select the required air volume according to cell capacity and test requirement.
- Run the automatic pressure sequence and monitor the pressure response.
- Inspect the enclosure and retain test data according to laboratory procedure.

1 Connect Sample — 2 Set Parameters — 3 Pressurize — 4 Inject Air — 5 Review Response

Air Volume Configuration and Pressure Monitoring

Selectable air-volume channels support capacity-based setup, while the touch-screen interface provides pressure values, release time and pressure-curve review for the test process.

Selectable Air Volume Configuration

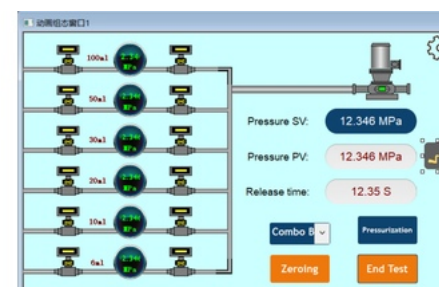
The applicable air volume is selected according to the highest-capacity metal-ion cell and the applicable test requirement.

Highest-Capacity Metal-Ion Cell	Air Volume
$0.2 \text{ Ah} \leq \text{Ah} < 1 \text{ Ah}$	6 mL
$1 \text{ Ah} \leq \text{Ah} < 3 \text{ Ah}$	10 mL
$3 \text{ Ah} \leq \text{Ah} < 5 \text{ Ah}$	20 mL
$5 \text{ Ah} \leq \text{Ah} < 25 \text{ Ah}$	30 mL
$25 \text{ Ah} \leq \text{Ah} < 100 \text{ Ah}$	50 mL

Configuration Note

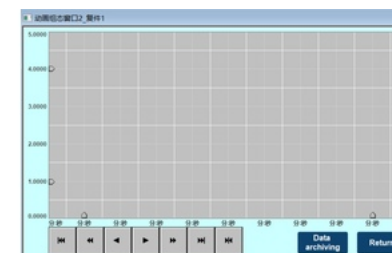
Confirm cell capacity, appliance type and applicable clause before quotation or formal testing.

HMI Pressure Control and Air-Volume Selection



Interface view showing selectable 6-100 mL channels, Pressure SV/PV and release time.

Pressure Curve and Data Review



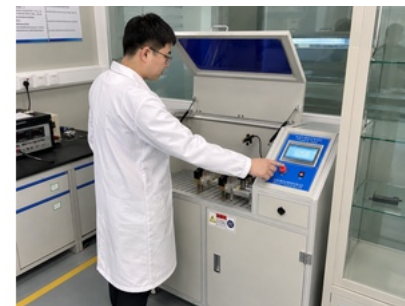
Pressure-curve display and data archiving support test review and laboratory documentation.

Applications, Compliance and Product Distinction

Typical Users and Laboratory Applications

- Household and similar appliance manufacturers
- Battery-operated appliance R&D and safety teams
- Product safety and pre-compliance laboratories
- Third-party testing and conformity assessment laboratories
- IEC 60335-related quality and compliance departments

Laboratory Operation



Representative laboratory operation of the KP-35B3 pressure test system.

Compliance & Regulatory Assurance

- Supports battery enclosure pressure testing associated with IEC 60335-1 Annex B.20.1.
- IEC 60335-1:2020 includes battery-operated appliances within its scope.
- Applicable IEC 60335-2-120 projects should be reviewed together with the required IEC 60335-1 test provisions.
- Confirm the standard edition, clause, enclosure structure and highest-capacity cell before testing.

Product Distinction

- Battery enclosure pressure test: evaluates enclosure pressure-relief and structural response.
- Battery crush test: evaluates external mechanical compression or deformation.
- Battery short-circuit test: evaluates abnormal electrical short-circuit conditions.
- Cell internal pressure measurement: measures pressure inside a battery cell.
- Use the correct test system for the applicable standard and test purpose.

Technical Inquiry and Expert Support

KingPo supplies the KP-35B3 IEC 60335 Battery Enclosure Pressure Tester for controlled enclosure pressure testing of applicable battery-operated appliances. Our engineering team can review the standard, test clause, cell capacity, sample connection and laboratory setup before quotation.

Please Provide the Following Information

- **Applicable standard:** IEC 60335-1:2020, applicable IEC 60335-2-120 requirement or internal test procedure
- **Required test clause:** IEC 60335-1 Annex B.20.1 or the applicable project clause
- **Appliance / enclosure:** Product type, enclosure construction and relevant sample information
- **Metal-ion cell information:** Cell chemistry and capacity of the highest-capacity cell
- **Sample connection:** Pressure interface, connection drawing or sample connection details
- **Data requirements:** Pressure curve review, USB data export or laboratory documentation needs
- **Configuration review:** Any special fixture, interface or project-specific setup requirement



Product Page



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