

# Advanced Safety Tester



- ▼ Overview of Equipment
- > Features

Lithium-ion secondary batteries are adopted wider applications in everything from consumer use to storage and automobiles, and there is greater interest not only in advancing performance testing but also in safety testing.

ESPEC designed the Advanced Safety Tester to perform multiple safety tests under precise temperature environments.

Category	Item	Specifications (example)
Applicable battery		Small capacity cells to laptop battery packs
Test chamber	Temperature range	-40 to 100°C
	Temperature fluctuation	±0.3°C
	Safety devices	<ul style="list-style-type: none"> <li>Pressure release vent</li> <li>Forced supply exhaust damper and duct flange</li> <li>Heat detector, smoke detector, CO<sub>2</sub> extinguisher, gas collector</li> </ul>
Measurement control unit	System	Test chamber, nail penetration, crushing, external short circuit integrated system
	Monitored items	(Nail penetration, crushing) load, transfer distance, velocity, battery voltage, battery temperature (External short circuit) battery voltage, battery temperature
	Data output	Monitored items can be saved to a CSV file
Crushing/nail penetration unit	Size of mountable battery	W 245 × D 215 × H 180 mm
	Load range	0.4 to 20 kN

	Velocity	0.1 to 50 mm/sec.
	Stroke	2 to 200 mm
External short circuit unit	Short circuit current	500 A
	Circuit resistance	Resistance switching inside unit (1) 5 mΩ or less (resistance short) (2) 10 to 30 mΩ (3) 80 to 100 mΩ

\* Please contact us for supported test standards and specifications.

### Case studies of large safety testers for automotive secondary battery packs

\* The specifications, appearance, and other contents herein are subject to change without notice due to continuous product development and improvement. Thank you for your understanding.

- Large nail penetration and crushing tester

This system is equipped with various safety functions and an electronic elevator stage that can support up to 500 kg and a 2 m × 2 m size.



- Large external short circuit tester

The world's first large tester that supports a maximum voltage of 500 V and a maximum current of 24,000 A.



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