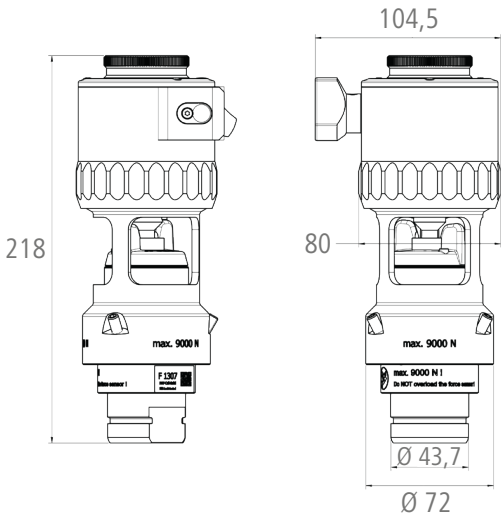
Dimensions in mm:



PAT-Cell-Solid

Advanced battery test cell for solid-state cell chemistries. Measure with an applied pressure of up to 300 MPa!*

The PAT-Cell-Solid is an electrochemical battery test cell capable of applying an adjustable force of up to 9000 N on the cell stack. It is designed to characterize solid-state batteries and can be equipped with the PAT-Solid-Core, enabling pressing and cycling of solid-state cell stacks with diameters of 6 or 10 mm. When using the PAT-Solid-Core with 6 mm components, pressures up to 300 MPa can be applied to the cell stack. Additionally, the PAT-Cell-Solid enables cycling with aprotic liquid electrolytes using the proven PAT-Core components.

In addition to the force sensor, the PAT-Cell-Solid features a built-in temperature sensor. Optional variants include a gas pressure sensor and gas connections for operation in a flow-through setup.

The PAT-Cell-Solid design features very high cell tightness against the ambient atmosphere, achieved with our proven metal lid seals and laser-welded electrode feed-throughs. The electrical connection is established without cabling by directly inserting the test cell into the socket of a PAT-Tester-x-8 potentiostat or PAT docking station, thereby preventing interference and simplifying operation. To adjust the applied force, a PAT-Terminal-1 is recommended.

Use Cases:

- Adjust and measure the applied force (up to 9000 N)
- Testing of solid-state electrolytes
- Testing of aprotic chemistries with liquid electrolytes
- Monitoring of gas pressure (optional) and temperature

Product website:

Key Features

- Force adjustment and measurement, up to 9000 Newton
- Built-in temperature, force and gas pressure (optional) sensors
- Optional gas in- and outlet for use in an flow-through setup
- Supports PAT-Core and PAT-Solid-Core components for cell stack configuration

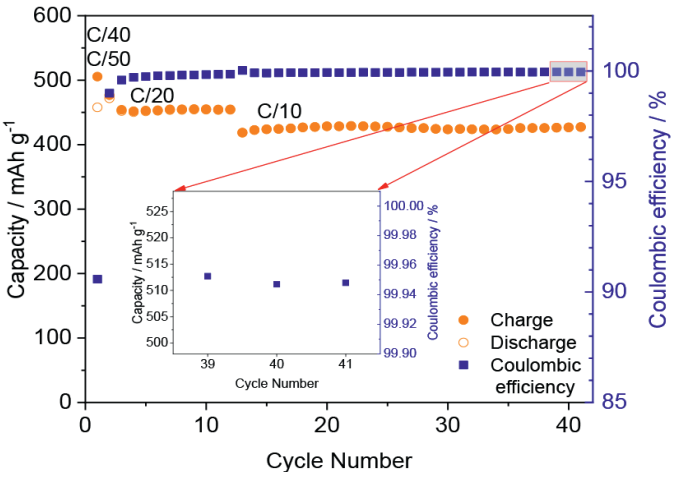
* at 6 mm electrode diameter

EL-Cell GmbH Tempowerkring 8 21079 Hamburg, Germany +49 40 79012-734 sales@el-cell.com el-cell.com

Specifications	
Height / Width / Length in mm	218 / 104.5 / 80
Weight	3.5 kg
Separator diameter (PAT-Core)	21.6 mm
Electrode diameter	PAT-Solid-Core: 6 mm or 10 mm / PAT-Core: 18 mm
Max. applied pressure on cell stack with PAT-Solid-Core	300 MPa @ 6 mm diameter / 115 MPa @ 10 mm diameter
Max. applied pressure on cell stack with PAT-Core	35 MPa @ 18 mm diameter
Force sensor	up to 9000 Newton
Temperature sensor	-20 to +80 °C
Gas pressure sensor (optional)	0 to 3 bar abs.
Operational temperature	-20 to +80 °C

Half cell SiC480 + LPSCl vs. In/InLi

Sample Test Results



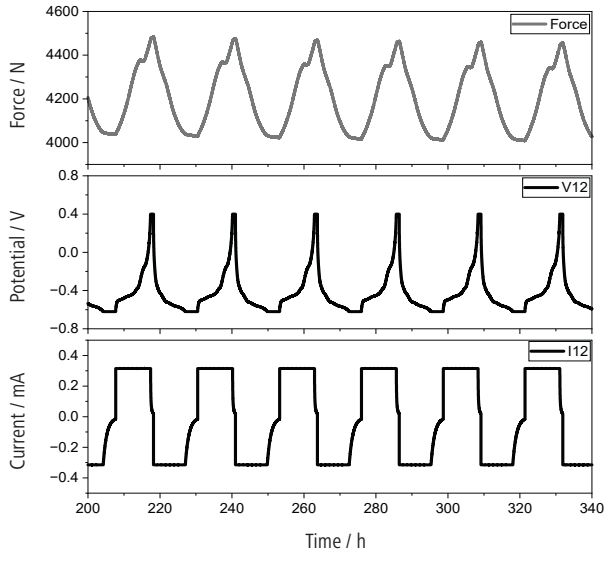
Setup details:
Half cell SiC480 + LPSCl vs. In/InLi

Elektrode 1:
(CSi 480 : LPSCl = 54:46) 11.5 mg -> CSi = 11.5 * 0.54 = 6.21 mg

Elektrode 2:
Indium 9 mm (140 µm) / Lithium 7 mm (270 µm) / Indium 9 mm (140 µm) (on top)

Electrolyte: LPSCl, 35.8 µl

Tested with aluminum lid seals



New PAT-Solid-Core

for Pressing and Cycling of Solid-State Cell Stacks!

New!

PAT-Solid-Core variants with 6 mm and 10 mm electrode diameter