

BATTERY TESTING

CELL LEVEL

PEC ACT0550: 80 channels

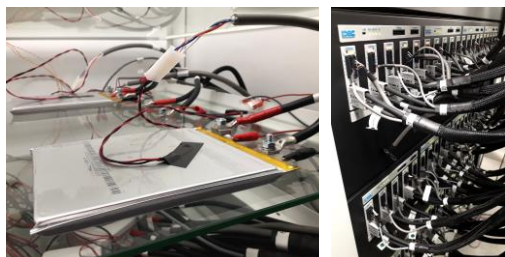
Voltage: 0 V up to 5 V
 Current: 50 A
 Parallel: Can be paralleled up to 4000 A

PEC SBT0550: 24 channels

Voltage: 0 V up to 5 V
 Current: 50 A
 Parallel: Can be paralleled up to 600 A

Digatron MCT 250-06-3 RE: 3 channels

Voltage: -6 V up to 6 V
 Current: 250 A / 300 A (peak)
 Parallel: Can be paralleled up to 750 A / 900 A (peak)
 EIS-Meter: Electrochemical impedance spectroscopy for three channels
 Other: Tabletop device, can be moved to other premises



Battery cells under test

MODULE LEVEL

PEC SBT10050: 12 channels

Voltage: 0 V up to 100 V
 Current: 50 A
 Power: 3 kW
 Parallel: Can be paralleled up to 600 A and 36 kW



PEC cell tester (left) and AVL battery pack cyclor / emulator (right)

PACK LEVEL

AVL E-STORAGE

Voltage: 10 V up to 1000 V
 Current: 600 A
 Power: 320 kW
 Container: Battery pack is placed inside a climate container, which has a temperature range from -32 °C up to +50 °C. It also includes a liquid cooling circuit with 10 kW cooling/heating power and temperature range of -10 °C up to +45 °C.
 Mode: Can be used as a battery cyclor or a battery emulator
 Link: Integrated to the heavy-duty chassis dynamometer infrastructure, can be used to emulate a battery pack



Climate container for battery pack testing

ITECH IT6108C-1500-240, 2 units

Voltage: 1500 V
 Current: 240 A
 Power: 108 kW
 Parallel: Can be paralleled up to 480 A and 216 kW
 Container: TBD



Thermal chamber (left) and interior of the climate container (right)

OTHER EQUIPMENT

- Two thermal chambers (600 l & 110 l) for cell and module testing
- Two thermal ovens (60 l) for cell testing at high temperatures
- Gamry Reference 3000 potentiostat/galvanostat/ZRA and Reference 30K Booster for EIS measurement up to 20 V and 30 A
- foxBMS development platform for battery management system algorithm development and system integration