NEWARE

Since 1998

Turnkey Solution for Battery Testing

CT-4000(mA)
CT-8000(mA)

CT/CE-4000(3C)
CT/CE-8000(3C)

CT-4000
CT-8000
（Customized Products）

CE-6000(Cell)

CE-6000(Module)

CE-6000(Pack)

CT-5000(mA)
CT-5000(3C)

CE-5000(3C)

CE-5000(Cell)

CT-9000

Agile Development | FlexibleProduction | Global Services

NEWARE

Since 1998

ISO 9001

1998
Established in

1,000+
Employees

60,000+
Clients

1,000+
Patents & Software Copyrights

Dedicated to providing support for Global Battery Manufacturers and related Material Production Companies, Quality Inspection Departments, Universities, and Research Institutions

- Providing high-performance Battery Testing Systems, Formationand Grading Systems, Environmental TestChambers, and Automation Equipment
- Providing system services NEWARE Store + NEWARE LabTech AI (LIMS)
- Providing global service network, achievingtimely response

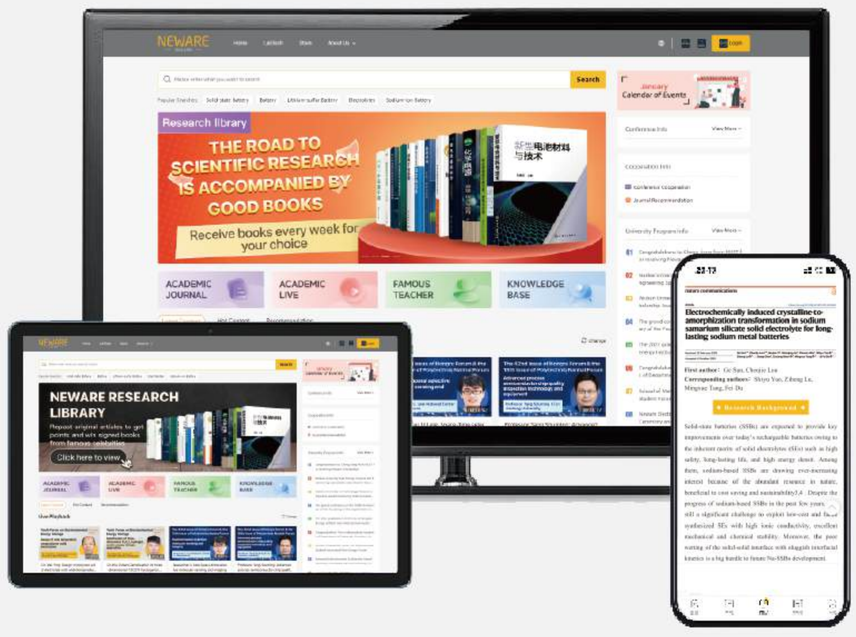
10-year product shipments overview of NEWARE

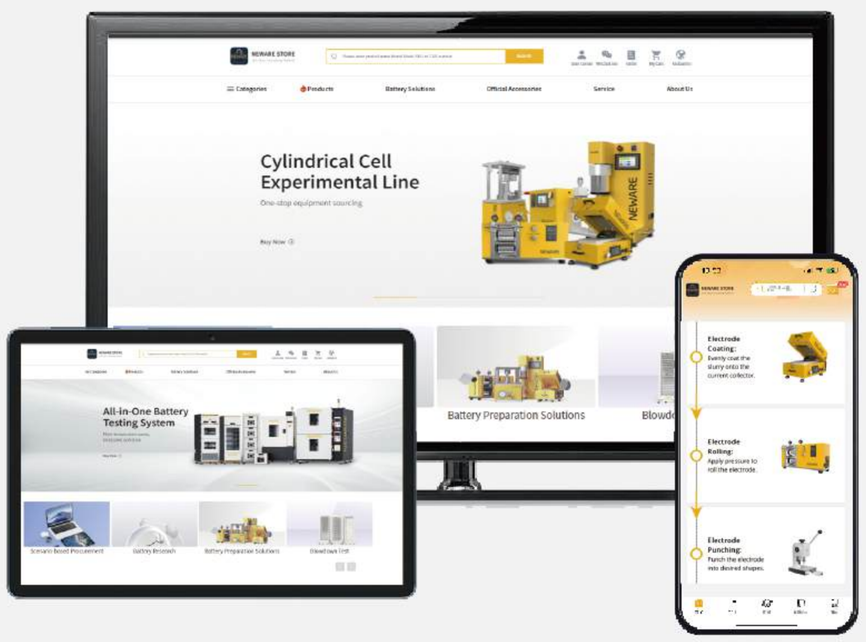
NEWARE LabTech App

Smart-Lab Solutions Platform

Remote Intelligent Control | Technical Support
Asset Management | Academic Live Streaming
Selected Top Journals | Research Community

neware.ai





NEWARE Store App

One-Stop Purchasing Platform

Complete Product Categories | One-Click Procurement
Video Explanation | Tool Guide
Academic Paper Award | Information Sharing

neware-store.com

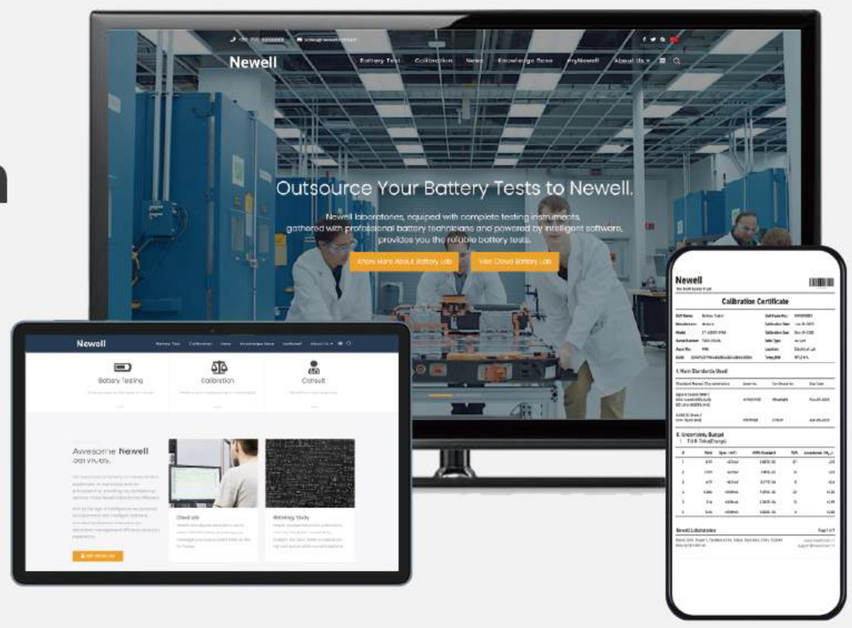
Newell Test App

CNAS

Guaranteeing You Accuracy Test Data

Battery Testing Services | Calibration Services

newell.com.cn



4|8 Series

Precision empowers confidence.

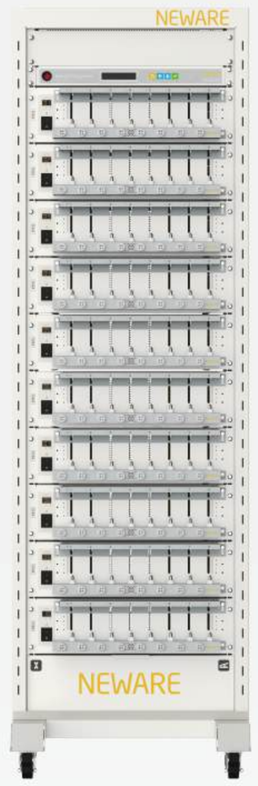
The 4/8 series battery testing system is specifically designed for battery material research and 3C battery testing and development. In addition to standard charging / discharging test functions, it also integrates various testing functions such as EIS, DCIR, CV, and pulse simulation, meeting comprehensive testing needs.

CT/CE-4000 Series
Scan to learn more details

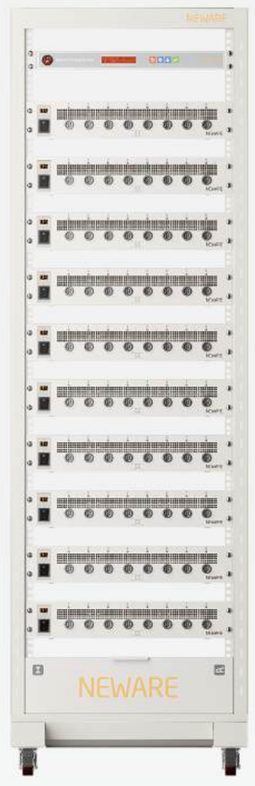
CT/CE-8000 Series
Scan to learn more details

CT-8002Q-5V100mA-124
- Size: 127×225×48mm

CT-4008Q-5V100mA-124
- Single: 19"1U (483×310×48mm)
- Overall: 555×650×1832mm



CT-4008Q-5V6A-S1
- Single: 19"3U (483×404×130mm)
- Overall: 555×650×1832mm



CE-4008Q-5V20A-SR
- Single: 19"2U (483×337×88.5mm)
- Overall: 555×650×1832mm

Battery Testing System	Voltage	Current
CT-4000 & CT-8000 mA Battery Testing System	5V	10mA/20mA/50mA/100mA
CT/CE-4000 & CT/CE-8000 3C Battery Testing System	5V	6A/12A/15A/20A/30A

Multi-range, more precise.

The 4/8 series battery testing system has a current range of 3 scales / 4 scales.

5V100mA
- 0.2μA ~ 0.1mA
- 0.1mA ~ 1mA
- 1mA ~ 10mA
- 10mA ~ 100mA

CT-4008Q-5V100mA-124

Multiple current options, meeting diverse needs.

5V10mA/20mA/50mA/100mA
Designed for coin cell testing.

5V6A/12A/15A/20A/30A
Designed for 3C battery testing.

CT-4008Q-5V6A-S1

Comprehensive testing.

Cycle Life Test

Rate Charging / Discharging Test

GITT Test

DCIR Test

dQ/dV Differential Capacity Curve

Pulse Test

Battery temperature test.

Linked with environmental test chambers, it achieves battery temperature performance testing and conducts comprehensive performance evaluation.

Constant Temperature Test

Thermal Condition Test

WHW-200L CT-4008Q-5V100mA-124

Voltage & Current Accuracy
±0.01%/0.02%/0.05%F.S.

Current Response Time
(10%F.S.~90%F.S.)
≤1/1.5/2ms

Recording Frequency
10/100/1000Hz

Sampling Time
10/100ms

Enhanced features, revolutionary experience.

Portable battery testing device with a Type-C power supply interface, featuring EIS, CV, and other testing functions.

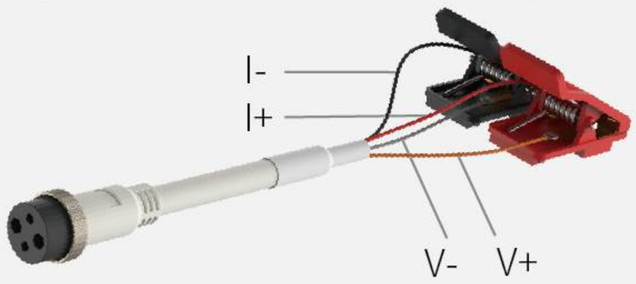
CV Test

EIS Test

CT-8002Q-5V100mA-124

Four-wire connection.

Four-wire test leads reduce the impact of lead resistance and improve measurement accuracy.



*CT/CE: Battery charging-discharging test system. "E" indicates that this equipment is equipped with energy feedback function.
*Other models can be customized according to voltage and current requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

6 Series

Swift in action, frugal in power.

The 6 series battery testing system is specifically designed for the testing of electric vehicles, communication base stations, energy storage systems, and other related applications. It features a variety of testing functions including simulation of operating conditions, DCIR testing, and CV testing, which are essential for in-depth research and comprehensive assessment of the electrical performance of battery packs. Additionally, the system supports multiple communication protocols to ensure efficient interaction with the BMS, guaranteeing the timeliness and accuracy of the test data.

CE-6000 Series
Scan to learn more details

CE-6012n-20V50A-HF
- Size: 600×800×1800mm
- Weight: Approx.290kg

CE-6001n-100kW-500V300A-IG
- Size: 1250×1050×1800mm
- Weight: Approx.1200kg

CE-6016A-5V75A
- Size: 800×800×1740mm

Testing System	Voltage	Current
CE-6000 Cell Testing System	5V/6V	50A~2000A
CE-6000 Module Testing System	20V~200V	20A~1200A
CE-6000 Pack Testing System	200V~1000V	100A~1200A

Modular power unit.

High-frequency isolated AC/DC and DC/DC modular design for flexible combination based on varying current ranges, channels, and power levels.

Voltage & Current Accuracy
±0.02%/
0.05%F.S.

Recording Frequency
100Hz

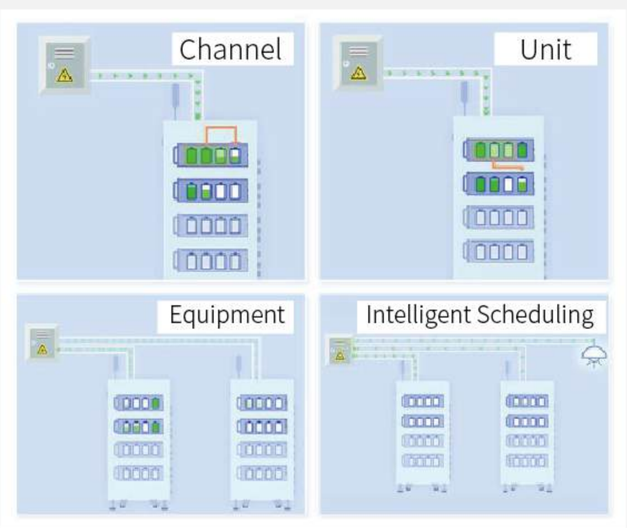
Current Response Time
(10%F.S.~90%F.S.)
≤3/10ms

Current Conversion Time
(-90%F.S.~90%F.S.)
≤6/10ms

Energy recycling, efficient and eco-friendly.

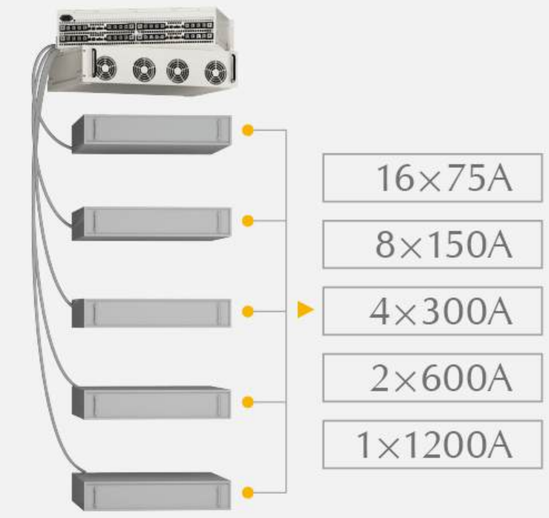
Battery discharge energy recovery, supplying other test channels or returning to the internal network.

Energy Feedback Efficiency (Max)
75%/90%/94%



Energy management.

Equipped with flexible paralleling capabilities and high current, it takes up minimal space and significantly enhances laboratory energy efficiency.



CE-6000 Cell Testing System

Multiple communication protocols.

Supports CAN and RS485 communication with BMS, and features DBC configuration.

Simulation Test

Pulse Test

DCIR Test

Channel Paralleling

*CT/CE: Battery charging-discharging test system. "E" indicates that this equipment is equipped with energy feedback function.
*Other models can be customized according to voltage and current requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

5|9 Series

Capture the fleeting, discern the minute.

The Series 6 battery testing system is designed for high-precision battery testing, focusing on battery material research and power cell testing. The entire series supports the SMBus communication protocol, specifically designed for smart battery testing to enhance the accuracy of test data and the convenience of the testing process.

CT/CE-5000 Series
Scan to learn more details

CT/CE-9000 Series
Scan to learn more details

CT-9002-5V6A-F-204n
● Size: 260×396×103mm

CT-5008-5V6A
● Single: 19"3U(483x660x130mm)
● Overall: 555×735×1834mm

CE-5008-20V10A-SMB
● Single: 19"3U(483x660x130mm)
● Overall: 555×735×1834mm

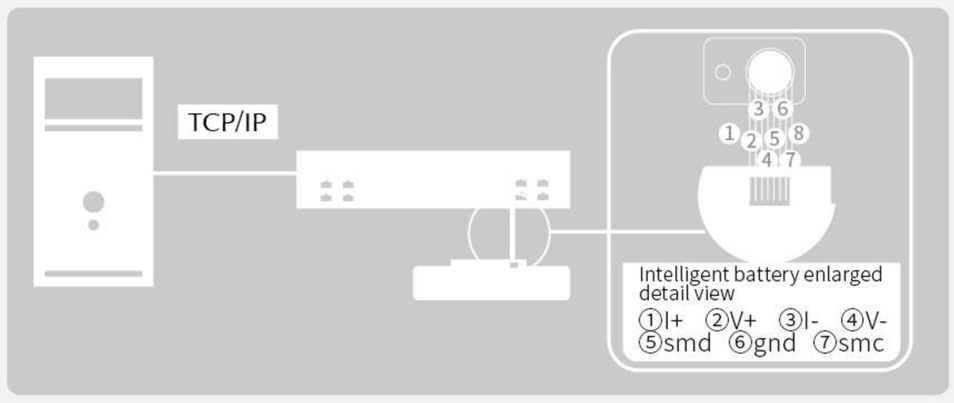
CE-5002-5V600A
● Single: 19"4U(483x533x178mm)
● Overall: 555×735×1834mm

CT-9008-5V15A
● Single: 19"3U(480×660×130mm)
● Overall: 606×800×2100mm

Testing System	Voltage	Current
CT/CE-5000 mA/3C Battery Testing System	5V~30V	100mA~30A
CE-5000 Power Cell Battery Testing System	5V	75A~10kA
CT/CE-9000 Ultra-Precision Battery Testing System	5V	15A/30A

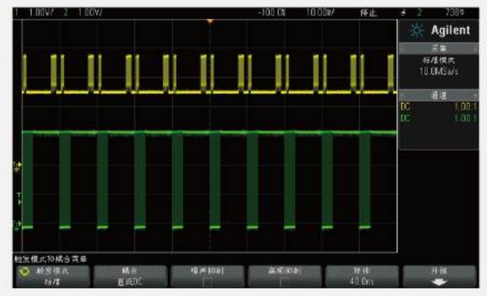
SMBus communication.

Designed specifically for smart battery testing, enabling efficient communication with the battery.



Ultra-fast response.

Supports cross-unit paralleling, with a recording interval of 10ms in condition simulation testing, and internal clock synchronization error between channels is <1us.



CT/CE-5000

Voltage Accuracy
±0.02%F.S.

Current Accuracy
±0.02%/0.05%F.S.

Recording Frequency
100Hz

Current Response Time
(10%F.S.~90%F.S.)
≤1/2/20/30ms

CE-5008-20V10A-SMB-DS (Single)

CT-9000 Ultra-Precision Battery Testing System.

Meets high-precision testing needs for material research and provides accurate test results.

Voltage & Current Accuracy
±0.02%F.S.

Recording Frequency
1000Hz

Current Response Time
≤100μs

Minimum Pulse Width
400μA

GSM

CV Test

CT-9002-5V6A-F-204n

Multi-range, more precise. (5V6A)

- 0.1μA ~ 180μA
- 180μA ~ 6mA
- 6mA ~ 180mA
- 180mA ~ 6A

DCIR

DCIR Test

dQ/dV Differential Capacity Curve

Energy recycling, efficient and eco-friendly.

Battery discharge energy recovery, supplying other test channels or returning to the internal network.

Energy Feedback Efficiency

*CT/CE: Battery charging-discharging test system. "E" indicates that this equipment is equipped with energy feedback function.
*Other models can be customized according to voltage and current requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

WHW/WGDW

Environmental Test Chamber Series

Silent insulation, loud on performance.

Environmental test chambers offer a stable environment for constant, high, and low temperature testing of battery temperature performance, with a temperature range of -70°C to 150°C. They reveal the performance characteristics of battery materials at different temperatures, assess battery performance under extreme hot or cold conditions, and ensure safety during tests like temperature shock.

Environmental Test Chamber
Scan to learn more details

WHW-200L-160CH-B
- Size: 600x920x1800mm
- Weight: Approx.200kg

WHW-100L-2-160CH
- Size: 600x920x1920mm
- Weight: Approx.260kg

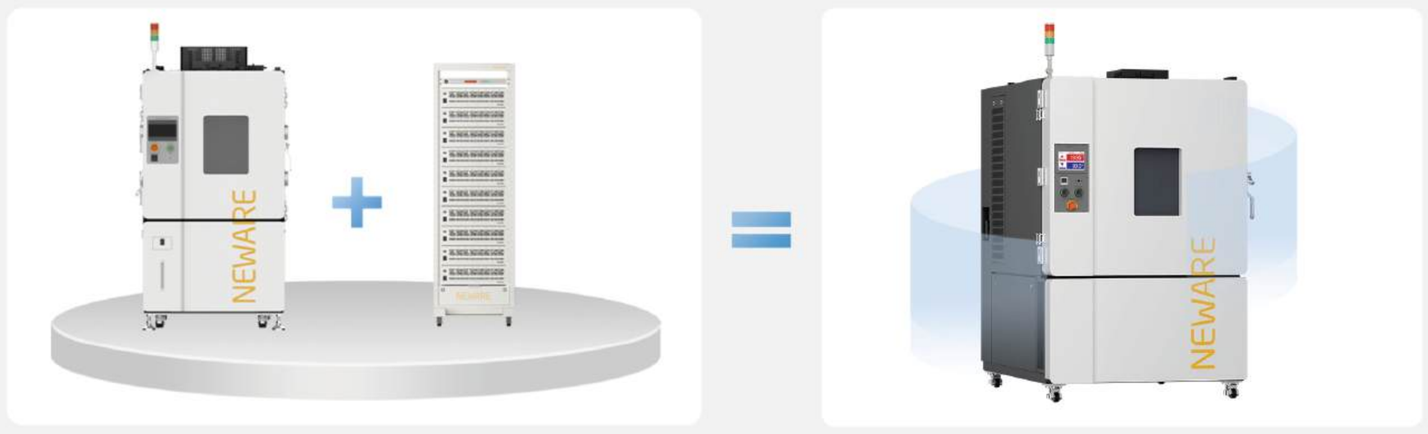
WGDW-380L-2-40BFC-5V600A8CH
- Size: 1600x1800x2050mm
- Weight: Approx.900kg

Testing System	Nominal Capacity	Temperature Range
WHW Constant Temperature Test Chamber Series	25L,100L,200L,400L	15°C~60°C
		0°C~60°C
WGDW High-Low Temperature Test Chamber Series	100L,200L,400L,600L,800L	-20°C~150 °C
		-40°C~150 °C
		-70°C~150°C

All-in-One Testing System series.

The battery testing system integrates with the environmental test chamber, saving experimental space.

- Voltage & Current Accuracy ±0.01%/0.05%F.S.
- Current Response Time 10/100Hz
- Recording Frequency (10%F.S.~90%F.S.) ≤1ms
- Sampling Time 10/100ms



- Temperature Deviation ±2°C (No Load & Stable Temperature)
- Temperature Fluctuation ≤0.5°C (No Load & Stable Temperature)
- Thermal Condition Test
- High and Low Temperature Testing
- Constant Temperature Test
- Forced Circulation Air Cooling

Multi-zone temperature design.

Dual-zone/-multi-zone design with independent control of each zone to increase testing efficiency.

(Single)
WHW-25L-S-16CH
- Size: 440x580x410mm
- Weight: Approx.45kg

Dedicated accessories.

Exclusive fixtures and accessories for environmental test chambers provide comprehensive support to ensure a worry-free testing process.

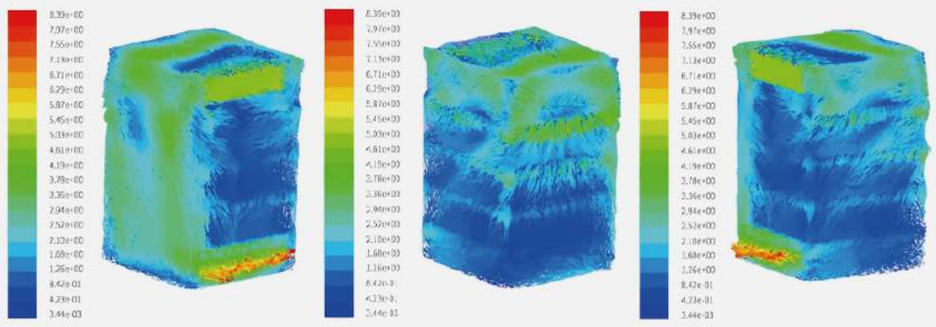
WGDW-380L-2-40BFC-5V600A8CH

WHW-200-5V12A64CH

*WHW/WGDW: Constant Temperature Chamber/High-Low Temperature Chamber
*All-in-One Testing System can be customized according to voltage and current requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

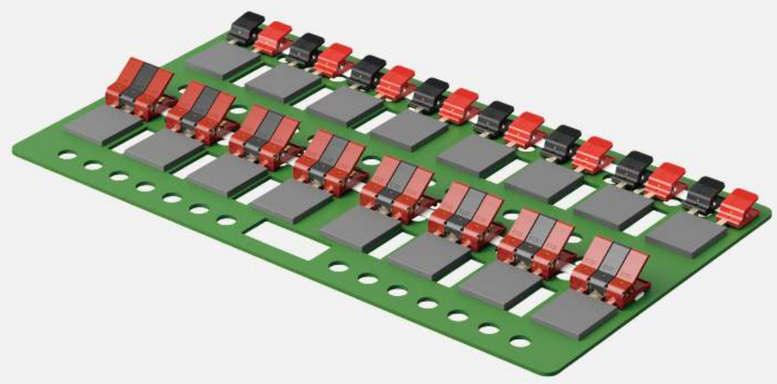
Powerful cooling, reliable stability.

Equipped with a fully enclosed piston compressor for environmentally friendly refrigeration and low-noise operation.



High-efficiency battery testing.

Portable battery testing device with a Type-C power supply interface, featuring EIS, CV, and other testing functions.



Safety design.

A variety of safety protection devices provide comprehensive protection for battery temperature condition testing, ensuring worry-free test safety.

- Automatic pressure relief
- Smoke detection alarm
- Overtemperature protection
- Circulation fan abnormality protection

WGDW-408L-40HBC-208V

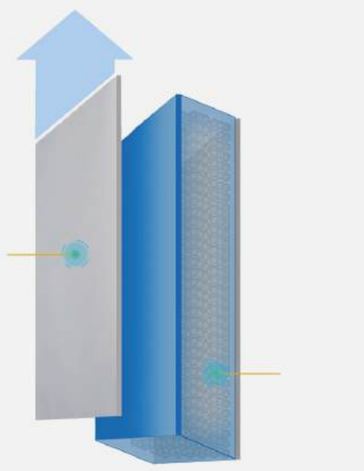
Intuitive touch control.

The touch LCD display design features an infrared motion sensor that automatically wakes the screen within 1.5m.

WHW-200L-160CH-B
- Size: 600x920x1800mm
- Weight: Approx.200kg

Thick insulation layer protects internal temperature.

A 50mm (70mm for High-Low Temperature Chambers) polyurethane foam insulation layer is added between the outer steel plate and the inner stainless steel plate.



PC control.

Integrate operation through the BTS system, synchronize battery testing with temperature control.

WHW-500L-5V6A120CH-380V

Space management master, desktop testing solution.

The compact mini all-in-one unit is ideal for small-scale development and experimentation, with a usage volume of 25L and a footprint of less than 0.5㎡. It frees up more desktop space, integrating battery testing and temperature testing to enhance space efficiency.

WHW-25L-16CH

*WHW/WGDW: Constant Temperature Chamber/High-Low Temperature Chamber
*All-in-One Testing System can be customized according to voltage and current requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

Measurement of Internal Resistance / Temperature / Humidity / Pressure.

Controlled precision, millisecond perfection.

Auxiliary Modules
Scan to learn more details

CA Temperature and Voltage Auxiliary Channels

Used in conjunction with the battery testing system, BTS intelligent testing monitors the voltage and temperature of individual cells, accurately measuring temperature and pressure to assist in battery testing.

Temperature Range
-200℃~260℃

Voltage Range
0V~5V

Voltage Accuracy
±0.1%F.S.

CA-4008n-1U-5VT-TC
- Size: 19"1U(442×150×46(mm)

CIR Internal Resistance Meter

Measurement of internal resistance R and voltage V of batteries, as well as equivalent resistance of supercapacitors and values of precision resistors.

Impedance Measurement Range
0~3Ω

Voltage Measurement Range
0~60V

Voltage Accuracy
±0.1%

Data Storage
1,000,000 samples

Sampling Frequency
1~50PLC
(1PLC=20ms,50Hz)
(1PLC=16.67ms,60Hz)

Input Impedance
200kΩ

BT-9562
- Size: 220×300×80mm
- Weight: Approx.2.5kg

CP Pressure Auxiliary Channel

Delivers precise pressure readings, essential for applications requiring tight pressure control, and supports multiple pressure sensors for monitoring various points simultaneously, enhancing test efficiency.

Pressure Range
10kg~2500kg

Accuracy
0.03%F.S.

Sampling Frequency
1Hz

CA-6008-PS
- Size: 275×135×40mm
- Weight: Approx.2kg

CI Ammeter

Precisely measures current and tracks changes during battery R&D, production, and testing.

Accuracy
0.005%F.S.

4 Ranges

CI-NW-DCQ-30A
- Size: 260×325×103mm

CI-NW-DCQ-1000A
- Size: 205×334×130mm

CV Voltmeter

Precisely measures voltage and monitors changes during battery R&D, production, and testing.

Accuracy
0.005%F.S.

4 Ranges

CV-NW-DCQ-2000V
- Size: 260×325×103mm

CT Temperature Detector

Portable for industrial field, calibrates transmitters, detects sensors, and measures temperature, with fast heating and cooling to meet quick and precise metrological needs on site.

LCS-GJL-F10-120C
- Size: 250×332×130mm

LCS-GJL-F45-140C
- Size: 200×240×315mm

Model	Temperature Range	Stability	Heating Time	Cooling Time	Well Depth
LCS-GJL-F10-120C	-10℃~122℃	±0.05℃	25℃→100℃≤10min	25℃→0℃≤10min	102mm
LCS-GJL-F45-140C	-45℃~140℃	±0.005℃	25℃→140℃≤30min	25℃→-45℃≤45min	160mm

*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

Accessories

Secure grip, accurate read.

The 4/8 series battery testing system is specifically designed for battery material research and 3C battery testing and development. In addition to standard charging and discharging test functions, it also integrates various testing functions such as EIS, DCIR, CV, and pulse simulation, meeting comprehensive testing needs.

Accessories
Scan to learn more details

Coin Cell

01

Coin Cell Clamp
A705-P5-45B

02

PCB Coin Cell Clamp
B01-DC-ZJB-mA-1.0

03

PCB Temperature Chamber Coin Cell Clamp
B01-WX-VIBF-1.4

04

Coin Cell Toggle Clamp
PPJ-19"-TP-KS-mA-8CH-KS

Pouch Cell

05

Polymer Clamp
A705-P-15A-DG

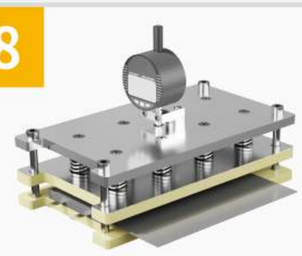
06

Pouch Cell Toggle Clamp
P103-12-TZ-R-300A

07

Heat Press Sensor Fixture
PJ-RY-20A

08



Spring Pressure Plate Fixture
PCJ-YTH-R-F-D-190

09

Pouch Cell Rack
PDCJ-R-P1-100A-32CH-D180
• Size: 1589×507×1677mm

10

Pouch Cell Rack
PDCJ-R1-P1-30A-32CH-D1
• Size: 996×540×1637mm

Prismatic Cell

11

Pouch Cell Rack
PCJ-F2-ZJ-500A-CH-L-1M

12

Pouch Cell Rack
PTF-F-ZJ-120A-1CH-LWX

13

Prismatic Cell Toggle Clamp
PCJ-YZJ-F-WX

14

Prismatic Cell Clamp Holder
PPJ-19"-JJMB-F1-300A-2CH-KS

15

Prismatic Cell Clamp Holder
PDCJ-F1-ZJ-60A-8CH-S1
• Size: 1300×407×1670mm

16

Prismatic Cell Clamp Holder
PDCJ-F1-LS-500A-8CH-D1
• Size: 783×400×1142mm

Cylindrical Cell

17

Cylindrical Cell Toggle Clamp
PCJ-YZJ-Y-3260-100A-WX

18

46 Series Cylindrical Cell Toggle Clamp
PTF-Y-ZJ-60A-1CH-L

19

Temperature Chamber Cylindrical Cell Clamp Holder
PPJ-19"-HWX-JJMB-XNA
• Size: 504×204×570mm

20

Cylindrical Cell Rack
PDCJ-Y1-TJ-50A-32CH-D1
• Size: 896×500×1096mm

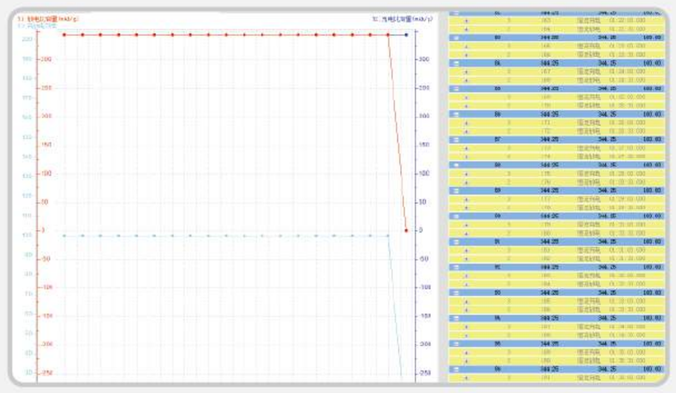
*Customizable based on current, battery size, and other requirements.
*Actual dimensions may differ from those marked in the picture. Please refer to the actual product for the correct size.

BTS8.1 / BTS9.0

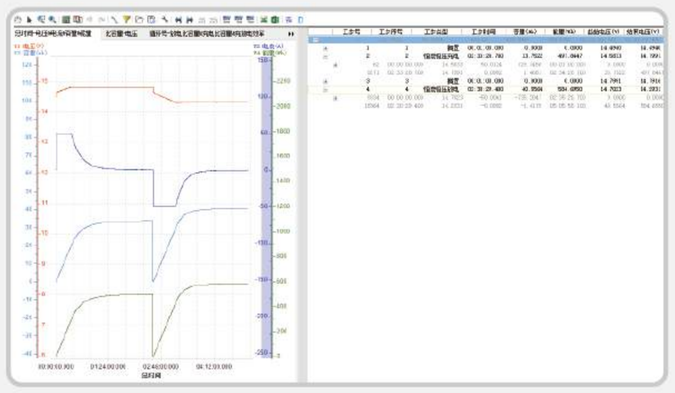
Hardware defines precision, software forges the future.

Scan to download BTS software

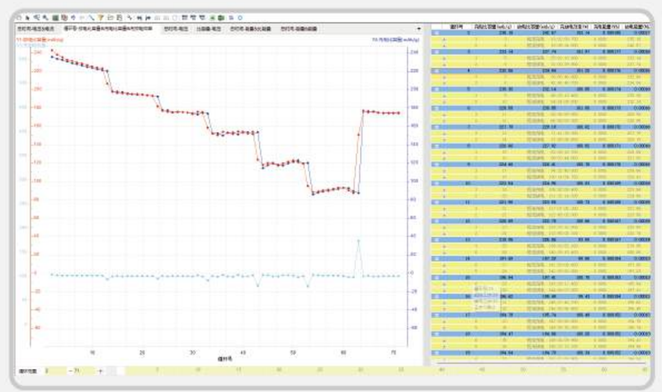
Charging / Discharging Test



Cycle life test



CCCV test

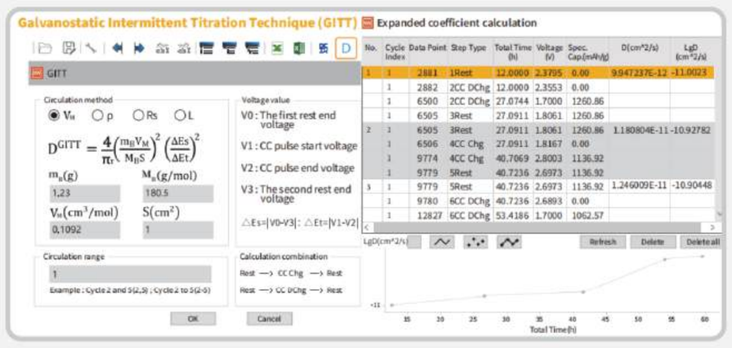


Rate test

Galvanostatic Intermittent Titration Technique (GITT)

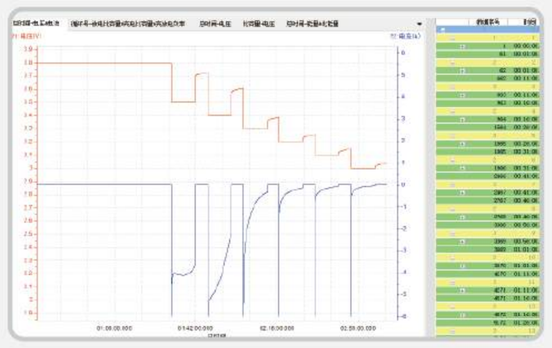
Step Index	Step Name	Step Time(hhmmsss.ms)	Voltage(V)	Current(mA)	
1	Rest	00:01:00.000			Time record condition:1s Volt. lower limit:2.4V Volt. upper limit:5V
2	CC Chg	00:01:00.000		0.1	Time record condition:1s Volt. lower limit:2.4V Volt. upper limit:5V If Voltage>4V goto Step4
3	Rest	00:02:00.000			Time record condition:1s Volt. lower limit:2.4V Volt. upper limit:5V If Voltage<4V And(&) Time>=119s goto Step2
4	CC DChg	00:01:00.000		0.1	Time record condition:1s Volt. lower limit:2.4V Volt. upper limit:5V If Voltage<2.5V goto Step6
5	Rest	00:02:00.000			Time record condition:1s Volt. lower limit:2.4V Volt. upper limit:5V

Diffusivity(D) calculation



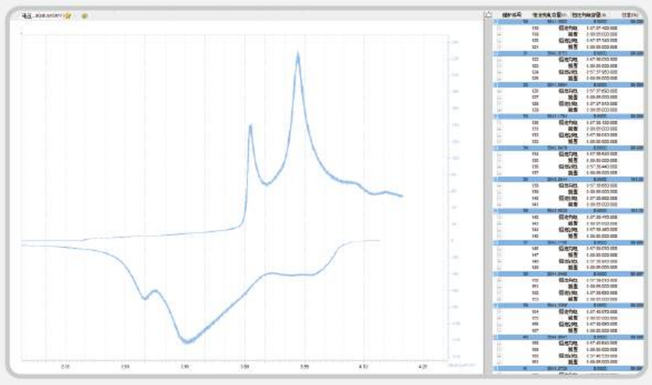
Diffusivity(D) calculation

Potentiostatic Intermittent Titration Technique (PITT)



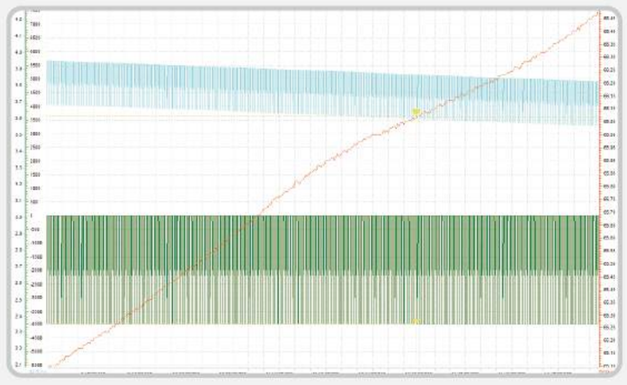
PITT test

Incremental Capacity Analysis (ICA)



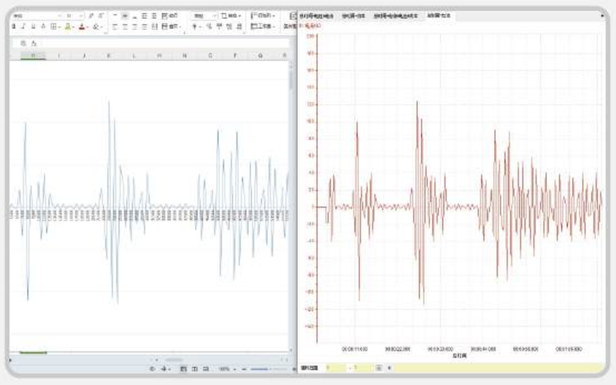
Differential capacity curve (dQ/dV)

DC Internal Resistance (DCIR)



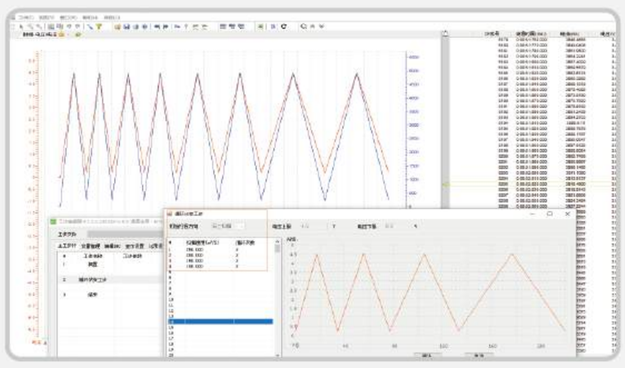
DCIR-potential & current

Simulation Test

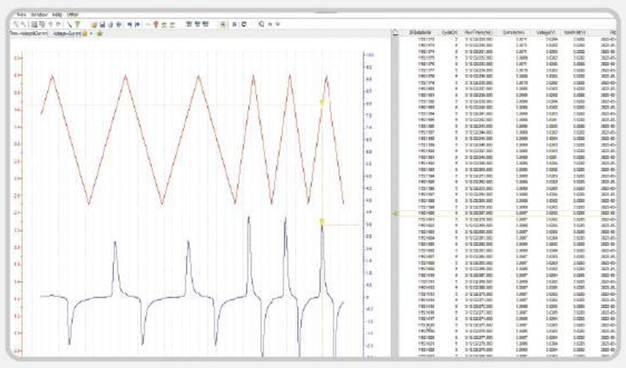


Pulse Width 100ms

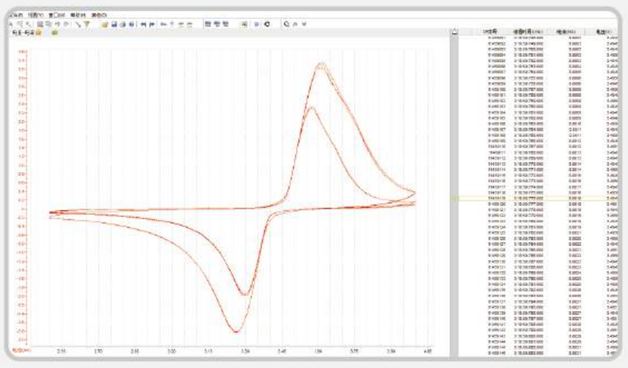
Cyclic Voltammetry (CV)



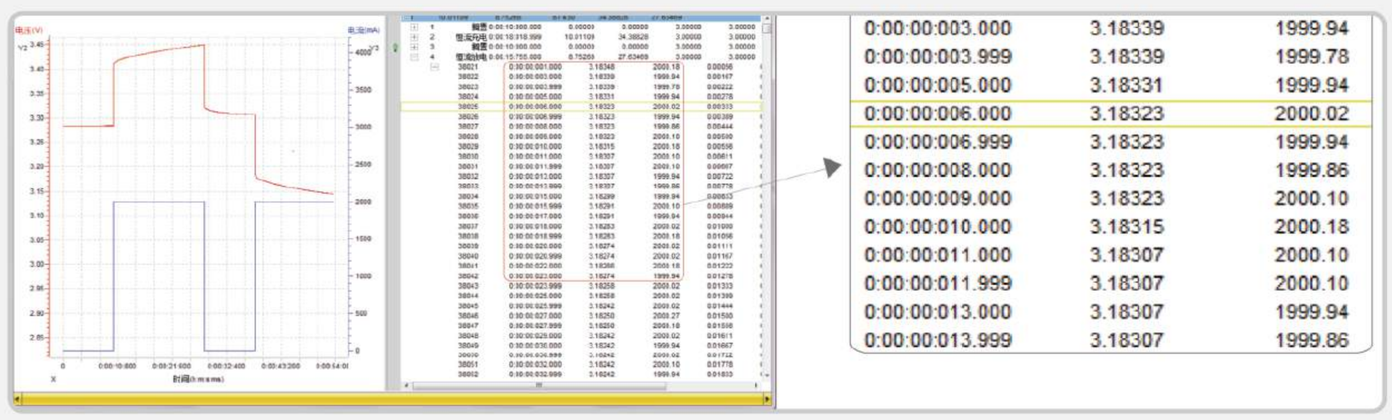
Test procedure



Time-potential & current

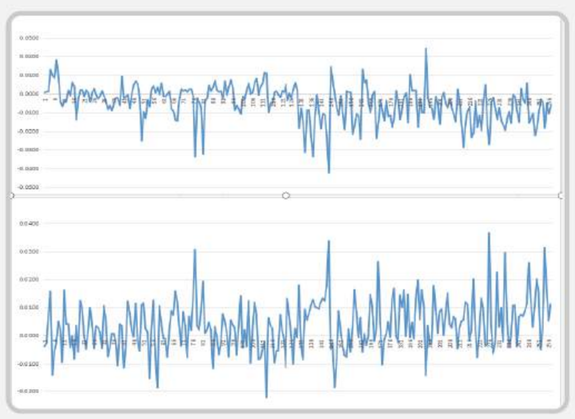


Potential-current curve



0:00:00:003.000	3.18339	1999.94
0:00:00:003.999	3.18339	1999.78
0:00:00:005.000	3.18331	1999.94
0:00:00:006.000	3.18323	2000.02
0:00:00:006.999	3.18323	1999.94
0:00:00:008.000	3.18323	1999.86
0:00:00:009.000	3.18323	2000.10
0:00:00:010.000	3.18315	2000.18
0:00:00:011.000	3.18307	2000.10
0:00:00:011.999	3.18307	2000.10
0:00:00:013.000	3.18307	1999.94
0:00:00:013.999	3.18307	1999.86

Recording frequency: up to 1000Hz



Current accuracy: 0.01% F.S.

Website: www.neware.net
Code: S02-002-CPML
Version Number: ZY-EN-1-1-24H2-V3.0